Appendix G1 - Abbreviated Faculty Curricula Vitae

Department of Microbiology & Immunology Faculty
Active in training graduate students and/or postdoctoral scholars

Table of Contents

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Kristina Abel, Ph.D.

Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Van Rompay, K.K.A., **K., Abel**, Lawson, J.R., Singh, R.P., Schmidt, K., Evans, T., Earl, P., Harvey, D., Franchini, G., Tartaglia, J., Montefiori, D., Hattangadi, S., Moss, B., Marthas, M.L. (2005): Attenuated Poxvirus-based SIV Vaccines Given in Infancy Partially Protect Infant and Juvenile Macaques Against Repeated Oral Challenge with Virulent SIV. *J.Acquir.Immune Defic.Syndr.* 38:124-134

Kim, E-Y., M. Busch, **K. Abel**, L. Fritts, P. Bustamante, J. Stanton, D. Lu, S. Wu, J. Glowczweskie, T. Rourke, D. Bogdan, M. Piatak, J.D. Lifson, R. Desrosiers, S. Wolinsky, C.J. Miller (2005). Retroviral recombination in vivo: Viral replication patterns and genetic structure of SIV populations in rhesus macaques after simultaneous or sequential intravaginal inoculation with SIVmac239Δvpx/vpr and SIVmac239Δnef. *J.Virology*, 9:4886-95.

Chung, E., S.B. Amrute, **K. Abel**, G. Gupta, Y. Wang, C.J. Miller, P. Fitzgerald-Bocarsly (2005). Characterization of Virus-responsive Plasmacytoid Dendritic Cells in the Rhesus Macaque: *Clin Diagn Lab Immunol.* 12:426-35.

Abel, K., Y. Wang, L. Fritts, E. Sanchez, E. Chung, P. Fitzgerald-Bocarsly, A. M. Krieg, C.J. Miller (2005). A, B, and C class CpG ODN induce distinct cytokine gene expression patterns in rhesus PBMC and distinct IFN-alpha responses in TLR9-expressing rhesus plasmacytoid dendritic cells. *Clin Diagn Lab Immunol.* 12:606-21.

Busch, M., **K. Abel**, J. Li, M. Piatak, Jr., J.D. Lifson, C.J. Miller (2005). Efficacy of a SHIV89.6 Proviral DNA Vaccine against mucosal SIVmac239 Challenge. *Vaccine*, 23:4036-47

Reynolds, M.R., E. Rakasz, P. J. Skinner, C. White, **K. Abel**, M. Ma, L. Compton, G. Napoé, N. Wilson, C.J. Miller, A. Haase, D. I. Watkins (2005). The $CD8^+$ T-Lymphocyte Response to Major Immunodominant Epitopes after Vaginal Exposure to SIV: Too Late Too Little, Especially in Gut Associated Lymphatic Tissue. *J. Virology*, 79:9228-35

Miller, C.J., Q. Li, **K. Abel**, E.-Y. Kim, M. Ma, S. Wietgrefe, L. La Franco-Scheuch, L. Compton, L. Duan, M. Dykhuizen Shore, M. Zupancic, M. Busch, J. Carlis, S. Wolinksy, and A. T. Haase (2005). Propagation and Dissemination of Infection after Vaginal Exposure to SIV. *J. Virology*, 79:9217-27

Abel, K., D. Rocke, B. Chohan, L. Fritts, C.J. Miller (2005). The temporal and anatomic relationship between virus replication and cytokine gene expression after vaginal SIV infection. *J. Virology*, 79:12164-12172

Wang, Y., **K. Abel**, K. Lantz, A.M. Krieg, M.-B. McChesney, C.J. Miller (2005). Intravaginally applied TLR7 or TLR9 agonists induce local production of antiviral cytokines and chemokines but do not prevent vaginal simian immunodeficiency virus transmission in rhesus macaques. *J. Virology*, 79:14355-14370

Quigley, M.F., **K. Abel**, B. Zuber, C.J. Miller, J.K. Sandberg, B.L. Shacklett (2006): Perforin expression in the gastrointestinal mucosa is limited to acute simian immunodeficiency infection. *J. Virology*, 80:3083-7

Zuber, B., M.F. Quigley, J.W. Critchfield, B.L. Shacklett, **K. Abel**, C.J. Miller, A. Morner, S. Paulie, N. Ahlborg, J.K. Sandberg (2006). Detection of macaque perforin expression and release by flow cytometry, immunohistochemistry, ELISA, and ELISpot. *J. Immunol. Meth.,* 312: 45-53

Abel, K., Pahar, B., Van Rompay, K.K., Fritts, L., Sin, C., Schmidt, K., Colon, R., McChesney, M. Marthas, M. (2006): Rapid virus dissemination in infant macaques after oral SIV exposure in the presence of local innate immune responses. *J. Virol*., 80:6357-67

Wang L, Joad JP, **Abel K**, Spinner A, Liu H, Pinkerton KE. (2007): Effects of Environmental Tobacco Smoke on the Developing Immune System of Infant Monkeys.. *J Allergy Clin Immunol.* 120: 445-51.

Miller CJ, Genesca M, **Abel K**, Montefiori D, Forthal D, Bost K, Li J, Favre D, McCune JM. (2007): Antiviral antibodies are necessary for control of SIV replication. *J Virol.* 81: 5024-5035.

Hartigan-O'Connor D, **Abel K**, McCune JM. (2007): Suppression of SIV-specific CD4+T cells by infant but not adult macaque regulatory T cells: implications for SIV disease progression. *J Exp Med.* 11: 2679-2692.

Asmuth DM, **Abel K**, George MD, Dandekar S, Pollard RB, Miller CJ. (2008): Pegylated Interferon-alpha 2a Treatment of Chronic SIV-Infected Macaques. *J Med Primatol.* 37: 26-30.

Capitanio JP, **Abel K**, Mendoza SP, Blozis SA, McChesney MB, Cole SW, Mason WA. (2008): Personality and serotonin transporter genotype interact with social context to affect immunity and viral set-point in simian immunodeficiency virus disease. *Brain Behav Immunity.* 22: 676-689.

Kinally EL, Lyons LA, **Abel K,** Mendoza S, Capitanio JP.(2008): Effects of early experience and genotype on serotonin transporter regulation in infant rhesus macaques. *Gene Brain Behav.* 7: 481-486.

Yue Y, Wang Z, **Abel K**, Li J, Strelow L, Madarino A, Eberhardt MK, Schmidt KA, Diamond DJ, Barry PA. (2008): Evaluation of Recombinant Modified Vaccinia Ankara Virus-Based

Rhesus Cytomegalovirus Vaccines in Rhesus Macaques. *Medical Microbiol Immunol.* 197: 117-23.

Abel K, Yue Y, Strelow L, Eberhardt MK, Schmidt KA, Barry PA. (2008): A Heterologous DNA Prime/Protein Boost Immunization Strategy for Rhesus Cytomegalovirus Vaccine. *Vaccine.* 26: 6013-25.

Fairman J, Moore J, Lemieux M, Van Rompay K, Geng Y, Warner J, **Abel K**. (2008): Enhanced in vivo immunogenicity of SIV vaccine candidates with cationic liposome-DNA complexes in a rhesus macaque pilot study. *Hum Vaccin.* 5(3): 1-10.

Van Rompay, K.K., **Abel, K.**, Earl, P., Kozlowski, P. A., Easlick, J., Moore, J., Buonocore-Buzzelli, L., Schmidt, K., Wilson, R.L., Simon, I., Moss, B., Rose, N., Rose, J., Marthas, (2010): M.L. Immunogenicity of viral vector, prime-boost SIV vaccine regimens in infant rhesus macaques: attenuated vesicular stomatitis virus (VSV) and modified vaccinia Ankara (MVA) recombinant SIV vaccines compared to live-attenuated SIV. *Vaccine*, 28:1481-1492

J. Easlick, S. Lantz, R. Szubin, N. Baumgarth, and **Abel, K (2010)**: The early interferon alpha subtype response in infant macaques infected orally with SIV. Journal of Acquired Immunodeficiency Syndrome, *in press*

Reviews & commentaries

C. J. Miller, **K. Abel** (2005). Protective immune mechanisms associated with the protection from vaginal SIV challenge in rhesus monkeys infected with virulence-attenuated SHIV 89.6. J Medical Primatol. 34:271-281

K. Abel (2009): The rhesus macaque pediatric SIV infection model – a valuable tool in understanding HIV pathogenesis and for designing pediatric HIV-1 prevention strategies. *Current HIV Research.* 7: 2-11.

Editorial Responsibilities

Ad hoc reviewer for:

Journal of Clinical investigation

Blood

Current Opinion on Investigational Drugs

Journal of Immunology

Grants/Contracts

PI, 06/10/08 – 05/31/13
"A novel oral combination pediatric HIV-TB vaccine"

1R01DE019064
Total direct costs: $587,669
% effort: 25

PI, 04/01/08 – 1/31/10
"A rhesus macaque model of SIV-malaria coinfection" (in no-cost extension)
1R21AI077373Total direct costs: $150,000
% effort: 10

PI, 04/01/08 – 03/31/10
"A nonhuman primate model of infant CMV infection" (in no-cost extension)
1R21HD056051
Total direct costs: $150,000
% effort: 10

PI Project 4, 08/15/08 – 07/31/12
(PI: Lerche)
"Genetically defined Herpes/Retrovirus SPF macaques"
U24 RR018144
Total direct costs: $1,536,054
% effort: 10

Grant Review Service

Ad-hoc reviewer:

January 2010	NIH/NIAID Grant Review: International Centers of Excellence in Malaria Research (RFA AI 09-017)
July 2009	NIH/NIAAA Program Grant Review: Alcohol Research Center
January 2009	CDC Grant Review: Healthy People Initiative- Dissertation Grants
November 2008	NIH/ NIAID Grant Review: HIV Microbicide Innovation Program
2006	Grant Review: South African AIDS Vaccine Initiative (SAAVI)
2006	NIH/ NIDCR – Special Emphasis Panel: HIV and HAART- Oral Mucosa

Professional Meetings/Societies

Meeting organization

2007-current	Abstract reviewer for Conferences of IAS (International AIDS Society)
2007	Scientific Committee of the Annual Meeting for Nonhuman Primate Models for AIDS

2010	Scientific Committee of the Annual Meeting for Nonhuman Primate Models for AIDS

Meeting participation

Talks

October 2009	SBRI Seattle Double Trouble "HIV-Coinfection Symposium" " Baby steps towards a pediatric HIV-TB Vaccine"
October 2009	27th Annual Meeting on NHP Models for AIDS, Boston, USA "A nonhuman primate co-infection model of simian immunodeficiency virus (SIV) and Plasmodium fragile infection to study immune mechanisms leading to exacerbated disease and enhanced transmission" "A Novel, Attenuated Recombinant *Mycobacterium Tuberculosis* HIV Vaccine Vector is Safe and Immunogenic in Infant Rhesus Macaques"
October 2007	25th Annual Meeting on NHP Models for AIDS, Monterey, CA Induction of local and systemic SIV-specific T cell responses by a VSV/MVA-SIV vaccine regimen does not prevent rapid SIV dissemination after oral SIV infection in infant macaques "Regulatory T cells suppress SIV-specific CD4+T, but not CD8+T cell responses in infant macaques - implication for SIV pathogenesis"
Fall 2006	24th Annual Meeting on NHP Models for AIDS, Atlanta, GA "Host factors contributing to infant SIV pathogenesis"
September 2006	International AIDS Vaccine Conference, Amsterdam "Host factors contributing to rapid disease progression in infant macaques"

Society membership

American Association of Immunologists, 2002-present

American Association for the Advancement of Science, 2002-present

American Society for Microbiology, 2002-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Steven Bachenheimer, Ph.D.
Professor
Primary Appointment: Department of Microbiology and Immunology

Publications
Primary literature
Gregory, D.A., and **S.L. Bachenheimer**. (2008) Characterization of mre11 loss following HSV-1 infection. *Virology*, **373**, 124-136.
Hargett, D., S. Rice, and **S.L. Bachenheimer**. (2006) Herpes simplex virus type 1 ICP27-dependent activation of NF-kB. *J. Virology*, **80**, 10565-10578.
Hargett, D., T. McLean, and **S.L. Bachenheimer**. (2005) Herpes simplex virus ICP27 activation of the stress kinases JNK and p38. *J. Virology*, **79**, 8348-8360.

Editorial Responsibilities
Editorial boards
Journal of Virology 2007-present, Virology 2002-present
Ad Hoc Reviewer
Virus Research 2005-present

Grant Review Service
Member, *Ad Hoc* Reviewer, NIH Special Panel for Program Projects in Virology, 2009
Chair, Molecular and Cell Biology of Cancer Review Panel, American Cancer Society, 2005

Committee Service
University of North Carolina, Chapel Hill
School of Medicine

2009-present	Member, Committee to Review APT-professor
2009-2010	Member, Pathogenesis Committee, BBSP Graduate Recruitment
2007-2009	Chair, Pathogenesis Committee, BBSP Graduate Recruitment

UNC-Chapel Hill

2008-forward	Chair, UNC-Chapel Hill Insurance Committee
2006-forward	Member, UNC-Chapel Hill Insurance Committee—*oversees the pre- and post-tax benefits programs offered to UNC-CH employees*.

University of North Carolina System

2010-present	Member and Head, UNC faculty delegation to Faculty Assembly
2006-present	Member, The University of North Carolina Optional Retirement Program Investment Advisory Committee—*advise the UNC System Vice-president for Human Resources on the investment strategies for the Optional retirement Program*
2002-2008	Delegate, UNC Faculty Assembly, member of subcommittee on Faculty Welfare—*promote issues of concern to system-wide faculty; discuss and formulate "best practices" for faculty governance*

Professional Meetings/Societies

Meeting organization

2005-2007 Scientific Advisory Committee, International Herpesvirus Workshops (IHW)

2007 Co-Organizer, 32nd International Herpesvirus Workshop, Asheville NC

Meeting participation

2009 IHW, attendee

2007 IHW, oral presentation

2006 IHW, poster presenter

2005 IHW, poster presenter

Society membership

Amer. Soc. Adv. Science 2005-present

Amer. Soc. For Virology 2005-present

Amer. Soc. For Microbiology 2005-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Ralph S. Baric, PhD

Professor

Primary Appointment: Department of Epidemiology

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Rockx B, Donaldson E, Frieman M, Sheahan T, Corti D, Lanzavecchia A, Baric RS. (2010) Escape from human monoclonal antibody neutralization affects in vitro and in vivo fitness of severe acute respiratory syndrome coronavirus. *Journal on Infectious Disease* **201**:946-955.
2. Freundt EC, Yu L, Goldsmith CS, Welsh S, Cheng A, Yount B, Liu W, Frieman MB, Buchholz UJ, Screaton GR, Lippincott-Schwartz J, Zaki SR, Xu XN, Baric RS, Subbarao K, Lenardo MJ. (2010) The open reading frame 3a protein of severe acute respiratory syndrome-associated coronavirus promotes membrane rearrangement and cell death. *Journal of Virology* **84,**1097-1109.
3. Chang CM, Schroeder JC, Huang WY, Dunphy CH, Baric RS, Olshan AF, Dorsey KC, Dent GA, Cerhan JR, Lynch CF, Rothman N, Cantor KP, Blair A. (2010) Non-Hodgkin lymphoma (NHL) subtypes defined by common translocations: utility of fluorescence in situ hybridization (FISH) in a case-control study. *Leukemia Research* **34,**190-195.
4. Lindesmith LC, Donaldson E, Leon J, Moe CL, Frelinger JA, Johnston RE, Weber DJ, Baric RS. (2010) Heterotypic humoral and cellular immune responses following Norwalk virus infection. *Journal of Virology* **84**, 1800-1815.
5. Frieman MB, Chen J, Morrison TE, Whitmore A, Funkhouser W, Ward JM, Lamirande EW, Roberts A, Heise M, Subbarao K, Baric RS. (2010) SARS-CoV pathogenesis is regulated by a STAT1 dependent but a type I, II and III interferon receptor independent mechanism. *PLoS Pathogen* **6:**e1000849.
6. Wahala WM, Donaldson EF, de Alwis R, Accavitti-Loper MA, Baric RS, de Silva AM. (2010) Natural strain variation and antibody neutralization of dengue serotype 3 viruses. *PLoS Pathogen* **6:**e1000821.
7. Eckerle LD, Becker MM, Halpin RA, Li K, Venter E, Lu X, Scherbakova S, Graham RL, Baric RS, Stockwell TB, Spiro DJ, Denison MR. (2010) Infidelity of SARS-CoV Nsp14-exonuclease mutant virus replication is revealed by complete genome sequencing. *PLoS Pathogen* **6:**e1000896.
8. Chang CM, Schroeder JC, Olshan AF, Dunphy CH, Huang WY, Baric RS, Conway K, Cerhan JR, Lynch CF, Rothman N, Cantor KP, Blair A. (2010) A case-control study of tobacco use and other non-occupational risk factors for lymphoma subtypes defined by t(14; 18) translocations and bcl-2 expression. *Cancer Causes Control* **21,**1147-1154.
9. Basu D, Walkiewicz MP, Frieman M, Baric RS, Auble DT, Engel DA (2009) Novel influenza NS1 antagonists block replication and restore innate immune function. *Journal of Virology* **83**,1881-1891.

10. Liao HI, Olson CA, Hwang S, Deng H, Wong E, Baric RS, Roberts RW, Sun R. (2009) mRNA display design of fibronectin-based intrabodies that detect and inhibit sars-cov N protein. *Journal of Biological Chemistry* **284**,17512-17520.
11. Frieman, M, Ratia, K., Johnston, RE, Mesecar, AD., Baric, RS. (2009) SARS-CoV papain-like protease ubiquitin-like and catalytic domain antagonize IRF3 and NFκB signaling. *Journal of Virology* **83**,6689-6705.
12. Miknis ZJ, Donaldson EF, Umland TC, Rimmer RA, Baric RS, Schultz, LW. (2009) SARS-CoV nsp9 Dimerization is Essential for Efficient Viral Growth. *Journal of Virology* **83**,3007-3018.
13. Rockx B, Baas T, Zornetzer GA, Haagmans B, Sheahan T, Frieman M, Dyer MD, Teal TH, Proll S, van den Brand J, Baric R, Katze MG. (2009) Early upregulation of acute respiratory distress syndrome-associated cytokines promotes lethal disease in an aged-mouse model of severe acute respiratory syndrome coronavirus infection. *Journal of Virology* **83**, 7062-7074.
14. Cannon JL, Lindesmith LC, Donaldson EF, Saxe L, Baric RS, Vinjé J. (2009) Herd immunity to GII.4 noroviruses is supported by outbreak patient sera. *Journal of Virology* **83,** 5363-5374.
15. LoBue AD, Thompson JM, Lindesmith L, Johnston RE, Baric RS. (2009) Alphavirus-adjuvanted norovirus-like particle vaccines: heterologous, humoral, and mucosal immune responses protect against murine norovirus challenge. *Journal of Virology* **83,** 3212-3227.
16. Day CW, Baric R, Cai SX, Frieman M, Kumaki Y, Morrey JD, Smee DF, Barnard DL. (2009) A new mouse-adapted strain of SARS-CoV as a lethal model for evaluating antiviral agents in vitro and in vivo. *Virology* **395**, 210-222.
17. Enjuanes, L., DeDiego, M.L., Álvarez, E., Deming, D., Sheahan, T, and Baric, R.S. (2008) Vaccines to Prevent Severe Acute Respiratory Syndrome Coronavirus-Induced Disease. *Virus Research* **133**, 45-62.
18. Roberts A, Lamirande EW, Vogel L, Jackson JP, Paddock CD, Guarner J, Zaki SR, Sheahan T, Baric R, Subbarao K. (2008) Animal models and vaccines for SARS-CoV infection. *Virus Research* 1**33**, 20-32.
19. Frieman, M., Heise, M. and Baric, R.S. 2008. SARS Coronavirus and Innate Immunity. *Virus Research* **133**, 101-112.
20. Tunis P., Moe C., Liu P., Miller S., Lindesmith L., Baric R., Le Pendu J., and Calderon R.L. (2008) Norwalk virus: How infectious is it? *Journal of Medical Virolology* **80,**1468-1476.
21. Pacciarini, F., Ghezzi, S., Canducci, F., Sims, A., Sampaolo, M., Ferioli, E., Clementi, M., Poli, G., Conaldi, P-G., Baric, R.S., and Vicenzi, E. (2008) Persistent Replication of SARS-CoV in Human Tubular Kidney Cells Selects for Adaptive Mutations in the Membrane Protein. *Journal of Virology* **82**, 5137-5144.
22. Sparks JS, Donaldson EF, Lu X, Baric RS, Denison MR. (2008) A Novel Mutation in MHV nsp5, the Viral 3C-like Proteinase, Causes TS Defects in Viral Growth and Protein Processing. *Journal of Virology* **82**, 5999-6008.
23. Chachu, K.A., LoBue, A.D., Strong, D.W., Baric, R.S. and Virgin, H.W. (2008) Vaccination against mucosal and lymphatic norovirus infection. *Plos Pathogen* **4,**e1000236.

24. Chachu, K.A, Strong, D.W., LoBue, A.D., Wobus, C.E., Baric, R.S. and Virgin, H.W. (2008) Antibody is critical for the clearance of MNV infection. *Journal of Virology* **82**, 6610-6617.
25. Sheahan T, Rockx B, Donaldson E, Corti D, Baric R. (2008) Pathways of Cross Species Transmission of Synthetically Reconstructed Zoonotic SARS-CoV. *Journal of Virology* **82**, 8721-8732.
26. Donaldson EF, Yount B, Sims AC, Burkett S, Pickles RJ, Baric RS. (2008) Systematic Assembly of a Full-length Infectious Clone of Human Coronavirus NL63. *Journal of Virology* **82**, 11948-11957.
27. Lamirande EW, DeDiego ML, Roberts A, Jackson JP, Alvarez E, Sheahan T, Shieh WJ, Zaki SR, Baric R, Enjuanes L, Subbarao K. (2008) A live attenuated severe acute respiratory syndrome coronavirus is immunogenic and efficacious in golden Syrian hamsters. *Journal of Virology* **82**, 7721-7724.
28. Sheahan, T., Morris, T., Whitmore, A., Baric, R.S. and Heise, M. (2008) MyD88 is required for protection from lethal infection with a mouse adapted SARS-CoV. *Plos Pathogens* **4(12),** e1000240.
29. Becker, M.M., Graham, R.L., Donaldson, E.F., Rockx, B., Sims, A.C., Sheahan, T., Pickles, R., Corti, D., Johnston, R.E., Baric, R.S. and Denison, M.R. (2008) A synthetic recombinant bat SARS-like coronavirus is infectious in cultured cells and in mice**.** *Proceedings of the National Academy of Sciences* **105,** 19944-19949.
30. Donaldson EF, Sims AC**,** Baric RS. (2008) Systematic assembly and genetic manipulation of the mouse hepatitis virus A59 genome. *Methods in Molecular Biology* **454**, 293-315.
31. Kopecky-Bromberg, S.A., Martínez-Sobrido, L., Frieman, M., Baric, RS and Palese,P. (2007) SARS-CoV proteins 3b, 6, and Nucleocapsid function as interferon antagonists. *Journal of Virology* **81**, 548-557.
32. Donaldson, E.F., Graham, R.L., Sims-Quinn, A.C., Denison, M.R. and Baric, R.S. (2007) Analysis of MHV-A59 temperature sensitive mutant TS-LA6 suggests that nsp10 plays a critical role in polyprotein processing. *Journal of Virology* **81**, 7086-7098.
33. Donaldson, E., Sims-Quinn, AC, Graham, R.L., Denison, M.R., and Baric, R.S. (2007) MHV-A59 replicase protein nsp10 is a critical regulator of viral RNA synthesis. *Journal of Virology* **81**, 6356-6368.
34. Zhu, Z., Chakraborti, S., He, Y., Roberts, A., Sheahan, T., Xiao, X., Hensley, L., Prabakaran, Sidorov, I.A., Corti, D., Vogel, L., Feng, Y., J-O. Kim, L-F. Wang, R.S. Baric, A. Lanzavecchia, K.M. Curtis, G.J. Nabel, K. Subbarao, S. Jiang, and D.S. Dimitrov. (2007) Potent Neutralization of SARS Coronaviruses from the 2002/03 and the 2003/04 Outbreaks and from Palm Civets by Cross-Reactive Human Monoclonal Antibodies. *Proceedings of the National Academy of Sciences* **104,** 12123-12128
35. von Brunn, A., Teepe, C., Simpson, J.C., Pepperkok, R., Friedel, C.C., Zimmer, R., Roberts, R., Baric, R., and Haas, J. (2007) Analysis of Intraviral Protein-Protein Interactions of the SARS Coronavirus ORFeome. *Plos One* **2,** e459.
36. Rockx, B., Sheahan, T., Donaldson, E., Harkema, J., Sims, A., Heise, M., Pickles, R., Cameron, M., Kelvin, D., and Baric, R.S. (2007) Synthetic Reconstruction of Zoonotic and Early Human SARS-CoV Isolates that produce Fatal Disease in Aged Mice. *Journal of Virology* **81**, 7410-7423.

37. Frieman, M., Yount, B., Heise, M., Palese, P., Johnston, R.E., and Baric, R.S. (2007) SARS-CoV ORF6: A Virulence Factor that Sequesters Nuclear Import Factors on rER/Golgi Membrane to Antagonize STAT1 Function. *Journal of Virology* **81**, 9812-9824.
38. Deming, D., Graham, R.L., Denison, M.R. and Baric, R.S. (2007) Processing of open reading frame 1a replicase proteins nsp7 to nsp10 in murine hepatitis virus strain A59 replication. *Journal of Virology* **81**, 10280-102891.
39. Wathelet, M.G., Orr, M., Frieman M.B. and Baric, R.S. (2007) The SARS coronavirus evades antiviral signaling: role of nsp1 and the rational design of an attenuated strain. *Journal of Virology* **81**, 11620-11633.
40. Lindesmith, L., Donaldson, E., Lobue, A., Cannon, J., Vinje, J., and Baric, RS. (2007) Mechanisms of GII.4 Norovirus Persistence in Human Populations. *PLOS Medicine* **5,** e31.
41. McRoy, W. and Baric, R.S. (2007) Amino Acid Substitutions in the S2 Subunit of Mouse Hepatitis Virus Variant V51 Encode Determinants of Host Range Expansion. *Journal of Virology* **82**, 1414-1424.
42. Sheahan, T., Rockx, B., Donaldson, E., Sims, A., Pickles, R., and Baric, R.S. (2007) Mechanisms of Zoonotic SARS-CoV Host Range Expansion in Human Airway Epithelium. *Journal of Virology* **82**, 2274-2285.
43. Rockx, B., Corti, D., Donaldson, E., Sheahan T., Stadler K., Lanzavecchia A., and Baric, R.S. (2007) Structural Basis for Potent Cross-Neutralizing Human Monoclonal Antibody Protection Against Lethal Human and Zoonotic SARS-CoV Challenge. *Journal of Virology* **82**, 3220-3235.
44. Roberts, AJ, Deming, D., Paddock, C.D., Cheng, A., Boyd Yount, Vogel, L., Herman, B.D., Tim Sheahan, Mark Heise, Genrich, G., Zaki, S.R**.,** Ralph Baric and Subbarao, K. (2007) A mouse-adapted SARS-coronavirus causes overwhelming infection and pulmonary damage resulting in dose-dependent morbidity and mortality in BALB/c mice. *Plos Pathogen* **3**, 23-37.
45. Baccaglini L, Schoenbach VJ, Poole C, McKaig RG, Ibrahim J, Baric RS, Wiesen C. (2006) Association between herpes simplex virus type 1 and Helicobacter pylori in US adolescents. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology & Endodontics* ***10*****,** 63-69.
46. Lobue AD, Lindesmith L, Yount B, Harrington PR, Thompson JM, Johnston RE, Moe CL, Baric RS. (2006) Multivalent norovirus vaccines induce strong mucosal and systemic blocking antibodies against multiple strains. *Vaccine* **12**, 5220-5234.
47. Lawler JV, Endy TP, Hensley LE, Garrison A, Fritz EA, Lesar M, Baric RS, Kulesh DA, Norwood DA, Wasieloski LP, Ulrich MP, Slezak TR, Vitalis E, Huggins JW, Jahrling PB, Paragas J. (2006) Cynomolgus macaque as an animal model for severe acute respiratory syndrome. *PLoS Medicine* **3,** e149.
48. Pekosz, A., Schaecher, S.R., Diamond, M.S., Fremont, D.H., Sims, A.C., Baric, R.S. (2006) Structure, expression and intracellular localization of the SARS-CoV accessory proteins 7a and 7b. *Advances in Experimental Medicine and Biology* **581**, 149-152.
49. Baric R.S., Sheahan T, Deming D, Donaldson E, Yount B, Sims AC, Roberts RS, Frieman M, Rockx B. (2006) SARS coronavirus vaccine development. *Advances in Experimental Medicine and Biology* **581**, 553-560.
50. Rockx, B., Baric, RS., de Gris, I., Duzier, E., Koopmens, MPG. (2005) Characterization of heterotypic and homotypic immune responses following norovirus infection. *Journal of Infectious Diseases* **77**, 439-446.

51. Reed F. Johnson, Min Feng, Boyd Yount, Ralph S. Baric, and Julian L. Leibowitz (2005) The Effect of Mutations in the Mouse Hepatitis Virus 3'(+)42 Protein Binding Element on RNA Replication. *Journal of Virology* **79**, 14570-14585
52. Baric, RS and Sims, AC. (2005) Humanized mice develop coronavirus respiratory disease. *Proceedings of the National Academy of Sciences* **102**, 8073-8074.
53. Sims, A., Baric, RS**.**, Boyd Yount, Susan E. Burkett, and Raymond J. Pickles. (2005) SARS-CoV Infection of Human Ciliated Airway Epithelium: The Role of the Ciliated Cell in Viral Spread in the Conducting Airways of the Lung. *Journal of Virology* **79**, 15511-15524.
54. Graham, RL, Sims, AC, Brockway, SM., Baric, RS., and Denison, MR. (2005) The nsp2 replicase proteins of the coronavirus murine hepatitis virus and severe acute respiratory syndrome coronavirus are dispensable for viral replication. *Journal of Virology* **79**, 13399-13411.
55. Yount, B, Roberts RS, Sims, AC, Deming, D, Frieman, M, Sparks, J, Denison MR, Davis N and Baric, RS. (2005) SARS-CoV Accessory ORFs Encode Luxury Functions For in vitro and in vivo Replication. *Journal of Virology* **79**, 14909-14922.
56. Sims AC, Baric RS, Yount B, Burkett SE, Collins PL, Pickles RJ. (2005) Severe acute respiratory syndrome coronavirus infection of human ciliated airway epithelia: role of ciliated cells in viral spread in the conducting airways of the lungs. *Journal of Virology* **79**, 15511-15524.
57. Yount B, Roberts RS, Sims AC, Deming D, Frieman MB, Sparks J, Denison MR, Davis N, Baric RS. (2005) Severe acute respiratory syndrome coronavirus group-specific open reading frames encode nonessential functions for replication in cell cultures and mice. *Journal of Virology* **79**, 14909-14922.
58. Graham RL, Sims AC, Brockway SM, Baric RS, Denison MR. (2005) The nsp2 replicase proteins of murine hepatitis virus and severe acute respiratory syndrome coronavirus are dispensable for viral replication. *Journal of Virology* **79**, 13399-411.
59. Rockx B, Baric RS, de Grijs I, Duizer E, Koopmans MP. (2005) Characterization of the homo- and heterotypic immune responses after natural norovirus infection. *Journal of Medical Virology* **77**, 439-446.
60. Sperry SM, Kazi L, Graham RL, Baric RS, Weiss SR, Denison MR. (2005) Single-amino-acid substitutions in open reading frame (ORF) 1b-nsp14 and ORF 2a proteins of the coronavirus mouse hepatitis virus are attenuating in mice. *Journal of Virology* **79**, 3391-3400.
61. Lindesmith L, Moe C, Lependu J, Frelinger JA, Treanor J, Baric RS. (2005) Cellular and humoral immunity following Snow Mountain virus challenge. *Journal of Virology* **79**, 2900-2909.

Reviews & commentaries

1. Donaldson, E.F., Lindesmith, L., LoBue, A.D. and Baric, R.S. (2010) Viral shape-shifting; norovirus evasion of the human immune system. *Nature Microbiology Reviews* **8**, 231-41.
2. Graham RL and Baric RS. (2010) Recombination, Reservoirs, and the Modular Spike: Mechanisms of Coronavirus Cross-Species Transmission. *Journal of Virology* **84**, 3134-3146.

3. Donaldson EF, Lindesmith LC, Lobue AD, Baric RS. (2008) Norovirus pathogenesis: mechanisms of persistence and immune evasion in human populations. *Immunological Review* **225**,190-211.
4. Frieman, M.R. and Baric, R.S. (2008) Mechanisms of SARS-CoV Pathogenesis and Innate Immuno-modulation. *Microbiology and Molecular Biology Reviews.* **72**, 672-85.
5. Brian, DA., and Baric RS. (2005) Coronavirus genome structure and replication. *Current Topics in Microbiology and Immunology* **287**,1-30.
6. Baric RS, and Sims AC. (2005) Development of mouse hepatitis virus and SARS-CoV infectious cDNA constructs. *Current Topics in Microbiology and Immunology* **287,** 229-252.

Editorial Responsibilities

Editorial boards

1. Senior Editor, Plos Pathogens 2008- present
2. Associate Editor, Plos Pathogen 2007-present
3. Editorial board, Journal of Virology, 2007-2010.
4. Editorial Board, Virology 2004-2006.

Grants/Contracts

Current Funding:
Principal Investigator, 02/01/2009 - 01/31/2014
"Susceptibility and Protective Immunity to Noroviruses"
NIH, Allergy and Infectious Diseases AI056351
Total direct costs $2,854,241
20% effort
Administrative Supplement - "ARRA 07/01/2009-06/30/2011
Total Direct Cost: $359,407

Principal Investigator, 07/01/2008-06/30/2013
"SARS-CoV Pathogenic Mechanisms in Senescent Mice "
NIH, Allergy and Infectious Diseases R01AI075297.
Total direct costs $1,966,516
10% effort

Principal Investigator, 05/01/2005-01/31/2011
"Developing vaccine candidates for the SARS Coronavirus"
NIH, Allergy and Infectious Diseases P01 AI059443
Total direct costs $9,025,984
30% effort.

Principal Investigator (Subcontract), 01/01/2006-12/31/10
Principal Investigator Michael Katze, University of Washington
"Macaque Model and Gene Expression Profiling of SARS"
NIH, Allergy and Infectious Diseases RO1 HL080621
Total direct costs $375,000
5% effort

Principal Investigator (Subcontract), 09/15/2008 - 09/14/2013.
Principal Investigator Michael Katze, University of Washington
"A Systems Biology Approach to Emerging Respiratory Viral Diseases"
SubProject: "Systems Biology of Lethal and Attenuated SARS-CoV Infection"
National Institutes of Health R01 HL080621
Total direct costs $1,249,962
15% Effort

Principal Investigator (Subcontract) 04/21/2009 – 02/28/2014
Principal Investigator Jay Nelson
Project 3.1 "Pathogenomics of Severe Respiratory Virus Infection"
NIH Pacific Northwest Regional Center for Excellence in Biodefense U54AI080680
Total Direct Cost: $2,155,000
10% effort

Principal Investigator, 09/01/2008 – 08/31/2010
"Vaccines for Global Health"
Gillings Foundation UNC GIL 200710.0017
Total Direct Costs: $528,371
10% effort

Co-Investigator 03/01/2009 – 02/28/2014
Project Principal Investigator Mark Denison, Vanderbilt University
Principal Investigator Fred Sparling
Project 1.1. "Platforms for the Synthesis and Testing of Emerging Zoonotic Viruses"
NIH, Southeastern Regional Center for Excellence in Biodefense U54 AI057157
5% effort

Co-Investigator 03/01/2009 – 02/28/2014
Project Principal Investigator Aravinda de Silva
Principal Investigator Fred Sparling
Project 3.2. "Antibody in Protective and Pathogenic Immunity to Dengue Type 3"
NIH, Southeastern Regional Center for Excellence in Biodefense U54 AI057157
5% effort

Principal Investigator (Subcontract) 01/26/2010-01/25/2017
Principal Investigator Peter Palese, Mt Sinai University
Animal Models of Infectious Diseases
NIH Contract-awarded
Direct costs: Variable depending on approved task orders

Co-Investigator, 07/01/2008-06/30/2011
Principal Investigator Amy Sims
"Targeted Gene Expression from NL63 Vaccine Vectors"
NIH, NIAID/NHLB R21 AI079521
Total direct costs $275,000

5% effort

Co-Investigator, 04/01/2008-03/31/2013
Principal Investigator Amy Sims
"Human Coronaviruses as Multigene Mucosal Vaccine Vectors for HIV"
National Institutes of Health R21/35 AI 076159
Total direct costs $286,661
5% effort

Completed

Principal Investigator, 04/01/1989-03/30/2008
"Studies into the Mechanism of MHV Replication".
NIH, Allergy and Infectious Diseases AI23946
Total direct costs: 1,250,000

Principal Investigator (Subcontract), 6/1/08 - 5/31/09.
Principal Investigator, Daniel Engle University of Virginia
"Yeast Based Assays for Chemical Screens Against SARS-CoV Targets"
GC11714-130654
Total direct costs: $36,875

Principal Investigator, 04/01/2004-03/31/2009
"SARS Reverse Genetics"
NIH, Allergy and Infectious Diseases AI059136
Total direct costs $1,150,000
10% effort

Grant Review Service

Permanent Member, Virology B Study Section, 2005-2009.

NIH MBRS External Review Committee National Institutes of Health, MBRS SCORE Proposal for the University of Puerto Rico at San Juan. (1999-2009)

Honors/Awards

Fellow, American Academy of Microbiology 2010

UNC Leadership

Committee Service

University of North Carolina, Chapel Hill

Infectious Disease Program Committee, 1990-present
Space Committee (School of Public Health) 1998-present
Conflict of Interest Committee, Member 2010

Outside UNC

National Academy Subgroup on Sequence based strategies for select agents Member: 2009-2011.
Member-Biological Sciences Expert Group (BSEG) 2007-present
National Academy Sciences: Working Group: Gene Sequence Methods for Classification of Select Agents 2007-present
NIH Advisory Board: SARS Vaccine Design, Dec 2008
CDC Advisory Board: Norovirus Vaccine Design, April 2008

Professional Meetings/Societies

Meeting organization

American Society for Microbiology Division T, Chairman 2008
American Society for Microbiology Division T, Vice-Chairman 2007

Meeting participation (Selected Meetings from 2005-2010)

1. American Society for Virology. Bozeman Montana. July 2010.
2. System Biology and Immune Response. Veyrier du Lac France. Invited Speaker. June 2010.
3. Positive Strand Meeting. Atlanta, GA. Invited Speaker. May 2010.
4. Systems Virology Meeting. Madison, WI Invited Speaker. May 2010.
5. National RCE meeting. Las Vegas, NV. April 2010.
6. Systems Viology Meeting. Seattle, WA Invited Speaker. November 2009.
7. Synthetic Virology, Synthetic Biology 4.0, Hong Kong, China. Invited Speaker. Oct 2009.
8. Madrid, Spain. Invited Speaker. October 2009.
9. American Society for Virology. Vancouver Canada. Speaker. July 2009.
10. Protease PO-1 Advisory Council Meeting. Chicago, Il. May 2009
11. National Counter Proliferation Center Information sharing and Biothreats meeting. Richmond, VA. Invited Speaker. April 2009
12. American Society for Microbiology and Biodefense Meeting Synthetic Virology and Biodefense. Baltimore, MD. Invited speaker. Feb 2009.
13. SARS-CoV Antagonism of Host Innate Immunity, University of Penn, Department of Microbiology, April 2008.
14. American Society for Microbiology, Norovirus Evolution and Persistence, Boston, MA. Invited Speaker. June 2008
15. American Society for Virology, Medical Virology working group, Mechanisms of Coronavirus Cross Species Transmission. July 2008.
16. Norovirus Pathogenic Mechanisms, Louisiana State University, Baton Rogue, LA. Oct 2008.
17. Genetics of SARS-CoV Pathogenesis. SARS Workshop, Paris, France Oct 2007
18. SARS-CoV Pathogenesis, North Carolina State University, Raleigh, NC. Feb, 2007.
19. Friday Morning ID Seminar: Norovirus Pathogenesis, UNC Chapel Hill, March 2007.
20. SARS-CoV Innate Immunity, University of Florida, Gainesville, FA. April, 2007.

21. Norovirus Pathogenesis, Loyola University, Chicago, IL. May 2007.
22. Norovirus Vaccine Design, NIH Food and Waterborne Disease Network Vaccine Development Meeting. Baltimore, Md. May 2007.
23. Synthetic Virology, American Society for Microbiology, Toronto, Canada May 2007.
24. Rewiring Coronavirus Genomes, Positive Strand RNA Virus Meeting, Washington, DC, May 2007.
25. Genetics of SARS-CoV Pathogenesis and Norovirus Evolution and Pathogenic Mechanisms, University of Madrid, Spain. June 2007.
26. SERCEB Planning Meeting. Norovirus Pathogenesis and Vaccine Design. Atlanta GA. June 2007.
27. Genetics of SARS-CoV Pathogenesis, University of Amsterdam, The Netherlands, June 2007
28. NIH Advisory Meeting and Planning Committee, SARS-CoV Pathogenesis, Vaccine Design and Therapeutics, Oct 2007.
29. International Calicivirus Meeting, Norovirus Evolution and Persistence in Human Populations, Invited Speaker, Cancun Mexico, Invited Speaker. Nov 2007.
30. SARS-CoV Pathogenesis and Replication, University of Pittsburg, Pittsburg, PA. 2006.
31. Synthetic Genomics Meeting. Washington, DC. March 2006
32. SARS-CoV Pathogenesis. University of Washington, March 2006.
33. Genetics of SARS-CoV Pathogenesis. Vanderbilt University. Nashville, TN, May 2006.
34. Biosafety and SARS-CoV. American Society for Microbiology, National Meeting Orlando Florida. May 2006.
35. Synthetic Biology Workshop. Synthetic Reconstruction of Viral Genomes. Washington DC June 2006.
36. American Society for Virology. SARS-CoV Pathogenesis Madison Wisconsin, Plenary Address. July 2006.
37. NSAAB Meeting on Synthetic Virology. Washington DC, July 2006
38. SARS-CoV Pathogenesis, University of Kentucky, Sept. 2006.
39. SARS-CoV Replication and Genetics. Department of Microbiology, University of Utah, Mar, 2005.
40. Coronavirus Reverse Genetics and Pathogenesis, University of Washington, Invited speaker. Seattle, WA. April 2005.
41. Synthetic Coronaviruses. Biohacking: Biological Warfare Enabling Technologies, DARPA/MITRE sponsored event. Washington, DC. Invited Speaker. June 2005.
42. American Society for Virology SARS-CoV Genetics and Pathogenesis. College Park, Penn State University. "State of the Art Lecturer" June 2005.
43. SARS-CoV Genetics and Vaccine Development. International Nidovirales Conference, Colorado, Invited keynote speaker. June 2005.
44. NIH Workshop: Emergence of new epidemic viruses through host switching Coronavirus Cross Species Transmission Mechanisms. Invited Speaker. Sept 2005.
45. Charles Gould Easton Seminar series: Human Coronavirus Pathogenesis and Genetics. Department of Immunology, University of Toronto. Toronto Canada Invited Speaker. Sept. 2005.
46. SARS-CoV Pathogenesis. Department of Microbiology, UCLA. Los Angeles, CA. Invited Speaker. Sept 2005.

Society membership

American Society for Microbiology, 1977-present
American Society for Virology, 1982-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Cornelis Beckers, Ph.D.

Associate Professor

Primary Appointment: Department of Cell & Developmental Biology

Joint Appointment: Department of Microbiology & Immunology

Publications

Primary literature

Gilk, S.D., Raviv, Y., Hu, K., Murray, J.M., **Beckers, C.J.**, and Ward, G.E. (2006) Identification of PhIL1, a novel cytoskeletal protein of the *Toxoplasma gondii* pellicle, through photosensitized labeling with 5-[^{125}I]-iodonaphthalene-1-azide. *Eukaryotic Cell* **5**, 1622-1634.

Johnson, T.M., Rajfur, Z., Jacobson, K., and **Beckers, C.J.** (2007) Immobilization of the type XIV myosin complex in *Toxoplasma gondii*. *Molecular Biology of the Cell* **18**, 3039-3046.

Luk, F.C.Y., Johnson, T.M., and **Beckers, C.J**. (2008) N-linked glycosylation of proteins in the protozoan parasite *Toxoplasma gondii*. *Molecular and Biochemical Parasitol*ogy **157**, 169-178.

De Miguel, N., Lebrun, M., Heaslip, A., Hu, K., **Beckers, C.J.**, Matrajt, M., Dubremetz, J.F., Angel, S. (2008) Toxoplasma gondii Hsp20 is a stripe-arranged chaperone like protein associated with the outer leaflet of the inner membrane complex. Biology of the Cell. **100**, 479–489.

Pomel, S., Luk, F.C.Y., and **Beckers, C.J.** (2008) Host cell egress and invasion induce marked relocations of glycolytic enzymes in Toxoplasma gondii tachyzoites. PLoS Pathogens **4**, e1000188.

Gilk, S., Gaskins, E., Ward, G., and **Beckers, C.J.** (2009) GAP45 phosphorylation controls assembly of the *Toxoplasma* myosin XIV complex. *Eukaryotic Cell* **8**, 190-196.

Editorial Responsibilities

Ad hoc reviewer for:
Cell Host and Microbe, Cellular Microbiology, Clinical and Vaccine Immunology, Clinical and Diagnostic Laboratory Immunology, EMBO journal, Eukaryotic Cell, Infection & Immunity, International Journal of Parasitology, Journal of Biological Chemistry, Journal of Cell Biology, Journal of Cell Science, Journal of Clinical Microbiology, Journal of Experimental Medicine, Molecular Biology of the Cell, Molecular & Biochemical Parasitology, Molecular Microbiology, PLoS Pathogens, Proceedings of the National Academy of Sciences, Traffic, Trends in Cell Biology

Grants/Contracts

Principal Investigator: Cornelis J. Beckers, Ph.D., start 3/15/2003 – end 2/29/2008

"*Toxoplasma* invasion into host cells – Protein Kinase C."
NIH, 2 R01 AI41765
Total Direct Support: $1,050,000
% effort: 50%

Grant Review Service

Ad hoc member, NIAID, AIDS-ASSOCIATED OPPORTUNISTIC INFECTIONS AND CANCER STUDY SECTION (AOIC), January 2006, July and November 2007, March, July and November 2008, August 2009, December 2009

UNC Leadership

Committee Service

University of North Carolina, Chapel Hill

Search Committee for Chairperson of the Department of Microbiology & Immunology (2007)

Professional Meetings/Societies

Society membership

American Society of Cell Biology, 1988-present

American Society of Microbiology, 2004-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Robert B. Bourret, Ph.D.

Professor

Primary Appointment: Department of Microbiology & Immunology

Publications

Primary literature

Miller, J., Parker, M., Bourret, R.B., & Giddings, M.C. (2010) An agent-based model of signal transduction in bacterial chemotaxis. *Public Library of Science One* **5,** e9454.

Pazy, Y., Wollish A.C., Thomas, S.A., Miller, P.J, Collins, E.J., Bourret, R.B., & Silversmith, R.E. (2009) Matching biochemical reaction kinetics to the timescales of life: Structural determinants that influence the autodephosphorylation rate of response regulator proteins. *Journal of Molecular Biology* **392,** 1205-1220.

Thomas, S.A., Brewster, J.A., & Bourret, R.B. (2008) Two nonconserved active site residues affect response regulator phosphoryl group stability. *Molecular Microbiology* **69,** 453-465.

Silversmith, R.E., Levin, M.D., Schilling, E., & Bourret, R.B. (2008) Kinetic characterization of catalysis by the chemotaxis phosphatase CheZ: modulation of activity by the CheYp substrate. *Journal of Biological Chemistry* **283,** 756-765.

Motaleb, M.D., Miller, M.R., Li, C., Bakker, R.G., Goldstein, S.F., Silversmith, R.E., Bourret, R.B., & Charon, N.W. (2005) CheX is a CheY-P phosphatase essential for *Borrelia burgdorferi* chemotaxis. *Journal of Bacteriology* **187,** 7963-7969.

Reviews & commentaries

Bourret, R.B. (2010) Receiver domain structure and function in response regulator proteins. *Current Opinion in Microbiology* **13,** 142-149.

Bourret, R.B., & Silversmith, R.E. (2010) Two-component signal transduction. *Current Opinion in Microbiology* **13,** 113-115.

Bourret, R.B., Thomas, S.A., Page, S. C., Creager-Allen, R.L., Moore, A.M., & Silversmith, R.E. (2010) Measurement of response regulator autodephosphorylation rates spanning six orders of magnitude. *Methods in Enzymology* **471,** 89-114.

Bourret, R.B. (2008) Signal transduction meets systems biology: deciphering specificity determinants for protein/protein interactions. *Molecular Microbiology* **69,** 1336-1340.

Bourret, R.B. (2006) Census of prokaryotic senses. *Journal of Bacteriology* **188,** 4165-4168.

Editorial Responsibilities

Editorial boards

Editorial Board, *Journal of Bacteriology*, 1997-2008, 2010-present

Editorial Advisory Board, *Molecular Microbiology*, 2008-2009

Ad hoc reviewer for:

Applied & Environmental Microbiology, Biophysical Journal, *EMBO Journal, Infection & Immunity*, *Journal of Bacteriology*, *Journal of Biological Chemistry, Molecular Microbiology*, *Molecular Systems Biology*, *Nature Chemical Biology*, *PLoS Biology, PLoS Computational Biology, Proceedings of the National Academy of Sciences of the USA*, *Trends in Biochemical Science*, *Trends in Microbiology*

Grants/Contracts

Principal Investigator, 09/01/09 - 8/31/10
"Recovery Act Administrative Supplement"
NIH/NIGMS, RO1 GM50860-15S2
Total direct costs $47,979
0% effort

Principal Investigator, 07/01/09 - 6/30/11
"Research Supplement to Promote Diversity in Health-Related Research"
NIH/NIGMS, RO1 GM50860-15S1
Total direct costs $79,985
0% effort

Principal Investigator, 01/01/08 - 11/30/08
"AKTA protein purification system" equipment supplement
NIH/NIGMS, RO1 GM50860-14S1
Total direct costs $20,345.
Secured matching commitment of $20,345 from UNC Chapel Hill
0% effort

Principal Investigator, 01/01/08 - 11/30/11
"Molecular mechanisms of signal transduction in two-component regulatory systems."
NIH/NIGMS, RO1 GM50860
Total direct costs $1,027,003
40% effort

Principal Investigator, 12/15/03 - 11/30/07
"Molecular mechanisms of signaling in *E. coli* chemotaxis."
NIH/NIGMS, RO1 GM50860
Total direct costs $920,423
30% effort

Grant Review Service

Member, NIH Special Emphasis Panel ZRG1 IDM-C (55), 5/10
Member, NIH Special Emphasis Panel ZRG1 GGG-F (52), 3/10
Member, NIH Special Emphasis Panel ZRG1 CB-N (52), 12/09
Ad hoc Member, NIH Fellowship Panel ZRG-1 F13-C, 3/08, 3/09
Ad hoc Member, NIH Prokaryotic Cell & Molecular Biology Study Section, 6/06, 10/07
Member, NIH Special Emphasis Panel ZRG1 IDM-A (02), 10/06
Ad hoc Member, NIH Minority Programs Review Committee MPRC-A, 2/06
Ad hoc Reviewer, National Science Foundation

Committee Service

University of North Carolina, Chapel Hill

Member, Biological & Biomedical Sciences Program executive committee, 2009-present

Professional Meetings/Societies

Meeting organization

Chair, Bacterial Locomotion And Signal Transduction XI, Cuernavaca, Mexico, 1/16-21/11

Vice Chair, Bacterial Locomotion And Signal Transduction X, Cuernavaca, Mexico, 1/18-23/09

Organizer, Workshop on Quantitative Approaches to Cell Motility and Chemotaxis, Institute for Mathematics and its Applications, University of Minnesota, 5/27-30/08.

Session Chair, Bacterial Locomotion And Signal Transduction IX, Laughlin, NV, 1/18/07.

Member, Robert Kadner & Robert Macnab Awards Selection Committee, BLAST IX Meeting, 1/07

Meeting participation

Speaker, Bacterial Locomotion And Signal Transduction X, Cuernavaca, Mexico. 1/19/09.

Speaker, Cellular Responses to Environmental Changes: Genomics, DNA Rearrangements and Signal Transduction, San Diego, CA 5/5/07.

Speaker, Bacterial Locomotion And Signal Transduction IX, Laughlin, NV. 1/18/07.

Attendee, Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA 1/22-27/06

Society membership

American Society for Microbiology, 1987-present

Federation of American Scientists, 1987-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Miriam Braunstein, Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Lu, D., Garcia-Contreras, L., Muttil, P., Padilla, D., Xu, D., Liu, J., Braunstein, M., McMurray, DN., & Hickey, AJ. (2010). Pulmonary immunization using antigen 85-B polymeric microparticles to boost tuberculosis immunity. *AAPS J.* 12, 338-47.
2. Sadagopal, S., Braunstein, M., Hager, C.C.,, Wei, J., Daniel, A.K., Bochan, M.R., Crozier, I., Smith, N.E., Gates, H.O., Barnett, L., Van Kaer, L., Price, J.O., Blackwell, T.S., Kalams, S.A., & Kernodle, D.S. (2009). Reducing the activity and secretion of microbial antioxidants enhances the immunogenicity of BCG. *PLoS One.* 4, e5531.
3. Rigel, N.W., Gibbons, H.S., McCann, J.R., McDonough, J.A, Kurtz, S. & Braunstein, M. (2009). The accessory SecA2 system of mycobacteria requires ATP binding and the canonical SecA1. *Journal of Biological Chemistry*, 284,9927-36.
4. Hall, J.D., Kurtz, S.L., Rigel, N.W., Gunn, B.M., Taft-Benz, S., Morrison, J.P., Fong, A.M., Patel. D.D., Braunstein, M., & Kawula, T.H. (2009). The impact of chemokine receptor CX3CR1 deficiency during respiratory infections with *Mycobacterium tuberculosis* or *Francisella tularensis*. *Clinical and Experimental Immunology*, 156,278-84.
5. McDonough, J.A., McCann, J.R., McElvania Tekippe, E. Silverman, J.S., Rigel, N.W. & Braunstein, M. (2008). Identification of functional Tat signal sequences in *Mycobacterium tuberculosis* proteins. *Journal of Bacteriology,* 190,6428-6438.
6. Hou, J.M., D'Lima, N.G., Rigel, N.W., Gibbons, H.S., McCann, J.R., *Braunstein, M. & Teschke, C.M. (2008). ATPase activity of *Mycobacterium tuberculosis* SecA1 and SecA2 proteins and its importance to SecA2 function in macrophages. *Journal of Bacteriology,* 190,4880-4887.
7. Mohamedmohaideen, N.N., Palaninathan, S.K., Morin, P.M., Williams, B.J., Braunstein, M., Tichy, S.E., Locker, J., Russell, D.H., Jacobs, W.R. Jr., & Sacchettini. J.C. (2008) The structure and function of the virulence-associated high temperature requirement A of *M. tuberculosis*. *Biochemistry* 47,6092-6102.
8. McCann, J.R., McDonough, J.M., Pavelka, M.S. & Braunstein, M. (2007). β-lactamase can function as a reporter of bacterial protein export during *Mycobacterium tuberculosis* infection of host cells. *Microbiology,* 153,3350-3359.
9. Lu, D., Garcia-Contreras, L., Xu, D., Kurtz, S.L., Liu, J., Braunstein, M., McMurray, D.N. & Hickey, A.J. (2007). Poly (Lactide-co-Glycolide) microspheres in respirable sizes can enhance an *in vitro* T cell response to Recombinant *Mycobacterium tuberculosis* Antigen 85B. *Pharmaceutical Research,* 24,1834-1843.
10. Hinchey, J., Lee, S., Manjunatha, V., Chen, B., Basaraba, R.J., Jeon, B.Y., Derrick, S.C., Chan, J., Braunstein, M., Orme, I.M., Morris, S.L., Jacobs, W.R. & Porcelli, S.A. (2007). Enhanced priming of adaptive immunity by a mutant of *Mycobacterium tuberculosis* that is

defective in inhibition of host cell apoptosis. *Journal of Clinical Investigation,* 171, 2279-2288

11. Gibbons, H.S., Wolschendorf, F., Abshire, M., Niederwies, M. & Braunstein, M. (2007) Identification of two *Mycobacterium smegmatis* lipoproteins exported by the SecA2-dependent export pathway. *Journal of Bacteriology,* 189,5090-5100
12. Guo, X.V., Monteleone, M., Klotzsche, M., Kamionka, A., Hillen, W., Braunstein, M., Ehrt, S. & Schnappinger, D. (2007). Silencing essential protein secretion in *Mycobacterium smegmatis* by using tetracycline repressors. *Journal of Bacteriology,* 189, 4614-4623
13. Kurtz, S., McKinnon ,K.P., Runge, M.S., Ting, J.P. & Braunstein, M. (2006). The SecA2 secretion factor of *Mycobacterium tuberculosis* promotes growth in macrophages and limits host cell activation. *Infection and Immunity*, 74, 6855-6864
14. McDonough, J.A., Hacker, K.E., Flores, A.R., Pavelka, M.S. & Braunstein, M. (2005). The twin-arginine translocation (Tat) pathway of *Mycobacterium smegmatis* is functional and required for the export of mycobacterial beta-lactamases. *Journal of Bacteriology*, 187,7667-7679.
15. Williams, K.L., Lich, J.D., Rallabhandi, P., Reed, W., Kurtz, S., Coffield, N., Su, L., Vogel, S.N., Braunstein, M. & Ting, J.P.-Y. (2005). Monarch-1 is an antagonist of TLR-induced inflammatory signal transduction. *Journal of Biological Chemistry*, 280:39914-39924.

Reviews & commentaries

1. McCann, J.R., Kurtz, S. & Braunstein, M. (2009). Secreted and exported proteins important to *Mycobacterium tuberculosis* pathogenesis. *In Bacterial Protein Secretion Systems.* Woolridge, K. ed. (Horizon Press). p. 265-298.
2. McDonough, J. A. & Braunstein, M. (2008). Protein transport pathways in *Mycobacterium tuberculosis*. *In Handbook of Tuberculosis:Molecular Biology and Biochemistry*. S.H.E. Kaufmann and Rubin, E. eds. (Wiley-VCH Publisher). p. 111-130
3. Rigel, N.W. & Braunstein, M. (2008) A new twist on an old pathway – accessory Sec systems. *Molecular Microbiology*. 69:291-302.
4. Kurtz, S. & Braunstein, M. (2005) Protein secretion and export in *Mycobacterium tuberculosis*. *In Mycobacterium: Molecular Microbiology*. Parish, T. ed. (Horizon Press). p. 71-138.

Editorial Responsibilities

Ad hoc reviewer for:
Analytical Biochemistry, BMC Microbiology, Cellular Microbiology, FEMS Microbiology Letters, Infection and Immunity, Journal of Bacteriology, Microbes and Infection, Molecular Microbiology, PLoS Pathogens, Proceedings of the National Academy of Sciences, Proteomics, Tuberculosis

Grants/Contracts

Principal Investigator**,** start 7/31/09 – end 7/31/14
"Protein Secretion Pathways of Mycobacterium tuberculosis"

NIH 2 R01 AI054540-05A2
Total direct costs $250,000
% effort 20

Principal Investigator, start 7/1/08 – end 6/30/13
"Identification of in vivo-secreted Protein of Mycobacterium Tuberculosis with Roles in Host-Pathogen Interactions"
Burroughs Wellcome Fund Investigators in the Pathogenesis of Infectious Disease Award
Total direct costs $100,000
% effort 10

Principal Investigator**,** start 12/31/07 - 12/30/12
"Enhancing Immunogenicity of Aeras Vaccine Candidates with Pro-Apoptotic Mutations"
AERAS Global TB Vaccine Fdn
Total direct costs $110,000
% effort 10

Principal Investigator**,** start 12/1/07 – end 11/30/10 No Cost Ext
"A Reporter Transposon for Studying Exported Protein of *M. tuberculosis*"
NIH 5 R21 AI076685-02
Total direct costs $250,000
% effort 20

Co-Investigator, start 06/01/05 - end 2/28/11 No Cost Ext
PI Jenny Ting)
"*M. tuberculosis* and Host-Defense Mechanisms"
NIH 5 R01 AI063031-05
% effort 10

Grant Review Service

Ad hoc reviewer for:
2009 Medical Research Council (MRC)
2005, 2006, 2008, 2009, 2010 NIH Special Emphasis Panel,Topics in Bacterial Pathogenesis
2007, 2009 National Science Foundation
2006 Michael Smith Foundation for Health Research
2005 Veterans Affairs Infectious Diseases

Honors/Awards
Burroughs Wellcome Fund Investigators in the Pathogenesis of Infectious Disease Award (2008)

UNC Leadership
2007-present
Co-Director of the Research in Molecular Biosciences at the University of North Carolina at Chapel Hill Program (NSF REU Program)
Director: Esta Sancar, Ph.D.
National Science Foundation Grant DBI-0453235

2007-present	Organizer of University of North Carolina Research in Progress Bacterial and Eukaryotic Pathogens
2002-present	Founder and Organizer of Tuberculosis Duke UNC (TB-DUNC) Monthly Research Meetings

Committee Service

University of North Carolina, Chapel Hill

2010-present	University of North Carolina Postbaccalaureate Research Education Program (PREP) advisory committee
2008-present	University of North Carolina BBSP First Year Advisor Group
2006-present	University of North Carolina Institutional Biosafety Committee
2006-2008	University of North Carolina Center For Aids Research Virology Job Search Committee
2005-2009	University of North Carolina Graduate Admissions Committee
2005	University of North Carolina Cell and Molecular Biology Collaborative Research Grant Review Committee
2004-2006	Undergraduate Research Committee for the Quality Enhancement Plan at UNC/Southern Association of Colleges and Schools (SACS) Reaccredidation
2001-present	University of North Carolina Center For Aids Research - Tuberculosis Working Group

Professional Meetings/Societies

Meeting organization

2010	Organizer Southeastern Mycobacteria Meeting, Chapel Hill NC
2009	Many Hosts of Mycobacteria Moderator of Proteome, Lipidome, and Secretion Panel, Carville LA
2008	Organizer Southeastern Mycobacteria Meeting, Athens GA
2005	Organizer Southeastern Mycobacteria Meeting, Birmingham AL

Meeting participation

2010 American Society of Microbiology Annual Meeting, San Diego CA (attendee)
2010 Gordon Conference: Cell Surfaces, New London CT (speaker)
2010 Southeastern Mycobacteria Meeting, Chapel Hill NC (organizer,poster)
2009 Many hosts of Mycobacteria Meeting, Carville LA (moderator/speaker)
2009 American Society for Microbiology General Meeting, Philadelphia PA (speaker)
2009 North Carolina American Society for Microbiology Meeting Durham NC (poster)
2009 Tuberculosis: Biology, Pathology, and Therapy Keystone, CO (poster)
2008 Southeastern Mycobacteria Meeting, Athens GA (organizer, poster)
2007 American Society for Microbiology General Meeting, Toronto Canada (speaker)
2007 Keystone Meeting on Tuberculosis: From Lab Research to Field Trials. Vancouver, Canada (poster)
2006 North Carolina American Society for Microbiology Meeting Raleigh NC (poster)
2006 American Society for Microbiology General Meeting, Orlando FL (poster)
2005 International Conference on the Pathogenesis of Mycobacterial Infections

Stockholm, Sweden (poster)
2005 Southeastern Mycobacteria Meeting, Birmingham AL (organizer,poster)

Society leadership
American Society of Microbiology Chair-Elect Division U Mycobacteriology (2010)

Society membership
American Association for the Advancement of Science, 2004-present
American Society for Microbiology, 1997-present
American Society for Biochemistry and Molecular Biology, 2008-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Christina L. Burch, Ph.D.

Associate Professor

Primary Appointment: Department of Biology

Joint Appointment(s): Department of Microbiology and Immunology

Publications

Primary literature

1. Knies, J. L., R. Izem, K. L. Supler, J. G. Kingsolver, and **C. L. Burch**. 2006. The genetic basis of thermal reaction norm evolution in lab and natural phage populations. *PLoS Biology.* 4: 1257-1264.
2. Azevedo, B. R., R. Lohaus, S. Srinivasan, K. K. Dang & **C. L. Burch**. 2006. Sexual Reproduction Selects for Robustness and Negative Epistasis in Artificial Gene Networks. *Nature*. 440: 87-90.
3. Rokyta, D. R., **C. L. Burch**, S. B. Caudle, and H. A. Wichman. 2006. Horizontal gene transfer and the evolution of microvirid coliphage genomes. *Journal of Bacteriology*. 188: 1134-1142.
4. Duffy, S., P. E. Turner, and **C. L. Burch**. 2006. Pleiotropic Costs of Niche Expansion in the RNA Bacteriophage phi-6. *Genetics*. 172: 751-757.
5. Ferris, M. T., P. Joyce, **C. L. Burch**. 2007. High frequency of mutations that expand the host range of an RNA virus. *Genetics*. 176: 1013-1022
6. **Burch, C. L.**, S. Guyader, D. Samarov, and H. Shen. 2007. Experimental estimate of the abundance and effects of nearly neutral mutations in the RNA virus f6. *Genetics*. 176: 467-476.
7. Duffy, S., **C. L. Burch**, and P. E. Turner. 2007. Rapid evolution of reproductive isolation in an RNA virus. *Evolution.* 61: 2614-2622.
8. Kwiek, J. J., E. S. Russell, K. K. Dang, C. L. Burch, V. Mwapasa, S. R. Meshnick, and R. Swanstrom. 2007. The Molecular Epidemiology of HIV-1 Envelope Diversity During HIV-1 Subtype C Vertical Transmission in Malawian Mother-Infant Pairs. *AIDS*. In press.
9. Guyader, S. and **C. L. Burch**. 2008. Host density mediates selection on bacteriophage host range. *PLoS ONE*. 3: e1946.
10. Knies, J. L., K. K. Dang, T. J. Vision, R. I. Swanstrom, and **C. L. Burch**. 2008. Compensatory evolution in RNA secondary structures increases substitution rate variation among sites. *Molecular Biology and Evolution*. 25: 1778-1787.
11. Rokyta, D. R., C. J. Beisel, P. Joyce, M. T. Ferris, **C. L. Burch** & H. A. Wichman. 2008. Beneficial fitness effects are not exponential for two viruses. *Journal of Molecular Evolution*. 67: 368-376.

12. Joseph S. B., K. A. Hanley, L. Chao, and **C. L. Burch**. 2009. Coinfection rates in phi-6 bacteriophage are enhanced by virus-induced changes in host cells. *Evolutionary Applications*. 2: 24-31.
13. Knies, J. L., J. G. Kingsolver, and **C. L. Burch**. 2009. Hotter Is Better and Broader: Thermal Sensitivity of Fitness in a Population of Bacteriophages. *American Naturalist*. 173: 419–430.
14. Ince, W.L., P. R. Harrington, G. L. Schnell, M. Patel-Chhabra, **C. L. Burch**, P. Menezes, R. W. Price, J. J. Eron, and R. I. Swanstrom. 2009. Major coexisting Human Immunodeficiency Virus type 1 env gene subpopulations in the peripheral blood are produced by cells with similar turnover rates and show little evidence of genetic compartmentalization. *Journal of Virology*. 83: 4068-4080.
15. Harrington, P. R., G. Schnell, S. L. Letendre, K. Ritola, K. Robertson, C. Hall, **C. L. Burch**, C. B. Jabara, D. T. Moore, R. J. Ellis, R. W. Price, and R. I. Swanstrom. 2009. Cross-sectional characterization of HIV-1 env compartmentalization in cerebrospinal fluid over the full disease course. *AIDS* 23: 907-915.
16. Watts, J. M., K. K. Dang, R. J. Gorelick, C. W. Leonard, J. W. Bess, R. Swanstrom, **C. L. Burch**, and K. M. Weeks. 2009. Architecture and secondary structure of an entire HIV-1 RNA genome. *Nature*. 460: 711-716.
17. Lohaus, R., **C. L. Burch**, and R. B. R. Azevedo. 2010. Genetic Architecture and the Evolution of Sex. *Journal of Heredity*. 101: S142 - S157.

Editorial Responsibilities

Editorial boards

Associate Editor, Evolution, 2009 - Present

Ad hoc reviewer for:

Nature, Science, Nature Genetics, Nature Reviews Genetics, PLoS Biology, PLoS Computational Biology, Evolution, Genetics, American Naturalist, Virology, Journal of Virology, Molecular Biology and Evolution, BMN Evolutionary Biology, Biochemistry and Cell Biology, Journal of Parasitology, Current Biology

Grants/Contracts

2003-2008 NIH R01 GM067940: Viral evolution: mutational effects and interactions
Role: Principal Investigator
$709,000/ 5 yrs
25% effort

2009-2013 NSF DEB-0922111: Competition and the origins of diversity: experimental evolution of resource polymorphism, character displacement, and reproductive isolation in viruses
Role: Principal Investigator
$561,396/ 4 yrs
17% effort

Grant Review Service
October 2009, NSF, Evolutionary Ecology Panel Member
February 2010, NIH, Genetic Variation and Evolution Panel, ad-hoc member

Honors/Awards
2008 UNC Graduate School Faculty Award for Excellence in Doctoral Mentoring

Committee Service

University of North Carolina, Chapel Hill
Genetics Curriculum Comprehensive Exam Committee (Chair 2005-2006)
Virology Training Grant Selection Committee (2007)
BBSP Admissions Committee (2010)

Professional Meetings/Societies

Meeting organization
Session chair, International Meeting of the Society for the Study of Evolution. SUNY, Stony Brook, NY. 2006

Meeting participation
Speaker, Evolution of Infectious Diseases Symposium. National Institutes of Health. Bethesda, MD. 2005.

Speaker, Gordon Research Conference on Microbial Population Biology. Andover, NH. 2005.

Speaker, International Meeting of the Society for the Study of Evolution. SUNY, Stony Brook, NY. 2006

Speaker, CIPRES Mini-Symposium on Evolutionary Simulation, Penn Center for Bioinformatics, Univ of Pennsylvania, Philadelphia, PA. 2006.

Speaker, Viral Evolution Workshop, Nobel Foundation, Ardmore, OK. 10/2006. Applications of Evolutionary Ecology to Viral Disease Emergence.

Speaker, Symposium on Epistasis, 9th Annual Plant Sciences Institute Symposium, Iowa State University, Ames IA. 2007

Speaker, The Evolution of Sex and Asexual Reproduction, Genetics Society Autumn Meeting, University of Bath, UK. 2008

Speaker, Darwinian Evolution in the 20th Century Symposium, Society for the Study of Evolution Annual Meeting, Moscow, ID. 2009

Speaker, Jacques Monod Conference on Virus Evolution. Rennes, France. 2009.

Society leadership
Council Member, American Genetics Association, 2009 - Present

Society membership
Society for the Study of Evolution, 2002-present
Genetics Society of America, 2002-present
American Genetics Association, 2008-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Bruce A. Cairns, MD

Director, North Carolina Jaycee Burn Center

John Stackhouse Distinguished Associate Professor

Primary Appointment: Department of Surgery

Joint Appointment(s): Department of Microbiology & Immunology

Publications

Primary literature

1. Jones S.W., Short K.A., Hanson W.J., Hendrix L., Charles A.G., **Cairns B.A.** (2010) Evaluation of a new circuit configuration for the VDR-4 high-frequency percussive ventilator. Journal of Burn Care and Research, 31, 640-645.
2. Peppercorn A, Veit L, Sigel C, Weber DJ, Jones S, **Cairns BA**. (2010) Overwhelming disseminated herpes simplex virus type 2 infection in a patient with severe burn injury: case report and literature review. Journal of Burn Care and Research, 31(3), 492-8.
3. Jones S.W, Short KA, Joseph M, Sommer C, **Cairns BA**. (2010) Use of a new novel humidification system with high frequency percussive ventilation in a patient with inhalation injury. Journal of Burn Care and Research, 31, 499-502.
4. Hultman CS, Erfanian K, Fraser J, Thornton SJ, Calvert CS, **Cairns BA**. (2010) Comprehensive management of hot-press hand injuries: long-term outcomes following reconstruction and rehabilitation. Annals of Plastic Surgery, 64, 553-8.
5. Chudasama S, Goverman J, Donaldson JH, van Aalst J, **Cairns BA**, Hultman CS. (2010) Does voltage predict return to work and neuropsychiatric sequelae following electrical burn injury? Annals of Plastic Surgery, 64, 522-5.
6. Peppercorn AF, Miller MB, Fitzgerald D, Weber DJ, Groben PA, **Cairns BA**. (2010) High-level human herpesvirus-6 viremia associated with onset of Stevens-Johnson syndrome: report of two cases. Journal of Burn Care and Research, 31, 365-8.
7. Campbell CA, **Cairns BA**, Meyer AA, Hultman CS. (2010) Adipocytes constitutively release factors that accelerate keratinocyte proliferation in vitro. Annals of Plastic Surgery, 64,327-32.
8. Rich PB, Douillet C, Buchholz V, Overby DW, Jones SW, **Cairns BA**. (2010) Use of the novel hemostatic textile Stasilon(R) to arrest refractory retroperitoneal hemorrhage: a case report. Journal of Medical Case Reports, Jan 22, 4:20.
9. Goldstein AO, Grant E, McCullough A, **Cairns B**, Kurian A. (2010) Achieving fire-safe cigarette legislation through coalition-based legislative advocacy. Tobacco Control, 19, 75-9. Epub 2009 Sep 10.
10. Nelson J, **Cairns B**, Charles A.J. (2010) Early extracorporeal life support as rescue therapy for severe acute respiratory distress syndrome after inhalation injury. Burn Care Research, 30,1035-8.
11. Reed CR, Han L, Andrady A, Caballero M, Jack MC, Collins JB, Saba SC, Loboa EG, **Cairns BA**, van Aalst JA. (2009) Composite Tissue Engineering on Polycaprolactone Nanofiber Scaffolds. Annals of Plastic Surgery, 62,505-12.

12. Welch GF, Sonnenwald DH, Fuchs H, **Cairns B**, Mayer-Patel K, Söderholm HM, Yang R, State A, Towles H, Ilie A, Ampalam MK, Krishnan S, Noel V, Noland M, Manning JE. (2009) 3D medical collaboration technology to enhance emergency healthcare. Journal Biomedical Discovery Collaboration, 19,4:4.
13. Sonnenwald D, Soderholm H, Manning J, **Cairns B**, Fuchs H, Welch G. (2008) "Exploring the potential of video technologies for collaboration in emergency medical care." Part I: Information sharing & Part II: Task performance. Journal of the American Society for Information Science and Technology, 59, 2320-2349.
14. Peppercorn A, Serody J, **Cairns B**. (2008) Reactivation of cytomegalovirus infection in critically ill immunocompetent patients. Journal American Medical Association, 26, 2367-8.
15. Hromadka M, Collins JB, Reed C, Han L, Kolappa KK, **Cairns BA**, Andrady T, van Aalst JA. (2008) Nanofiber applications for burn care. Journal Burn Care Research, 29, 695-703.
16. **Cairns BA**, Barnes CM, Mlot S, Meyer AA, Maile R. (2008) Toll-like receptor 2 and 4 ligation results in complex altered cytokine profiles early and late after burn injury. Journal of Trauma, 64,1069-77; discussion 1077-8.
17. Ballard J, Edelman L, Saffle J, Sheridan R, Kagan R, Bracco D, Cancio L, **Cairns BA**, Baker R, Fillari P, Wibbenmeyer L, Voight D, Palmieri T, Greenhalgh D, Kemalyan N, Caruso D. (2008) Multicenter Trials Group, American Burn Association. Positive fungal cultures in burn patients: a multicenter review. Journal of Burn Care Research, 29, 213-21.
18. Piehl MD, Manning JE, McCurdy SL, Rhue TS, Kocis KC, Cairns CB, **Cairns BA**. (2008) Pulse contour cardiac output analysis in a piglet model of severe hemorrhagic shock. Critical Care Medicine, 36, 1189-95.
19. Wolak ES, **Cairns B**, Smith E. (2008) Nursing grand rounds as a medium for the continuing education of nurses. Journal of Continuing Education Nursing, 39,173-8.
20. Moore CB, Medina MA, van Deventer HW, O'Connor BP, Cameron S, Taxman DJ, Maile R, Ting JP, **Cairns BA**. (2007) Downregulation of immune signaling genes in patients with large surface burn injury. Journal of Burn Care Research, 28, 879-87.
21. Caballero M, Lightfoot HM Jr, Lapaglia M, Pleasant A, Hatada S, **Cairns BA**, Fair JH. (2007) Detection and characterization of hepatic engraftment of embryonic stem derived cells by fluorescent stereomicroscopy. Journal of Surgical Research, 141, 134-40.
22. Gates DH, Lee JS, Hultman CS, **Cairns BA**. (2007) Inhibition of rho-kinase impairs fibroblast stress fiber formation, confluence, and contractility in vitro. Journal of Burn Care Research, 28, 507-13.
23. Kidd M, Hultman CS, Van Aalst J, Calvert C, Peck MD, **Cairns BA**. (2007) The contemporary management of electrical injuries: resuscitation, reconstruction, rehabilitation. Annals of Plastic Surgery, 58, 273-8.
24. Riesenman PJ, Kissell LC, Marston WA, **Cairns BA**. (2007) Endovascular repair of a thoracic aortic injury in a burn patient. Journal of Burn Care Research, 28, 758-61.
25. Mabe TG, Honeycutt T, **Cairns BA**, Kocis KC, Short KA. (2007) High-frequency percussive ventilation in a pediatric patient with hydrocarbon aspiration. Pediatric Critical Care Medicine, 8, 383-5.
26. Riesenman PJ, Braithwaite SS, **Cairns BA**. (2007) Metformin-associated lactic acidosis in a burn patient. Journal of Burn Care Research, 28, 342-7.

27. **Cairns BA**, Maile R, Barnes CM, Frelinger JA, Meyer AA. (2006) Increased Toll-like receptor 4 expression on T cells may be a mechanism for enhanced T cell response late after burn injury. Journal of Trauma, 61, 293-8; discussion 298-9.
28. Maile R, Barnes CM, Nielsen AI, Meyer AA, Frelinger JA, **Cairns BA**. (2006) Lymphopenia-induced proliferation of CD8+ T cells is a mechanism for allogeneic skin graft rejection following burn injury. Journal of Immunology, 176, 6717-6726.
29. Buchanan IB, Maile R, Frelinger JA, Fair JH, Meyer AA, **Cairns BA**. (2006) The effect of burn injury on CD8+ and CD4+ T cells in an irradiation model of homeostatic proliferation. Journal of Trauma, 61,1062-8.
30. Palmieri TL, Caruso DM, Foster KN, **Cairns BA**, Peck MD, Gamelli RL, Mozingo DW, Kagan RJ,Wahl W, Kemalyan NA, Fish JS, Gomez M, Sheridan RL, Faucher LD, Latenser BA, Gibran NS, Klein RL, Solem LD, Saffle JR, Morris SE, Jeng JC, Voigt D, Howard PA, Molitor F, Greenhalgh DG. (2006) American Burn Association Burn Multicenter Trials Group. Effect of blood transfusion on outcome after major burn injury: a multicenter study. Critical Care Medicine, 34,1602-7.
31. Barillo DJ, Dimick AR, **Cairns BA**, Hardin WD, Acker JE 3rd, Peck MD. The Southern Region burn disaster plan. J Burn Care Res 2006;27:589-95.
32. Wolak E, Klish K, Smith E, **Cairns BA**. (2006) Educational opportunities for experienced staff: do they make a difference? Journal of Nurses Staff Development, 22,181-86.
33. Wolf SE, Edelman LS, Kemalyan N, Donison L, Cross J, Underwood M, Spence RJ, Noppenberger D, Palmieri TL, Greenhalgh DG, Lawless M, Voigt D, Edwards P, Warner P, Kagan R, Hatfield S, Jeng J, Crean D, Hunt J, Purdue G, Burris A, **Cairns BA**, Kessler M, Klein RL, Baker R, Yowler C, Tutulo W, Foster K, Caruso D, Hildebrand B, Benjamin W, Villarreal C, Sanford AP, Saffle J. (2006) Effect of Oxandrolone on Outcome Measures in the Severely Burned: A Multicenter Prospective Randomized Double-Blind Trial. Journal of Burn Care Research, 27,131-139.
34. Maile R, Pop SM, Tisch R, Collins EJ, **Cairns BA**, Frelinger JA. (2006) Low-avidity CD8lo T cells induced by incomplete antigen stimulation in vivo regulate naïve higher-avidity CD8hi T cell responses to the same antigen. European Journal of Immunology, 36, 397-410. Commentary by Hoglund P. Induced peripheral regulatory T cells: the family grows larger. European Journal of Immunology, 36, 264-266.
35. Byerly FL, Haithcock JA, Buchanan IB, Short KA, **Cairns BA**. (2006) Use of high flow nasal cannula on a pediatric burn patient with inhalation injury and post-extubation stridor. Burns, 32, 121-5.
36. Neuman HB, Zarzaur BL, Meyer AA, **Cairns BA**, Rich PB. (2005) Superselective catheterization and embolization as the first-line therapy for lower gastrointestinal bleeding. American Surgeon, 71, 539-544.
37. Fair JF, **Cairns BA**, LaPaglia MA, Caballero M, Pleasant WA, Hatada S, Kim HS, Gui T, Pevny L, Meyer AA, Stafford DW, Smithies O, Frelinger JF. (2005) Correction of factor IX deficiency in mice by embryonic stem cells differentiated in vitro. Proceedings of the National Academy of Sciences, 102, 2958-2963. (Reviewed by Editor's Choice, Science, 2005, 307; 1171).
38. **Cairns BA**, Stiffler A, Price F, Peck MD, Meyer AA. (2005) Managing a combined burn trauma disaster in the post-9/11 world: lessons learned from the 2003 West Pharmaceutical plant explosion. Journal of Burn Care and Rehabilitation, 26, 144-150.

39. Buchanan IB, Campbell BT, Peck MD, **Cairns BA**. (2005) Chest wall necrosis and death secondary to hydrochloric acid infusion for metabolic alkalosis. Southern Medical Journal, 98, 822-824.
40. Welch G, Yang R, Becker S, Ilie A, Russo D, Funaro J, State A, Low K, Anselmo L, Towles H, **Cairns BA**, Fuchs H, van Dam A. (2005) Immersive electronic books for surgical training. IEEE Multimedia, 12, 22-35.
41. Hultman CS, Pratt B, **Cairns BA**, McPhail L, Rutherford EJ, Rich PB, Baker CC, Meyer AA. (2005) Multidisciplinary approach to abdominal wall reconstruction after decompressive laparotomy for abdominal compartment syndrome. Annals of Plastic Surgery, 54, 269-75; discussion 275.
42. Maurin H, Sonnenwald DH, **Cairns BA**, Fried E, Manning J, Welch G, Fuchs H. (2005) Experimental comparison of the use of 2D and 3D Telepresence technologies in distributed emergency medical situations. In Proceedings of 9th European Conference on Computer-Supported Cooperative Work Paris, France. 2005.
43. Welch G, Fuchs H, **Cairns BA**, Mayer-Patel K, Sonnenwald DH, Yang R, State A, Towles H, Ilie A, Noland M, Noel V, Yang H. (2005) Improving, expanding and extending 3D telepresence. In Proceedings of the 2005 International Workshop on Advanced Information Processing for Ubiquitous Networks with ICAT Christchurch, New Zealand. 2005.
44. Byerly FL, Nelson KC, Granko RP, Morrell DS, **Cairns BA**. (2005) Valdecoxib-associated acute generalized exanthematous pustulosis. Burns, 31, 383-387.
45. Wolak E, Byerly FL, Mason T, and **Cairns BA**. (2005) Methemoglobinemia in critically ill burned patients. American Journal of Critical Care, 14, 104-108.

Editorial Responsibilities

Ad hoc reviewer for:

Burns, Journal of Burn Care and Research, Journal of Clinical Investigation, Journal of Trauma, Infection and Critical Care, Journal of Surgical Research

Grants/Contracts

Principal Investigator**,** 09/01/2006 - 07/23/2010
Prospective Evaluation of the Effects of Topical Therapy With Sulfamylon for 5% Topical Solution on Autograft Healing in Subjects with Thermal Injuries Requiring Meshed Autografts; A Comparison to a Historical Control
Kendle International Inc., SMS-401
Total direct costs $26,023
% effort 0.12

Principal Investigator, 02/01/2008 – 01/31/2010
Development of a quantitative method to assess tissue dressing adherence
North Carolina Translational and Clinical Sciences Institute, 2KR10804
Total direct costs $2000

Principal Investigator, 05/01/2008 – 04/30/2011
Use of a hemostatic textile (Stasilon™) to control bleeding at skin graft donor sites
Entegrion, Inc, PREN-101

Total direct costs $73,138
% effort 1.20 Calendar (10.00%)

Principal Investigator, 07/01/2009 – 06/13/2014
Trauma Research Fellowship
National Institute of General Medicine Science, 2T32GM008450-17
(Cairns, *formerly Frelinger*)
Total direct costs $115,521.00

Principal Investigator, 07/01/2010 – 06/30/2011
Burn Surge Disaster Program
Office of Emergency Medical Services, HP-10-1959/PO2790001
Total direct costs $204,545.00
% effort 0.24 Calendar (2.00%)

Principal Investigator, 04/01/2010 – 03/31/2014
Cellular Mechanism of immune dysfunction following burn injury
National Institute of General Medicine Science, 5R01GM076250-02
Total direct costs $202,950.00
% effort 2.04 Calendar (17.00%)

Co-Investigator, 06/01/2008 – 08/31/2009
(PI Jeffrey Fair)
Correction of Hemophilia in Mice by Embryonic Stem Cells (Sub-contract to Cedars Sinai Medical Center) (R01 HL082606-01). National Heart, Lung and Blood Institute Total direct cost: $8,364
% effort 5%

Grant Review Service

Panel Member, National Institute of Health — July 2010
First Level Review, NIAAA P50

Panel Member, National Institute of Health — February 2007
NIGMS P50

Panel Member, National Institute of Health — October 2006
NIGMS P50 Trauma /Burn Center Research Grants

Panel Member, National Institute of Health — July 2006
NIGMS P50 Trauma /Burn Center Research Grants

Panel Member, National Institute of Health — May 2006
NIGMS Loan Repayment Grants

Panel Member, National Institute of Health — November 2005
NIGMS P50 Trauma /Burn Center Research Grants

Honors/Awards

Recognition Award, Scientific Poster — 2009
Cairns, BA. Superior Performance of a Novel Hemostatic Non-Adherent Wound Dressing in a Prospective, Randomized Controlled Standardized Human Model

Of Cutaneous Hemorrhage. Southern Region Burn Conference, Shreveport, LA November 6-8, 2009

Recognition Award, Scientific Poster 2009
Cairns BA. Terminal-Restriction Fragment Length Polymorphism Analysis (T-RFLP) to Evaluate Microbial Communities in the Burn Center. Southern Region Burn Conference, Shreveport, LA November 6-8, 2009

Recognition Award, Scientific Poster 2009
Cairns, BA. The Use of a Call Center for Burn Admissions and Burn Consultations: One Stop Shopping for Burn Referrals. Southern Region Burn Conference, Shreveport, LA November 6-8, 2009

First Place, Best Physician Paper 2008
Cairns BA and Zihni A. "Dynamic Alterations in Geomics and Proteomics Following Burn Injury". Presented at the 21st Annual Southern Region Burn Conference, Richmond , VA October 31-November 2, 2008.

First Place, Non-Physician Award 2007
Hobbs RD, Grant EJ, Jones SW, Cairns BA. Evaluation of consumer bath thermometers. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007

First Place, Physician Award 2007
"Cadaveric allografts in the management of burn injury: update on the mechanism of rejection and current options for clinical use". 20th Annual Southern Burn Region Meeting; Augusta, GA; November, 2007

Village Pride Award 2007
Named Hometown Hero through the WCHL Village Pride Award in public recognition of demonstrated excellent service to others

UNC Surgery Resident Advocate Faculty Award 2006
Selected by the residents and given each year at the UNC Surgery Resident graduation ceremony

Leonard Tow Humanism in Medicine Award 2006
"Given annually to a School of Medicine faculty member who consistently demonstrates compassion and empathy in the delivery of care to patients and serves as a role model for students and colleagues by illustrating professional behavior." (University of North Carolina at Chapel Hill)

James W. Woods Faculty Award 2005
"Given each year to support research and scholarship for one promising young member of the clinical faculty at the University of North Carolina School of Medicine" (University of North Carolina at Chapel Hill)

Physician of the Year Award 2005
North Carolina State Society for Respiratory Care
(University of North Carolina at Chapel Hill)

American Burn Association Traveling Fellow Award 2005
"For best physician with evidence of interest and productivity in the field of burn care, teaching or research" (University of North Carolina at Chapel Hill)

Winner, Best Poster in Infection/Immunology 2005
37th Annual Meeting of the American Burn Association "Insulin growth factor-I (IGF-I) can prevent burn-induced thymic T cell apoptosis and activation-induced T cell death in vitro. Chicago, IL. May 11-15, 2005. (University of North Carolina at Chapel Hill)

School of Medicine Teaching Excellence Award 2004-2005 (University of North Carolina at Chapel Hill)

UNC Leadership

UNC School of Medicine tenure-track representative	2001-Present
Mid-Career Leadership Initiative	2008
UNC Covenant Mentors	2007-Present
Surgical Operations Governing Group	2007-Present
Inaugural Fellow, UNC Academy of Educators	2007
UNC Faculty Governing Group	2006
Faculty Development Task Force	2005
Curriculum Evolution Task Force	2004-Present
ICU Advisory Council	2003-Present

Committee Service

University of North Carolina, Chapel Hill

Member UNC Chancellor's Advisory Committee	2010-2013
Clinical & Translational Research Center Member (CTRC)	2008-Present
Surgical Education Committee	2000-Present
Task Force on Surgery Faculty Compensation	2002-Present
Surgery Faculty Career Development Committee	2004-Present
Surgery Faculty Scholarship Award Committee	2003-Present
ICU Ventilation Protocol Committee	2004-Present
Herbert J. Proctor Award Committee	2002-Present
Committee Chair	2003-Present
Member, UNC Faculty Council Agenda Committee	2004-2005
Steering Committee, Hurricane Katrina Relief Effort	2005

Electronic DNR Order Committee	2005
UNC Hospitals Ethics Committee	2002-Present
UNC Hospitals Disaster Committee	2000-Present

Outside UNC

Chair, Research Committee, American Burn Association	2010-Present
Vice Chair, Research Committee, American Burn Association	2008-2010
Representative American Burn Association	2009- Present
U.S. Critical Illness and Injury Trials Group (USCIIT Group)	

Professional Meetings/Societies

Meeting organization

1. **Cairns BA (course co-director)** Disaster Management (Oral Presentation) American Burn Association, Boston, MA. March 9-12, 2010.
2. **Cairns BA (co-moderator)** Correlative Session VIII: Critical Care (Oral Presentation) American Burn Association, Boston, MA. March 9-12, 2010.
3. **Cairns BA (co-moderator)** Inhalation Injury Biomarker Selection in Burn Patients. ABA 42nd Annual Meeting, Boston, MA March 9-12, 2010.
4. **Cairns BA (co-moderator) The** Southern Disaster Plan. Presented at the 22nd Annual Southern Region Burn Conference, Shreveport, Louisiana, November 6-8, 2009.
5. **Cairns BA (co-moderator)** The Southern Disaster Plan: Current Status and Future Directions. Presented at the 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31-November 2, 2008.
6. **Cairns BA (co-moderator)** Functional Integration of the Southern Region Burn Disaster Plan, Objective: Describe the differences between the Southern Burn Region and the Department of Homeland Security Region IV; discuss how differences impact the development of a functional Southern Region Burn Disaster Plan. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
7. **Cairns BA (co-moderator**) Cadaveric Allograft in the Management of Burn Injury: Update on the Mechanism of Rejection and Current Options for Clinical Use**,** Objective: Discuss current and future potential use of cadaveric allogeneic skin. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
8. **Cairns BA (co-moderator)** The Latest Advances and Ongoing Controversies Regarding Infection Control in the Burn Center, Objective: Describe the IHI's Save "5 Million Lives" Campaign and changes in practice in the burn center, discuss actions to improve infection control and impact on infection rates and cost effectiveness. . Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
9. **Cairns BA (co-moderator),** Correlative Session XIV: Critical Illness-Clinical Science (seven sessions: 1)Evaluation of intestinal absorption during enteral resuscitation of burn shock; 2) A fluid balance monitor for enhancing burn resuscitation; 3) Burn injury-induced whole-body insulin resistance in rats; 4) Defining acute abdominal hypertension and abdominal compartment syndrome in acute thermal injury: A multicenter survey; 5) Microalbuminuria in acute burn injury; 6) Prospective randomized trial using Hartmann's and 6% hydroxyethylstarch (HES) solution for fluid resuscitations following acute thermal injury; 7) Resuscitation restores heart rate complexity in burn patients. Presented at the 39th Annual Meeting of the ABA, San Diego, California, March 20- 23, 2007

10. **Cairns BA (course co-director),** Coffee T. Hot Issues in the Burn ICU (eight sessions: 1) NO, NFO, and other innovative approaches to ARDS; 2) Renal replacement-when and how; 3) Can we spend more? Update on immunonutrition, APC, and other immunomodulating strategies; 4) Training and maintaining competency in the ICU; 5) Resuscitation endpoints: innovative ways to monitor resuscitation; 6) Update on noninvasive and invasive monitors of cardiovascular function; 7) Chronic ventilatory support: weaning protocols and the great trach debate; 9) Panel discussion. Presented at the 38th Annual Meeting of the ABA, Las Vegas, NV. April 4-10, 2006.
11. **Cairns BA (course co-director),** Short K, Mabe, T. Symposium on the management of inhalation injury (four sessions: 1) etiology, pathophysiology and incidence; 2) high-frequency percussive ventilation; 3) pediatric inhalation injury; 4) alternative modes of ventilation. Presented at the 51st International Respiratory Congress. San Antonio, TX. December, 2005.

Meeting participation

1. Neely CJ, Maile R, Wang M.J, Wolfgang M, **Cairns BA**. Severe Burn Injury Leads to spontaneous Generation of Th17 CD4+ T Cells in Wound Drainingg Lymph Nodes. (Poster Presentation) American Association of Immunologist Baltimore, MD. April 7-11, 2010.
2. Zihni A, Sparks C, Cicuto BJ, Moore CB, Maile R, **Cairns BA**. Inflammasome Activation Following Burn Injury (Poster Presentation). American Burn Association, Boston, MA. March 9-12, 2010.
3. Maile R, Cicuto B, Barnes C, Wang M, **Cairns BA**. MHC Class I Tetramers Reveal Cd8+ T Cell CMV – Reactivity and Effector Function Within Stored Lymphocyte Populations (Poster Presentation). American Burn Association, Boston, MA. March 9-12, 2010.
4. Neely CJ, Maile R, Cicuto BJ, Vadlamudi S, Wand M, **Cairns BA**. Innate Signaling Regulates Pro-Inflammatory T Cell Response Late After Burn Injury (Poster Presentation). American Burn Association, Boston, MA. March 9-12, 2010.
5. **Cairns BA**, Maile R, Wolfgang M. Terminal-Restriction Fragment Length Polymorphism (t-rflp) Analusis Identifies Dominant Bacterial Species In Lungs Following Burn Injury (Poster Presentation). American Burn Association, Boston, MA. March 9-12, 2010.
6. Maile R, Bowers GH, Vadlamudi S, **Cairns BA**. Over-Expression of Transgenic BCL2 By T Cells Protects Against Burn – Induced T Cell Apoptosis (Poster Presentation). American Burn Association, Boston, MA. March 9-12, 2010.
7. Kearns R, Holmes JH, **Cairns BA.** Southeastern Burn Surge Capabilities During The 2009 Presidential Inauguration (Poster Presentation). American Burn Association, Boston, MA. March 9-12, 2010.
8. Neely CJ, Maile R, Cicuto BJ, Vadlamudi S, Wang M, **Cairns BA**. Innate Signaling Regulates Pro-inflammatory T Cell Response Late After Burn Injury. (Oral Presentation) American Burn Association, Boston, MA. March 9-12, 2010.
9. Jeng JA and **Cairns BA**. Inhalation Injury Biomarker Selection in Burn Patients. (Oral Presentation) American Burn Association, Boston, MA. March 9-12, 2010.
10. **Cairns BA.** The Use of a Call Center for Burn Admissions and Burn Consultations: One Stop Shopping for Burn Referrals (Poster Presentation) Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.

11. Cairns BA, Wolfgang M, Maile R. Terminal-Restriction Fragment Length Polymorphism Analysis (T-RFLP) to Evaluate Microbial Communities in the Burn Center (Poster Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
12. Cairns BA, Antanesian M, Massey S, Carroll MM. The Development of Family House: A Vital Resource for the Families of Severely Injured Burn Patients (Poster Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
13. Cairns BA. Preliminary Results of the Minimal Perforation Skin Graft Mesher for Split Thickness Autografting (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
14. Cairns BA, Grant E. Substantial Progress in Preventing Illegal Bonfires During Public Celebrations: A Challenging Public Health Problem (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
15. Zihni A, Sparks C, Maile R, Moore C, Lal A, Cameron S, Cairns BA. The Potential Role of Inflammasome Activation Leading to Immune Dysfunction Following Burn Injury (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
16. Neely C, Maile R, Vadlamudi A, Wang MJ, Cairns BA. Potential Immunologic Mechanisms That Lead To Increased Susceptibility To Pseudomonas Aeruginosa Infections Following Burn Injury (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
17. Nelson J, Cairns BA, Charles A. Early Extracorporeal Life Support as Rescue Therapy for Severe Adult Respiratory Distress Syndrome Following Inhalation Injury (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
18. Charles A, Schneider D, Jones S, Cairns B. The Role of Pre-Existing Co-Morbidities in the Mortality Outcome of Burn Patients: A Single Center Retrospective Study (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
19. Sommer C, Newton K, Charles A, Jones SW, Cairns BA. Is the Old Adage of Age +% Total Body Surface Area Still Applicable in Predicting Mortality in Burn Patients (Oral Presentation) Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
20. Charles A, Samuel J, Meyer AA, Cairns BA. The Modern Role of Academic Burn Centers in Developing Mechanisms for International Outreach in the Care of Burn Injury (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
21. Cairns BA, Jones SW, Cairns CB, Buchholz V, Douillet C, Nielsen C. Superior Performance of a Novel Hemostatic Non-Adherent Wound Dressing in a Prospective, Randomized Controlled Standardized Human Model of Cutaneous Hemorrhage (Skin Graft Donor Sites) (Poster Presentation). Southern Medical Association, Southern Region

Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.

22. Schultheis H, Cairns BA, Jones SW, Hultman S. The Effectiveness of the Semmes Weinstein Monofilament Examination as a Diagnostic Tool for the Burned Hand (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
23. Grant E, Antanesian M, Schmits G, Cairns BA. The Beneficial Impact of Comprehensive Domestic Violence Resources (Beacon Program) in the Evaluation and Management of Pediatric Burn Abuse Cases (Oral Presentation) Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
24. Cairns, Kearns, Holmes. Southern Burn Surge Capabilities During a Presidential Inauguration (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
25. Cairns BA & Kearns RD. Airplane Crashes and High Rise Buildings (Poster Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
26. Cairns, Kearns, Grant, Holmes. ABLS in the US. (Poster Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
27. Kearns, Holmes, Sagraves, Cairns. State Burn Disaster Planning (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
28. Kearns, Hardin, Holmes, Cairns. Southern Disaster Plan (Oral Presentation). Southern Medical Association, Southern Region Burn Conference, Louisiana State University (Host), Shreveport, LA November 5-8, 2009.
29. Kearns RD (Moderator), Kirkwood JD, Hill, Foster, and Cairns BA. The Garner Industrial Disaster and the Continuum of Care, EMS, Hospitals, Trauma Center and Burn Center (Oral Keynote Presentation). North Carolina Emergency Medicine Today, 2009 Conference. Greensboro, NC October 5, 2009.
30. Neely CJ, Maile R, Wang MJ, Vadlamudi S, Meyer AA, **Cairns BA**. Th17 (IFN-γ-IL17+) CD4+ T Cells Generated after Burn Injury May be a Novel Cellular Mechanism for Post-burn Immunosuppression. (Oral Presentation) American Association for the Surgery of Trauma Meeting, Pittsburg, PA. Oct. 1-3, 2009.
31. Kearns RD & Cairns BA. North Carolina Burn Disaster Program. North Carolina Medical Disaster Preparedness State Conference. Greensboro, NC July 21, 2009.
32. Kearns RD, Grant E, Holmes IV JH, Cairns BA. ABLS in the US (Poster Presentation). US Department of Health and Human Services, Assistant Secretary for Preparedness and Response, National Healthcare Preparedness Evaluation and Improvement Conference. Washington, DC, July 2009.
33. Kearns RD & Cairns BA. Burn Disasters and Burn Disaster Planning (Poster Presentation). US Department of Health and Human Services, Assistant Secretary for Preparedness and Response, National Healthcare Preparedness Evaluation and Improvement Conference. Washington, DC, July 2009.
34. Kearns RD, Holmes IV JH, Sagraves SG, Cairns BA. State Burn Disaster Planning (Poster Presentation). US Department of Health and Human Services, Assistant

Secretary for Preparedness and Response, National Healthcare Preparedness Evaluation and Improvement Conference. Washington, DC, July 2009.

35. Neely CJ**,** Wang MJ, Fuchs E, Vadlamudi S, Wolfgang M, **Cairns BA**, Maile R. Burn injury induces a myeloid suppressor phenotype and susceptibility to *Pseudomonas* infection. (Poster Presentation) American Association of Immunologists Meeting, Seattle, WA. May 8-12, 2009.
36. Crystal Neely BS, Robert Maile PhD, Matthew Wolfgang PhD, Erin Fuchs PhD, Sivaram Vadlamudi PhD, Ming Jin Wang BS, Bruce A. Cairns MD, FACS. Increased Susceptibility to Pseudomonas Infection Early After Burn Injury Does Not Correlate With Innate Priming. Presented at the 29th Annual Meeting of the Surgical Infection Society, Chicago, IL, May 7, 2009.
37. Kearns RD, Holmes IV JH, Sagraves SG, Hoffman HD, Cairns BA. State Burn Disaster Planning. Presented at the American Burn Association 41st Annual Meeting, San Antonio, TX, March 24-27, 2009.
38. Lal A, Zihni AM, Moore CB, Maile R, Cairns BA. Whole Genome Transcriptional Responses To Burn Injury. Presented at the American Association 41st Annual Meeting, San Antonio, TX, March 24-27, 2009.
39. Cairns BA, Grant E. Preventing Illegal Bonfires: The Role Of Burn Centers In Protecting The Public. Presented at the American Burn Association 41st Annual Meeting, San Antonio, TX, March 24-27, 2009.
40. Kearns RD, Grant, EJ, Holmes IV JH, Sagraves SG, Cairns BA. ABLS in The United States. Presented at the American Burn Association 41st Annual Meeting, San Antonio, TX, March 24-27, 2009.
41. Cairns BA, Maile R. Challenge & Innovation-Update of Research North Carolina Jaycee Burn Center. Presented at Surgery Grand Rounds, UNC Department of Surgery, January 7, 2009.
42. Cairns BA. Nanofibers and the Future of Burn Related Biotechnology. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, November 1, 2008.
43. Cairns BA. Dynamic Alterations in Genomics and Proteomics Following Burn Injury. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, November 1, 2008.
44. Cairns BA. The Latest Advances in High Frequency Percussive Ventilation (HFPV) via the VDR. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31, 2008.
45. Cairns BA. Lung Transplant Following Toxic Epidermal Necrolysis Syndrome (TENS). Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31, 2008.
46. Cairns BA. An Update on the Indications and Use of Xenograft Following Burn Injury. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31, 2008.
47. Cairns BA. The Development of Colistin Resistance in Multi-drug Resistant (MDR) Acenitobacter. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31, 2008.
48. Cairns BA. Are Advanced Directives Being Used Properly in the Burn Center? The Health Care Provider Prospective. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31, 2008.

49. Cairns BA. The Burn Center and PICU Working Together: The Benefits Of a Collaborative Effort in the Care of Pediatric Burn Patients. Presented at 21st Annual Southern Region Burn Conference, Richmond, Virginia, October 31, 2008.
50. Grant EJ, Cairns BA. Emergency Medicine Today. Guilford College, Greensboro, NC, October 7, 2008.
51. Cairns BA. North Carolina Burn Surge Response. Presented at The Seventh Annual Trauma & Critical Care Symposium, Charlotte AHEC, Charlotte, NC, September 5, 2008.
52. Sigounas VY, Kessler M, Jones SW, Cairns BA. Impact of age and gender on survival following burn injury. Presented at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
53. Maile R, Barnes CM, Bowers GH, Cairns BA. The effects of genetic disruption on Toll-like Receptor (TLR) 2 and TLR4 signaling on T cell hyper-responsiveness late after burn injury. Presented at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
54. Cairns BA, Barnes CM, Mlot S, Jones SW, Meyer AA, Maile R. Dynamic Toll-like Receptor (TLR) 3 expression is associated with altered anti-viral innate responses early and late after burn injury. Presented at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
55. Cairns BA, Barnes CM, Meyer AA, Jones SW, Maile R. Accumulation of macrophages in the spleen late after burn injury is not dependent on Toll-like receptor (TLR) 2 or TLR4 signaling. Presented at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
56. Maile R, Barnes CM, Wang M, Bowers GH, Cairns BA. The splenic memory-like T cell repertoire that arises late after burn injury has restricted clonality. Poster presentation at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
57. Barnes CM, Maile R, Bowers GH, Cairns BA. Mac-1 (CD11b) identifies chronically stimulated memory-like CD8+ T cells late after burn injury. Poster presentation at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
58. Maile R, Barnes CM, Mlot S, Cairns BA. Macrophage expression and response to bacterial Toll-like receptor (TLR) 2 and TLR4-ligands are altered early and late after burn injury. Poster presentation at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
59. Moore CB, Hartsell FL, Lal A, Maile R, Cairns BA. Dynamic alterations in immune and inflammatory proteomics are burn size dependent. Poster presentation at the 40th Annual Meeting of the American Burn Association, Chicago, IL, April 29-May 2, 2008.
60. Cairns BA, Maile R. Cadaveric allograft in the management of burn injury: update on the mechanism of rejection and current options for clinical use. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007 (1st place physician award).
61. Hobbs RD, Grant EJ, Jones SW, Cairns BA. Evaluation of consumer bath thermometers. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007 (1st place non-physician award).

62. Thornton SJ, Prochazka MT, Barnes CM, Cairns BA. A pilot study to measure the effectiveness of readymade gradient pressure garments on the burned extremity. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
63. Grant EJ, Cairns BA. Fire-safe cigarettes…The time is now. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
64. Cairns BA, Kearns R, Holmes JH, Sagraves S, Mozingo D. Functional integration of the Southern Region Burn Disaster Plan. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
65. Cairns BA, Schmits G. The latest advances and ongoing controversies regarding infection control in the burn center. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
66. Prochazka MT, Thornton S, Hultman CS Cairns BA. Common approaches to grafting, splinting and movement after various burn coverage procedures of the hand. Presented at the 19th Annual Southern Region Burn Conference, Augusta, Georgia, November 2-4, 2007.
67. Maile R, Barnes CM, Cairns BA. Macrophages resistant to endogenous cell death accumulate late after burn injury. Presented at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007
68. Mlot S, Maile R, Barnes CM, Cairns BA. Macrophages accumulating late after burn injury have low levels of toll-like receptors (TLR) 2 and 4. Presented at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007.
69. Barnes CM, Maile R, Faulk MA, Cairns BA. Hyper-responsive memory CD8+ T cells generated late after burn injury have a normal homeostatic proliferation profile. Presented at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007.
70. Faulk MA, Barnes CM, Maile R, Fair JH, Cairns BA. Phenotypic changes of murine embryonic cells after co-culture with mature keratinocytes. Presented at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007.
71. Grant EJ, Cairns BA, Peck MD. National burn center reporting system: how does the southeast compare? Presented at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007.
72. Barnes CM, Maile R, Faulk MA, Cairns BA. Macrophages exert a negative regulatory effect on hyper-responsive Tcell proliferation late after burn injury. Poster presentation at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007.
73. Faulk MA, Barnes CM, Maile R, Fair JH, Cairns BA. Epidermal growth factor (EGF) reduces the random differentiatin of embryonic stem cell co-cultured with mature keratinocytes. Poster presentation at the 39th Annual American Burn Association. San Diego CA. March 20-23, 2007.
74. Fields AM, Schmits G, Peck M, Cairns BA. Burn Verification: Lessons learned and what it means for your center. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
75. Grant EJ, Cairns BA, Peck M. National Burn Center Reporting System: How does the Southeast compare? Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.

76. Fields AM, Barr M, Calvert C, Irven J, Cairns BA, Peck M. Camp Celebrate: A 25-year review of the oldest pediatric burn camp in the US. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
77. Massey SM, Fields AM, Cairns BA, Peck M. Development and implementation of the SOAR (survivors offering assistance in recovery program) at a burn center. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
78. Peppercorn A, Maile R, Barnes C, Serody J, Frelinger JA, Cairns BA. Viral reactivation and disease: a potentially important contributor to morbidity and mortality following severe burn injury. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
79. Cairns CB, Cairns BA. The latest concepts regarding the metabolic response to burn injury. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
80. Parker KM, Cairns BA, Byerly FL, Bednarski BK, The use of ultrasound guidance for placement of central venous catheters in critically injured patients. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
81. Byerly FL, Buchanan IB, Brown V, Kittrell I, Rutala WA, Weber DJ, Meyer AA, Peck MD, Cairns BA. The introduction of antiseptic impregnated central venous catheters is associated with a decrease in catheter associated bloodstream infections in burn patients. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
82. Meyer AA, Cairns BA, Peck MD, Hultman SC. The future of Burn surgery in academics: implications on clinical practice, training and research. Presented at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
83. Sagraves SG, Rotondo M, Peck MD, Meyer AA, Cairns BA. The successful utilization of a trauma system in managing patients with severe burn injury. Poster presentation at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
84. Riesenman P, Braithwaite S, Cairns BA. Metformin associated lactic acidosis following burn injury. Poster presentation at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
85. Riesenman P, Farber M, Cairns BA. Aortic transaction and burn injury: an emerging role for endovascular repair. Poster presentation at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
86. Thornton S, Hultman SC, Peck MD, Cairns BA. Current guidelines and controversies regarding the use of pressure garments following burn injury. Poster presentation at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
87. Short K, Schmits G, Cairns BA. Successful implementation of non-physician ventilator weaning protocols in the burn intensive care unit. Poster presentation at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
88. McCawley B, Schmits G, Wolak E, Peck MD, Cairns BA. Implementation of a safe patient handling/minimal lift program in a burn center. Poster presentation at the 19th Annual Southern Region Burn Conference. Durham NC. November 3-5, 2006.
89. Barnes CM, Maile R, Meyer AA, Cairns BA. Age-dependent reduction of T cell recovery late after burn injury. Poster presentation at the 29th Annual Meeting of the Shock Society. Broomfield, CO. June 3-6, 2006.

90. Maile R, Barnes CM, Meyer AA, Cairns BA. Impaired maturation of splenic macrophages in aged mice late after burn injury. Poster presentation at the 29th Annual Meeting of the Shock Society. Broomfield, CO. June 3-6, 2006.
91. Maile R, Barnes CM, Roldan M, Cairns BA. Burn injury results in a unique and not previously described CD8+ memory T cell population. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
92. Roldan M, Maile R, Barnes CM, Kessler M, Cairns BA. Serine phosphorylated IGF binding protein-1 (IGFBP-1) accumulates in the serum following burn injury. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
93. Caruso DM, Cairns BA, Baker RA, Kemalyan NA, Saffle JR, Guy JG, Kowal-Vern A, Foster KN, Richey KJ, Clark BM. Utilization of do not resuscitate orders in the elderly. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
94. Ballard J, Edelman L, Saffle JR, Sheridan RL, Kagan RJ, Bracco D, Cancio LC, Cairns BA, Baker RA, Fillari P, Wibbenmeyer L, Voight DW, Palmieri TL, Greenhalgh DG Kemalyan NA, Caruso DM. Positive fungal cultures in burn patients- a multicenter review. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
95. Peck MD, Calvert C, Jones D, Grant E, Cairns BA. Throwing fuel- firefighters injured by live fire practices. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
96. Dickson P. Minton W, Wolak ES, Cairns BA. Improving the retention of fire safety and burn prevention programs in a university fraternity system. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
97. Wolak ES, Moretz D, Byerly FL, Schmits G, Cairns BA. Perception vs. reality: nurse utilization of insulin drip protocols in the burn intensive care unit. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
98. Kidd M, Cairns BA, Peck MD. An evaluation of the economic burden of unpaid self-pay charges in burn care. Presented at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
99. Maile R, Barnes CM, Frelinger JA, Meyer AA, Cairns BA. CD8+ T cells have a decreased requirement for activation late after burn injury. Poster presentation at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
100. Barnes CM, Maile R, Meyer AA, Cairns BA. Differential expression of Toll-Like Receptor 2 (TLR2) on CD8+ cells following burn injury. Poster presentation at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
101. Moore CB, Medina MA, Van Deventer HW, O'Connor BP, Cameron S, Ting J, Cairns BA. Increasing burn size dramatically influences the immune response to burn injury. Poster presentation at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
102. Barnes CM, Maile R, Meyer AA, Roldan M, Cairns BA. Persistence of CD4+CD25+ immunoregulatory T Cells (Treg) late after burn injury. Poster presentation at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
103. Sagraves SG, Phade S, Spain T, Bard M, Goettler C, Schenarts P, Toschlog E, Newell M, Cairns BA, Rotondo M. A collaborative systems approach to rural burn care. Poster

presentation at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.

104. Byerly FL, Buchanan IB, Hultman CS, Peck MD, Kidd M, Meyer AA, Cairns BA, The burn center as model for critical care education. Poster presentation at the 38th Annual Meeting of the American Burn Association. Las Vegas, NV. April 4-10, 2006.
105. **Cairns BA,** Maile R, Barnes C, Frelinger JA, Meyer AA. Lymphocyte apoptosis is required to generate memory CD8+ T cells with enhanced in vivo activity late after burn injury. Presented at the 67th Annual Meeting of the Society of University Surgeons. San Diego, CA. February 2006.
106. Maile R, Barnes C, Meyer AA, **Cairns BA**. Differential pro- and anti-inflammatory cytokine response to toll-like receptor 2 and 4 ligation following burn injury. Oral poster presentation at the 39th Annual Meeting of the Association of Academic Surgery. San Diego, CA. February, 2006.
107. **Cairns BA**, Kearns R, Sagraves SG, Fields AM, Peck MD, Rotondo MF, Meyer AA. Internal disaster planning: developing a strategy for the first 72 hours of a disaster response. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
108. **Cairns BA**, Peck MD, Hultman CS, Meyer AA. The burn center as a universal model for critical care education. Prospective analysis of albumin use for burn resuscitation. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
109. Dickson PD, Wolak ES, **Cairns BA**. A newly created nursing assistant (NA) orientation program that influences RN staffing satisfaction. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
110. James MO, Mason T, Wolak ES, **Cairns BA**. Deep venous thrombosis and life threatening pulmonary embolus: the importance of nursing assessment. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
111. Wolak ES and **Cairns BA**. Glycemic control in a burn intensive care unit: what is the best practice. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
112. Hultman CS, Peck MD, Calvert C, **Cairns BA.** Initial management, reconstruction, and rehabilitation of hot-press hand injuries: the University of North Carolina 10-year experience. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
113. Peck MD, Kidd M, **Cairns BA.** What is the economic burden of unpaid self-pay charges? Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
114. Wolak ES, Schmits G, Klish K, Dickson PD, Peck MD, **Cairns BA**. Caring for burn wounds in a non-burn care unit: a process evaluation. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
115. **Cairns BA**, Kidd M, Peck MD, Hultman CS. Options for torso reconstruction following devastating electrical injury. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
116. Byerly FL and **Cairns BA**. Blood transfusions in Jehovah's Witness patients: ethics and consequence. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
117. Calvert C, Peck MD, Hultman CS, **Cairns BA**. Return to work following an industrial explosion: identifying barriers to readiness and rehabilitation. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.

118. Dickson PD, Wolak ES, Peck MD, **Cairns BA**. Improving retention of fire safety and burn prevention in the University of North Carolina at Chapel Hill fraternity and sorority system. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
119. Thomspon AB, Wolak ES, **Cairns BA**. Occipital ulcers in burn patients. Poster presentation at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
120. Brower B, Klish K, Wolak ES, Peck MD, **Cairns BA**. A case report of late gestational burn patient: pathophysiology and ethics. Poster presentation at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
121. Byerly FL, Peck MD, Kessler M, **Cairns BA**. Prospective analysis of albumin use for burn resuscitation. Presented at the 18th Annual Southern Region Burn Conference. Nashville, TN. November 4-6, 2005.
122. **Cairns BA**, Maile R, Barnes C, Meyer AA. Increased T cell toll-like receptor 4 expression late after burn injury. Presented at the 65th Annual Meeting of the American Association for the Surgery of Trauma, Atlanta, GA. September 22-24, 2005.
123. **Cairns BA**, Barnes C, Maile R, Meyer AA. Burn injury induces increased spontaneous secretion of pro-inflammatory cytokines. Poster presentation at the 65th Annual Meeting of the American Association for the Surgery of Trauma, Atlanta, GA. September 2005.

Society leadership

Chair, Research Committee, American Burn Association	2010-Present
Vice Chair, Research Committee, American Burn Association	2008-2010
Representative American Burn Association	2009- Present
U.S. Critical Illness and Injury Trials Group (USCIIT Group)	

Society membership

Fellow, American Association for Surgery of Trauma	2010
North Carolina Medical Association	2007-Present
American Trauma Society	2006-Present
The Arnold P. Gold Foundation	2006-Present
Society of University Surgeons	2006-Present
American Association for Respiratory Care	2005-Present
Phoenix Society	2005-Present
Fellow, American College of Surgeons	2005-Present
American Association of Immunologists	2005-Present
Association for Academic Surgery	2005-Present
Eastern Association for the Surgery of Trauma (EAST)	2005-Present
Shock Society	2005-Present
Surgical Infection Society	2005-Present
Surgical Biology Club III	2005-Present
Society of Critical Care Medicine	2005-Present
American Association for the Advancement of Science	2005-Present
American Burn Association	2005-Present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Stephen H. Clarke

Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Dasu, T., Sindhava, V., Clarke, S. H., and Bondada, S., (2009) CD19 signaling is impaired in murine peritoneal and splenic B-1 B lymphocytes. Molecular Immunology 46:2655-2665.
2. Ye, Q., Clarke, S. H., Ye‡, J., Aoki, V., Hans-Filhio, G., Rivitti E. A., and Diaz. L A., (2009) Antigen selection of the anti-Dsg1 response in endemic pemphigus foliaceus (Fogo Selvagem) begins before the onset of clinical disease. Journal of Investigative Dermatology 129:2823-2834.
3. Bunch, D. O., Silver, J. S., Majure, M. C., Sullivan, P., Alcorta, D. A., Chin, H., Hogan, S. L., Lindstrom, Y. I., Clarke, S. H., Falk, R. J., and Nachman, P. H., (2008) Maintenance of tolerance by regulation of anti-myeloperoxidase B cells. Journal of the American Society of Nephrology 19:1763-1773.
4. Diz, R., McCray, S. K., and Clarke. S. H., (2008) B cell receptor affinity and B cell subset identity integrate to define the effectiveness, affinity threshold, and mechanism of anergy. Journal of Immunology 181:3834-3840.
5. Wang, H., Feng, J., Qi, C. F., Li, Z., Morse, H. C. 3rd, and Clarke. S. H., (2007) Transitional B cells lose their ability to receptor edit but retain their potential for positive and negative selection. Journal of Immunology 179:7544-7552.
6. Nicholas, M. W., Dooley, M. A., Hogan, S. L., Anolik, J., Looney, J., Sanz, I., and Clarke, S. H., (2008) A novel subset of memory B cells is enriched in autoreactivity and correlates with adverse outcomes in SLE. Clinical Immunology 126:189-201.
7. Qian, Y., Diaz, L., and Clarke, S. H., (2007) Dissecting the autoreactive B cell repertoire in pemphigus vulgaris patients. Journal of Immunology 178:5982-5990
8. Culton, D. A., Nicholas, M. W., Bunch, D. O., Zhen, Q. L., Kepler, T. B., Lin, L., Dooley, M. A., Mohan, C., Nachman, P. H., and Clarke, S. H., (2006) Similar CD19 dysregulation in two autoantibody-associated autoimmune diseases suggests a shared mechanism of B cell tolerance loss. Journal of Clinical Immunology 27:53-68.
9. Contreras, C. M., Halcomb, K. E., Randle, L., Hinman, R. M., Clarke, S. H., and Satterthwaite, A. B., (2006) Btk regulates multiple stages in the positive selection, differentiation, and survival of B-1 cells. Molecular Immunology 44:2719-2728.
10. Wang, H., and Clarke, S. H., (2007) Association of the pre-B cell receptor (BCR) expression level with the quality of pre-BII cell differentiation reveals hierarchical pre-BCR function. Molecular Immunology 27:53-68
11. Wang, H., Nicholas, M. W., Conway, K., Sen, P., Diz, R., Tisch, R. M., Clarke, S. H., (2006) EBV latent membrane protein 2A induces autoreactive B cell activation and TLR hypersensitivity. Journal of Immunology 177:2793-2802.
12. Qian, Y., Conway, K., Lu, X., Seitz, H., Matsushima, G. K., and Clarke, S. H, (2006) Autoreactive MZ and B-1 B cell activation by Faslpr is coincident with an increased

frequency of apoptotic lymphocytes and a defect in macrophage clearance. Blood 108:974-982.
13. Culton, D. A., O'Conner, B., Conway, K. L., Diz, R., Rutan, J., Vilen, B., and Clarke, S. H., (2006) Early pre-plasma cells define a tolerance checkpoint for autoreactive B cells. Journal of Immunology 176:790-802.
14. Kilmon, M.A., Rutan, J.A., Carnathan, D.G., Clarke, S.H., and Vilen, B.J., (2004) Cutting Edge: Tolerance to a lupus-related antigen is reversible and mediated by dendritic cells. Manuscript in preparation. Journal of Immunology 175:37-41.
15. Pop, S. M., Wong, C. P., Culton, D. A., Clarke, S. H., and Tisch, R., (2005) Single cell analysis shows decreasing FoxP3 and TGFbeta1 coexpressing CD4+CD25+ regulatory T cells during autoimmune diabetes. Journal of Experimental Medicine 201:1333-1346

Reviews & commentaries

Clarke, S. H. 2008. Anti-Sm B cell tolerance and tolerance loss in systemic lupus erythematosus. Immunologic Research 41:203-216.

Editorial Responsibilities

Ad hoc reviewer for:

Arthritis and Rheumatism, Clinical Immunology, Journal of Immunology, Journal of Experimental Medicine, PLoS Biology, Science Translational Medicine

Grants/Contracts

Principal Investigator, 7/1/08 – 6/30/13
"Anti-Sm B cell regulation"
NIAMS, NIH R01 AI043587-11
Total direct costs:
% effort: 30

Co-Investigator, 6/15/2003 – 11/30/07 R01 AI53266-01
PI: Barbara Vilen
Molecular Basis for Overcoming Tolerance to Sm
NIAID, NIH
% effort: 5

Co-Investigator, 12/01/00 – 11/30/10
PI: Luis Diaz
NIAID, NIH R37 AR32081
"Pemphigus and Pemphigoid"
% effort: 5

Co-Investigator, 4/25/08 – 3/31/13
PI: Luis Diaz
NIAID, NIH R01 AR32599-27

Etiology and Pathogenesis of Pemphigus
% effort: 5

Co-Investigator, 10/1/09 - 9/30/11
PI: Zhi Liu
Immunopathogenesis of Bullous Pemphigoid
NIAID, NIH
% effort: 5

Principal Investigator, 10/1/07-9/30/09
"Autoreactive B cells in human systemic lupus erythematosus"
Lupus Foundation of America
Total direct costs: $200,000
% effort: 10

Principal Investigator, 3/1/07-2/28/09
"B cell activation by the Epstein Barr virus protein LMP2A"
Arthritis Foundation
Total direct costs: $200,000
% effort: 5

Committee Service

University of North Carolina, Chapel Hill

Immunology Group Leader, Department of Microbiology and Immunology, 1996-present
Member, Executive Committee for MD/Ph.D. program, 2005 to present
Member, Committee to review Gary Johnson's reappointment as Chair, Department of Pharmacology, 2009
Member, 5 Year Review Committee for Full Professors, 2009

Outside UNC

Scientific Advisory Board, Global HIV Vaccine Enterprise, Vaccine Development Center, Duke University, *Broadly Reactive neutralizing Antibodies: Novel Strategies for Vaccine Design*, Bill and Melinda Gates Foundation, Barton Haynes, PI. 2006-present

Ocrelizumab Advisory Board, Genentech, 2008

Professional Meetings/Societies

Society membership

American Association of Immunologists, 1986-present

American Association for the Advancement of Science, 1986-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Name Edward J. Collins, Ph.D.

Academic Title: Associate Professor

Primary Appointment: Department of Microbiology and Immunology

Joint Appointment: Department of Biochemistry and Biophysics

Publications

Primary literature

Pazy, Y., Wollish, A.C. Thomas, S.A., Miller, P.J., **Collins, E.J**., Bourret, R.B., Silversmith, R.E. (2009) Matching biochemical reaction kinetics to the timescales of life: Structural determinants that influence the autodephosphorylation rate of response regulator proteins J Mol Biol. 392:1205-20

Riddle, D, Miller, P, Vincent, B, Kepler, T., Frelinger, JA, **Collins, EJ**. Diverse, functional T cells in the absence of TCR/coreceptor agreement (2008) E. J Immunol. 38, 2545-2559.

Miller,PJ, Pazy, Y., Conti, B. Riddle, D, Biddison, WE, Appella, E and **Collins, EJ** Single MHC Mutation Eliminates Enthalpy Associated with T Cell Receptor Binding (2007) J Mol Biol 273, 315-327

Tian, S., Maile,R., **Collins, E.J.,** and Frelinger , J.A T cell cytotoxicity is governed by TCR-pMHC affinity, not dissociation rate. (2007) J Immunol. 179, 2952-2960..

Hess, PR, Barnes, C. Woolard, M, Johnson, M, Collins, EJ and Frelinger, JA Selective deletion of antigen-specific CD8+ T cells by MHC class I tetramers coupled to the type I ribosome-inactivating protein, saporin (2007) Blood 109(8) 3300-3307

Maile, R., Siler, CA, Kerry, SA, Midkiff, KE, **Collins, E.J.** and Frelinger, JA Peripheral "CD8-tuning" dynamically modulates the size and responsiveness of an antigen-specific T cell pool *in vivo*" (2005) J. Immunol 174, 619-627.

Maile, R, Pop, SM, Tisch, RM, **Collins, E.J.** and Frelinger, JA E Low-avidity CD8 lo T cells induced by incomplete antigen stimulation in vivo regulate naive higher-avidity CD8 hi T cell responses to the same antigen. (2005) J. Immunol 36, 397-410.

Reviews & commentaries

Collins, EJ and Riddle, D. 2008 TCR-MHC Docking Orientation, Natural Selection or Thymic Selection. Immunologic Research Immunol Res 41:267-94.

Miller, P. and Collins, EJ 2006 Class I MHC Antigen Presentation Immunodominance Ed. Frelinger, JA., 3-22.

Editorial Responsibilities

Editorial boards

Journal of Immunology 2006-present
Self:NonSelf: Immune Recognition and Signaling 2009-2012

Ad hoc reviewer for:

Biochemistry, Immunity, Journal of Molecular Biology, Journal of Biological Chemistry, PLoS One, Journal of Molecular and Cellular Medicine, Proceedings of the National Academy of Science

Grants/Contracts
ONGOING

Principal Investigator: Bourret 5/1/1994 - 11/30/2011
Molecular Mechanisms of Signaling Transduction by Two-Component Regulatory Systems
National Inst. of Health , 5 R01 GM50860-16
Direct Cost: $298,211
% effort: 10

Principal Investigator 1/1/2008 - 12/31/2010
Development of High-Affinity TCR for Imaging in the Brain
DANA Foundation
Direct Cost: $77,934
% effort: 2.5

COMPLETED

Principal Investigator: Tisch 7/1/2002 - 6/30/2005
T cell promiscuity in Type I diabetes
Juvenile Diabetes Foundation , JDRF 1-2002-758
Direct Cost: $181,818
% effort: 10

Principal Investigator: Frelinger 2/1/1983 - 4/30/2007
Role of MHC Class I in CD8 T Cell Activation
Natl Inst Allergies & Infect Dis, 5 R01 GM67143-22

Direct Cost: $259,489

% effort: 10

Principal Investigator 8/1/2003 - 7/31/2008
Peptide Binding to Class I MHC
National Inst. of Health, 5 R01 CA92368-04

Direct Cost: $217,271

% effort: 20

Principal Investigator: Frelinger 9/30/2004 – 6/29/2010
Large Scale Antibody and T Cell Epitope Discovery Program
National Inst. of Health , HHSN266200400086C
Direct Cost: $301,779
% effort: 5

Grant Review Service
NSF Graduate Fellowship Review 2008-present
NIH AED (2/08)

NIH CMIB (10/10-10/12)

Committee Service

University of North Carolina, Chapel Hill

Royster committee 2010-present

Outside UNC

SER-CAT executive board 05-09, UNC representative 05-present

Professional Meetings/Societies

Meeting organization

American Crystallographic Association, Program Chair, 2005

MidAtlantic Crystallographic Association 2008 meeting organizer

Meeting participation

Session chair, yearly meeting, Crystallographic structure solution programs and data collection 2008-present

Society leadership

American Crystallographic Association, biomacromolecule special interest group chair 2009-2010

Society membership

AAI, ASBMB, ACA 1995-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Peggy A. Cotter, Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Inatsuka, C.S., Xu, Q., Vujkovic-Cvijin, I., Wong, S., Stibitz, S., Miller, J.F., & Cotter, P.A. (2010) Pertactin is required for *Bordetella* to resist neutrophil-mediated clearance. *Infection and Immunity* **78**:2901-2909.

Julio, S.M., Inatsuka, C.S., Mazar, J., Dieterich, C., Relman, D.A., & Cotter, P.A. (2009) Natural-host Animal Models Indicate Functional Interchangeability Between the Filamentous Hemagglutinins of *Bordetella pertussis* and *Bordetella bronchiseptica* and Reveal a Role for the Mature C-terminal Domain, but not the RGD Motif, During Infection. *Molecular Microbiology* **71**:1574-1590.

Williams, C. L., Haines, R., & Cotter, P.A. (2008) Serendipitous Discovery of an Immunoglobulin-binding Autotransporter in *Bordetella*. *Infection and Immunity* **76**:2966-2977.

Williams, C.L. & Cotter**,** P.A. (2007) Autoregulation is Essential for Precise Temporal and Steady-state Regulation by the *Bordetella* BvgAS Phosphorelay. *Journal of Bacteriology* **189**:1974-1982.

Mazar, J. & Cotter**,** P.A**.** (2006) Topology and Maturation of Filamentous Hemagglutinin Suggest a New Model for Two-Partner Secretion. *Molecular Microbiology* **62**(3):641-654.

Inatsuka, C.S., Julio, S.M. and Cotter, P.A. (2005) *Bordetella* Filamentous Hemagglutinin Plays a Critical Role in Immunomodulation, Suggesting a Mechanism for Host Specificity. *Proceedings of the National Academy of Sciences, USA* **102**(51):18578-18583.

Jones, A.M., Boucher, P.E., Williams, C.L., Stibitz, S. & Cotter, P.A. (2005) Role of BvgA Phosphorylation and DNA Binding Affinity in Control of Bvg-mediated Phenotypic Phase Transition in *Bordetella pertussis*. *Molecular Microbiology* **58**(3):700-713.

Julio, S.M. & Cotter, P.A. (2005) Characterization of the FHA-like Protein FhaS in *Bordetella bronchiseptica*. *Infection and Immunity* **73**(8):4960-4971.

Williams, C.L., Boucher, P.E., Stibitz, S. & Cotter**,** P.A**.** (2005) BvgA Functions as Both an Activator and a Repressor to Control Bvg^{i} Phase Expression of *bipA* in *Bordetella pertussis*. *Molecular Microbiology* **56**(1):175-188.

Vergara-Irigaray, N., Chávarri-Martínez, A., Rodríguez-Cuesta, J., Miller, J.F., Cotter, P.A., & Martínez de Tejada, G. (2005) Evaluation of the Role of the Bvg-intermediate Phase of *Bordetella pertussis* During the Experimental Respiratory Infection. *Infection and Immunity* **73:**748-760.

Reviews, commentaries & book chapters

Jani, A.J. & Cotter, P.A. (2010) Type VI Secretion: not just for pathogenesis anymore. *Cell Host and Microbe* In Press

Carruthers, V. B., Cotter, P.A. & Kumamoto, C.A. (2007) Microbial Pathogenesis: Mechanisms of Infectious Disease. *Cell Host and Microbe* **2**:214-219. (meeting report)

Mazar, J. and Cotter**,** P.A**.** (2007) New Insight into the Molecular Mechanisms of Two-Partner Secretion. *Trends in Microbiology* **15**:508-515.

Cotter, P.A. and Stibitz, S. (2007) c-di-GMP-mediated Regulation of Virulence and Biofilm Formation. *Current Opinion in Microbiology* **10**:17-23.

Cotter, P.A. *Genetic Approaches to Studying Bacterial Virulence.* (2005) *In* Mechanisms of Microbial Disease. C. Engleberg, V. DiRita, T. Dermody, Eds. Williams & Wilkins Press, Baltimore, MD. pp 39-55.

Cotter, P.A. *Regulation in Response to Environmental Conditions*, (2005) *In* Colonization of Mucosal Surfaces. J. Nataro, H. Mobley, P. Cohen, J. Weiser, Eds. ASM Press, Washington DC, pp141-159.

Editorial Responsibilities

Editorial boards

Editor for *Molecular Microbiology* (2006 – present)
Editorial Board member for *Annual Review of Microbiology* (2008 – 2010)
Editorial board member for *Molecular Microbiology* (2003 - 2006)
Editorial board member for *Infection and Immunity* (2000 - present)

Ad hoc reviewer for:

Applied and Environmental Microbiology, BMC Genomics, Cellular Microbiology, Current Microbiology, FEMS Microbiology Letters, Gene, Genome Biology, Journal of Bacteriology, Journal of Biological Chemistry, Journal of Clinical Microbiology, Microbiology, Molecular Membrane Biology, PLoS ONE, PLoS Neglected Tropical Diseases, PLoS Pathogens, Proceedings of the National Academy of Sciences USA, Science, Trends in Microbiology

Grants/Contracts

Principal Investigator, 07/01/2005 – 03/31/2011
"Genetic Analysis of Bordetella Pathogenesis"
NIH R01 AI43986
Total Direct Costs: $954,015
% effort: 20

Project Leader and Subproject Principal Investigator, 05/01/2005 – 04/30/2014
(PI Alan Barbour)
"Pacific Southwest Research Center of Excellence for Biodefense and Emerging Infectious Disease Research"
Title of Subproject: "*Burkholderia pseudomallei* autotransporter and TPS proteins"
NIH, U54AI065359
Total Direct Costs (for Cotter subproject): $831,884
% effort: 20

Project Leader and Subproject Principal Investigator, 05/01/2005 - 03/31/2007
(PI Alan Barbour)
"Pacific Southwest Research Center of Excellence for Biodefense and Emerging Infectious Disease Research"
New Opportunities Funds for Alterations/improvements to BSL-3 laboratory
NIH, U54AI065359
Total Direct Costs: $279,000

Co-Principal Investigator, 10/01/2005 – 09/30/2007
(PI Linda Petzold)
"Towards the Multiscale Simulation of Biochemical Networks"
Army Office of Research DAAD19-03-D-0004
Total Direct Costs: $183,596
% effort: 5

Principal Investigator, 09/01/2003 – 08/31/2005
"FHA Dependent and Independent Roles of the Putative Serine Protease SphB1 in *Bordetella*"
USDA 2003-35204-13555
Total Direct Costs: $172,000
% effort: 20

Grant Review Service
Member, NIH, BACP Oct. 2007 – June 2011
Ad hoc member, NIH, BACP June 2007
Ad hoc reviewer, Biotechnology and Biological Sciences Research Council, June 2007
Ad hoc member, NIH, HIBP Feb. 2006, June 2006
Ad hoc member, NIH, IDM-A Feb. 2005, July 2005
Ad hoc reviewer, USDA, Oct. 2005

Committee Service

University of North Carolina, Chapel Hill

Outside UNC

Member, Colloquium Planning Committee, American Society for Microbiology, 2010
Member, Colloquium Planning Committee, American Society for Microbiology, 2008
Member, UCSB Campus Veterinarian/ARC Director Search Committee, 2005, 2006, 2008
Member, UCSB IACUC, 2005 – 2009
Acting Director UCSB Animal Resource Center, 2006 – 2007
Member, UCSB ARC Task Force, 2006 – 2007
Member, UCSB ESCRO Committee, 2006 – 2009
Member, UCSB Campus Diversity Committee, 2004 – 2009
Chair, UCSB Graduate Recruitment Committee, 2006 – 2009

Professional Meetings/Societies

Meeting organization

Chair, FASEB Research Conference on Microbial Pathogenesis: Mechanisms of Infectious Disease, Snowmass, CO, 07/24/2011 – 07/29/2011

Chair, Scientific Program Committee, 9th International *Bordetella* Symposium, Baltimore, MD, 09/30/10 – 10/03/2010

Vice-Chair, FASEB Research Conference on Microbial Pathogenesis: Mechanisms of Infectious Disease, Snowmass, CO, 07/19/2009 – 07/24/2009

Colloquium convener, General Meeting of the American Society for Microbiology, Philadelphia, PA, 05/18/2009

Session Chair, FASEB Research Conference on Microbial Pathogenesis: Mechanisms of Infectious Disease, Snowmass, CO, 07/21/2007

Session Chair, Gordon Research Conference on Microbial Toxins and Pathogenicity, Hanover, NH, 07/17/2006

Colloquium convener, General Meeting of the American Society for Microbiology, Orlando, FL 05/22/2006

Meeting participation

Invited speaker, RCE Sponsored Workshop on Protein Secretion in Bacteria, Seattle, WA, 07/08/10.

Invited speaker, Banff Conference on Infectious Diseases, Banff, Alberta, Canada, 05/29/2010

Attendee, General Meeting for the American Society of Microbiology, San Diego, CA, 05/24/2010 – 05/27/2010

Invited speaker, National RCE Meeting. Las Vegas, NV, 04/12/2010.

Invited speaker, Cold Spring Harbor Meeting on Molecular Pathogenesis and Host Response, 09/10/2009

Invited Divisional Symposium Speaker, General Meeting of the American Society for Microbiology. Philadelphia, PA, 05/19/2009

Invited speaker, Society for General Microbiology, Meeting on Protein Secretion, Edinburgh, Scotland, 04/03/2008

Invited speaker, Workshop on *Burkholderia* – hosted by the NWRCE. Seattle, WA, 02/06/2008

Invited speaker, International Meeting of the Societies, Federation of Korean Microbiological Societies, Seoul, Korea, 10/12/2007

Invited speaker, 8th International Symposium: Saga of the Genus Bordetella, 1906-2006. Institut Pasteur, Paris, France, 11/10/2006

Invited colloquium speaker, General Meeting of the American Society for Microbiology. Orlando, FL, 05/22/2006

Invited speaker, Cold Spring Harbor Meeting on Microbial Pathogenesis and Host Response, Cold Spring Harbor, NY, 09/15/2005

Society leadership

American Society for Microbiology Division B Councilor 07/01/2010 – 06/30/2011
American Society for Microbiology Division B Chair 07/01/2009 – 06/30/2010
American Society for Microbiology Division B Chair-elect 07/01/2008 – 06/30/2009

Society membership

Member, American Society for Microbiology 1988 – present
Member, American Association for the Advancement of Science 1999 - present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Blossom Damania, PhD
Associate Professor of Microbiology & Immunology
Member, Lineberger Comprehensive Cancer Center
Primary Appointment: Department of Microbiology & Immunology

Publications

Primary literature

1) Bhatt, AP, Bhende, PM, Sin, SH, Roy, D, Dittmer, DP and **B. Damania**. 2010. Dual inhibition of PI3K and mTOR inhibits autocrine and paracrine proliferative loops in PI3K/Akt/mTOR-addicted lymphomas. 115(22):4455-63.
2) Bhende, PM, Lim, M, Parks, SI, Dittmer, DP and **B. Damania**. 2010. NVP-BEZ235, is Efficacious against Transformed Follicular Lymphoma. Leukemia. *Manuscript in press*
3) Wen, KW and **B. Damania**. 2010. Hsp90 and Hsp40 are required for the anti-apoptotic function of K1. Oncogene.
4) Gonzalez, CM, Wang, L. and **B. Damania**. 2009. KSHV encodes a viral deubiquitinase. Journal of Virology. 83(19):10224-33.
5) Gregory, S. West, JA, Dillon, PJ, Hilscher, C.,Dittmer,DP and **B. Damania**. 2009. Toll like receptor signaling controls reactivation of KSHV from latency. PNAS. 106(28):11725-30.
6) Wen, KW, Dittmer, DP and **B. Damania**. 2009. Disruption of LANA in rhesus rhadinovirus generates a highly lytic recombinant virus. Journal of Virology. (19):9786-802.
7) O'Hara, AJ, Wang, L., Dezube, B., Harrington, WJ., **B. Damania** and DP Dittmer. Tumor suppressor micro RNAs are underrepresented in primary effusion lymphoma and Kaposi sarcoma. 2009. Blood. 113(23):5938-41.
8) O'Hara, AJ, Chugh, P. Wang, L., Netto,E., Luz,E., Harrington, W., Dezube, B., **B. Damania,** and DP Dittmer. 2009. Pre-Micro RNA signatures delineate stages of endothelial cell transformation in Kaposi sarcoma. PloS Pathogens. 5(4):e1000389.
9) West, J and **B. Damania.** 2008 Upregulation of the TLR3 pathway by KSHV. Journal of Virology. 82(11):5440-9.
10) Tomlinson, CC and **B. Damania**. 2008. A critical role for endocytosis in KSHV K1 signaling. Journal of Virology. 82(13):6514-23.
11) Wang, L. and **B. Damania.** 2008. KSHV confers a survival advantage to endothelial cells. Cancer Research. 68 (12): pp.1210.
12) Mark, L., Spiller, BO., Okroj, M., Chanas, S., Aiken, J., Wong SW, **Damania, B**., Blom, AM and DJ Blackbourn. 2007. Molecular characterisation of the Rhesus Rhadinovirus (RRV) ORF4 gene and the RRV complement control protein (RCP) it encodes. J. Virology. 81(8):4166-76.
13) Nun, T., Kroll D.,Oberlies,N.,Wang, L., Dittmer, DP., and **B. Damania**. 2007. Development of a Novel, High Throughput Assay to Screen Anti-Viral Drugs against Kaposi's Sarcoma-Associated Herpesvirus. Molecular Cancer Therapeutics. 6(8):2360-70.

14) Hoon-Sin,S., Roy,D., Wang,L., Staudt M.R., Fakhari,FD., Patel,DD. Koon,H., **Damania, B**. and DP Dittmer. 2007. Rapamycin is efficacious against primary effusion lymphoma (PEL). Blood. 109(5):2165-73
15) Wong, E.L. and **B. Damania.** 2006. Transcriptional regulation of the KSHV K15 promoter. J. Virology 80(3):1385-92.
16) Bilelo, J.P., Morgan, J.S., **Damania, B.,** Lang, S.M., and R.C. Desrosiers. 2006. A Genetic System for Rhesus Monkey Rhadinovirus: Use of Recombinant Virus to Quantitate Antibody-Mediated Neutralization. J. Virology. 80(3):1549-62.
17) Gonzalez, CM, Wong, EL., Bowser, BS, Hong,G., Kenney SC and **B. Damania**. 2006. Identification and Characterization of the KSHV Orf49 protein. J Virol. 80(6):3062-70.
18) Wang, L., Dittmer, D. P., Tomlinson, C.C., Fakhari, F.D. and **B. Damania.** 2006. Immortalization of primary endothelial cells by the K1 protein of Kaposi's sarcoma-associated herpesvirus (KSHV). Cancer Res. 66(7):3658-66.
19) Bowser, B.S., Song, M.J., Sun, R., Morris, S. and **B. Damania. 2006.** Identification of Multiple Rta Responsive Elements in the KSHV K1 promoter. Virology. 348(2):309-27.
20) DeWire, S. and **B. Damania.** 2005. The latency-associated nuclear protein of rhesus monkey rhadinovirus (RRV). J. Virol. 2005;79 3127-3138.
21) Dittmer, D.P., Gonzalez C.M., Vahrson, W., DeWire, S.M., and **B. Damania**. 2005. Whole-Genome Transcription Profiling of Rhesus Monkey Rhadinovirus.J Virol. 79(13):8637-50.
22) Cai, W., Lu, S., Zhang, Z., Gonzalez, C. **Damania, B**., and B. Cullen. 2005. Kaposi's sarcoma associated herpesvirus expresses an array of novel viral microRNAs in latently infected cells. Proc. Natl. Acad. Sci. 102; 15. 5570-5575
23) Hong, G., Kumar, P., Wang, L., **Damania, B.,** Gulley, M.L., Delecluse H-J., Polverini, P., and S. Kenney. 2005. Epstein-Barr Virus Lytic Infection is Required for Efficient Production of the Angiogenesis Factor VEGF in Lymphoblastoid Cell Lines. 2005. J Virol. 79(22):13984-92.

Reviews & commentaries
1) West, JA and **B. Damania.** 2010. KSHV and Innate Immunity. Future Virology. 5(2):185-196.
2) Moyo, TK, Richards, KL, and **B. Damania**. 2010. Use of Cidofovir for the Treatment of HIV-negative Human Herpes Virus-8 Associated Primary Effusion Lymphoma. Advances in Clinical Hematology and Oncology. 8(5):372-4.
3) Gregory, SM and **B. Damania**. 2009. KSHV and the Toll of Innate Immune Activation. Cell Cycle. 15;8(20):3246-7
4) Wen, KW and **B. Damania**. 2009. Kaposi Sarcoma-associated Herpesvirus (KSHV): Molecular Biology and Oncogenesis. Cancer Letters. 289(2):140-50.
5) Dittmer, D and **B. Damania**. KSHV-Associated Diseases in the AIDS Patient. 2007. Cancer Treat Res. 133:129-39.
6) **Damania, B.** 2007. DNA tumor viruses and human cancer. Trends Microbiol. 15(1):38-44.
7) Wong, EL and **B. Damania**. 2005. Linking KSHV to Human Cancer. Curr Oncol Rep. 7(5):349-56.

Editorial Responsibilities

Editor
2009-present Associate Editor, PLoS Pathogens

Editorial Boards
2005-2011 Editorial Board Member for Journal of Virology
2009-2012 Editorial Board Member for Virology
2006-present Editorial Board member for International Journal of Cancer Research
2006- present Editorial Board member for International Journal of Virology
2007-present Editorial Board member for The Open Virology Journal
2008-present Editorial Board member for Infection and Drug Resistance
2008-present Contributing Faculty Member of *Faculty of 1000, Biology*.
Virology Section of the Microbiology Faculty.

Ad hoc reviewer for:

2009-present	Future Virology
2009-present	Oncogene
2008-present	Cell, Host and Microbe
2007-present	Proceedings of the National Academy of Science
2007-present	PLoS Pathogen
2007-present	PLoS ONE
2007-present	Molecular Cancer Therapeutics
2007-present	Cancer Research
2006-present	Future Oncology
2006-present	Expert Review of Anticancer Therapy
2006-present	Neoplasia
2006-present	Nature
2005-present	Journal of General Virology
2005-present	Future Virology
2004-present	FASEB Journal
2004-present	BMC-Cancer
2003-present	Microbiology& Molecular Biology Reviews
2003-present	Virology
1998-present	Journal of Virology
1998-present	AIDS Research & Human Retroviruses

Grants/Contracts

1) Principal Investigator: Blossom Damania, PhD 7/1/2002 to 6/30/2012
Role of KSHV K1 in Viral Pathogenesis
National Cancer Institute; RO1-CA96500-04
Total direct costs $890,000.00
3.00 Calendar (25.00% effort)

2) Principal Investigator: Blossom Damania, PhD 6/1/2006 to 6/30/2011
Role of KSHV in Primary Pulmonary Hypertension
National Heart, Lung, Blood Institute; RO1-HL083469-01
Total direct costs: $1,250,000
3.00 Calendar (25.00% effort)

3) Principal Investigator: Blossom Damania, PhD 6/1/2007 to 3/31/2012
Innate Immunity and KSHV
National Institute of Dental & Craniofacial Research; R01 DE18281
Total direct costs: $1,250,000
1.20 Calendar (10.00% effort)

4) Principal Investigator: Blossom Damania, PhD 6/1/2007 to 7/31/2010
The Role of KSHV in B-Cell Lymphoproliferative Disease
Leukemia & Lymphoma Society Scholar Award; 1036-06
Total direct costs: $525,000
This career award supports the salary of the investigator

5) Principal Investigator: Blossom Damania, PhD 1/1/2006 to 12/31/2010
KSHV and Angiogenesis
American Heart Association Established Investigator Award
Total direct costs: $450,000
1.20 Calendar (10.00% effort)

6) Principal Investigator: Blossom Damania, PhD 7/1/2006 to 6/30/2011
Role of Viral Signaling Proteins in the Pathogenesis of Kaposi's Sarcoma-Associated Herpesvirus
Burroughs Wellcome Fund
Total direct costs: $450,000
0.60 Calendar (10.00% effort)

7) Principal Investigator: Blossom Damania, PhD 9/1/2008 to 8/31/2010
Identification of novel compounds that cure KSHV infection
National Institute of Health subcontracted through Univ. of Pennsylvania
Total direct costs: $80,000
0.60 Calendar (5.00% effort)

8) Principal Investigator: Blossom Damania, PhD 10/1/2009 to 9/30/2011
Development of a novel vaccine for protection against gammaherpesvirus infection
National Cancer Institute RC2-CA149024
Total direct costs: $1,000,000
1.20 Calendar (10.00% effort)

9) Co-Investigator 7/1/2007 to 6/30/2012
(Principal Investigator = Dirk Dittmer, PhD)
ART Modulation of Viral Pathogenesis
National Institute of Dental & Craniofacial Research R01-DE018304
Total direct costs: $1,250,000
0.6 Calendar (5% effort)

10) Co-Directors: David Margolis, MD & Blossom Damania, PhD 8/1/2008 to 6/30/2013

Pathogenesis Training Grant
National Institute of Health 5T32AI007151
Total direct costs: $1,121,120

Grant Review Service

2009-2013 Virology Study Section (VIR-A) *(Permanent member)*
2008-2009 American Heart Association Study Section (Basic Cell & Molecular Biology) *(ad-hoc)*
2008-present Wellcome Trust Scientific Reviewer *(ad-hoc)*
2008 Virology Study Section (VIR-A) (*ad hoc*)
2006-present Special Emphasis Panels for NHLBI and NIAID (*ad hoc*)
2005-present AIDS-associated infectious agents (AOIC) Study Section (*ad hoc*)

Honors/Awards

Ruth and Phillip Hettleman Prize for Artistic and Scholarly Achievement, 2008.
Burroughs Wellcome Investigator in Infectious Disease, 2006-2011.
American Heart Association Established Investigator Award, 2006-2011.
Jefferson-Pilot Award in Faculty Medicine, 2005
Leukemia & Lymphoma Society Scholar, 2005-2010.
Mary Lyon Alumnae Award, 2005.

UNC Leadership

Committee Service

University of North Carolina, Chapel Hill
Office of UNC-CH Technology Development Internal Advisory Panel, 2008-present
UNC Medical School Dean's Research Advisory Committee (RAC), 2007-present

Genetics Curriculum
Genetics Curriculum Prelim Committee, 2004-2005
Chair of Genetics Curriculum Prelim Committee, 2005

IBMS
Academic Advisor, 2004-2005
Member of Admissions Committee, 2007

BBSP
First year group advisor, 2009-2010

Department of Microbiology & Immunology
Chair of Admissions Committee, 2004-2005
Member of Admissions Committee, 2003-present.
Chair of Seminar Committee, 2003-present
Organizer for departmental faculty retreat, 2005

Faculty Search Committee, 2009.

Lineberger Comprehensive Cancer Center

Faculty Search Committee, 2010.
Head of AIDS-associated malignancies group, 2009-present.
Lineberger Communications Committee, 2009-present
Faculty Search Committee, 2007-2009.
Faculty Search Committee, 2006-2007.
Organizer, Cancer Center Postdoctoral Fellow Symposium, 2008.
Lineberger Equipment Committee, 2002-present

Professional Meetings/Societies

Meeting organization

-35th Annual International Herpesvirus Workshop, Salt Lake City, Utah. Member of Scientific Program Committee. 2010
-12th International Workshop on KSHV and associated tumor viruses. Charleston, SC 2009. Member of Scientific Program Committee.
-31st International Herpesvirus Workshop, Asheville, NC. 2007. Member of Scientific Program Committee and Session Chair.
-10th International Workshop on KSHV and associated tumor viruses. Portland, Oregon. 2007. Member of Scientific Program Committee.
-9th International Workshop on KSHV and associated tumor viruses. Cape Cod, MA. 2006. Session Chair.

Meeting participation

Plenary speaker, NCI Workshop on Novel Viruses Associated with Human Cancer, Syria VA. 2010.
Plenary speaker, 35th Annual International Herpesvirus Workshop, Salt Lake City, Utah. 2010.
Plenary speaker, Southeast Regional Virology Conference, Atlanta, Georgia.2010
Plenary Speaker, Herpesvirus Symposium, University of Pennsylvania, Philadelphia, Pennsylvania.2009.
Plenary speaker, Mid-Atlantic Gammaherpesvirus Symposium. NCI-Frederick, MD. 2009
Speaker, 11th International Conference on Malignancies in AIDS and Other Acquired Immunodeficiencies (ICMAOI). NCI/NIH, Bethesda, MD. 2008
Invited speaker, Viruses & Cells Gordon Research Conference, Tilton, NH. 2007.
Invited speaker, 10th AIDS Malignancy Conference, NIH, Bethesda, MD. 2006.
Plenary speaker, American Association of Animal Sciences Meeting, St. Louis, Missouri. 2005
Invited speaker, 96th Annual American Association for Cancer Research (AACR) Meeting. Annaheim, California 2005

Society membership

American Society of Microbiology, 2000-present
American Association of Cancer Research, 2000-present
American Society of Virology, 2008-present
Infectious Disease Society of America, 2010-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Jeff Dangl

John N. Couch Distinguished Professor of Biology

Primary Appointment: Department of Biology

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Chang, JH, JM Urbach, TF Law, LW Arnold, A Hu, S Gombar, SR Grant, FM Ausubel and JL Dangl (2005) A high-throughput, near-saturating screen for type III effector genes from *Pseudomonas syringae. Proc. Natl. Acad. Sci., USA* **102,** 2549-2554.

Lindeberg, M, J Stavrinides, JH Chang, JR Alfano, A Collmer, JL Dangl, JT Greenberg, JW Mansfield and DS Guttman (2005) Proposed guidelines for a unified nomenclature and phylogenetic analysis of type III Hop effector protein in the plant pathogen *Pseudomonas syringae. Molec. Plant-Microbe Interact.* **18,** 275-282.

Kim, H-S, D Desveaux, AU Singer, P Patel, J Sondek and JL Dangl (2005) The *P. syringae* effector AvrRpt2 cleaves its C-terminally acylated target, RIN4, from Arabidopsis membranes to block RPM1 activation. *Proc. Natl. Acad. Sci. USA* **102,** 6496-6501.

Kim, M-G, L da-Cunha, A McFall, Y Belkhadir, JL Dangl and D Mackey (2005) Two *Pseudomonas syringae* type III effectors inhibit RIN4-regulated basal defense in Arabidopsis. *Cell* **121,** 749-759.

Holt III, BF, Y Belkhadir and JL Dangl (2005) Antagonistic control of disease resistance protein stability in the plant immune system. *Science* **309,** 929-932.

Torres, MA, JDG Jones and JL Dangl (2005) The pathogen-induced, Atrboh-dependent, oxidative burst suppresses cell death spread in Arabidopsis. *Nature Genet.* **37,** 1130-1134.

Kawasaki, T, J Nam, DC Boyes, BF Holt, III, DA Hubert, A Wiig and JL Dangl (2005) A duplicated pair of Arabidopsis RING-finger E3 ligases contribute to RPM1-and RPS2-mediated hypersensitive response. *Plant J.* **44,** 258-270.

McDowell, JM, SG Williams, NT Funderburg, T Eulgem and JL Dangl (2005) Genetic analysis of developmentally regulated resistance to Downy Mildew (*Hyaloperonospora parasitica*) in *Arabidopsis thaliana*. *Molec. Plant-Microbe Interact.* **18,** 1226-1234.

Desveaux, D, AU Singer and JL Dangl (2006) Type III effector proteins: Doppelgangers of bacterial virulence. *Curr. Opin. Plant Biology* **9,** 376-382.

Andersson, MX, O Kourtchenko, JL Dangl, D Mackey, and M Ellerström (2006) Phospholipid signalling during the AvrRpm1 and AvrRpt2-induced disease resistance response in *Arabidopsis thaliana*: The sequential activation of phospholipases C and D. *Plant J.* **47,** 947-959.

Kaminaka, H, C Näke, P Epple, J Dittgen, K Schütze, C Chaban, BF Holt III, T Merkle, E Schäfer, K Harter and JL Dangl (2006) bZIP10-LSD1 antagonism modulates basal defense and cell death in Arabidopsis following infection. *EMBO J,* **25,** 4400–4411.

Knoth, C., J. Ringler, JL Dangl and T Eulgem (2007) Arabidopsis WRKY70 is required for full *RPP4*-mediated disease resistance and basal defense against *Hyaloperonospora parasitica. Molec. Plant-Microbe Interact* **20,** 120-128.

Fahlgren, N, MD Howell, KD Kasschau, EJ Chapman, CM Sullivan, JS Cumbie, SA Givan, TF Law, SR Grant, JL Dangl and JC Carrington (2007) High-throughput sequencing of *Arabidopsis* microRNAs: evidence for frequent birth and death of *MIRNA* genes. *PLoS ONE* **2,** e219.

Eulgem, T, X-J Wang, T Tsuchiya, B Easley, M Tör, T Zhu, JM McDowell, EB Holub and JL Dangl (2007) EDM2 is a novel component of RPP7-dependent disease resistance in Arabidopsis that affects *RPP7* transcript levels. *Plant J.* **49,** 829-839.

Nimchuk, ZL, EJ Fisher, D Desveaux, JH Chang and JL Dangl (2007) The AvrPphE (HopX) family of *Pseudomonas syringae* type III effectors contain a catalytic triad and a novel N-terminal domain necessary for function. *Molec. Plant-Microbe Interact.* **20,** 346–357.

Desveaux, D AU Singer, A-J Wu, BC McNulty, L Musslewhite, Z Nimchuk, J Sondek and JL Dangl (2007) Type III effector activation via nucleotide binding, phosphorylation and host target interaction. *PLoS Pathogens* **3,** e48.

Bomblies, K, J Lempe, P Epple, N Warthmann, C Lanz, JL Dangl and D Weigel (2007) Autoimmune response as a mechanism for a Bateson-Dobzhansky-Muller-type incompatibility syndrome in plants. *PLoS Biology* **5,** e236.

Jeck, WR, JA Reinhardt, DA Baltrus, MT Hickenbotham, V Magrini, ER Mardis, JL Dangl, and CD Jones (2007) Extending assembly of short DNA sequences to handle error. *Bioinformatics*, **23,** 2942-2944.

Goel, AK, D Lundberg, MA Torres, R Matthews, C Akimoto-Tomiyama, L Farmer, R Vierstra, JL Dangl and SR Grant (2008) The *Pseudomonas syringae* type III effector HopAM1 enhances virulence on water-stressed plants. *Molec. Plant-Microbe Interact.* **21,** 361-370.

Eitas, TK, ZL Nimchuk and JL Dangl (2008) Arabidopsis TAO1 is a TIR-NB-LRR protein that contributes to disease resistance induced by the *Pseudomonas syringae* effector AvrB. *Proc. Natl. Acad. Sci. USA* **105,** 6475–6480.

Glasner, JD, M Marquez-Villavincencio, H-S Kim, CE Jahn, B Ma, BS Biehl, AI Rissman, B Mole, X Yi, C-H Yang, JL Dangl, SR Grant, NT Perna, AO. Charkowski (2008) Niche-specificity and the variable fraction of the *Pectobacterium* pan-genome. *Molec. Plant-Microbe Interact.* **21,** 1549-1560.

Reinhardt, JA, DA Baltrus, MT Nishimura, WR Jeck, CD Jones and JL Dangl (2009) *De novo* assembly using low coverage short read sequence data from the rice pathogen *Pseudomonas syringae* pv. *oryzae. Genome Res.***19,** 294-305.

Widjaja, I, K Naumann, U Roth, N Wolf, D Mackey, JL Dangl, D Scheel and J Lee (2009) Combining sub-proteome enrichment and Rubisco depletion enables identification of low abundance proteins differentially regulated during plant defense. *Proteomics* **9,** 138-147.

Hubert, DA, Y He, P Tornero, BC McNulty and JL Dangl (2009) Specific Arabidopsis HSP90.2 alleles recapitulate RAR1 co-chaperone function in plant NB-LRR disease resistance regulation. *Proc. Natl. Acad. Sci., USA* **106,** 9556-9563.

Miller, G, R Tam, D Cortes, MA Torres, V Shulaev, JL Dangl and R Mittler (2009) The plant NADPH oxidase RbohD mediates rapid, systemic signaling in response to diverse stimuli. *Science Signaling* ***2*** *(84), ra45*.

Studholme, DJ, Selena Gimenez-Ibanez, D MacLean, JL Dangl JH Chang and JP. Rathjen (2009) A draft genome sequence and functional screen reveals the repertoire of type III secreted proteins of *Pseudomonas syringae* pathovar *tabaci* 11528. *BMC Genomics* **10,** 395

Widjaja, I, I Lassowskat, G Bethke, L Eschen-Lippold, H-H Long, K Naumann, JL Dangl, D Scheel and J Lee (2010) A Protein Phosphatase 2C, specifically responsive to the bacterial effector AvrRpm1 but not to AvrB effector, regulates defense responses in Arabidopsis. *Plant J* **61,** 249-258.

Serrano, M, DA Hubert, JL Dangl, P Schulze-Lefert and E Kombrink (2010) A chemical screen for suppressors of the *avrRpm1-RPM1*-dependent hypersensitive cell death response in *Arabidopsis thaliana. Planta* **231,** 1013-1023.

Todesco, M, S Balasubramanian, TT Hu, MB Traw, M Horton, P Epple, C. Kuhns, S Sureshkumar, C Schwartz, C Lanz, RAE Laitinen, Y Huang, J Chory, V Lipka, JO Borevitz, JL Dangl, J Bergelson, M Nordborg, and D Weigel (2010) Natural allelic variation underlying a major fitness tradeoff in *Arabidopsis thaliana*. *Nature,* **465**, 632-636.

Mole, B, S Habibi, JL Dangl and SR Grant (2010) Gluconate metabolism is required for virulence of the soft-rot pathogen *Pectobacterium carotovorum*. *Molec. Plant-Microbe Interact.* **23,** 1335-1344.

Reviews & commentaries

Torres, MA and JL Dangl (2005) Functions of the respiratory burst oxidase in biotic interactions, abiotic stress and development. *Curr. Opin. Plant Biology* **8,** 397-403.

Dangl, JL and JM McDowell (2006) Two modes of pathogen recognition by plants. *Proc. Natl. Acad. Sci. USA* **103,** 8575-8576.

Torres, MA, JDG Jones and JL Dangl (2006) ROS signaling in response to pathogens. *Plant Physiol.* **141,** 373-378.

Grant, SR, EJ Fisher, JH Chang, BM Mole and JL Dangl (2006) Subterfuge and manipulation: Type III effector proteins of phytopathogenic bacteria. *Annu. Rev. Microbial.* **60,** 425-429.

Jones, JDG and JL Dangl (2006) The Plant Immune System. *Nature* **444,** 323-329.

Dangl, JL (2007) Plant Science: Nibbling at the plant cell nucleus (Perspective). *Science* **315,** 1088-1089.

Mole, BM, DA Baltrus, JL Dangl and SR Grant (2007) Global virulence regulation networks in phytopathogenic bacteria. *Trends Microbiol.* **15,** 363-371.

Jones, AM, J Chory, JL. Dangl, M Estelle, SE Jacobsen, EM Meyerowitz, M Nordborg, and D Weigel (2008). The impact of Arabidopsis on human health: "Diversifying our portfolio." *Cell* **133,** 939-943.

Bisseling, T, JL Dangl and P Schulze-Lefert (2009) Next generation communication. *Science* **324,** 691.

Mukhtar, M. S., MT Nishimura and JL Dangl (2009) NPR1 in plant defense: It's not over 'til it's turned over. *Cell* **137,** 804-806.

Nishimura, MT and JL Dangl (2010) Arabidopsis and the Plant Immune System. *Plant J.* **61,** 1053–1066.

Eitas, TK and JL Dangl (2010) NB-LRR proteins: Pairs, pieces, perception, partners and pathways. *Curr. Opinion in Plant Biology* **13,** 471-477.

Editorial Responsibilities

Editorial boards

Science (Board of Reviewing Editors, from 2007)
Cell (from 1998)
PLoS Biology (from 2003)
PLoS Pathogens (from 2005)
Trends in Plant Sciences (from 1995)
PNAS (2007-2010)
Current Opinion in Plant Biology (from 1997; co-Editor-in-Chief 2005-2010)
The Plant Journal (from 1990, co-Editor from 1995-2008)
Cellular Microbiology (2003-2007)
Molecular Plant-Microbe Interaction (1995-2004; Senior Editor 1998-2000)

Ad hoc reviewer for:

Plant Cell, Nature, Nature Immunology, Nature Genetics

Grants/Contracts

<u>ACTIVE</u>

NIH General Medicine **P.I.:** Dr. Jeffery L. Dangl 8/01/07-7/31/11 2.0 calendar months
R01-GM057171 $217,992
Title: Genetics of Programmed Cell Death in Arabidopsis.

NIH ARRA Admin. Suppl. **P.I.:** Dr. Jeffery L. Dangl 8/01/09-7/31/10
R01-GM057171 $215,518

NIH General Medical Sciences **P.I.:** Dr. Jeffery L. Dangl 5/5/08-2/29/12 2.0 calendar months
R01-GM066025 $215,000
Title: Diversity and evolution of *P syringae* type III effectors.

NSF-IOS-0929410 **P.I.:** Dr. Jeffery. L. Dangl 09/01/09-08/31/13 10% effort
Arabidopsis 2010 $460,625
Title: Arabidopsis 2010: Mechanisms of NB-LRR disease resistance protein function.

DE-FG05-95ER20187 **P.I.:** Dr. Jeffery L. Dangl 7/14/09-7/14/12 1.0 calendar months
DOE Basic Energy Sciences $159,000
Title: Pathogen virulence factors as unique probes of plant cell structure and function.

NSF-IOS-0639964 **P.I.:** Dr. Jeffery L. Dangl 01/15/08-12/31/11 1.0 calendar months
NSF $109,305
Title: The Arabidopsis gp91-Phox Gene Family and NADPH Oxidase Function

Human Frontiers (HFSP) **P.I.** Dr. Detlef Weigel 10/01/07-09/31/10 1.0 calendar months
RGP0057/2007-C $112,500 (to J.L. Dangl)
Title: Reproductive Isolation and Autoimmunity in Plants.

NSF-IOS-0958245 **P.I.:** Dr. Jeffery. L. Dangl 04/15/10-03/31/14 1.0 calendar months
NSF $560,306 ($234,306 to J. L. Dangl)
Title: Collaborative Research: MSB: Defining Plant-Associated Metagenomics.

Grant Review Service

Grant Reviews for:

NIH GVE (Genetic Variation & Evolution) study section, 2004-2006; ad hoc 2000
NIH CDF-1 (Cell and Developmental Function) study section, member 2001-2004
NSF Eukaryotic Genetics Panel, 1996-2000)
Ad hoc: HHMI, USDA, DOE, DFG (Germany), BBSRC (United Kingdom), HFSP, EU, ERC

Honors/Awards

Elected Member:

US National Academy of Sciences, 2007

Awards:

Int. Society of Molecular Plant Microbe Interactions, Board of Directors Award, 2009
American Society of Plant Biologists, Stephen A. Hales Prize, 2009

UNC Leadership

Associate Director, Carolina Center for Genome Sciences

Professional Meetings/Societies

Meeting participation
Invited Seminars and Symposium Presentations (2007-present)):

2007

Cold Spring Harbor Conference, Plant Genomes, Cold Spring Harbor, NY
New York University School of Medicine, "Honors Program Lecture"
EMBO Course, Plant Genomics, Gent, Belgium

Int. Congress on Molecular Plant-Microbe Interactions, Sorrento, Italy
15th Annual International Conference on Microbial Genomics, College Park, Md.
NC Biotech Center, Plant Molecular Biology Retreat, Keynote Speaker
Sainsbury Lab, John Innes Center, Norwich, UK

2008

Keystone Conference "Plant innate Immunity", Keystone, Co.
NSF Workshop "Grand Challenges in Plant Biology 2020", Arlington, Va.
US National Academy of Sciences, "New Members Research Frontiers", Washington
Center for Genomics and Bioinformatics, Oregon State Univ., Corvallis, Or.
Max-Planck-Institute for Infection Biology, Berlin, Germany
International Arabidopsis Conference, Montreal, Canada
Carnegie Institute Plant Biology, Stanford University.
Genomics Cluster, UCLA, Los Angeles, Ca.

2009

DOE-Joint Genome Institute Users Meeting, Walnut Creek, CA.
Int. Congress on Molecular Plant-Microbe Interactions, Quebec City, Canada
New York University, Dept. of Biology, New York, NY
Int. Society of Plant Molecular Biology, St. Louis, MO.
Sainsbury Laboratory, John Innes Center, Norwich, UK

2010 (scheduled to date)

Dept. of Biology, Duke University
The Salk Institute, La Jolla, Ca.
UNC-CH Symposium: Microbial Communities in Health, Disease and Our Environment
Gordon Research Conference: Plant Molecular Biology, Holderness, NH
DOE Basic Biosciences Awardees Symposium, Annapolis, Md.

Society membership

AAAS, ASPB, IS-MPMI

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Aravinda M. de Silva, Ph.D., MPH
Associate Professor
Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1) Wahala WM, Donaldson EF, de Alwis R, Accavitti-Loper MA, Baric RS, de Silva AM.(2010) Natural strain variation and antibody neutralization of dengue serotype 3 viruses. PLoS Pathogens 19:6(3):e1000821.

2) Wahala WM, Kraus AA, Haymore LB, Accavitti-Loper MA, de Silva AM. (2010) Dengue virus neutralization by human immune sera: role of envelope protein domain III-reactive antibody. Virology. 392(1):103-13.

3) Hacker KE, White LJ, de Silva AM. (2009) N-Linked Glycans on Dengue Viruses Grown in Mammalian and Insect Cells. Journal of General Virology 90:2097-106.

4) Srivastava, S. Y. and de Silva A.M. (2009). Characterization of Borrelia burgdorferi aggregates. Vector Borne and Zoonotic Infectious Diseases. 9(3):323-9.

5) Kanakaratne, N. Wahala, W M.P.B., Messer, W.B., Tissera, H.A., Shahani, A., Abeysinghe, N., Gunasekera, M. and de Silva, A.M. (2009) Severe Dengue Epidemics in Sri Lanka, 2003–2006. Emerging Infectious Diseases. 2009 Feb;15(2):192-9.

6) Silva, R.L., de Silva, A.M., Harris, E, and MacDonald, G. (2008) Genetic analysis of dengue 3 virus subtype III 5' and 3' non-coding regions. Virus Research. 135(2):320-5.

7) Srivastava, S. Y. and de Silva A.M. (2008) Reciprocal expression of ospA and ospC in single cells of *Borrelia burgdorferi*. Journal of Bacteriology. 190(10):3429-33.

8) Tyson, K. R., Elkins, C., and de Silva A.M. (2008) A novel mechanism of complement inhibition unmasked by a tick salivary protein that binds to properdin. Journal of Immunology. 180(6):3964-8.

9) Kraus, A., Messer, W. , Haymore, L., and de Silva, A.M. (2007) Comparison of Plaque- and Flow Cytometry- Based Methods for Measuring Dengue Virus Neutralization. Journal of Clinical Microbiology. 45: 3777-80.

10) White LJ, Parsons MM, Whitmore AC, Williams BM, de Silva A, Johnston RE. (2007) An Immunogenic and Protective Alphavirus Replicon Particle-Based Dengue Vaccine Overcomes Maternal Antibody Interference in Weanling Mice. Journal of Virology. 81(19):10329-39.

11) Strother. K.O., Hodzic, E., Barthold, S.W., de Silva, A.M. (2007) Infection of mice with Lyme disease spirochetes constitutively producing outer surface proteins A and B. Infection and Immunity. Infect Immun. 75(6):2786-94.

12) Tyson, K.R., Elkins, C., Patterson, H., Fikrig, E. and de Silva, A.M. (2007) Biochemical and Functional Characterization of Salp20, an *Ixodes scapularis* Tick Salivary Protein that Inhibits the Complement Pathway. Journal of Insect Molecular Biology. 16(4):469-79

13) Nosbisch, L., and de Silva, A.M. (2007) Lack of detectable variation at the *Borrelia burgdorferi vlsE* locus.Journal of Medical Entomology. J Med Entomol. 44(1):168-70.

14) Gould, H.L., Sui, J., Foellmer, H., Wang, T.,Ledizet, M., Murakami, A., Noonan, K., Lambeth, C.R., Kar, K., Anderson, J.F., de Silva, A.M., Koski, R., Marasco, W.A. and Fikrig, E. (2005) Protective and therapeutic capacity of human single chain Fv-Fc fusion proteins against West Nile virus. Journal of Virology. 2005 Dec;79(23):14606-13.

15) Strother, K.O. , Broadwater, A. and de Silva, A.M. (2005) Plasmid Requirements for Infection of Ticks by *Borrelia burgdorferi*. Vector-borne and Zoonotic Infectious Diseases 53(3):237-245.

16) Strother, K.O. and de Silva, A.M. (2005) Role of *Borrelia burgdorferi* Linear Plasmid 25 in the Infection of *Ixodes scapularis* Ticks. Journal of Bacteriology 187(16):5776-81.

17) Lambeth CR, White LJ, Johnston RE and de Silva A.M. (2005) A Flowcytometry Based Assay for Titrating Dengue Virus. Journal of Clinical Microbiology 43(7):3267-72.

18) Gipson, C.L. and de Silva, A.M. (2005) Interactions of OspA monoclonal antibody C3.78 with *Borrelia burgdorferi* within ticks . Infection and Immunity. 73(3):1644-7.

Reviews & commentaries
de Silva, A.M., Tyson, K.R., and Pal, U. (2009) Molecular characterization of the tick-borrelia interface. Front Biosci. 2009 Jan 1;14:3051-63.

Editorial Responsibilities

Ad hoc reviewer for: Archives of Virology, Infection and Immunity, Journal of the American Society of Tropical Medicine and Hygiene, Journal of Biological Chemistry, Journal of Clinical Microbiology, Journal of Medical Entomology, Journal of Virology, Lancet Infectious Diseases, Proceedings of the National Academy of Sciences (USA), Virology.

Grants/Contracts

Co-investigator, 9/1/09 - 8/31/14
(PI Alex Sette, La Jolla Inst for Allergy and Immunology)
Large Scale T Cell Epitope Discovery
NIH,

Total direct costs to de Silva $17,390.00/year
% effort 5

Principal Investigator, 3/1/09 – 2/28/14
SERCEB Project 3.2: Antibody in Protective and Pathogenic Immunity to Dengue 3
National Inst. of Health, U54 AI057157
Total direct costs $$212,900.00/ year
% effort 20

Principal Investigator, 4/15/02 – 8/31/13
Defining Borrelia Genes required for tick Infection and Transmission
National Inst. of Health, 2 R01 AR047948-06A1
Total direct costs $220,000.00/ year
% effort 25

Co-investigator, start 5/1/08 – 4/30/13
(PI Laura White)
A Tetravalent Dengue Vaccine Based on Alphavirus Replicons
NIH, 5 U01 AI078060-02
Total direct costs to de Silva $5,000/year
% effort 5

Principal Investigator, 6/1/08 – 11/31/10
Pediatric Dengue Surveillance in Colombo, Sri Lanka
Pediatric Dengue Vaccine Initiative: DR 11C
Total direct costs $65,000
% effort 05

Principal Investigator, 2/15/08 – 8/14/09
Characterization of Interactions between Human Antibody and Dengue Serotype 3
Pediatric Dengue Vaccine Initiative: DR 11A
Total direct costs $100,000
% effort 10

Principal Investigator, 6/1/08 – 05/30/09
Validation of a flow cytometry based dengue neutralization test
Pediatric Dengue Vaccine Initiative: DR 11B
Total direct costs $95,000
% effort 10

Principal Investigator, 7/15/2006 - 6/30/09
Risk Factors for Dengue Hemorrhagic Fever in Sri Lanka
NIH: 5 R03 TW007319-03
Total direct costs $30,342.00/ year
% effort 05

Principal Investigator, 9/1/2003 - 8/31/08
Anti-Complement Proteins of Ixodes scapularis
NIH: U01 AI58263-02
Total direct costs $30,342.00/ year
% effort 10

Principal Investigator, 05/20/04 - 04/30/06
Interactions Between Dengue 3 and Human Dendritic Cells
NIH: 1 R21 AI060865-01
Total direct costs $400,000
% effort 10

Grant Review Service

Ad Hoc Member: NIAID Immunity and Host defense study section. (February 2010)
Member: National Institute of Arthritis and Musculoskeletal and Skin Diseases Special Emphasis Panel (ZAR1 MLB-G (M1) (2009)
Reviewer: Wellcome Trust (UK) (Spring 2008)
Reviewer: NIAID dengue program project (Fall 2007)
Member: NIH Special Emphasis panel to review grants on bacterial pathogenesis (ZRG1 IDM-A 90) (2004-2007)
Member: NIH Special Emphasis panel to review grants on innovative Virology (ZRG1 IDM-G 90) (2005)

Honors/Awards

W. R. Kenan research and scholarly sabbatical grant from the University of North Carolina at Chapel Hill (2006)

Outside UNC
Invited External Reviewer of CDC Lyme disease program (May 2009)
Invited External Reviewer of CDC dengue program (September 2009)

Professional Meetings/Societies

Meeting organization
Co-chair of flavivirus I symposium at the Annual Meeting of the American Society for Tropical Medicine and Hygiene (December 2009).

Main organizer of Asia Febrile Illness study meeting held in Colombo, Sri Lanka. Meeting was attended by investigators from UNC, Duke, Johns Hopkins, National University of Singapore and Sri Lanka Ministry of Health (April 2009).

Main Organizer of Scientific Symposium in memory of Professor Felix Amerasinghe held in Colombo, Sri Lanka (November 2006)

Meeting participation
Annual Meeting of the pediatric dengue vaccine initiative. *Speaker*. Santa Monica, CA, (June 2010)

Annual Meeting of the Regional Centers for Excellence in Biodefense and Emerging Infections. Las Vegas, NV. *Plenary Session Speaker*. (April, 2010)

Annual Meeting of the American Society for Tropical Medicine and Hygiene. *Oral Presentation.* Washington, DC. (December 2009)

Annual Meeting of the South Eastern Regional Center for Excellence in Emerging Infections and Biodefense. *Speaker.* Chapel Hill, May 2009.

Asian Dengue Research Network meeting. *Plenary Session Speaker.* Singapore (2009)

Annual Meeting of the pediatric dengue vaccine initiative. *Speaker*., Asilomar, CA (June 2009)

Latin American dengue congress. *Plenary Session Speaker.* Brazil (2008)

Annual Meeting of the pediatric dengue vaccine initiative. *Speaker*. Mont Tremblant, Canada (2008)

Flavivirus Symposium. Annual Meeting of the American Society for Tropical Medicine and Hygiene. *Oral Presentation.* New Orleans, USA (2008)

Society membership
American Society of Microbiology, 1999-present
American Society of Tropical Medicine and Hygiene, 1996-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Dirk Dittmer, Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Bhatt AP, Bhende PM, Sin SH, Roy D, **Dittmer DP**, Damania B. Dual inhibition of PI3K and mTOR inhibits autocrine and paracrine proliferative loops in PI3K/Akt/mTOR-addicted lymphomas. Blood. 2010 Mar 18 115(22):4455-63.
2. Chen W, Hilton IB, Staudt MR, Burd CE, **Dittmer DP.** Distinct p53, p53:LANA, and LANA Complexes in Kaposi's Sarcoma-Associated Herpesvirus Lymphomas. J Virol. 2010 Apr;84(8):3898-908.
3. Lechowicz M, **Dittmer DP**, Lee JY, Krown SE, Wachsman W, Aboulafia D, Dezube BJ, Ratner L, Said J, Ambinder RF. Molecular and clinical assessment in the treatment of AIDS Kaposi sarcoma with valproic Acid. Clin Infect Dis. 2009 Dec 15;49(12):1946-9.
4. Wang FZ, Roy D, Gershburg E, Whitehurst CB, **Dittmer DP**, Pagano JS. Maribavir inhibits epstein-barr virus transcription in addition to viral DNA replication. J Virol. 2009 Dec;83(23):12108-17.
5. Han Z, Verma D, Hilscher C, **Dittmer DP**, Swaminathan S. General and target-specific RNA binding properties of Epstein-Barr virus SM posttranscriptional regulatory protein. J Virol. 2009 Nov;83(22):11635-44.
6. Lechowicz M, **Dittmer DP**, Lee JY, Krown SE, Wachsman W, Abulafia D, Dezube BJ, Ratner L, Said J, Ambinder JF, Molecular and Clinical Assessment in the Treatment of AIDS Kaposi's Sarcoma with Valproic Acid, Clin. Inf. Dis. 2009, 49(12) 1946-9.
7. Wen, K-W, **Dittmer DP**, Damania, B, Disruption of LANA in rhesus rhadinovirus generates a highly lytic recombinant virus J. VIROL. 2009 Oct; 83(19): 9786-802.
8. Gregory, S. West, JA, Dillon, PJ, Hilscher, C., **Dittmer, DP** and B. Damania. Toll-like receptor signaling controls reactivation of KSHV from latency. PNAS. 2009 Jul, 106(28): 11725-30
9. Bouvard V, Baan R, Straif K, Grosse Y, Secretan B, El Ghissassi F, Benbrahim-Tallaa L, Guha N, Freeman C, Galichet L, Cogliano V; WHO International Agency for Research on Cancer Monograph Working Group. A review of human carcinogens--Part B: biological agents. LANCET ONCOL. 2009 Apr; 10(4): 321-2
10. Jacobson MA, **Ditmer DP**, Sinclair E, Martin JN, Deeks SG, Hunt P, Mocarski ES, Shiboski C. Human herpesvirus replication and abnormal CD8+ T cell activation and low CD4+ T cell counts in antiretroviral-suppressed HIV-infected patients. PLOS ONE. 2009; 4(4): e5277.
11. O'Hara AJ, Chugh P, Wang L, Netto EM, Luz E, Harrington WJ, Dezube BJ, Damania B, **Dittmer DP**. Pre-micro RNA signatures delineate stages of endothelial cell transformation in Kaposi sarcoma. PLOS PATHOGEN 2009 Apr; 5(4): e1000389.
12. O'Hara AJ, Wang L, Dezube BJ, Harrington WJ Jr, Damania B, **Dittmer DP**. Tumor suppressor micro RNAs are underrepresented in primary effusion lymphoma and Kaposi sarcoma. BLOOD 2009 June 4; 113(23): 5938-41

13. Queiroga EM, Gualco G, Weiss LM, **Dittmer DP**, Araujo I, Klumb CE, Harrington WJ Jr, Bacchi CE. Burkitt lymphoma in Brazil is characterized by geographically distinct clinicopathologic features. AM J CLIN PATHOL. 2008 Dec; 130(6): 946-56.
14. **Dittmer DP**, Hilscher CJ, Gulley ML, Yang EV, Chen M, Glaser R. Multiple pathways for Epstein-Barr virus episome loss from nasopharyngeal carcinoma. INT J CANCER. 2008 Nov 1; 123(9): 2105-12.
15. Xia T, O'Hara A, Araujo I, Barreto J, Carvalho E, Sapucaia JB, Ramos JC, Luz E, Pedroso C, Manrique M, Toomey NL, Brites C, **Dittmer DP**, Harrington WJ Jr. EBV microRNAs in primary lymphomas and targeting of CXCL-11 by ebv-mir-BHRF1-3. CANCER RES. 2008 Mar 1; 68(5): 1436-42.
16. Krown SE, Lee JY, **Dittmer DP**; AIDS Malignancy Consortium. More on HIV-associated Kaposi's sarcoma. N ENGL J MED. 2008 Jan 31; 358(5): 535-6
17. O'Hara AJ, Vahrson W, **Dittmer DP**. Gene alteration and precursor and mature microRNA transcription changes contribute to the miRNA signature of primary effusion lymphoma. BLOOD. 2008 Feb 15; 111(4):2347-53.
18. Nun TK, Kroll DJ, Oberlies NH, Soejarto DD, Case RJ, Piskaut P, Matainaho T, Hilscher C, Wang L, **Dittmer DP**, Gao SJ, Damania B. Development of a fluorescence-based assay to screen antiviral drugs against Kaposi's sarcoma associated herpesvirus. Mol Cancer Ther. 2007 Aug; 6(8): 2360-70.
19. Mutlu A, Vincent L, Chiozzini C, Eroles P, Cavallin L, Asgari Z, Hooper AT, Hilsher, C Gao SJ, **Dittmer DP**, Rafii S and Mesri EA, Human herpesvirus-8/ KSHV transforms angiogenic hematopoietic cells: a cell and animal model of virally induced Kaposi's sarcoma. Cancer Cell. 2007 Mar; 11(3): 245-58.
20. Petre CE, Sin SH, **Dittmer DP**. Functional p53 signaling in Kaposi's sarcoma-associated herpesvirus lymphomas: implications for therapy. J Virol. 2007 Feb; 81(4): 1912-22.
21. Sin SH, Roy D, Wang L, Staudt MR, Fakhari FD, Patel DD, Henry D, Harrington WJ Jr, Damania BA, **Dittmer DP**. Rapamycin is efficacious against primary effusion lymphoma (PEL) cell lines in vivo by inhibiting autocrine signaling. Blood. 2007 Mar 1; 109(5): 2165-73.
22. Whitby D, Marshall V, Miley W, Bagni R, McCloud T, Hines-Boykin R, Goedert J, Mikovits J, **Dittmer DP**, Newman D. "Re-activation of KSHV in latently infected primary effusion lymphoma cells by natural products from KS endemic regions in Africa", Intl. Journal Cancer, 2007 Jan 15; 120(2): 321-0
23. Wolf RF, Papin JF, Hines-Boykin R, Chavez-Suarez M, White GL, Sakalian M, **Dittmer DP**. Baboon model for West Nile Virus infection and vaccine evaluation. Virology. 2006 Nov 10; 355(1): 44-51.
24. An, FQ, Folarin HM, Compitello N, Roth J, Gerson SL, McCrae KR, Fakhari FD, **Dittmer DP,** Renne R. Long-term-infected telomerase-immortalized endothelial cells: a model for Kaposi's sarcoma-associated herpesvirus latency in vitro and in vivo. J Virol. 2006 May; 80(10): 4833-46.
25. Staudt MR, **Dittmer DP**. Promoter switching allows simultaneous transcription of LANA and K14/vGPCR of Kaposi's sarcoma-associated herpesvirus. Virology. 2006 Jun20; 350(1): 192-205
26. Wang L, **Dittmer DP**, Tomlinson CC, Fakhari FD, Damania B. Immortalization of primary endothelial cells by the K1 protein of Kaposi's sarcoma-associated herpesvirus. Cancer Res. 2006 Apr 1; 66(7): 3658-66.

27. Wolf RF, Rogers KM, Blewett EL, **Dittmer DP**, Fakhari FD, Hill CA, Kosanke SD, White GL, Eberle R.naturally occurring fatal case of Herpesvirus papio 2 pneumonia in an infant baboon (Papio hamadryas anubis). J Am Assoc Lab Anim Sci. 2006 Jan; 45(1): 64-8.
28. Fakhari FD, Jeong JH, Kanan Y, **Dittmer DP**. The latency-associated nuclear antigen of Kaposi sarcoma-associated herpesvirus induces B cell hyperplasia and lymphoma. J Clin Invest. 2006 Mar; 116(3): 735-42. Epub 2006 Feb 23.
29. Hilscher C, Vahrson W, **Dittmer DP**. Faster quantitative real-time PCR protocols may lose sensitivity and show increased variability. Nucleic Acids Res. 2005 Nov 27; 33(21): e182.
30. Chang H, **Dittmer DP**, Shin YC, Hong Y, Jung JU. Role of Notch signal transduction in Kaposi's sarcoma-associated herpesvirus gene expression. J Virol. 2005 Nov; 79(22): 14371-82.
31. Papin JF, Floyd RA, **Dittmer DP**. Methylene blue photoinactivation abolishes West Nile virus infectivity in vivo. Antiviral Res. 2005 Nov; 68(2): 84-7. Epub 2005 Aug 9.
32. **Dittmer DP**, Gonzalez CM, Vahrson W, DeWire SM, Hines-Boykin R, Damania B. Whole-genome transcription profiling of rhesus monkey rhadinovirus. J Virol. 2005 Jul; 79(13): 8637-50.
33. Kurokawa M, Ghosh SK, Ramos JC, Mian AM, Toomey NL, Cabral L, Whitby D, Barber GN, **Dittmer DP**, Harrington WJ Jr. Azidothymidine inhibits NF-kappaB and induces Epstein-Barr virus gene expression in Burkitt lymphoma. Blood. 2005 Jul 1; 106(1): 235-40.

Reviews & commentaries

1. **Dittmer DP**, Krown SE.Targeted therapy for Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus. Curr Opin Oncol. 2007 Sep; 19(5): 452-7.
2. Sampaio J, Brites C, Araujo I, Bacchi CE, **Dittmer DP**, Tanaka PY, Harrington W Jr, Netto EM. AIDS related malignancies in Brazil. Curr Opin Oncol. 2007 Sep; 19(5): 476-8
3. **Dittmer DP**, Damania B. KSHV-associated disease in the AIDS patient. Cancer Treat Res. 2007; 133: 129-39.
4. Petre CE, **Dittmer DP**.Liposomal daunorubicin as treatment for Kaposi's sarcoma. Int J Nanomedicine. 2007; 2(3): 277-88.
5. Staudt MR, **Dittmer DP**. The Rta/Orf50 transactivator proteins of the gamma-herpesviridae. Curr Top Microbiol Immunol. 2007; 312: 71-100.
6. **Dittmer DP**, Vahrson W, Staudt M, Hilscher C, Fakhari FD. Kaposi's sarcoma in the era of HAART-an update on mechanisms, diagnostics and treatment. AIDS Rev. 2005 Jan-Mar; 7(1): 56-61.
7. **Dittmer DP**. Profiling viral gene expression in lymphomas. Braz J Infect Dis. 2005 Oct; 9(5): 444.

Editorial Responsibilities

Editorial boards

Editorial Board Member for J. of Virology (2004-2010)

Ad hoc reviewer for:
AIDS, Antiviral Research, Am. J. Pathology, Archives of Virology, BMC Microbiology, Cancer Research, Current HIV Research, FEMS Microbiology Letters, Genes & Development Intervirology, Journal of the American Medical Association, J. Imm. Methods, J. of Clinical Microbiology, J. of General Virology Clinical and Diagnostic Laboratory Immunology, J. of Molecular Diagnostics, J. Virological Methods, J. Biological Chemistry, J. Investigative

Ophthalmology & Visual Science, J. of Virology, Pharmacogenomics, PLoS Biology, PLoS One PLoS Pathogen, PLoS Medicine, Proceedings of the National Academy of Sciences USA, Scandinavian Journal of Immunology, TIBS Microbiology, Virology

Grants/Contracts

Principal Investigator 1/1/2007-12/31/2012
ART Modulation of Viral Pathogenesis in the Oral Epithelia
Nat. Institute of Dental and Craniofacial Res., ***NIH R01-DE018304***
$237,931 per year
% effort: 15%

Principal Investigator 8/1/2004-7/30/2015
Regulation of the KSHV LANA promoter
National Cancer Institute, ***NIH RO1-CA109232***
$167,000 per year
% effort: 15%

R. Mitsuyashi (P.I.) / UCLA 7/1/2005-6/31/2010
AIDS malignancies clinical trials consortium Director of Network laboratories
National Cancer Institute, ***NIH UO1-CA700580***
% effort: 15%

Principal Investigator 10/1/2005-9/30/2011
Leukemia and Lymphoma Society
Pharmacogenomics of viral lymphoma
$180,000 per year
% effort: 20%

J. Webster-Cyriaque, (P.I.) 6/29/2006-5/31/2013
NIH Oral HIV/AIDS Research Alliance (OHARA) at UNC
Virology core lab
% effort: 10%

Subcontract AMC Mitsuyashi-PI 8/1/08 - 7/31/11
Supplement Efficacy Testing of Drug Candidates
U01 CA121947-01
$267,983 total direct
% effort: 5%

Principal Investigator 6/1/07 - 5/31/09
3 D43 TW001039-09S2 - Fogerty Intl. Center /UNC AITRP - Administrative Supplement

Subcontract AMC Mitsuyashi-PI 8/1/07 - 7/31/10
Supplement Application for Preclinical Study of Medi522/VitaminTM

U01 CA121947-01 supplement

S. Swaminathan, MD (P.I.) (subcontract to U. Florida) 2005-20
Viral and Cellular Gene Regulation during Lytic KSHV Replication
NIH RO1-CA109232

Principal Investigator 6/1/2006-5/31/2007
"Regulation of the KSHV LANA promoter"
National Cancer Institute, ***NIH RO1-CA109232 supplement***

Principal Investigator 7/1/2005-6/30/2007
Primate model for viral pathogenesis in the oral cavity
Nat. Institute of Dental and Craniofacial Res., ***NIH R21-DE017084***

Principal Investigator 1/1/2005-12/31/2007
Pilot study of Valganciclovir in Patients with classic, non-HIV-associated Kaposi's sarcoma
Memorial Sloan-Kettering Cancer Center

Principal Investigator 8/17/2004-7/30/2007
In situ real-time PCR arrays for virally-associated cancers
National Cancer Institute, ***NIH RO3-CA110136***

Principal Investigator 7/1/2005-6/30/2006
Rapid Diagnosis of cancer-associated μRNAs
UNC Lineberger Comprehensive Cancer Center

Principal Investigator 8/1/2005-7/31/2006
Regulation of the KSHV LANA promoter
National Cancer Institute, ***NIH RO1-CA109232 supplement***

Grant Review Service

Professional Service (Study Sections at National Institutes of Health [NIH]):

Permanent Reviewer:

2010-13 NIH ZRG1-AOIC "AIDS-associated Infections and Cancer"

Ad hoc Reviewer:

2010 NIH ZDE1-MH10 "Oral Vaccines"
2009 NIH ZRG1-AOIC "AIDS-associated Infections and Cancer"
2009 NIH ZRG1 IMM-E (58) R "Challenge Grants"
2008 NIH ZRG-III "Innate Immunity & Inflammation" conflicts
2008 NIH ZRG-IHD "Immunity and Host Defense" conflicts
2008 NIH ZRG1-AOIC "AIDS-associated Infections and Cancer"

2007	NIH ZRG1-AOIC "AIDS-associated Infections and Cancer"
2006	NIH ZRG1 IDM-B (12) "SBIR STTR"
2005	NIH ZRG1 IDM-B (12) "SBIR STTR"
2005	NIH ZAT1 G (15) (1) "NCCAMs centers Program"
2005	NIH ZRG1 IDM-L 02 "Response to Viral Infections"
2005	NIH ZRG1 IDM-G 90 "Innovative Res. Topics in Virology"

Professional Service (National Science Foundation [NSF]):

2008	NSF graduate awards

Professional Service (International):

2010	Volkswagenstiftung

Honors/Awards

2006	UNC Lineberger Cancer Center Clinical/Translational Research Award

UNC Leadership

Protocol Review Committee (2010 - present)
UNC training grant (Virology) selection committee (2005)
NCI/Cfar supplement pilot grant review (2009)
Postdoctoral Symposium Poster review (2008, 2009)

Committee Service

University of North Carolina, Chapel Hill
Protocol Review Committee (2010 - present)

Professional Meetings/Societies

Meeting organization

2010	NCI Program Committee "12th Intl. Conf. on Malignancies in AIDS and Other Immunodeficiencies (ICMAOI)"
2009	Organizer, 10th Intl. Workshop on KSHV, Charleston, SC
2009-present	Scientific board NCI AIDS Cancer Specimen Resource (ACSR)
2008-2009	International Agency for Research on Cancer (IARC) Committee Volume 100B – Biological agents
2008	Scientific Program Committee and Session Chair, 9th Intl. Workshop on KSHV, Birmingham, UK
2008	NCI Program Committee "11th Intl. Conf. on Malignancies in AIDS and Other Immunodeficiencies (ICMAOI)"
2008- present	Steering Committee, Oral HIV/AIDS Research Alliance (OHARA)
2007- present	Steering Committee, AIDS-associated malignancies clinical trials Consortium (AMC)
2007	Organizing Committee and session chair, International Herpesvirus Workshop, Asheville, NC.
2006- present	Co-Chair, Kaposi's Sarcoma Working Group (AIDS-associated malignancies clinical trials Consortium (AMC))
2006	NCI Program Committee "10th Intl. Conf. on Malignancies in AIDS and Other Immunodeficiencies (ICMAOI)"

2006- present	Natl. Cancer Institute working group on AIDS-associated malignancies
2004- 2006	Kaposi's Sarcoma Working Group (AIDS-associated malignancies clinical trials Consortium (AMC))

Meeting participation

2005	University of North Carolina—Curriculum in Genetics, Chapel Hill, NC
2005	8th International KSHV Workshop, Bad Kreuth, Germany
2005	University of North Carolina—MD/PhD retreat, Wilmington, NC
2005	9th Intl. AIDS Malignancy Conference (ICAMOI), Bethesda, MD
2006	9th International KSHV Workshop, Hyannis, MS
2006	10th th Intl. AIDS Malignancy Conference (ICAMOI), Bethesda, MD
2008	10th International KSHV Workshop, Birmingham, UK
2008	11th Intl. AIDS Malignancy Conference (ICAMOI), Bethesda, MD
2008	CHI 8th Conference on Integrative data Analysis (plenary), Providence, RI
2009	34th International Herpesvirus Workshop, Ithaca, New York
2010	CHI "MicroRNA in Human Disease and Development" (plenary), Boston, MA
2010	German Cancer Research Center (DKFZ) (plenary), Heidelberg, Germany
2010	UNC Lineberger symposium (plenary)
2010	South East Regional Virology Conference, Atlanta, GO
2010	4th European Congress of Virology, Como, Italy

Society membership

American Association for Cancer Research (AACR)
American Society of Microbiology (ASM)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Marshall H. Edgell, Ph.D.

Kenan Professor

Primary Appointment: Department of Microbiology & Immunology

Joint Appointment: Department of Biochemistry & Biophysics

Publications

Primary literature
Fetrow, J.S., Knutson, S.T., & Edgell, M.H. (2006) Mutations in a-helical solvent exposed sites of eglin c have long range effects: evidence from molecular dynamics simulations. *Proteins* **35,** 356-372.

Clarkson, M.S., Gilmore, S.A., Edgell, M.H., & Lee, A.L. (2006) Dynamic coupling and allosteric behavior in a nonallosteric protein. *Biochemistry* **45**, 7693-7699.

Knaggs, M.H., Salisbury, F.R., Jr., Edgell, M.H., & Fetrow, J.S. (2007) Insights into correlated motions and long-range interactions in CheY derived from molecular dynamics simulations. *Biophysical Journal* **92,** 2062-2079.

Boyer, J.A., Clay, C., Luce, K.S., Edgell, M.H., & Lee, A.L. (2010) Detection of native-state non-additivity in double mutant cycles via hydrogen exchange. *Journal of the American Chemical Society* **132,** 8010-8019.

Grants/Contracts

Co-PI, start 04/01/2010 - end 03/31/2013
(PI Andrew Lee)
"Dynamic Networks and Mechanisms of Allosteric Communication in Proteins"
NIH/NIGMS R01 GM066009
Total direct costs to Edgell $340,000
% effort: 50%

Committee Service

University of North Carolina, Chapel Hill

Member, Office of Undergraduate Research Advisory Committee, 1999-2007

Member, Medical Informatics and Bioinformatics Advisory Committee, 2001-2007

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Patrick Flood, PhD

Associate Professor

Primary Appointment: Department of Periodontology, School of Dentistry

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Whitmore A.C., Neely H.R., Diz, R. and **Flood P.M.** (2005) Rapid Induction of Splenic and Periotoneal B-1a Cells in Adult Mice by Thymus-Independent Type-2 Antigen. J Immunol. 173: 5406-5414, 2004.

Tan, K.S., Qian, L., Rosado, R., **Flood, P.M.** and Cooper, L.F. (2006) The role of titanium surface topography on J774A.1 macrophage inflammatory cytokines and nitric oxide production. Biomaterials, 27:5170-5177.

Qian, L., Hong, J-S., and **Flood**, **P.M.** (2006) Role of Microglia in Inflammation-medicated Degeneration of Dopaminergic Neurons: Neuroprotective Effect of IL-10. Journal of Neural Transmission., (70):367-371.

Qian, L, Block, M.L., Wei, S-J., Lin, C., Reece, J., Pang, H., Wilson, B., Hong, J-S., and **Flood, P.M**. (2007). Interleukin-10 protects lipopolysaccharide-induced neurotoxicity in primary midbrain cultures by inhibiting the function of NADPH oxidase., J. Pharmacology and Experimental Therapeutics, 319:44-52.

Nackley-Neely, A.G., Tan, K.S., Fecho, K., **Flood, P.M.**, Diatchenko, L., and Maixner, W. (2007) Catechol-O-methyltransferase Inhibition Increases Pain Sensitivity through Activation of Both β_2 and β_3 Adrenergic Receptors. Pain, 128:199-208.

Qian, L., Xu, Z., Block, M, Wilson, B., Reece, J.M., Hong, J-S., and **Flood, P.M**. (2007) Sinomenine, an active ingredient of Chinese herb medicine, sinomenium acutum, is neuroprotective through inhibition of microglial NADPH oxidase. J. Neuroinflammation, 4:23-33.

Qian, L, Tan, K.S., Wei, S.J., Wu, H.W., Wilson, B., Hong, J-S., and **Flood, P.M.** (2007) Microglia-mediated neurotoxicity is inhibited by morphine through mu-opioid receptor independent reduction of NADPH oxidase activity. J. Immunol, 179:1198-209.

Tan, K.S., Neely-Nackley, A.G., Satterfield, K., Maixner, W., Diatchenko, L., and **Flood, P.M.** (2007) β_2-adrenergic receptor activation stimulates pro-inflammatory cytokine production in macrophages via PKA- and NF-κB-independent mechanisms. Cell Signal. 19:251-260.

Qian, L, Tan, K.S., Wei, S-J.. Wu, H-W., Wilson, B., Hong, J-S., and Flood, P.M. (2007) NADPH oxidase inhibitor DPI is neuroprotective at femtomolar concentrations through inhibition of microglia over-activation. Parkinsonism & Related Disorders Volume 13, Supplement 3, Pages S316-S320.

Qian, L, Tan, K.S., Wei, S-J., Wu, H-W., Wilson, B., Hong, J-S., and Flood, P.M. (2008) Potent Anti-Inflammatory and Neuroprotective Effects of TGF-β1 Are Mediated through the Inhibition of ERK and p47phox-Ser345 Phosphorylation and Translocation in Microglia. J. Immunol, 181:660-668.

Gao, X., Hu, X., Qian, L., Yang, S., Zhang, W., Zhang, D., Wu, X., Fraser, A., Wilson, B., **Flood, P.M.**, Block, M., and Hong, J-S. (2008) Formyl-methionyl-leucyl-phenylalanine induces dopaminergic neurotoxicity via microglial activation: mediator between peripheral infection and neurodegeneration? Environmental Health Perspectives, 116(5):593-598.

Tchivileva, I.E., Tan, K.S., Gambarian, M., Medvedev, A., Nackley, A.G., Romanov, S., Flood, P.M., Maixner, W., Makarov, S.S., and Diatchenko, L.B. (2009) Signaling Pathways Mediating Beta 3 Adrenergic Receptor-induced Production of Interleukin-6 in Adipocytes. Mol Immunol. 46: 2256-66.

Qian L., Hu X., Zhang D., Snyder A., Wu H.M., Li Y., Wilson B., Lu R.B., Hong J-S., Flood P.M. (2009) b2-adrenergic receptor activation induces microglial PHOX activation and DA neurotoxicity through an ERK-dependent/Protein kinase A independen. pathway. Glia, 57(15):1600-9.

Wu, H-M., Tzeng, N-S., Qian, L., Wei, S-J., Hu, X., Rawls, S., **Flood, P.M.**, Hong, J-S., and Lu, R. (2009) Novel Neuroprotective Mechanisms of Memantine: Increase in Neurotrophic Factor Release from Astroglia and Anti-Inflammation by Preventing Microglial Activation. Neuropsychopharmacology, 34:2344-2357.

Zhang D., Hu, X., Qian, L., Wilson, B., Lee, C., **Flood, P.M.**, Langenbach, R., and Hong J-S. (2009) Prostaglandin E2 released from activated microglia enhances astrocyte proliferation in vitro. Toxicol Appl Pharmacol. 238:64-70.

Qian, L, Tan, K-S, Wei, S-J. Wu, H-W, Wilson, B, Hong, J-S, and **Flood, PM** (2009) b2-adrenergic receptor activation induces microglial PHOX activation and DA neurotoxicity through an ERK-dependent/Protein kinase A independent pathway. Glia, 15:1600-1609.

Zhang, F., Qian, L., **Flood**, **P.M.,** Shi, J-S., Hong, J-S., and Gao. M.H. (2010). An inhibitor of IkB-kinase-b (IKK-b) Protects Dopamine Neurons against Lipopolysaccharide-Induced Neurotoxicity. JPET, 333:822-833.

Liu, Y., Qian, L., Crews**,** F.T., Wilson, B., Li, Y., Chen, H-L., Wu, H-M., Wei, K., **Flood, P.M.**, Ali, S., Lu, R-B., Hong, J-S., and Lo Y-C. Novel Anti-inflammatory and

Neuroprotective Effects of Verapamil in Neuron/Glia Cell Cultures: Beyond Calcium Channel. JPET, in press.

Zhang, D., Hu, X., Qian, L., Chen, S.H., Zhou, H., Wilson, B., **Flood**, **P.M.** Miller, D.S. and Hong, J-S. Microglial MAC1 receptor and PI3K are essential in mediating β-amyloid peptide-induced neurotoxicity in neuron/glia cultures. J. Neuroscience, in press.

Reviews & commentaries

Qian, L. and **Flood, P.M**. (2008) Microglial Cells and Parkinson's Disease. Immunol. Research, 41:155-164.

Editorial Responsibilities

Ad hoc reviewer for:

Journal of Clinical Investigation, Journal of Neurochemistry, Journal of Neurimmunology,Journal of Neuroinflammation, Journal of Neuropharmacology, Journal of Neuroscience, International Endodontic Journal

Grants/Contracts

Flood (Principal Investigator) 8/1/99-7/31/05
Center for Inflammatory Disorders.
NIH – NIDCR, 1 P60 DE13079-01
$10,875,000
% Effort: 40%

Flood (Principal Investigator) 8/1/99-7/31/05
Center for Inflammatory Disorders, Subproject 7: Role of NF-kB in T Cell Inflammation.
NIH – NIDCR, 1 P60 DE13079-01
$999,334
% Effort: 15%

Flood (Principal Investigator) 5/1/06-4/30/08
Blockade of NF-kappaB for Prevention/Treatment of GVHD.
NIH, NIAID 1R41 AI-069602-01,
$244,488.
% Effort: 10%.

Flood (Co-Investigator) 7/1/06-6/30/08
Scott Plevy, Principal Investigator
Validation of a Novel NF-KB Inhibitor in Murine IBD
NIH, NIDDK 1R41 DK074193-01
$227,216
% Effort: 10%.

Flood (Co-Investigator) 12/01/07-11/30/12
Denis Guttridge (Principal Investigator)
NF-kB Inhibition Therapy for Duchenne Muscular Dystrophy
NIH – NINDS, 1-U01-1NS058451-01
$9,000
% Effort: 5%

Flood (Principal Investigator) 07/01/07-06/30/11
Use of NF-kB inhibitors in treatment of Parkinson's Disease
Michael J. Fox Foundation
$398,253
% Effort: 10%

Flood (Principal Investigator) 07/01/08-6/30/11
Inhibition of IKKb to treat lethal graft vs. host disease
NIH, NIAID, 1 R42 AI069602-03
$1,081,343
% Effort: 10%

Flood (Principal Investigator) 08/01/09-7/31/10
NF-kB Inhibition of Lung Ischemia Reperfusion Injury
NIH, NHHLBI, 1R41HL095293-01A2
$255,627
% Effort: 10%

Grant Review Service

3/96-present	Member, Study Section, Small Business Innovative Research, IMM-IRG (HNG34), now called IMM-G review group, National Institutes of Health; Co-chair 2010
2007-present	Member, Merit Review Immunology B study section, Department of Veteran's Affairs
2007-present	Member, ZDE1 MK12 Special Emphasis Panel, NIDCR, National Institutes of Health
2009-present	Member, ZDE1 MK23 Special Emphasis Panel, NIDCR, National Institutes of Health
2009	Ad hoc member, ZRG1 IDM-C Study Section, Division of Research Grants, National Institutes of Health
2009	Ad hoc member, ZRG1 IMM-E Study Section, Division of Research Grants, National Institutes of Health
2006-present	Special ad hoc reviewer for Life Sciences & Medicine, Israel Science Foundation, Agence Nationale de la Recherche, Parkinson's Disease Society, and The Michael J. Fox Foundation.

Honors/Awards

Elected Member, Society for Neuroscience, 6/2008
Invited publication, Immunologic Research, 2/2008

UNC Leadership

9/94-present	Director, Pathogenesis Training Track, Curriculum in Oral Biology, University of North Carolina School of Dentistry, Chapel Hill, NC.
9/94-present	Director, Curriculum in Oral Biology, University of North Carolina School of Dentistry, Chapel Hill, NC.
1/98-6/08	Associate Dean for Research, University of North Carolina School of Dentistry, Chapel Hill, NC.
1/98-08	Director, Dental Research Center, University of North Carolina School of Dentistry, Chapel Hill, NC.
8/99-present	Director, Comprehensive Center for Inflammatory Disorders, University of North Carolina at Chapel Hill, Chapel Hill, NC
2002-2006	UNC Institutional Animal Care and Use Committee (IACUC) Task Force, Chair
2006-2009	University Research Council Research Grants and Scholarly Publication Review Committee, Chair 2008-2010

Committee Service

University of North Carolina, Chapel Hill

1999-present	CCID Internal Operations Committee, Chair
2000-2006	Advisory Committee, Carolina Center for Genomics Sciences.
2002-2006	Computational Resource Coordinating Committee for Genomics and Bioinformatics (CRCCGB)
2003-2008	Institutional Carolina Roadmap Task Force
2003-present	Institutional Clinical Scholars Development Committee
2000-present	External Advisory Committee for Biotechnology Cooperative Research Consortium
2001-present	Advisory Committee, joint BIRCWH and Dual K-12 (now KL-2) Program Committees
2002-present	Executive Committee, Clinical Scholars Interdisciplinary Research Training Program
2004-2007	University Resources Committee
2004-2007	University Animal Space Use Committee
2005-2007	Executive Committee Member, UNC Center on Inflammation and Imaging
2005-2008	Institutional Research Advisory Committee
2005-present	UNC Predoctoral Clinical Research Training Program
2005-present	Carolina Entrepreneurial Initiative, Committee member
2005-present	UNC Tissue Bank and DNA Repositories Committee
2006-present	Clinical Trials Compliance Task Force
2006-present	Multidisciplinary Clinical Research Career Development Program Executive Committee
2006-2010	University Research Council Research Grants and Scholarly Publication Review Committee, Chair 2008-2010

Outside UNC

1996-2007	Committee on Research Administrators, NIDCR (CRAM)
1998-2007	AADR Associate Deans for Research Group
1999-2007	NIDCR Center Directors' Committee
2003-2008	External Advisory Committee, University of Alabama Infrastructure Enhancement Plan.

Professional Meetings/Societies

Meeting participation

FASEB, San Diego, 2005.
Society for Neuroscience, 2006.
Society for Neuroscience, Atlanta, GA, 2006.
American Association of Immunology, Boston, MA, 2006..
American Association of Dental Research, Orlando, FL, 2006.
American Association of Immunology, Miami, FL, 2007
Society for Neuroscience, San Diego, CA, 2007.
Society for Neuroscience, Washington, DC, 2008.
Society for Neuroscience, Chicago, IL, 2009.

Society membership

1984-present	New York Academy of Science
1984-present	American Association of Immunologists
1993-present	International Association for Dental Research
1993-present	American Association for Dental Research
2008-present	Society for Neuroscience

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

J. Victor Garcia-Martinez, Ph.D.

Professor of Medicine

Primary Appointment: Department of Medicine

Joint Appointment: Department of Microbiology and Immunology

Publications

Smith S, Goldman D, Bailey AS, Pfaffle DL, Kreklywich CN, Spencer DB, Borton JA, Othieno FA, **Garcia JV**, Fleming WH and Nelson JA. G-CSF Reactivates Human Cytomegalovirus in a Latently Infected Humanized Mouse Model. *Cell Host and Microbe*. In press.

Denton PW, Krisko JF, Powell DA, Mathias M, Kwak YT, Martinez-Torres F, Zou W, Payne DA, Estes, JD, and **Garcia JV**. Systemic administration of antiretrovirals prior to exposure prevents rectal intravenous HIV-1 transmission in humanized BLT mice. *PLoS One*, 5(1) e8829:1-11, 2010.

Baugh LL, **Garcia JV**, Foster JL. Functional Characterization of the Human Immunodeficiency Type 1 Nef Acidic Domain. J. Virology 82: 9657-9776 (2008).

Buzina A, Lo M, Moffett A, Hotta A, Fussner E, Bharadwaj R, Pasceri P, **Garcia JV**, Bazett-Jones D, and Ellis J. β-globin LCR and intron elements cooperate and direct spatial reorganization for gene therapy. PLoS Genetics 4(4): e1000051. (2008)

Wang J, Shackelford JM, Selliah N, Shivers DK, O'Neill E, **Garcia JV,** Karuppiah M, Weiner D, Yu X-F, Gabuzda D and.Finkel TH. The HIV-1 Vif Protein Mediates Ubiquitination of Vpr, Reducing Intracellular Expression and Vpr-Induced Cell Cycle Arrest. DNA and Cell Biology 27, 267-277 (2008).

Denton PW, Estes JD, Sun Z, Othieno F, Wei B, Wege AK, Powell DA, Payne D, Haase AT and **Garcia JV**. Antiretroviral Pre-exposure Prophylaxis Prevents Vaginal Transmission of HIV-1 in Humanized BLT Mice. PLoS Medicine Vol. 5, No. 1, e16 (2008).

Raney A, Shaw AY, Foster JL and **Garcia JV**. Structural constrains on human immunodeficiency virus type 1 Nef function. Virology 368, 7-16 (2007).

Sun Z, Denton PW, Estes JD, Othieno F, Wei B, Wege AK, Melkus MW, Padgett-Thomas A, Zupancic M, Haase AT and **Garcia JV**. Intrarectal transmission, systemic infection and CD4 T cell depletion in humanized mice infected with HIV-1. J. Exp. Med. 204, 705-714 (2007).

Agopian K, Wei BL, **Garcia JV** and Gabuzda D. CD4 and MHC-I Downregulation are Conserved in Primary HIV-1 Nef Alleles from Brain and Lymphoid Tissues, but Pak2 Activation is Highly Variable. Virology. 358, 119-135 (2007).

Melkus MW, Estes JD, Padgett-Thomas A, Gatlin J, Denton PW, Othieno F, Wege AK, Hasse AT, and **Garcia JV**. Humanized mice mount specific adaptive and innate immune response to EBV and TSST-1. Nature Medicine. 12, 1322-1326 (2006).

O'Neill E, Baugh LL, Novitsky VA, Essex ME and **Garcia JV**. Itra- and intersubtype alternative Pak2-activating structural motifs of HIV-1 Nef. J. Virology. 80, 8824-8829 (2006).

Agopian J, Wei BL, **Garcia JV**, and Gabuzda D. A Hydrophobic Binding Surface on the Human Immunodeficiency Virus Type 1 Nef Core Is Critical for Association with p21-Activated Kinase 2. J. Virology 80, 3050-3061 (2006).

O'Neill E, Kuo LS, Krisko JF, Tomchick DR, **Garcia JV**, and FosterJL. Dynamic evolution of the human immunodeficiency virus type 1 pathogenic factor, Nef. J. Virology 80, 1311-1320 (2006).

Wei B, Arora VK, Raney A, Kuo L, Xiao G-H, O'Neill E, Testa JR, Foster JL and **Garcia JV**. Activation of p21-activated kinase by human immunodeficiency virus type-1 Nef induces merlin phosphorylation. J. Virology. 79, 14976-14980 (2005).

Bente DA, Melkus MW, **Garcia JV** and Rico-Hesse, R. Dengue fever in humanized NOD/SCID mice. J. Virology. 79, 13797-13799 (2005).

Raney A, Kuo LS, Baugh LL, Foster JL and **Garcia JV**. Reconstitution and molecular analysis of an active Nef/PAK-2 complex. J. Virology. 79, 12732-12741 (2005).

Wei B, Denton P, Luo T, Foster JL, and **Garcia JV**. Inactivation of Human Immunodeficiency Virus Type 1 by Proteasomes and Lysosomes. J. Virology. 79, 5705-5712 (2005).

Binck BW, Tsen MF, Islas M, White JD, Schultz RA, Willis MS, **Garcia JV**, Horton JW, Thomas JA. Bone marrow-derived cells contribute to contractile dysfunction in endotoxic shock. Am. J. Phys. Heart. 288, 577-583 (2005).

Cravens PD, Melkus MW, Padgett-Thomas A, Islas-Ohlmayer M, Martin MP and **Garcia JV**. *In vivo* modeling of human dendritic cell development, differentiation and function: phenotypic and functional analysis during the steady state and acute response to endotoxin. Stem Cells. 23, 264-278 (2005).

Reviews & commentaries

Denton PW and **Garcia JV.** Novel humanized murine models for HIV research. Curr HIV/AIDS Rep 6(1):13-9 (2009).
Foster JL and **Garcia JV**. HIV-1 Nef: at the crossroads. Retrovirology 5:84, (2008).
Foster, JL and **Garcia JV**. HIV Pathogenesis: Nef loses control. Cell 125, 1034-1035 (2006).

Editorial Responsibilities

Editorial boards

Journal of Virology 2007-2010

Ad hoc reviewer for:

Nature, Nature Medicine, Nature Biotechnology, Journal of Virology, Journal of Clinical Investigation, Blood,

Grants/Contracts

Grantor: NIH NIAID 4R33AI071940-03
Title of the project: Implementation of a vaginal/rectal HIV transmission to model to evaluate microbicides
Role of nominee: Principal Investigator (2.4 Cal Mos)
Annual amount and dates: -09 $250,000, -10 $250,000, -11 $250,000; 09/20/08-08/31/11
Total amount of award and dates: $750,000; 09/20/08-08/31/11

Grantor: NIH 1RO1 AI073146-01
Title of the project: Vaginal/Rectal HIV Transmission Model
Role of nominee: Principal Investigator (1.2 Cal Mos)
Annual amount/dates:-01 $359,543, -02 $370,329, -03 $381,439, -04 $392,882; 07/01/07-06/31/11
Total amount of award and dates: $1,504,193; 07/01/07-06/31/11

Grantor: NIH/NIAID 5 RO1 AI33331
Title of the project: Nef Function
Role of nominee: Principal Investigator (1.2 Cal Mos)
Annual Amount and dates: -14 $250,000, -15 $250,000, -16 $250,000, -17 $250,000; 06/01/07-05/31/11
Total amount of award and dates: $1,000,000; 06/01/07-05/31/11

Grantor: NIH/NIAID U19 AI082608
Title of the project: Modeling eradication of HIV infection in BLT mice
Role of Nominee: Principal Investigator, project 2 (1.2 Cal Mos)
(David M. Margolis, M.D., PI, University of N. Carolina)
Total amount and dates: -01 $351,339, -02 $361,879; 03/01/09-02/28/11
Total amount of award and dates: $713,218; 03/01/09-02/28/11

Grantor: NIH/NIAID RO1AI39416 (No Cost Extension; 11/30/10)
Title of the project: Gene Transfer System for AIDS Therapy
Role of nominee: Principal Investigator (1.2 Cal Mos)
Annual amount and dates: -08 $225,000, -09 $225,000, -10 $219,713, -11 $218,250, -12 $219,713; 12/01/03-11/30/08
Total amount of award and dates: $1,107,676; 12/01/03-11/30/08

Grant Review Service

Member, AMCB Study Section

Committee Service

University of North Carolina, Chapel Hill

2009- Simmons Scholar Program Advisory Committee (UNC)
2009- Carolina Latina/o Collaborative Working Group (UNC)

Outside UNC

Board of Directors, Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)

Professional Meetings/Societies

Meeting organization

2nd International Workshop on Humanized Mice, organizing committee, Amsterdam, 2009

3rd International Workshop on Humanized Mice, organizer, Washington, DC, 2011

Microbiocides 2010, organizing committee, Pittsburg, PA 2010.

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Morgan C Giddings, Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology and Immunology

Joint Appointment: Department of Computer Science

Publications

Primary literature

1. Su, H.C., Ramkissoon, K., Doolittle, J., Clark, M., Khatun, J., Secrest, A., Wolfgang, M.C., and Giddings, M.C. **2010**. The development of ciprofloxacin resistance in *Pseudomonas aeruginosa* involves multiple response stages and multiple proteins. Antimicrob Agents Chemother. *In press.*
2. Miller, J.A., Parker, M., Bourret, R.B., and Giddings, M.C. **2010**. An Agent-Based Model of Signal Transduction in Bacterial Chemotaxis. PLoS One, 5(5): e9454.
3. Maier, C.W., Long, J.G., Hemminger, B.M., and Giddings, M.C. **2009**. Ultra-Structure database design methodology for managing systems biology data and analyses. BMC Bioinformatics, 10:254.
4. Wilkinson, K.A., Vasa, S.M., Deigan, K.E., Mortimer, S.A., Giddings, M.C., and Weeks, K.M. **2009**. Influence of nucleotide identity on ribose 2'-hydroxyl reactivity in RNA. RNA, 15(7): 1314-1321.
5. Vasa, S.M., Guex, N., Wilkinson, K.A., Weeks, K.M., and Giddings, M.C. **2008**. ShapeFinder: A software system for high-throughput quantitative analysis of nucleic acid reactivity information resolved by capillary electrophoresis. *RNA*, 14(10): 1979-90.
6. Wilkinson, K.A., Gorelick, R.J., Vasa, S.M. Guex, N., Rein, A., Mathews, D. Giddings, M.C. and Weeks, K.M. **2008**. High-throughput SHAPE analysis reveals structures in HIV-1 genomic RNA strongly conserved across distinct biological states. *PLOS Biology*, 6(4): e96.
7. Khatun, J., Hamlett, E.D., and Giddings, M.C. **2008**. Incorporating Sequence Information into the Scoring Function: A Hidden Markov Model for Improved Peptide Identification. *Bioinformatics*, 24(5): 674-81.
8. Yang, D., Ramkissoon, K., Hamlett, E., and Giddings, M.C. **2008**. High-Accuracy Peptide Mass Fingerprinting Using Peak Intensity Data With Machine Learning. *Journal of Proteome Research.* 7 (01), 62–69.
9. Da Costa, KA, Miller, J.A., Giddings, M.C., Cui, Z., and Zeisel, S.H. **2008.** Characteristic changes in plasma phosphatidylcholine species in humans depleted of choline. FASEB, 22:1092.8.
10. Su, H.C., Hutchison III, C.A., and Giddings, M.C. **2007**. Mapping phosphoproteins in *Mycoplasma genitalium* and *Mycoplasma pneumoniae*. *BMC Microbiology*, 7:63.

11. Khatun J, Ramkissoon K, Giddings MC. **2007**: Fragmentation Characteristics of Collision-Induced Dissociation in MALDI TOF/TOF Mass Spectrometry. *Anal. Chem.* 79: 3032-3040. Journal has ISI Impact Factor of 5.6.
12. Crayton ME, 3rd, Powell BC, Vision TJ, Giddings MC. **2006**. Tracking the evolution of alternatively spliced exons within the Dscam family. *BMC Evol Biol*, 6:16.

Reviews & commentaries

1. Wisz MS, Khatun J, Giddings MC: Computational methods enabling genome-based protein identification from large, complex genomes using mass spectrometry data. In: *Third IEEE Workshop on Genomic Signal Processing and Statistics (GENSIPS)*: 5/22/05 2005; Newport, RI: IEEE Signal Processing Society; 2005. This paper was fully reviewed by two anonymous peers and revised according to their instructions before acceptance into the proceedings.

Editorial Responsibilities

Editorial boards

Ad hoc reviewer for:
Bioinformatics, BMC Bioinformatics, Journal of Proteome Research, Nature Biotechnology, and Nucleic Acids Research.

1. Jefferys, S.R. and Giddings, M.C. 2010. Automated data integration and determination of posttranslational modifications with the protein inference engine. Methods in Molecular Biology volume – "Bioinformatics for Comparative Proteomics". *In press.*
2. Holmes, M.R., and Giddings, M.C. "Using GFS to identify encoding genomic loci from protein mass spectral data," Chapter 13: Unit 13.9, in Current Protocols in Bioinformatics, March **2008**.

Grants/Contracts

Principal Investigator: Morgan C Giddings 9/01/09 – 10/31/11
Software to Identify Post-translational Modifications From Proteomic Data Sets
NIH/NCRR, 5-R01-RR020823-04-06S1
$ 295,000.00/yr
0% effort

Co Principal Investigator: Morgan C Giddings 9/26/09 – 6/30/11
Generating and Managing Large Scale Proteogenomic Data for ENCODE Cell Lines
NIH/NHGRI, 1 RC2 HG005591-01
$ 800,000 /yr
20% effort

Principal Investigator: Morgan C Giddings 12/15/07-11/30/11
Software to Identify Post-translational Modifications From Proteomic Data Sets
NIH/NCRR, 2 R01 RR020823-06

$225,000/yr
32.5% effort

Collaborator: Morgan C Giddings 2/1/06 - 1/31/11
PI: Kevin Weeks
Structure of the HIV-1 Genome
NIH/CFAR, R01 AI068462-01
$250,000/yr
10% effort

Collaborator: Morgan C Giddings 09/15/06 - 07/31/11
PI: Richard Boucher
SCCOR in Host Factors in Chronic Lung Disease
NHLBI, 1 P50 HL 084934-01
5% effort

Principal Investigator: Morgan C Giddings 09/06/05 - 03/31/12
Developing Proteogenomic Mapping for Human Genome Annotation
NIH, 2-R01-HG003700
$ 314,115.00/yr
32.5% effort

UNC Leadership

Michael J. Hooker Proteomics Facility 2002 - 2009
Computational Advisor

Program in Bioinformatics and Computational Biology 2002-present
- *Co founder*, 2002
- *Member of Curriculum and Progression Committee*, 2002-present
- *Member BCB Executive Committee*, 2006-2009
- *Student Progression Director*, 2006-2009

Committee Service

University of North Carolina, Chapel Hill

Biomedical Engineering Department

Computer Resources Committee 2004-2009

Professional Meetings/Societies

Meeting organization

Member, Technical Program Committee, GENSIPS 2004- 2007

IEEE

Meeting participation

1. "Modeling Biology with Equations is Like Strapping a V8 Engine to a Horse Drawn Buggy", UNC-Charlotte Bioinformatics and Genomics Spring 2010 Seminar, UNC-Charlotte, Charlotte, NC, March 2010, Invited.
2. "Proteogenomic mapping for the human genome: technologies and challenges for identifying protein-coding sequences", College of Computing and Informatics, UNC-Charlotte, Charlotte, NC, April 2008, Invited.
3. "Modeling emergent behavior in bacterial chemotaxis with agents and scapes", UNC Theoretical and Systems Biology Seminar, March 2007, Invited.
4. " HMMScore: An HMM Model for Improved Peptide Identification using MS/MS", The Human Proteome Organization (HUPO) 5th Annual Congress 2006, Long Beach, CA, October 2006 (abstract selected for talk).
5. " All you ever wanted to know about software for biology", Carolina Center for Genome Sciences Faculty Meeting, April 2006, Invited.
6. "Examination of differential ribosomal protein modification and substitution in antibiotic resistant E. coli by top-down/bottom-up mass spectrometry", US HUPO 2006, Boston, MA. March 2006. (abstract selected for talk)
7. "It's all just a computer program", Triangle Complexity Seminar, UNC-Chapel Hill, Chapel Hill, NC, December 2005, Invited.
8. "Proteomic Analysis of Compensatory Mutations in the Ribosomes of Drug Resistant Bacteria", York University, Nov 2005, Invited.
9. "Proteomic Analysis of Compensatory Mutations in the Ribosomes of Drug Resistant Bacteria", NC A&T University, Nov 2005, Invited.

Society membership

Human Proteome Organization (HUPO)	2005 -present
International Society for Computational Biology	2005 - present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

William Goldman, Ph.D.

Professor and Chair of Microbiology and Immunology

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Mellroth, P., J. Karlsson, J. Håkansson, N. Schultz, W.E. Goldman, and H. Steiner. 2005. Ligand induced dimerization of *Drosophila* peptidoglycan recognition proteins. **Proceedings of the National Academy of Sciences U.S.A.** 102:6455-6460.

Lathem, W.W., S.D. Crosby, V.L. Miller, and W.E. Goldman. 2005. Progression of primary pneumonic plague: A mouse model of infection, pathology, and bacterial transcriptional activity. **Proceedings of the National Academy of Sciences U.S.A.** 102:17786-17791.

Swaminathan, C.P., P.H. Brown, A. Roychowdhury, Q. Wang, R. Guan, N. Silverman, W.E. Goldman, G.-J. Boons, and R.A. Mariuzza. 2006. Dual strategies for peptidoglycan discrimination by peptidoglycan recognition proteins (PGRPs). **Proceedings of the National Academy of Sciences U.S.A.** 103:684-689.

Lim J.H., M.S. Kim, H.E. Kim, T. Yano, Y. Oshima, K. Aggarwal, W.E. Goldman, N. Silverman, S. Kurata, and B.H. Oh. 2006. Structural basis for preferential recognition of diaminopimelic acid-type peptidoglycan by a subset of peptidoglycan recognition proteins. **Journal of Biological Chemistry** 281:8286-8295.

Mielcarek, N., A.-S. Debrie, D. Raze, J. Bertout, A. Ben Younes, J. Engle, W.E. Goldman, and C. Locht. 2006. Live attenuated *Bordetella pertussis* as a highly efficient single-dose mucosal vaccine against whooping cough. **PLoS Pathogens** 2:e65.

Kaneko, T., T. Yano, K. Aggarwal, J.H. Lim, K. Ueda, Y. Oshima, C. Peach, D. Erturk-Hasdemir, W.E. Goldman, B.H. Oh, S. Kurata and N. Silverman. 2006. PGRP-LC and PGRP-LE play essential yet distinct roles in the *Drosophila* immune response to monomeric DAP-type peptidoglycan. **Nature Immunology** 7:715-723.

Cathelyn, J., S.D. Crosby, W.W. Lathem, W.E. Goldman, and V.L. Miller. RovA, a global regulator of *Yersinia pestis,* specifically required for bubonic plague. 2006. **Proceedings of the National Academy of Sciences U.S.A.** 103:13514-13519.

Marion, C.L., C.A. Rappleye, J.T. Engle, and W.E. Goldman. 2006. An a-(1,4)-amylase is essential for a-(1,3)-glucan production and virulence in *Histoplasma capsulatum.* **Molecular Microbiology** 62:970-983.

Lathem, W.W., V.L. Miller, and W.E. Goldman. 2007. A plasminogen-activating protease specifically controls the development of primary pneumonic plague. **Science** 26:509-513.

Rappleye, C.A., L.G. Eissenberg, and W.E. Goldman. 2007. *Histoplasma capsulatum* a-(1,3)-glucan blocks recognition by the macrophage b-glucan receptor. **Proceedings of the National Academy of Sciences U.S.A.** 104:1366-1370.

Almeida, A.J., J.A. Carmona, C. Cunha, A. Carvalho, C.A. Rappleye, W.E. Goldman, P.J. Hooykaas, C. Leão, P. Ludivico, and F. Rodrigues. 2007. Towards a molecular genetic system for the pathogenic fungus *Paracoccidioides brasiliensis*. **Fungal Genetics and Biology** 44:1387-1398.

Beck, M.R., G.T. DeKoster, D.M. Hambly, M.L. Gross, D.P. Cistola, and W.E. Goldman. Structural features responsible for biological stability of *Histoplasma*'s virulence factor CBP. 2008. **Biochemistry** 47:4427-4438.

Yano, T., S. Mita, H. Ohmori, Y. Oshima, Y. Fujimoto, R. Ueda, H. Takada, W.E. Goldman, K. Fukase, N. Silverman, T. Yoshimori, S. Kurata. 2008. Autophagic control of listeria through intracellular innate immune recognition and autophagy in drosophila. **Nature Immunology** 9:908-916.

Gross, R., C.A. Guzman, M. Sebaihia, V.A.P. Martins dos Santos, D.H. Pieper, R. Koebnik, M. Lechner, D. Bartels, P.D. Becker, J. Buhrmester, J.V. Choudhuri, T. Ebensen, L. Gaigalat, S. Hermann, A.N. Khachane, C. Larisch, S. Link, B. Linke, F. Meyer, S. Mormann, D. Nakunst, C. Rückert, S. Schneiker-Bekel, K. Schulze, F.-J. Vorhölter, T. Yevsa, J.T. Engle, W.E. Goldman, A. Pühler, U.B. Göbel, A. Goesmann, H. Blöcker, O. Kaiser & R. Martinez-Arias. 2008. The missing link: *Bordetella petrii* is endowed with both the metabolic versatility of environmental bacteria and virulence traits of pathogenic *Bordetellae*. **BMC Genomics** 9:449.

Adin, D.M, J.T. Engle, W.E. Goldman, M.J. McFall-Ngai, and E.V. Stabb. 2009. Mutations in *ampG* and lytic transglycosylase genes affect the net release of peptidoglycan monomers from *Vibrio fischeri*. **Journal of Bacteriology** 191:2012-2022.

Beck, M.R., G.T. DeKoster, D.P. Cistola, and W.E. Goldman. 2009. NMR structure of a fungal virulence factor reveals structural homology with mammalian saposin B. **Molecular Microbiology** 72:344-353.

Troll, J.V., D.M. Adin, A.M. Wier, N. Paquette, N. Silverman, W.E. Goldman, F.J. Stadermann, E.V. Stabb, and M.J. McFall-Ngai. 2009. Peptidoglycan induces loss of a nuclear peptidoglycan recognition protein during host tissue development in a beneficial animal-bacterial symbiosis. **Cellular Microbiology** 11:1114-1127.

Troll, J.V., E.H. Bent, N. Paquette, A.M. Wier, N., W.E. Goldman, N. Silverman, and M.J. McFall-Ngai. 2009. Taming the symbiont for coexistence: a host PGRP neutralizes a bacterial symbiont toxin. **Environmental Microbiology** (Dec. 27 Epub ahead of print).

Lehotzky, R.E., C.L. Partch, S. Mukherjee, H.L. Cash, W.E. Goldman, K.H. Gardner, and L.V. Hooper. 2010. Molecular basis for peptidoglycan recognition by a bactericidal C-type lectin. **Proceedings of the National Academy of Sciences U.S.A.** 107:7722-7727.

Reviews & commentaries

Goldman, W.E., and C.A. Rappleye. 2005. RNA interference as a tool for studying fungal pathogens. **Nova Acta Leopoldina** 92:141-145.

Rappleye, C.A., and W.E. Goldman. 2006. Defining virulence genes in the dimorphic fungi. **Annual Review of Microbiology** 60:281-303.

Cloud-Hansen, K.A., S.B. Peterson, E.V. Stabb, W.E. Goldman, M.J. McFall-Ngai, and J. Handelsman. 2006. Breaching the great wall: Peptidoglycan and microbial interactions. **Nature Reviews Microbiology** 4:710-716.

Rappleye, C.A., and W.E. Goldman. 2008. Fungal stealth technology. **Trends in Immunology** 29:18-24.

Editorial Responsibilities

Editorial boards

Editorial Board, Current Opinion in Microbiology 1997 - present
Editorial Board, Cellular Microbiology 1999 - present
Editorial Board, Trends in Microbiology 2000 - present
Editor, Molecular Microbiology 2001 - 2008
"Faculty of 1000" Section Co-Head (Cellular Microbiology & Pathogenesis) 2001 - present

Ad hoc reviewer for:

Cell, Science, Proceedings of the National Academy of Sciences USA, Genes & Development, Journal of Experimental Medicine, Journal of Clinical Investigation, Molecular Microbiology, Journal of Bacteriology, Journal of Immunology, Genetics, Journal of Leukocyte Biology, Gene, Biochemistry, Journal of Infectious Diseases, Clinical Microbiology Reviews, Medical Mycology, American Journal of Respiratory Cell and Molecular Biology, Eukaryotic Cell, Cell Host & Microbe, PLoS Pathogens

Grants/Contracts

Principal Investigator, 07/01/05-02/28/11
Molecular Mechanisms of *Histoplasma* Pathogenesis
NIH, R01 AI025584-18
Total direct costs $1,250,000
30% effort

Principal Investigator, 02/28/09-03/01/14
SERCEB Project SE-RP-007: Controlling the Progression of Pneumonic Plague
SERCEB/NIH, U54 AI057157-07
Total direct costs $859,500
20% effort

Principal Investigator, 09/01/04-05/31/10
a-(1,3)-Glucan as a Target for Antifungal Therapy
NIH, P01 AI061298-05
Total direct costs $600,000
20% effort

Principal Investigator, 08/01/02-05/31/08
Comparative Genomics of *Histoplasma* and *Blastomyces*
NIH, R01 AI050882
Total direct costs $793,182
20% effort

Principal Investigator, 07/01/07-02/29/08

New Targets for Plague Prevention and Therapy
MRCE/NIH, U54 AI057160
Total direct costs $56,000
10% effort

Principal Investigator, 08/01/06-02/28/07
Transcriptional regulation and response during bubonic and pneumonic plague
MRCE/NIH, U54 AI057160
Total direct costs $30,000
10% effort

Grant Review Service

Advisory Committee, Burroughs Wellcome Fund 2005 - present
American Academy of Microbiology Raymond W. Sarber Award Section Committee 2005 - 08
Ad hoc external grant reviewer, NIH and Veterans Affairs Medical Research Service

Honors/Awards

Featured Speaker, ASM Conference on Dimorphic Fungal Pathogens 2006
Keynote Speaker, Molecular Microbiology Graduate Program Retreat, University of Texas Southwestern Medical Center 2008
Keynote Speaker, Mid-Atlantic Microbial Pathogenesis Meeting 2009
Keynote speaker, Midwest Microbial Pathogenesis Meeting 2009
American Society for Microbiology Division F Lecturer 2010

Committee Service

University of North Carolina, Chapel Hill

Member, Dean's Advisory Committee, UNC-CH School of Medicine 2008 - present
Member, Strategic Space Planning Committee, UNC-CH School of Medicine 2009 - 2010

Outside UNC

Director, Washington University Graduate Program in Molecular Microbiology & Microbial Pathogenesis 1998 - 2007
Advisory Board, Washington University Infectious Diseases Scholars Program 2003 - 2008
Member, Infectious Diseases Research Strategic Plan Subcommittee, Washington U. 2007

Professional Meetings/Societies

Meeting organization
ASM Conferences Committee (currently Vice-Chair) 2005 - present

Chair, Scientific Committee, ASM Conference on Dimorphic Fungal Pathogens 2006
Meeting proposal review, American Academy of Microbiology Committee on Colloquia 2007 - 2010
Program Committee, ASM Biodefense and Emerging Diseases Research Meeting 2007 - 2009
ASM General Meeting Colloquium Advisory Committee 2009
Scientific Committee, Mid-Atlantic Microbial Pathogenesis Meeting 2009 - present
ASM General Meeting Program Committee 2010

Meeting participation

Invited participant, ASM-NIH Workshop on Basic Bacterial Research, Bethesda 2005
Invited speaker, Midwest Regional Center of Excellence in Biodefense & Emerging Infectious Diseases, Annual Meeting 2005
Invited speaker, Cold Spring Harbor Meeting on Microbial Pathogenesis and Host Response 2005, 2009
Invited speaker, International Meeting on Paracoccidioidomycosis 2005, 2008
Invited speaker, International Symposium on Pertussis, France 2006
Invited speaker, Gordon Research Conference on Microbial Toxins and Pathogenicity 2006, 2010
Invited speaker, ASM Biodefense Meeting (Washington, D.C.) 2006
Invited speaker, ASM Conference on Dimorphic Fungal Pathogens 2006, 2010
Discussion leader, Burroughs Wellcome Fund Conference on Infectious Diseases 2006
Invited speaker, International Symposium on *Yersinia* 2006, 2010
Invited speaker, FASEB Research Conference on Microbial Pathogenesis: Mechanisms of Infectious Diseases (Snowmass Village, CO) 2007
Invited speaker, Regional Centers of Excellence in Biodefense Annual Meeting 2007
Invited speaker, ITIC Molecular Biology Seminar 2007
Invited speaker, NIH Roundtable on Synthetic Biology 2007
Invited speaker, Gordon Research Conference on Fungal Cell and Molecular Biology 2008
Invited speaker, European Congress of Fungal Genetics (Scotland) 2008
Discussion leader, Gordon Research Conference on Plasminogen Activation and Extracellular Proteolysis 2008
Invited speaker, Mid-Atlantic Microbial Pathogenesis Meeting 2009
Invited speaker, FEBS Lecture Course on Human Fungal Pathogens (France) 2009
Invited speaker, Midwest Microbial Pathogenesis Meeting 2009
Invited speaker, American Society for Microbiology General Meeting, San Diego 2010
Invited lecturer, Woods Hole course on Molecular Mycology 2010
Invited speaker, Gordon Research Conference on Immunology of Fungal Infections 2011

Society membership

American Society for Microbiology
Medical Mycological Society of the Americas
American Association for the Advancement of Science

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Jack D. Griffith Ph.D.

Kenan Distinguished Professor

Primary Appointment: Department of Microbiology and Immunology

Joint Appointment: Department of Biochemistry and Biophysics

Publications

Deepa Subramanian and Jack D. Griffith. Modulation of p53 binding to Holliday junctions and 3-cytosine bulges by phosphorylation events. **Biochemistry**, 44: 2536-2544, 2005.

Jozef Nosek, Adriana Rycovska, Judita Slezakova, Alexander M. Makhov, Jack D. Griffith, and Lubomir Tomaska. Amplification of telomeric arrays via rolling-circle mechanism. **J. Biol. Chem.** 10840-10845. 2005.

Grove DE, Willcox S, Griffith JD, Bryant FR. Differential single-stranded DNA binding properties of the paralogous SsbA and SsbB proteins from streptococcus pneumoniae. **J Biol Chem**. 11067-11073, 2005

Cindy Groff-Vindman, Anthony J. Cesare, Shobhana Natarajan, Jack D. Griffith and Michael J. McEachern Recombination at long mutant telomeres produces tiny ss and ds telomeric circles **Mol. Cell. Biol**. 11: 4406-4412, 2005

Deepa Subramanian and Jack Griffith. p53 monitors replication fork regression by binding to "Chicken foot" Intermediates. **J. Biol. Chem.** 280: 42568-42572, 2005

Martin, M., Cho, J., Cesare, A., Griffith, JD., and Attardi, G . Termination Factor-Mediated DNA Loop between Termination and Initiation Sites Drives Mitochondrial rRNA Synthesis. **Cell**. 123:1227-40, 2005

Alexander Makhov and Jack Griffith. Visualization of the Annealing of Complementary Single-stranded DNA Catalyzed by the Herpes Simplex Virus Type 1 ICP8 SSB/Recombinase. **J Mol Biol**. 355:911-22. 2006

Ji, Y., Gu, J., Makhov, A., Griffith, JD, and Mitchell, BS. Regulation of the interaction of inosine monophosphate dehydrogenase with mycophenolic Acid by GTP. **J Biol Chem.** 281:206-12. 2006

Debra Weigl, Mike Molloy, Tim Clayton, Jack Griffith, Clara Smith, Terry Steward, Barbara Merrill, Randolph DePrince, Carl Jone and Magnus Persmark. Characterization of a topologically aberrant plasmid population from pilot-scale production of clinical-grade DNA. **Journal of Biotechnology** 121: 1-12. 2006

Electron Microscopic Visualization of Telomerase from Euplotes aediculatus Bound to a Model Telomere DNA Nicole Fouché, Ian K. Moon, Brian R. Keppler, Jack D. Griffith and Michael B. Jarstfer **Biochemistry** 45: 9624-9631. 2006

Beiyu Liu, Dario Kalame, Akhilesh Pandey, Jack D. Griffith and Paul T. Englund. Role of p38 in Replication of *Trypanosoma brucei* Kinetoplast DNA. **Mol. Cell. Biology**, 26: 5382-5393, 2006.

Nicole Fouche, Sezgin Ozgur, Desmandia Roy and Jack D. Griffith. Replication fork regression in repetitive DNAs. **Nucl. Acids. Res**. 34: 6044-6050, 2006

Nicole Fouche, Anthony J. Cesare, Smaranda Willcox, Sezgin Ozgur, Sarah A. Compton and Jack D. Griffith, The Basic Domain of TRF2 Directs Binding to DNA Junctions

Irrespective of the Presence of TTAGGG Repeats. **J. Biol. Chem.** 281: 37486-37495, 2006

Nancy G. Nossal, Alexander M. Makhov, Paul D. Chastain, II, Charles E. Jones, and Jack D. Griffith. Architecture of the bacteriophage T4 replication complex revealed with nanoscale biopointers. **J. Biol. Chem.** 282: 1098-1108, 2007.

Kenney Kuo, Jack D. Griffith, and Kenneth Kreuzer. 5-Azacytidine induced methyltransferase-DNA adducts block DNA replication in vivo. : **Cancer Res.** 67(17):8248-54. 2007.

Yuan Yuan, Sarah Compton, Krystof Sobczak, Myrna Stenberg, Charles Thornton, Jack Griffith, and Maurice Swanson. Muscleblind-Like 1 Interacts with RNA Hairpins in Splicing Target and Pathogenic RNAs. **Nuc. Acids. Res**. 35: 5474-5486. 2007

Sarah A Compton, Jun-Hyuk Choi, Anthony Cesare, Sezgin Ozgur, Jack Griffith. Xrcc3 and Nbs1 are required for Telomere Length Maintenance and Production of Telomeric Circles in Human ALT cells. **Cancer Res**, 67: 1513-1519, 2007.

Jeonggu Sim, Sezgin Ozgur, Biing Yuan Lin, Jei-Hwa Yu, Thomas R. Broker, Louise T. Chow and Jack Griffith. Remodeling of the Human Papillomavirus Type 11 Replication Origin into Discrete Nucleoprotein Particles and Looped Structures by the E2 Protein. **J. Mol. Biol**. 375: 1165-1177. 2008.

Elini Mumtsidu, Alexander Makhov, Peter Konarev, Dimitri Svergun, Jack Griffith and Paul Tucker. Structural Features of the Single-strand binding protein of Epstein Barr Virus. **Journal of Structural Biology**, 161: 172-187. 2008

Anthony J. Cesare, Cindy Groff-Vindman, Sarah A. Compton, Michael J. McEachern and Jack D. Griffith. T-loops and homologous recombination dependent t-circles in a *Kluyveromyces lactis* telomere mutant strain. **Mol. Cell. Biol**. 28: 20-29, 2008.

Marcela Raices, Ramiro E. Verdun, Sarah A. Compton, Candy I. Haggblom, Jack D. Griffith, Andrew Dillin, Jan Karlseder. *C. elegans* telomeres contain 3' G tails and 5' C tails that are bound by two distinct OB fold containing proteins. **Cell**. 132: 745-757. 2008

Jack D. Griffith, Smaranda Willcox, Dennis W. Powers, Roger Nelson, and Bonnie K. Baxter. Discovery of abundant cellulose microfibers encased in 250 Ma Permian halite: a macromolecular target in the search for life on other planets. **Astrobiology**. 8: 215-228. 2008

Anthony J. Cesare, Cindy Groff-Vindman, Sarah A. Compton, Michael J. McEachern and Jack D. Griffith. T-loops and homologous recombination dependent t-circles in *Kluyveromyces lactis* telomere mutant strain. **Mol. Cell. Biol**. 28: 20-29. 2008

Etheridge, KT., Compton, SA., Barrientos, KS, Ozgus, A. Griffith, JD.,and Counter DM. Tethering telomeric double-and single-stranded DNA binding proteins inhibits telomere elongation. **J. Biol. Chem.** 238:6935-6941. 2008

Sarah A. Compton, Ashwini S. Kamath-Loeb, Lawrence A. Loeb, and Jack D. Griffith. The Werner Syndrome Protein binds Secondary Structure-containing DNA as a Trimer/Tetramer. **J. Biol. Chem.** 283: 24478-24483. 2008

Raschle, M., Knipscheer, P., Enoiu, M., Angelov, T., Sun, J., Griffith, J.D., Ellenberger, T.E., Scharer, O.D., and Walter, J.C. Mechanism of replication-coupled crosslink repair. **Cell,** 134: 969-980. 2008.

Makhov, A.M., Sen, A. Yu, X., Simon, M.N., Griffith, J.D., and Egelman, E.H. The bipolar filaments formed by Herpes Simplex Virus Type I SSB/Recombination protein (ICP8) suggest a mechanism of DNA annealing. **J. Mol. Biol.** 386: 273-279, 2009.

Manolaaridis, I., Mumtsidu, E., Konarev, P., Makhov, A.M., Fullerton, S.F., Sinz, A., Kalkhof, S., McGeehan, J.E., Carey, P.D., Griffith, J.D., Svergun, D., Kneale, G.G, and Tucker, P. Structural and biophysical characterization of the proteins interacting with the Herpes Simplex virus 1 origin of replication. in press, **J. Biol. Chem.** 284: 16343-16353, 2009.

Adrian Randall and Jack Griffith. Structure of long telomeric DNA transcripts: The G-rich RNA forms a compact repeating structure containing G-Quartets. **J. Biol. Chem**. 284: 13980-13986, 2009

Jaakko L.O. Pohjoismäki, Steffi Goffart, Henna Tyynismaa, Smaranda Willcox, Tomomi Ide, Dongchon Kang, Anu Suomalainen, Pekka J. Karhunen, Jack D. Griffith, Ian J. Holt, Howard T. Jacobs. Human heart mitochondrial DNA is organized in complex catenated networks containing abundant recombination junctions and replication forks. **J Biol. Chem**. 284: 21446-21457, 2009

Basenko, EY., Cesare, AJ., Lyer, S., Griffith, JD., and McEachern, M. Telomeric circles are abundant in the stn1-M1 mutant that maintains its telomeres through recombination. **Nucleic Acids Res.** 38: 182-189. 2009.

Mehmet Kesimer, Alexander M. Makhov, Jack D. Griffith, Pedro Verdugo and John K. Sheehan. Unpacking a gel forming mucin: a view of MUC5B organization after granular release. **Am. J. Physiol. Lung Cell Mol Physiol.** 298 L15-2. 2010.

Rehmus, D., Eeuron, F., Tolun, G., Griffith, J.D., Mossir, EP, and Diffley, JF. Concerted Loading of Mcm2-7 Double Hexamers Around DNA during DNA Replication Origin Licensing. **Cell**, 139: 719-730. 2009.

Liu B, Yildirir G, Wang J, Tolun G, Griffith JD, Englund. PT.TbPIF1, a Trypanosoma brucei mitochondrial DNA helicase, is essential for kinetoplast minicircle replication. **J. Biol. Chem.** 285: 7056-7066. 2009.

Rass, U., Compton, SA., Matos, J, Singleton, MR, Ip, SC., Blanco, MG., Griffith, JD, and West, SC. Mechanisms of Holliday Junction resolution by the human GEN1 protein. **Genes and Development**. 24: 1559-1569. 2010

Compton, SA., Ozgur, S., and Griffith, JD. Ring-shaped Rad51 paralog protein complexes bind Holliday junctions and replication forks as visualized by electron microscopy. **J. Biol. Chem**. 285: 13349-13356. 2010.

Thorslund, T., McIllwraith, MJ., Compton, SA., Lekomtsev, S., Pertonczki, M., Griffith, JD, and West. S. the Breast Cancer Tumor Suppressor BRCA2 Promotes the Specific Targeting of RAD51 to Single Stranded DNA. **Nature Molecular and Structural Biology.** 2010 in press.

Review articles

Lubomir tomaska, Josef Nosek, Juraj Kramara, and Jack D. Griffith. Telomeric circles: Universal players in telomere maintenance. **Nature Structural Molecular Biology** 16: 1010-1015, 2009

Editorial Responsibilities

Editorial boards

Editorial Board, Journal of Biological Chemistry, 2002-2007, 2010 to present

Grants/Contracts

Grants Funded

Principal Investigator 2001-2005
Ellison Senior Scholar Award
Ellison Medical Foundation. SS-0533-00.
Total Direct $600,000
Principal Investigator 2004-2009
Dynamics of DNA looping at the Replication Fork
NIH 1-RO1-GM31819-21.
Total direct Funding $880,000
% effort: 25

Grant support over the past 5 years

ACTIVE

Principal Investigator: Earp 12/1/04 - 11/30/09
Cancer Center Core Support Grant- Microscopy and Imaging Core
National Cancer Institute , 5-P30-CA16086-34
Direct Cost: 81,196.00
% effort: 10

Principal Investigator: Raab-Traub 4/1/05 - 3/31/10
Herpesviral Oncogenesis, Latency and Reactivation- Project 1
National Cancer Institute, 2-P01-CA19014-31
Direct Cost: 183,446.00
% effort: 20

Principal Investigator 5/1/05 - 4/30/10
Nucleoprotein Structures Formed At Sites of DNA Damage
National Inst. of Health, 1-RO1-ES13773-05
Direct Cost: 220,689.00
% effort: 25

Principal Investigator 1/1/06 - 12/31/09
Studies of Telomere Structure Using Yeast Model Systems
National Inst. of Health, 2-RO3-TW05654-06
Direct Cost: 27,335.00
% effort: 5

Principal Investigator 9/27/07 - 9/27/09
Glenn Award for Research in Biological Mechanisms on Aging
Glenn Foundation
Direct cost: 25,000.00

The Glenn Award is a one-time $50,000 grant given to augment research in the Griffith Laboratory.

Principal Investigator 1/1/09 - 12/31/12
DNA-Protein Interactions at the Replication Fork
National Inst. of Health, 2-R01-GM031819-25
Direct Cost: 229,350.00
% effort: 25

Principal Investigator 5/1/09 - 4/30/10
Instrumentation for Upgrading cryoEM and Single Particle Analysis Capabilities
National Inst. of Health, 1-S10-RR025456-01
Direct Cost: 310,074.00

TERMINATED
Principal Investigator 7/1/01 - 6/30/06
Studies of Telomere Structure Using Yeast Model Systems
National Inst. of Health, 1-R03-TW05654-03
Direct Cost: 32,000.00

Principal Investigator 7/1/04 - 12/31/08
DNA-Protein Interactions at the Replication Fork
National Inst. of Health, 2-RO1-GM31819-24
Direct Cost: 250,000.00
% effort: 25

Principal Investigator 7/1/05 - 10/31/05
XXII International Conference on Yeast Genetics and Molecular Biology
Ellison Medical Foundation, AG-CW-0207-05
Direct Cost: 8,100.00

Grant Review Service

Site visits for CryoEM facility, NIH, December 2009

Honors/Awards
36 journal covers, 1979-present
Elected to the American Academy of Arts and Sciences 2005
Awarded the Grand Gold Medal of Comenius University, Slovak Republic, 2006
Glenn Foundation Glenn Award. 2007

Committee Service

University of North Carolina, Chapel Hill

RAC: Deans research advisory committee 2007-2010

Professional Meetings/Societies

Meeting organization

Chief Organizer: 2008 Keystone Symposium on DNA Replication, Santa Fe, NM

Society membership

Associated Societies of Molecular Biology and Biochemistry

Biophysical Society

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Mark T. Heise, Ph.D.

Associate Professor

Primary Appointment: Department of Genetics

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Bhardwaj, N., M.T. Heise, and T.M. Ross. 2010. Vaccination with DNA plasmids expressing Gn coupled to C3d or alphavirus replicons expressing Gn protects mice against Rift Valley fever virus, **PLoS Neglected Tropical Diseases**. *In Press*
2. Frieman MB, Chen J, Morrison TE, Whitmore A, Funkhouser W, Ward JM, Lamirande EW, Roberts A, Heise M, Subbarao K, Baric RS. SARS-CoV pathogenesis is regulated by a STAT1 dependent but a type I, II and III interferon receptor independent mechanism. **PLoS Pathog**. 2010 Apr 8;6(4):e1000849
3. Cruz, C.C., M.S. Suthar, S.A. Montgomery, R.Shabman, J.D. Simmons, R.E. Johnston, T.E. Morrison, and M.T. Heise*, Modulation of type I IFN induction by a virulence determinant within the Alphavirus nsP1 protein, **Virology**, 399(1):1-10.
4. Simmons, J.D., White, L., Morrison, T.E., Montgomery, S.A., Whitmore, A., Johnston, R.E., and M.T. Heise*, Venezuelan equine encephalitis virus disrupts STAT1 signaling by mechanisms independent of host shutoff. **The Journal of Virology.** 83 (20):10571-81
5. Heise, M.T.*, A. Whitmore, J. Thompson, A.A. Grobbelaar, A. Kemp, J.T. Paweska, K. Madric, L.J. White, R. Swanepoel, and F.J. Burt. 2009. An alphavirus replicon derived candidate vaccine for Rift Valley fever virus. **Epidemiology and Infection** 27:1-10
6. Sheahan, T., T.E. Morrison, W. Funkhouser, S. Uematsu, S. Akira, R.S. Baric*, and M.T. Heise*. 2008. MyD88 is required for protection from lethal infection with a mouse adapted SARS-CoV. **PLoS Pathogen** 4(12):e1000240.
7. Shabman, R., Rogers, K.M., and M.T. Heise*. 2008. Modulation of type I interferon induction by N-linked glycans on a mosquito-borne alphavirus. **Journal of Virology** 82(24):12374-83
8. Morrison, T.E., J. D. Simmons, and M.T. Heise*. 2008. Complement receptor 3 (CR3) promotes severe Ross River virus-induced disease. **Journal of Virology** 82(22):11263-72
9. Moore CB, Bergstralh DT, Duncan JA, Lei Y, Morrison TE, Zimmermann AG, Accavitti-Loper MA, Madden VJ, Sun L, Ye Z, Lich JD, Heise MT, Chen Z, Ting JP-Y*. 2008. NLRX1: a novel regulator of mitochondrial antiviral immunity. **Nature** 451(7178):573-7
10. Rockx, B., T. Sheahan, E. Donaldson, J. Harkema, A. Sims, M. Heise, R. Pickles, M. Cameron, D. Kelvin, and R. Baric*, 2007. Synthetic reconstruction of zoonotic and early human SARS-CoV isolates that produce fatal disease in aged mice. **Journal of Virology**. 81(14):7410-23
11. Frieman M, Yount B, Heise M, Kopecky-Bromberg SA, Palese P, Baric RS*. 2007. Severe acute respiratory syndrome coronavirus ORF6 antagonizes STAT1 function by

sequestering nuclear import factors on the rough endoplasmic reticulum/Golgi membrane. **Journal of Virology**. 81(18):9812-24

12. Morrison, T.E., R.J.Fraser, P.N. Smith, S. Mahalingam, and M. T. Heise*. 2007. Complement contributes to inflammatory tissue destruction in a mouse model of Ross River virus-induced disease. **Journal of Virology**. 81: 5132-5143 **(Article selected for Journal of Virology Spotlight)**
13. Shabman, R.S., T.E. Morrison, C. Moore, L. White, M.S. Suthar, L. Hueston, N. Rulli, B. Lidbury, J. P-Y. Ting, S. Mahalingam, and M.T. Heise*. 2007. Differential Induction of Type I IFN Responses in Myeloid Dendritic Cells by Mosquito and Mammalian cell-derived Alphaviruses, **Journal of Virology**. 81:237-247
14. Roberts A., D. Deming, C. D. Paddock, A. Cheng, B.Yount, L. Vogel, B. D. Herman, T. Sheahan, M. Heise, G. L. Genrich, S. R. Zaki, R. Baric, and K. Subbarao*. 2006. A mouse-adapted SARS-coronavirus causes disease and mortality in BALB/c mice. **PLOS Pathogens**, 3:23-37
15. Deming,D., T. Sheahan, M. Heise**,** B. Yount, N. Davis, A. Sims, M. Suthar, J. Harkema, A. Whitmore,R. Pickles, A. West, E. Donaldson, K. Curtis, R. Johnston, and R. Baric*. 2006. Vaccine Efficacy in Senescent Mice Challenged with Recombinant SARS-CoV Bearing Epidemic and Zoonotic Spike Variants. **PLOS Medicine**, 3:2359-2375
16. Filone, C. M**.,** M. Heise**,** R. W. Doms, and A. Bertolotti-Ciarlet*. 2006. Development and characterization of a Rift Valley fever virus cell-cell fusion assay using alphavirus replicon vectors. **Virology**. 356:155-164
17. Morrison, T.E., Whitmore, A.C., Shabman, R.S., Lidbury, B.A., Mahalingam, S., and M.T. Heise*. 2006. Characterization of Ross River virus tropism and virus-induced inflammation in a mouse model of viral arthritis and myositis. **Journal of Virology**. Volume 80: 737-749
18. Suthar, M.S., Shabman, R., Madric, K., Lambeth, C., and Heise, M.T.*, 2005. Identification of adult mouse neurovirulence determinants of the Sindbis virus strain AR86. **Journal of Virology** 79: 4219-4228

Reviews & commentaries

1. Rogers, K.R.* and M.T. Heise. 2009. Modulation of Cellular Tropism and Innate Antiviral Response by Viral Glycans. **Journal of Innate Immunity**. 1(5):405-12
2. Morrison, T.E. and Heise, M.T.* 2008. The host complement system and arbovirus pathogenesis. **Current Drug Targets** 9(2):165-72
3. Frieman M, Heise M, Baric R.*, 2007. SARS coronavirus and innate immunity. **Virus Research**. 133:101-112
4. Rulli, N.E., Suhrbier, A., Hueston, L., Heise, M.T., Tupanceska, D., Zaid, A., Wilmes, A., Gilmore, K., Lidbury, B.A., Mahalingam, S.* 2005. Ross River virus: molecular and cellular aspects of disease pathogenesis. **Pharmacol Ther**. 107(3):329-42.

Editorial Responsibilities

Editorial boards

Journal of Virology (2006-2011)

Ad hoc reviewer for:

Archives of Virology, Journal of General Virology, Journal of Infectious Diseases, Microbes and Infection, PLoS Pathogen, PLoS One, Scandinavian Journal of Rheumatology, Virology, Vaccine, Virus Research

Grants/Contracts

Principal Investigator 04/01/08-03/31/2011
Improved Vaccines for Rift Valley Fever Virus
National Institutes of Health/NIAID 1 R01 AI074946-02
Total Direct Costs: $1,201,968
Percent Effort: 2.4 Cal. Months

Principal Investigator 8/01/2000-8/31/2011
Togavirus Tropism for Bones, Joints, and CNS
National Institutes of Health (NIAMS) R01 AR47190-08
Total Direct Costs: $1,016,910
Percent Effort: 2.4 Cal. Months
ARRA Supplement: 9/18/2009-9/17/2011
Total Direct Costs $149,479

Principal Investigator 04/01/09-03/31/14
Project 2.1: The Pathogenesis of Chikungunya Virus
Southeastern Center for Excellent in Emerging Infectious Diseases and Biodefense
National Institutes of Health/NIAID U54 AI 057157-07
Total Direct Costs $769,271
Percent Effort 1.2 Cal. Months

Principal Investigator 12/01/2007 – 11/30/2012
Immune Evasion Mechanisms of Neurovirulent Alphaviruses
National Institutes of Health/NIAID R01 AI 067641-03
Total Direct Costs $994,000
Percent Effort 2.4 Cal. Months

Co-Investigator 04/01/08-03/31/2013
PI: Ralph Baric
SARS-CoV Pathogenic Mechanisms in Senescent Mice
National Institutes of Health/NIAID 1 R01 AI075297-02
Total Direct Costs $1,966,516
Percent Effort 0.6 Cal. Months

Co-Investigator 04/01/09-03/31/14
PI: Ralph Baric
Systems Pathogenomics of Acute Respiratory Virus Infection

Pacific Northwest Regional Center for Excellence in Biodefense and Emerging Infectious Diseases.

National Institutes of Health/NIAID	U54 AI081680-01
Total Direct Costs	$1,484,960
Percent Effort	0.6 Cal. Months

Grant Review Service

NIH *Ad Hoc* Reviewer: (ZRG1 IDM-L (55) Study Section, May 2010

NIH *Ad Hoc* Reviewer OD-10-005: Recovery Act Limited Competition: NIH Director's Opportunity for Research in Five Thematic Areas (RC4),

NIH *Ad Hoc* Reviewer: Virology B Study Section (VirB). Feb. and June 2009, Feb. 2010

NIH *Ad Hoc* Reviewer: Vaccines Against Microbial Diseases (VMD) study section
May 19-20, 2008
Oct. 2-3, 2008 (mail in)

NIH *Ad Hoc* Reviewer IDM-G90 (S) Study Section
2/23/2006
6/14/2007
10/04/2007
04/04/2008
10/22/2008 (phone reviewer)

Ad Hoc Reviewer: Thomas F. and Kate Miller Jeffress Memorial Trust October, 2008

Ad Hoc Reviewer: The Austrian Genome Research Programme GEN-AU October 24th, 2008

Ad Hoc Reviewer: National Health Laboratory Service Research Trust (NHLSRT) Grants in South Africa, May 1st, 2007

Ad Hoc Reviewer. Western Regional Center for Excellence in Biodefense and Emerging Infectious Diseases. Precompetition Proposal Evaluation. October 12th 2007

Honors/Awards

Jefferson Pilot Award, UNC School of Medicine 10/9/2008

UNC Leadership

Interim Associate Director, The Carolina Vaccine Institute. 7/01/2010 – Present

Committee Service

University of North Carolina, Chapel Hill

UNC Curriculum in Genetics and Molecular Biology Graduate Program Advisory Committee. 2009-Present

UNC Department of Microbiology and Immunology Graduate Program Advisory Committee. 2009-Present

UNC Department of Genetics Faculty Advisory Committee. 2009-Present

Initiative for Maximizing Student Diversity (IMSD) Program Advisory Panel. UNC-CH. February 10th, 2009 – Present

BBSP Graduate Admission Committee. UNC-CH. December 1st, 2008- Present.

UNC Curriculum in Genetics and Molecular Biology Qualifying Exam Committee Member 2006-2007

UNC Center for Aids Research (CFAR) Immunology Core Advisory Committee 2005-Present

Outside UNC

Member: American Society for Virology, Education and Career Development committee (8-1-2008 to 7-31-2011)

Professional Meetings/Societies

Meeting participation

The Positive Strand RNA Virus Meeting, Atlanta, GA. May, 17-21, 2010. Host Inflammatory Responses Play a Key Role in the Pathogenesis Of Alphavirus-Induced Arthritis/Myositis (Invited Speaker)

American Society for Microbiology Meeting on Biodefense, Baltimore, Maryland, Feb. 21-24, 2010. The Role of Innate Immunity in the Pathogenesis of Alphavirus-Induced Arthritis: New Interactions with Old Pathways (Invited Speaker)

10th Southeastern Regional Conference on Virology (SERCV), Atlanta, GA, April 4th-6th, 2008. Plenary Session. The Role of Host Innate Immune Mediators in the Pathogenesis of Alphavirus-Induced Arthritis/Myositis (Invited Speaker)

Society membership

American Society for Microbiology (2000-Present)

American Society for Virology (2002-Present)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Marcia M. Hobbs, Ph.D.

Professor

Primary Appointment: Department of Medicine (Division of Infectious Diseases)

Joint Appointment: Department of Microbiology & Immunology

Publications

Primary literature

1. Hobbs, M.M., Steiner, M.J., Rich, K.D, Gallo, MF, Warner, DL and Macaluso, M. Vaginal swab processing methods influence perfromance of rapid semen detection tests: A cautionary tale. (2010) *Contraception* **in press**.

2. Brown, L.B., Krysiak, R., Kamanga, G., Mapanje, C., Kanyamula, H., Banda, B., Mhango, C., Hoffman, M., Kamwendo, D., Hobbs, M., Hosseinipour, M.C., Martinson, F., Cohen, M.S., and Hoffman, I.F. *Neisseria gonorrhoeae* antimicrobial susceptibility in Lilongwe, Malawi, 2007. (2010) *Sexually Transmitted Diseases* **37,**169-172.

3. Minnis, A.M., Steiner, M.J., Gallo, M.F., Warner, L., Hobbs, M.M., van der Straten, A., Chipato, T., Macaluso, M. and Padian, N.S. Biomarker validation of reports of recent sexual activity: results of a randomized controlled study in Zimbabwe. (2009) *American Journal of Epidemiology* **170**, 918-924.

4. Torok, M.R., Miller, W.C., Hobbs, M.M., MacDonald, P.D.M., Leone, P.A., Schwebke, J.R. and Seña, A.C. The association between oral contraceptives, depot-medroxyprogesterone acetate, and trichomoniasis. (2009) *Sexually Transmitted Diseases* **36**,336-340.

5. Hobbs, M.M., Steiner, M.J., Rich, K.D., Gallo, M.F., Alam, A., Rahman, M., Menezes, P., Chipato, T., Warner, L. and Macaluso, M. Good performance of rapid prostate-specific antigen (PSA) test for detection of semen exposure in women: implications for qualitative research. (2009) *Sexually Transmitted Diseases* **36**, 501-506.

6. Huppert, J.S., Mortensen, J.E., Reed, J.L., Kahn, J.A., Rich, K.D. and Hobbs, M.M. *Mycoplasma genitalium* detected by transcription-mediated amplification is associated with *Chlamydia trachomatis* in adolescent women. (2008) *Sexually Transmitted Diseases* **35**, 250-254.

7. Rogers, S.M., Miller, W.C., Turner, C.F., Ellen, J., Zenilman, J., Rothman, R., Villarroel, M., Al-Tayyib, A., Leone, P.A., Gaydos, C., Ganapathi, L., Hobbs, M.M. and Kanouse, D. Concordance of *Chlamydia trachomatis* infections within sexual partnerships. (2008) *Sexually Transmitted Infections* **84**, 23-28.

8. Hobbs, M.M., Van Der Pol, B., Totten, P., Gaydos, C.A., Wald, A., Warren, T., Winer, R.L., Cook, R.L., Deal, C.D., Rogers, M.E., Schachter, J., Holmes, K.K. and Martin, D.H. From the NIH: Proceedings of a workshop on the importance of self-obtained

vaginal specimens for detection of sexually transmitted infections. (2008) *Sexually Transmitted Diseases* **35**, 8-13.

9. Kinoshita-Moleka, R., Smith, J.S., Atibu, J., Tshefu, A., Hemingway-Foday, J., Hobbs, M.M., Bartz, J., Kotch, M.A., Rimoin, A.W. and Ryder, R.W. Low Prevalence of HIV and other selected sexually transmitted infections in 2004 among pregnant women from Kinshasa, the Democratic Republic of the Congo. (2008) *Epidemiology and Infection* **136**,1290-1296.

10. Gallo, M.F., Steiner, M.J., Warner, L., Hylton-Kong T, Figueroa JP, Hobbs MM and Behets FM. Self-reported condom use is associated with reduced risk of chlamydia, gonorrhea, and trichomoniasis. (2007) *Sexually Transmitted Diseases* **34**, 829-833.

11. Torok, M.R., Miller, W.C., Hobbs, M.M., MacDonald, P.D., Leone, P.A., Schwebke, J.R. and Seña, A.C. The association between *Trichomonas vaginalis* infection and level of vaginal lactobacilli among non-pregnant women. (2007) *Journal of Infectious Diseases* **196**,1102-1107.

12. Thomsen, S.C., Gallo, M.F., Ombidi, W., Omungo, Z., Janowitz, B., Hawken, M., Tucker, H., Wong, E.L., and Hobbs, M.M. Randomized controlled trial on whether advance knowledge of prostate-specific antigen testing improves participant reporting of unprotected sex. (2007) *Sexually Transmitted Infections* **83**, 419-420.

13. Huppert, J., Mortensen, J.E., Reed, J.L., Kahn, J.A., Rich, K.D., Miller, W.C., and Hobbs, M.M. Rapid antigen testing compares favorably to transcription-mediated amplification assay for detection of *Trichomonas vaginalis* in young women. (2007) *Clinical Infectious Diseases* **45**, 194-198.

14. Gallo, M.F., Behets, F.M., Steiner, M.J., Thomsen, S.C., Ombidi, W., Luchters, S., Toroitich-Ruto, C., and Hobbs, M.M. Validity of self-reported "safe sex" among female sex workers in Mombasa, Kenya - PSA analysis. (2007) *International Journal of Sexually Transmitted Diseases and AIDS* **18**, 33-38.

15. Seña, A.C., Miller, W.C., Hobbs, M.M., Schwebke, J.R., Leone, P.A., Swygard, H., Atashili, J. and Cohen, M.S. *Trichomonas vaginalis* infection in the sexual partners of infected women. (2007) *Clinical Infectious Diseases* **44**, 13-22.

16. Steiner, M.J., Taylor, D., Hylton-Kong, T., Mehta, N., Figueroa, J.P., Bourne, D., Hobbs, M. and Behets, F. Decreased condom breakage and slippage rates after counseling men at an sexually transmitted infection clinic in Jamaica. (2007) *Contraception* **75**, 289-293.

17. Hobbs, M.M., Lapple, D.M., Lawing, L.F., Schwebke, J.R., Cohen, M.S., Swygard, H., Atashili, J., Leone, P.A., Miller, W.C. and Seña, A.C. Methods for detection of *Trichomonas vaginalis* in the male partners of infected women: implications for control of trichomoniasis. (2006) *Journal of Clinical Microbiology* **44**, 3994-3999.

18. Morris, M., Handcock, M.S., Miller, W.C., Ford, C.A., Schmitz, J.L., Hobbs, M.M., Cohen, M.S., Harris, K.M. and Udry, J.R. Prevalence of HIV infection among young adults in the United States: Results From the Add Health Study. (2006) *American Journal of Public Health* **96**, 1091-1097.

19. Gallo, M.F., Behets, F.M., Steiner, M.J., Hobbs, M.M., Hatzell, T., Van Damme, K., Ralimamonjy, L., Raharimalala, L. and Cohen, M.S. Prostate-specific antigen to

ascertain reliability of self-reported coital exposure to semen. (2006) *Sexually Transmitted Diseases* 33, 476-479.

20. Steiner, M.J., Hylton-Kong, T., Figueroa, J.P., Hobbs, M.M., Behets, F., Smikle, M., Tweedy, K., Powell, S., McNeil, L. and Brathwaite, A. Does a choice of condoms impact sexually transmitted infection incidence? A randomized, controlled trial. (2006) *Sexually Transmitted Diseases* **33,** 31-35.

21. Afonina, G., Leduc, I., Nepluev, I., Jeter, C., Routh, P., Almond, G., Orndorff, P.E., Hobbs, M., and Elkins, C. Immunization with the *Haemophilus ducreyi* hemoglobin receptor HgbA protects against infection in the swine model of chancroid. (2006) *Infection and Immunity* **74**, 2224-2232.

22. Miller, W.C., Swygard, H., Hobbs, M.M., Ford, C.A., Handcock, M.S., Morris, M., Schmitz, J.L., Cohen, M.S., Harris, K.M. and Udry, J.R. The prevalence of trichomoniasis in young adults in the United States. (2005) *Sexually Transmitted Diseases* **33**, 593-598.

Reviews, commentaries & book chapters

1. Hobbs, M.M., Swygard, H., Seña, A.C. and Schwebke, J.R. *Trichomonas vaginalis* and Trichomoniasis. (2008) *In* Sexually Transmitted Diseases, 4th edition. K.K. Holmes, P.F. Sparling, W.E. Stamm, P. Piot, J.N. Wasserheit, L. Corey, M.S. Cohen and D.H. Watts, editors. McGraw Hill, New York, NY. pp. 771-793.

2. Seña, A.C. and Hobbs, M.M. Current and best practices for testing of sexually transmitted diseases. (2006) *North Carolina Medical Journal* **67**, 359-363.

3. Hobbs, M.M., Steiner, M.J., Feldblum, P.J. and Padian, N. Hobbs *et al.* reply to "The use of prostate-specific antigen as a criterion for condom effectiveness." (2005) *American Journal of Epidemiology* **162**, 704.

Editorial Responsibilities

Editorial boards

Journal of Clinical Microbiology	2009 - 2011
Sexually Transmitted Diseases	2009 – 2011
WHO STD Diagnostics Initiative	2003 - present

Ad hoc reviewer for:

BioMed Central Infectious Diseases, Clinical and Vaccine Immunology, Sexually Transmitted Infections, Sexually Transmitted Diseases, Clinical Microbiology Reviews, Journal of Clinical Microbiology, Journal of Infectious Diseases, Infection & Immunity, Human Reproduction

Grants/Contracts

Principal Investigator, start 12/07/2009 - end 12/06/2010
"Clinical Evaluation of the APTIMA® Trichomonas vaginalis Assay on the TIGRIS DTS System in Asymptomatic and Symptomatic Female Subjects"
Gen-Probe, Inc., 2009ATVT01
Total direct costs $53,200
% effort 5.0

Principal Investigator, start 07/01/2007 - end 09/30/2010
"Rapid PSA Testing – Next Steps"
Family Health International, FCO172008
Total direct costs $79,777
% effort 8.0

Center Co-Director, start 09/25/2009 - end 08/31/2014
(PI Philip Sparling)
"Southeastern Sexually Transmitted Infections Cooperative Research Center (Administrative Core A)"
NIH, U19 AI031496
Total direct costs to Hobbs $596,000
% effort 10.0

Core B PI, start 09/25/2009 - end 08/31/2014
(PI Philip Sparling)
"Southeastern Sexually Transmitted Infections Cooperative Research Center (Clinical and Microbiology Core B)"
NIH, U19 AI031496
Total direct costs to Hobbs $1,382,735
% effort 67.0

Grant Review Service

Ad hoc member NIH ZRG1 IDM-G (03) S Study Section, November 8, 2005

Ad hoc member NIH ZRG1 IDM-Q (53) R Study Section, November 17, 2009

Honors/Awards

2005 University of North Carolina Teaching Excellence Award

UNC Leadership

Co-Director, Southeastern Sexually Transmitted Infections Cooperative Research Center (based at UNC-CH)

Director, Clinical and Microbiology Core Laboratory of the Southeastern Sexually Transmitted Infections Cooperative Research Center (based at UNC-CH)

Committee Service

University of North Carolina, Chapel Hill

Member, UNC-CH Faculty Council, 2006 – 2009

Outside UNC

Member, CDC Expert Panel on Trichomoniasis, 2009

Chair, NIAID STI-TM CRC Diagnostics Working Group, 2005 – 2009

Professional Meetings/Societies

Meeting organization

Co-organizer, Annual Meeting of the NIAID Sexually Transmitted Infections and Topical Microbicides Cooperative Research Centers, Bethesda, MD, February 26-27, 2009.

Lead organizer, NIAID Workshop: Advances and Challenges in STI Microbicide Research, Chapel Hill, NC April 15-16, 2008.

Lead organizer and meeting chair, Annual Meeting of the NIAID Sexually Transmitted Infections and Topical Microbicides Cooperative Research Centers, Chapel Hill, NC, April 13-14, 2008.

Lead organizer and meeting chair, NIAID Workshop: The Importance of Self-Obtained Vaginal Swabs (SOVs) for Detection of STIs, Bethesda, MD, June 27, 2006.

Meeting participation

Speaker and Poster Presenter, 18th International Society for Sexually Transmitted Diseases Research Congress. London, United Kingdom, June 28 – July 1, 2009.

Speaker, University of Medicine and Dentistry of New Jersey, Symposia in Clinical Laboratory Science, Update: Genital & Sexually Transmitted Infections. Scotch Palins, New Jersey; October 21, 2008.

Speaker and Poster Presenter, 17th International Society for Sexually Transmitted Diseases Research Congress. Seattle, Washington, July 29 – August 1, 2007.

Speaker, NIAID Diagnostics Workshop on the Importance of Self-Obtained Vaginal Specimens for Detection of STIs. Bethesda, MD, June 27, 2006.

Presenter, 106th General Meeting of the American Society for Microbiology. Orlando, FL, May 21-25, 2006.

Speaker and Poster Presenter, 16th International Society for Sexually Transmitted Diseases Research Congress. Amsterdam, the Netherlands, July 10-13, 2005.

Society membership

Member, American Society for Microbiology, 1994 – present.

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Christian Jobin, Ph.D

Associate Professor

Primary Appointment: Department of Medicine

Joint Appointment(s): Department of Pharmacology, Department of Microbiology & Immunology

Publications

Primary literature

1. Ding, S., Chi, MM., Scull, BP., Rigby, R., Schwerbrock, N., Magness, ST., Jobin, C., Lund, PK. 2010 High-Fat Diet: Bacteria interactions promote intestinal inflammation which precedes and correlates with obesity and insulin resistance in mouse *PLoS ONE. In press*
2. Allen, IC., TeKippe, EM, Woodford, RMT., Uronis, JM., Holl, EK., Rogers, AB., Herfarth, HH., Jobin, C., Ting, JPY. (2010). The inflammasome functions as a negative regulator of tumorigenesis during colitis associated cancer. *J. Exp. Med* 207:1045-1056.
3. Uronis, J., Arthur, JC., Keku, T., Carroll, IM, Cruz, ML, De Simone, C, Appleyard, CB., Jobin, C. (2010). Gut Microbial Diversity is Reduced by the Probiotic VSL#3 and Correlates with Decreased TNBS-Induced Colitis. Inflamm. Bowel. Dis. *In press*
4. Thurston, RD., Larmonier, CB., Majewski, PM., Ramalingam, R., Laubitz, D., Midura-Kiela, M., Vandewalle, A., Besselsen, DG., Muehlbauer, M., Jobin, C., Kiela, PR., Ghishan, FK. (2010). Downregulation of aging-related Klotho gene in experimental colitis: the role of TNF and IFNg. *Gastroenterology.* 138(4):1384-1394
5. Lippert, E., Karrasch, T., Sun, X., Allard, B., Herfarth, H.H., Threadgill, D., Jobin, C. (2009). Gnotobiotic IL-10$^{-/-}$;NF-κB^{EGFP} mice develop rapid and severe colitis following *Campylobacter jejuni* infection. PloS ONE. 4(10):e7413
6. Uronis, JM., Mühlbauer, M., Herfarth, H.H., Jones, G.S., Rubinas, T.C., Jobin, C. (2009). Influence of the intestinal microbiota composition on development of colitis-associated colon cancer PloS ONE. 4(6): e6026
7. Kim, J-Y., Kajino-Sakamoto, R., Omori, E., Jobin, C., Ninomiya-Tsuji, J. (2009). intestinal epithelial-derived TAK1 signaling is essential for cytoprotection against chemical-induced colitis. PloS ONE. 4(2):e456
8. Joo YE., Karrasch T., Mühlbauer M., Allard B., Narula A., Herfarth HH., Jobin C (2009). Tomato lycopene extract prevents lipopolysaccharide-induced NF-kB signaling and gene expression, but worsens dextran sulfate sodium-induced colitis in transgenic NF-kB^{EGFP} mice. PloS ONE. 4(2):e4562
9. Kajino-Sakamoto, R., Inagaki, M., Lippert, E., Akira, S., Robine, S., Matsumoto, K., Jobin, C., Ninomiya-Tsuji, J. (2008). Intestinal epithelial-derived TAK1 signaling prevents TNF-dependent intestinal damage and the development of ileitis and colitis. J. Immunol. 181(2):1143-52
10. Larmonier, C.B., Uno, J.K., Lee, K.M., Karrasch, T., Laubitz, D., Thurston, R., Midura-Kiela, M.T., Ghishan, F.K., Sartor, R.B., Jobin, C., Kiela, P.R. (2008). Limited effects of dietary

curcumin on Th-1 driven colitis in IL-10 deficient mice suggest an IL-10 dependent mechanism of protection. Am. J. Physiol. 95(5):G1079-1091
11. Chavey C., Mühlbauer M., Bossard C., Freund A., Durand S., Jorgensen C., Jobin C., Lazennec G. (2008). Interleukin-8 expression is regulated by histone deacetylases through NF-kB pathway. Mol. Pharmacol. 74(5):1359-1366
12. Ivory, C.P.A., Prystajecky, M., Jobin, C., Chadee, K. (2008). TLR-9 dependent macrophage activation by *Entamoeba histolytica* DNA. Infect. Immun. 76(1):289-297
13. Mühlbauer M., Chilton P.M., Mitchell T.C., Jobin C. (2008). Impaired Bcl3 up-regulation leads to enhanced LPS-induced IL-23p19 gene expression in IL-$10^{-/-}$ mice. J. Biol. Chem. 283(21):14182-14189.
14. Davé, S., Tilstra, J.S, Matsuoka, K., Li F., Karrasch, T., Uno, J.K., Sepulveda, A.R., Jobin, C. Baldwin, A.S., Robbins, P.D., Plevy, S.E. (2007). Amelioration of chronic murine colitis by peptide mediated transduction of the IkB kinase (IKK) inhibitor NEMO binding domain (NBD) peptide. J. Immunol. 179(11):7852-7859
15. Kim S.C., Tonkonogy, S.L., Karrasch, T., Jobin, C., Sartor, R.B (2007). Dual-Association of Gnotobiotic IL-10-/- Mice With Two Non-Pathogenic Commensal Bacteria Induces Aggressive Pancolitis. Inflamm. Bowel. Dis. 13(12):1457-1466
16. Karrasch T, Kim, J.S., Mühlbauer, M. Magness, S.T., Jobin C. (2007). Gnotobiotic IL-$10^{-/-}$;NF-κB^{EGFP} mice reveal the critical role of TLR/NF-κB signaling in commensal bacteria-induced colitis. J. Immunol. 178 (10): 6622-6532
17. Karrasch T, Steinbrecher K, Allard B, Baldwin, A.S. Jobin C. (2006). Wound-induced p38MAPK-dependent histone H3 phosphorylation correlates with increased COX-2 expression in enterocytes *J. Cell. Physiol. 207*(3), 809-815.
18. Jijon, H.B., Walker, J., Hoentjen, F., Diaz, H., Ewaschuk, J., Jobin, C., Madsen, K.L. (2005). Adenosine is a negative regulator of NF-kB and MAPK signaling in human intestinal epithelial cells. *Cell. Immunol.237* (2), 86–95
19. Kim, J.S., Jobin, C. (2005). The Flavonoid Luteolin Prevents LPS-Induced NF-κB Signaling and Gene Expression by Blocking IκB Kinase Activity in Intestinal Epithelial Cells and Bone Marrow-derived Dendritic Cells. *Immunology. 115*(3), 375-387.
20. Jijon, H., Madsen, K.L., Walker, J.W., Allard, B., Jia, H.P., McCray, P., Jobin, C. (2005). Serum Amyloid A activates NF-κB and proinflammatory gene expression in human and murine intestinal epithelial cells. *Eur. J. Immunol. 35*(3), 718-726
21. Kim, J.S., Narula, A., Jobin, C. (2005). *Salvia miltiorrhiza* Water-Soluble Extract, But Not Its Constituent Salvianolic Acid B, Abrogates LPS-Induced NF-κB Signaling in Intestinal Epithelial Cells. *Clin. Exp. Immunol. 141*(2), 288-297.
22. Yan, S.R., Joseph, R.R. Rosen, K., Reginato, M.J., Allaire, N. Brugge, J.S., Jobin, C., Stadnyk, A.W. (2005). Activation of NF-κB following detachment delays apoptosis in intestinal epithelial cells. *Oncogene 24*(43), 6482-6491
23. Ou D., Wang X., Metzger D.L., Robbins M, Huang J, Jobin C., Chantler J.K., James R.F., Pozzilli P., Tingle A.J. (2005). Regulation of TNF-Related Apoptosis-Inducing Ligand-Mediated Death Signal Pathway in Human beta Cells by Fas-Associated Death Domain and Nuclear Factor kappaB. *Hum Immunol. 66*(7), 799-809
24. Wilson H.M., Chettibi S., Jobin C., Walbaum D., Rees A.J., Kluth D.C. (2005). Inhibition of macrophage nuclear factor-kappaB leads to a dominant anti-inflammatory phenotype that attenuates glomerular inflammation in vivo. *Am J Pathol. 167*(1), 27-37

25. Theiss, A.L., Simmons, J.G., Jobin, C., Lund, P.K. (2005). Tumor necrosis factor-a increases collagen accumulation and proliferation in intestinal myofibroblasts via TNF receptor 2. *J. Biol. Chem. 280*(43), 36099-36109

Reviews & commentaries

1. Arthur, JC., Jobin, C. (2010). The struggle within: Microbial influences on colorectal cancer. Inflamm. Bowel. Dis. *In press*
2. Jobin, C. (2010). Probiotics and ileitis: Could augmentation of TNF/NF-kB activity be the answer? Gut Microbes. *In press*
3. Jobin, C. (2010). MyD88 signaling in the intestine: Dr Jekyll and Mr Hyde? (2010). Gastroenterology. *In press*
4. Karrasch T, Jobin C. (2009) Wound Healing Responses at the Gastrointestinal Epithelium: A Close Look at Novel Regulatory Factors and Investigative Approaches. ZGastroenterol. 47(12):1221-1229
5. Uronis, J., and Jobin, C. (2009) Microbes and Colorectal Cancer: Is There a Relationship? Current Oncol. 16 (4):22-24
6. Karrasch, T., Jobin, C. (2008) NF-kB in the intestine: Friend or foe? Inflamm. Bowel. Dis. 14 (1):114-124
7. Jobin, C. (2008). The NF-kB signaling cascade and IBD: Turn it down? Inflamm. Bowel. Dis. 4(S2):S108-S109
8. Taylor, C., Jobin, C. (2005). Ubiquitin Protein modification and signal transduction: implications for inflammatory bowel diseases. *IBD 11*(12), 1097-1107

Editorial Responsibilities

Editorial boards

American Journal of Physiology, (2001-present)
Gastroenterology, (2005-present)
IBD: Section Editor: Cell Biology/Biochemistry/Molecular Biology (2007-2008)
IBD: Associate Editor: Cell Biology/Biochemistry/Molecular Biology (2008-present)

Ad hoc reviewer for:

American Journal Physiology: Cell physiology, Gastroenterology, GUT, Inflammatory Bowel Diseases, Infection and Immunity, Journal of Immunology, Journal of Clinical Investigation, Journal of Experimental Medicine, Molecular and Cellular Biology, Oncogene, Public Library of Science One.

Grants/Contracts

Principle Investigator, 04/01/2007-03/31/2011
Role of bacteria in colitis-associated colon cancer
NIH, R01 DK73338
Total direct costs to Jobin $1,176,309
% effort: 25

Principle Investigator, 07/1/2010-6/30/2015
Regulation of immunosuppressive molecules in IBD
NIH, DK47700
Total direct costs to Jobin $1,125,000
% effort: 30

Co-investigator, 07/01/2007-6/30/2012
Balfour Sartor
Mechanisms of colitis induced by defined bacterial flora.
NIH, RO1 DK 040249
Total direct costs to Sartor $ $920,871
% effort: 5

Co-investigator, 07/01/2008-6/30/2013
Balfour Sartor
Colitis induced by immune responses to luminal bacteria-mouse
NIH, RO1 DK DK053347
Total direct costs to Sartor $ $1,116,300
% effort: 5

Grant Review Service
-Member Crohn's and Colitis Foundation of America Study section (Fellowship and Career Awards) (2008-present)
-Ad hoc NIH Tumor Microenvironment (TME) Study Section (2007-present)
-NIH Special Emphasis Panel NIDDK (2005, 2006, 2008, 2009, 2010)
-Ad hoc NIH ZAT1 SM Dietary Supplement Research Centers: Botanicals (P50) applications
-Member Canadian Institutes of Health Research. Experimental Medicine (2003-2007)
-Member Canadian Institutes of Health Research. Vanier Canada Graduate Scholarships (2010-present)

Honors/Awards
UNC Junior Faculty Development Award 2005
UNC GI SPORE Award 2005
American Gastroenterological Association Fiterman Basic Research Award 2005

Committee Service

University of North Carolina, Chapel Hill

UNC Biological and Biomedical Sciences Program admission committee. (2009-present)

Professional Meetings/Societies

Session chair:

1. Bacterial-induced immune responses and signaling, Digestive Disease Weeks, New Orleans, May 2010
2. NF-kB: Friend or foe, Digestive Disease Weeks, Chicago, May 2009
3. Effector cytokines in intestinal inflammation, Digestive Disease Weeks, Chicago, May 2009
4. In vivo intestinal TLR activation and signaling, Digestive Disease Weeks, San Diego, May 2008
5. Intestinal inflammation physiology, Digestive Disease Weeks, San Diego, May 2008
6. Bacterial activation of epithelial and innate immune responses, Digestive Disease Weeks, Washington, May 2007
7. Meet-the-Investigator: Regulation of inflammatory cytokines, Digestive Disease Weeks, Los Angeles, May 2006
8. Regulation of mucosal inflammation, Digestive Disease Weeks, Chicago, May 2005

Meeting participation

1. Differential impact of the microbiota on colitis-associated colorectal cancer.
2. Digestive Disease Week (New Orleans) May 2010. Barrier and immune function of the intestine: An interactive topic forum.
3. Canadian Immunological Society. Ontario April 2010. Bacteria, Innate Immune Sensors and the Intestine: The Great Paradox Annual Scientific KSGE Meeting, Seoul (South Korea), November 2006 Bacteria, inflammation and colon cancer: Tale from the intestine
4. Vertex Pharmaceuticals. Boston February 2010. From protective to deleterious function: The wide impact of the microbiota on intestinal homeostasis
5. CCFA (Florida) Dec 2009 8th Annual Advances in the Inflammatory Bowel Diseases NF-kB and Nod2 signaling in IBD
6. Microbes and intestinal inflammation. Raleigh August 2009. The microbiota, intestinal homeostasis and inflammation: Lessons from germ free zebrafish and murine NF-kB reporter gene system.
7. Microbes and Mucosal Immunity. Boston July 2009. Models to study innate responses in the GI tract.
8. University of Alberta. Edmonton (Canada) June 2009. From cyto-protective function to the development of inflammation and colon cancer: The wide impact of the microbiota on intestinal physiology. Keynote address GI Research day
9. Digestive Disease Week (Chicago) May 2009 round-table workshop: Host-microbe interaction.
10. Keystone Symposia. Taos January 2009. Host/microbes interaction: Lessons from gnotobiotic murine and zebrafish NF-kB reporter gene system.
11. GIRI symposium. Kananaskis Canada January 2009. The microbiota and colitis-associated colon cancer
12. Banff Inflammatory Workshop. Banff January 2009. Host/microbes interactions and intestinal inflammation: Lessons from germ free zebrafish and murine NF-kB reporter gene system.
13. 7th Annual Advances in the Inflammatory Bowel Diseases Hollywood Dec 2008. Mechanisms regulating innate immune cells activation in IBD.

14. University of Miami. Miami July 2008. Dissecting the complex daily conversation between the intestinal microbiota and the host using murine and zebrafish models.
15. Microbes and Mucosal Immunity. Charlottesville Virginia June 2008. Dissecting the molecular mechanisms controlling intestinal innate response to microorganisms
16. Immunobiology Departmental Seminar Series, Arizona Health Sciences Center, Arizona January 2008 The microbiota and the intestine: Friend or Foe?
17. Host-Microbial Interactions at Mucosal Surfaces in Health and Disease, Boston, November 2007 Critical Role Of TLR/NF-kB Signaling In Commensal Bacteria Induced Colitis
18. Gastrointestinal Response to Injury: October 2007. Montebello (Canada), Dietary Supplements and Gastrointestinal Injury: Should We Pay Attention?
19. Microbes and Mucosal Immunity October 2007. Montebello (Canada), Epithelium and Innate Immune Responses in the Gut
20. The Banff Inflammation Workshop, Alberta (Canada), January 2007 Commensal bacteria-induced IL-23 expression and colitis depend on TLR/MyD88 signaling in IL-$10^{-/-}$ mice
21. McMaster University, Hamilton (Canada), November 2006 Molecular mechanisms controlling host response to commensal bacterial colonization in the intestine
22. Annual Scientific KSGE Meeting, Seoul (South Korea), November 2006 Wound healing response in the intestine
23. Annual Scientific KSGE Meeting, Seoul **(South Korea)**, November 2006 Bacteria, inflammation and colon cancer: Tale from the intestine
24. University of Virginia at Charlottesville, Virginia (USA), June 2006. Signaling in intestinal epithelial cells: Role of TLR and Nod2 in maintaining intestinal homeostasis
Digestive Disease Week (Los Angeles) May 2006 Meet the Investigator Luncheon: Regulation of inflammatory cytokine.
25. University of Virginia at Charlottesville, Virginia (USA), January 2006. Modulation of innate signal transduction and experimental colitis by natural plant extracts
26. University of San Diego, California (USA), April 2005. The intestine and the microflora: A love and hate relationship.

Society membership

American Gastroenterology Association (1995-present)
American Society for Biochemistry and Molecular Biology (2003-present)
American Association of Immunologists (2004-present)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Robert E. Johnston, Ph.D

Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Burgents, Joseph E., Timothy P. Moran, Michelle L. West, Nancy L. Davis, Robert E. Johnston and Jonathan S. Serody. (2010) The immunosuppressive tumor environment is the major impediment to successful therapeutic vaccination in neu transgenic mice. *Journal of Immunotherapy*, In Press
2. Brooke, Christopher B., Damon J. Demming, Alan C. Whitmore, Laura J. White and Robert E. Johnston. (2010) T cells facilitate recovery from Venezuelan equine encephalitis virus-induced encephalomyelitis in the absence of antibody. *Journal of Virology,* **84**:4556-4568.
3. Tonkin, Daniel R., Patricia Jorquera, Tracie Todd, Clayton W. Beard, Robert E. Johnston and Mario Barro. (2010) Alphavirus replicon-based enhancement of mucosal and systemic immunity is linked to the innate response generated by primary immunization. *Vaccine,* **28**:3238-3246.
4. Lindesmith, Lisa C., Eric Donaldson, Juan Leon, Christine L. Moe, Jeffrey A.Frelinger, Robert E. Johnston, David J. Weber and Ralph S. Baric. (2010) Heterotypic humoral and cellular immune responses following Norwalk virus infection. *Journal of Virology,* **84**:1800-1815.
5. Cruz, Catherine C., Mehul S. Suthar, Stephanie A. Montgomery, Reed Shabman, Jason Simons, Robert E. Johnston, Thomas E. Morrison and Mark T. Heise. (2009) Modulation of type 1 interferon induction by a virulence determinant in the alphavirus nsP1 protein. Vir*ology,* **399**:1-10.
6. Schäfer Alexandra, Whitmore, Alan C., Jennifer L. Konopka and Robert E. Johnston. (2009) Replicon particles of Venezuelan equine encephalitis virus as a reductionist murine model for encephalitis. *Journal of Virology,* **83**:4275-4286.
7. Konopka, Jennifer L., Joseph M. Thompson, Alan Whitmore, Drue Webb and Robert E. Johnston. (2009) Acute infection with Venezuelan equine encephalitis virus replicon particles catalyzes a systemic antiviral state and protects from lethal virus challenge. *Journal of Virology,* **83**:12432-12442.
8. Simmons, Jason D, Laura J. White, T. E. Morrison, Stephanie A. Montgomery, Alan C. Whitmore, Robert E. Johnston and Mark T. Heise. (2009) Venezuelan equine encephalitis virus disrupts STAT1 signaling by distinct mechanisms independent of host shutoff. *Journal of Virology,* **83**:10571-10581.
9. Frieman Matthew, K. Ratia, Robert E. Johnston, A. D. Mesecar and Ralph S. Baric. (2009) Severe acute respiratory syndrome coronavirus papain-like protease ubiquitin-like domain and catalytic domain regulate antagonism of IRF3 and NF-kappaB signaling. *Journal of Virology,* **83**:6689-6705.

10. LoBue, Anna D., Joseph M. Thompson, L. Lindesmith, Robert E. Johnston and Ralph S. Baric. (2009) Alphavirus-adjuvanted norovirus-like particle vaccines: heterologous, humoral, and mucosal immune responses protect against murine norovirus challenge. *Journal of Virology,* **83**:3212-3227.
11. Barefoot, Brice, Natalie J. Thornburg, Daniel H. Harouch, Jae-sung Yu, Christopher Sample, Robert E. Johnston, Hua Xin Liao, Thomas B. Kepler,, Barton F. Haynes, and Elizabeth Ramsburg. (2008) Comparison of multiple vaccine vectors in a single heterologous prime-boost trial. *Vaccine,* **26**:6108-6118.
12. Thompson, Joseph M., Alan C. Whitmore, Herman F. Staats and Robert E. Johnston. (2008) The contribution of type 1 interferon signaling to mucosal IgA responses induced by alphavirus replicon vaccines. *Vaccine,* **26**:4998-5003.
13. Thompson, Joseph M., Alan C. Whitmore, Herman F. Staats and Robert E. Johnston. (2008) Alphavirus replicon particles acting as adjuvants promote $CD8^+$ T cell responses to co-delivered antigen. *Vaccine,* **26**:4267-75.
14. Thompson, Joseph M., Michael G. Nicholson, Alan C. Whitmore, Melodie Zamora, Akiko Iwasaki, Herman F. Staats and Robert E. Johnston. (2008) Nonmucosal Alphavirus Vaccination Stimulates a Mucosal Inductive Environment in the Peripheal Draining Lymph Node. *Journal of Immunology,* **181**:574-85.
15. Becker, Michelle M., Rachel L. Graham, Eric F. Donaldson, Barry Rockx, Amy C. Sims, Timothy Sheahan, Raymond Pickles, Davide Corti, Robert E. Johnston, Ralph S. Baric and Mark R. Denison. (2008) Synthetic recombinant bat SARS-like coronavirus is infectious in cultured cells and in mice. *Proceedings of the National Academy of Sciences* **105**:19944-19949.
16. Mok, Hoyin, Sharon J. Tollefson, Amy B. Podsiad, Bryan E. Shepherd, Vasiliy V. Polosukhin, Robert E. Johnston, John V. Williams and James E. Crowe, Jr. (2008) An alphavirus replicon-based human metapneumovirus vaccine is immunogenic and protective in mice and cotton rats. *Journal of Virology,* **82**:11410-11418.
17. Konopka, Jennifer L., Luiz O. Penalva, Joseph M. Thompson, Laura J. White, Clayton W. Beard, Jack D. Keene and Robert E. Johnston. (2007) A two-phase innate host response to alphavirus infection identified by mRNP-tagging *in vivo*. *PloS Pathogens*, **3**:e199.
18. Mok, H., S. Lee, ST. J. Utley, B. E. Shepherd, V. V. Polosukhin, M. L. Collier, N. L. Davis, R. E. Johnston and J. E. Crowe, Jr. (2007) Venezuelan equine encephalitis virus replicon particles encoding respiratory syncytial virus surface glycoproteins induce protective mucosal responses in mice and cotton rats. *Journal of Virology,* **81**:13710-13722.
19. Ljungberg, Karl, Alan C. Whitmore, Meagan E. Fluet, Timothy P. Moran, Reed S. Shabman, Martha L. Collier, Annette A. Kraus, Joseph M. Thompson, David C. Montefiori, Clayton Beard and Robert E. Johnston. (2007) Increased immunogenicity of a DNA-launched VEE-based replicon DNA vaccine. *Journal of Virology,* **81**:13412-13423.
20. Fluet, Meagan E., Alan C. Whitmore, Dmitry Moshkoff, Kailing Fu, Youyang Tnag, Martha L. Collier, Ande West, Dominic T. Moore, Ronald Swanstrom, Robert E. Johnston, and Nancy L. Davis. (2007) Effects of rapid antigen degradation and VEE glycoprotein specificity on immune responses induced by a VEE replicon vaccine. *Virology,* **370**:22-32.

21. Ryman, K. D., C. L. Gardner, K. C. Meier, C. A. Biron, R. E. Johnston and W. B. Klimstra. (2007) Early restriction of alphavirus replication and dissemination contributes to age-dependent attenuation of systemic hyperinflammatory disease. *Journal of General Virology,* **88**:518-529.
22. Thornburg, Natalie J., Carol A. Ray, Martha L. Collier, Hua-Xin Liao, David J. Pickup and Robert E. Johnston. (2007) Vaccination with Venezuelan Equine Encephalitis Replicons Encoding Cowpox Virus Structural Proteins Protects Mice from Intranasal Cowpox Virus Challenge. *Virology,* **362**:441-452.
23. Cecil, Chad, Ande West, Martha Collier, Christy Jurgens, Victoria Madden, Alan Whitmore, Robert Johnston, Dominic T. Moore, Ronald Swanstrom and Nancy Davis. (2007) Structure and immunogenicity of alternative forms of the simian immunodeficiency virus Gag protein expressed using Venezuelan equine encephalitis virus replicon particles. *Virology,* **362**:362-373.
24. White, Laura J., Melissa M. Parsons, Alan C. Whitmore, Brandon M. Williams, Aravinda de Silva and Robert E. Johnston. (2007) An immunogenic and protective alphavirus replicon particle-based dengue vaccine overcomes maternal antibody interference in weanling mice. *Journal of Virology,* **81**:10329-10339.
25. Montgomery, Stephanie A. and Robert E. Johnston. (2007) Nuclear import and export of Venezuelan equine encephalitis virus nonstructural protein 2. *Journal of Virology,* **81**:10268-10279.
26. Moran, Timothy, J.E. Burgents, B. Long, I Ferrer, E.M. Jaffe, R.M. Tisch, Robert E. Johnston and Jonathan S. Serody. (2007) Alphaviral vector-transduced dendritic cells are successful therapeutic vaccines against neu-overexpressing tumors in wild-type mice. *Vaccine,* **215**:6604-6612.
27. Thomas, Christopher E., W. Zhu, C. N. Van Dam, N. L. Davis, R. E. Johnston and P. F. Sparling. (2006) Vaccination of mice with gonococcal TbpB expressed *in vivo* from Venezuelan equine encephalitis viral replicon particles. *Infection and Immunity,* **74**:1612-1620.
28. Thompson, Joseph M., Alan C. Whitmore, Jennifer L. Konopka, Martha L. Collier, Erin M. B. Richmond, Nancy L. Davis, Herman F. Staats and Robert E. Johnston. (2006) Mucosal and systemic adjuvant activity of alphavirus replicon particles. *Proceedings of the National Academy of Sciences,* **103**:3722-3727.
29. LoBue, A. D., L. Lindesmith, B. Yount, P. R. Harrington, J. M. Thompson, R. E. Johnston, C. L. Moe and R. S. Baric. (2006) Multivalent norovirus vaccines induce strong mucosal and systemic blocking antibodies against multiple strains. *Vaccine,* **24**:5220-5234.
30. Montgomery, Stephanie A., Peter Berglund, Clayton W. Beard and Robert E. Johnston. (2006) Ribosomal protein S6 associates with alphavirus nonstructural protein 2 and mediates expression from alphavirus messages. *Journal of Virology,* **80**:7729-7739.
31. Deming, Damon, Timothy Sheahan, Mark Heise, Boyd Yount, Nancy Davis, Amy Sims, Mehul Suthar, Jack Harkema, Alan Whitmore, Raymond Pickles, Ande West, Eric Donaldson, Kristopher Curtis, Robert Johnston and Ralph Baric.
(2006) Vaccine efficacy in senescent mice challenged with recombinant SARS-CoV bearing epidemic and zoonotic spike variants. *PloS Medicine,* **3**:e525. *Erratum PloS Medicine,* **4**:e80.

32. Lambeth, Cassandra R., Laura J. White, Robert E. Johnston and Aravinda de Silva. (2005) Flow cytometry-based assay for titrating dengue virus. *Journal of Clinical Microbiol*ogy **43**:3267-3272.
33. Johnston, Robert E., Philip R. Johnson, Mary J. Connell, David C. Montefiori, Ande West, Martha L. Collier, Chad Cecil, Ronald Swanstrom, Jeffrey A. Frelinger and Nancy L. Davis. 2005. Vaccination of macaques with SIV immunogens delivered by Venezuelan equine encephalitis virus replicon particle vectors followed by a mucosal challenge with SIVsmE660. Vaccine 23:4969-4979.
34. Moran, Timothy P., M. Collier, Karen McKinnon, Nancy L. Davis, Robert E. Johnston and Jonathan S. Serody. 2005. A novel viral system for generating antigen-specific T cells. J. Immunol. 175:3431-3438.
35. Zhu, Weiyan, Christopher E. Thomas, Ching-ju Chen, Cornelius N. Van Dam, Robert E. Johnston, Nancy L. Davis and P. Frederick Sparling. 2005. Comparison of immune responses to gonococcal PorB delivered as outer membrane vesicles, recombinant protein or Venezuelan equine encephalitis virus replicon particles. Infect. Immun. 73:7558-7568.

Grants/Contracts

Principal Investigator, 9/30/2001 - 6/30/2006
"In Vitro Construction of Attenuated VEE Mutants",
NIH R01-AI 51990
Total direct costs: $1,415,250

Principal Investigator, 9/30/2002-6/30/2008
"Therapeutic Vaccination for HIV Using VEE Vectors",
NIH P01 AI50246
Total direct costs $5,676,239

Principal Investigator, Project 1 09/04/2003 - 02/29/2008.
"New Vaccine Concepts for Poxviruses and Poxvirus Accessory Genes",
NIH-U54-AI057157, "Southeastern RCE in Biodefense and Emerging Infections",
Total Direct Cost: $4,338,422

Principal Investigator, Project 1.2 09/04/2003 - 02/29/2008
"Cross-Protection Against Multiple Poxviruses", R. E.
NIH-U54-AI057157, "Southeastern RCE in Biodefense and Emerging Infections",
Total direct costs: $1,295,366

Co-Principal Investigator Project 1.3, 09/04/2003 - 02/29/2008
"Vaccines Against Extra-Cellular Accessory Proteins Encoded by Orthopoxviruses",
NIH-U54-AI057157, "Southeastern RCE in Biodefense and Emerging Infections"
Total direct costs: $1,504,136

Co-Investigator , Project 1.1, 09/04/2003 - 02/29/2008.
Principal Investigator, D. Garber
"Increasing the Protective Efficacy of Modified Vaccinia Ankara",
NIH-U54-AI057157, "Southeastern RCE in Biodefense and Emerging Infections"

Total direct cost: $1,538,920

Principal Investigator 08/01/2004 - 07/31/2006
"A Novel VEE Replicon Vaccine for HIV"
NIH-P01-AI46023
Total direct cost: $997,238

Project Principal Investigator, 03/01/2005 - 01/31/2011.
Project 4, Alphavirus Vectored Vaccines for the SARS Coronavirus",
Principal Investigator, Ralph Baric
"Developing Vaccine Candidates for the SARS Coronavirus",
NIH-P01-AI059443
Total direct costs: $11,358,656. Project 4 total direct cost: $1,603,722

Principal Investigator, 12/1/05 - 6/30/08
"A New HIV Vaccine Concept"
Global Vaccines, Inc., subcontract to UNC from IAVI grant
Total direct costs: $378,278

Principal Investigator, 09/01/2006 - 08/31/2010
"Novel Systemic and Mucosal Adjuvant for Biodefense"
Global Vaccines, Inc., subcontract to UNC from NIH
U01-AI070976 (01-04)
Total direct costs: $625,568

Grants to Global Vaccines, Inc., R. E. Johnston, PI:

Principal Investigator, 12/01/2005 - 12/31/2008
"A New HIV Vaccine Concept"
International AIDS Vaccine Initiative
Total direct costs: $1,554,213

Principal Investigator, 06/01/2006 - 05/30/2011
"A New HIV Vaccine Concept"
Bill & Melinda Gates Foundation (through IAVI to Global Vaccines, Inc.)
Total direct costs: $1,449,000

Principal Investigator, 09/01/2006 - 08/31/2010
"Novel Systemic and Mucosal Adjuvant for Biodefense"
NIH, U01-AI070976 (01-04)
Total direct costs: $4,934,588

Extramural Training Support

NIH F32 AI071770 National Research Service Award (Post-doctoral Fellowship) to Kelly Young. 8/01/06 - 7/31/09.

UNC Leadership

2002 – 2010 Director, Carolina Vaccine Institute

Committee Service

University of North Carolina, Chapel Hill
Microbiology and Immunology Graduate Student Admissions Committee (Chairman, 1994)
Phil Bassford Fund Committee
Faculty Search Committee: Immunobiology of Viral Pathogenesis
Departmental LAN Committee
Review Committee: Associate Dean of the Medical School for Admissions
Dean's Research Advisory Committee, School of Medicine
Search Committee: Chair of Medicine
Committee on Faculty Salary Incentives, School of Medicine
Faculty Search Committee: Tumor Virology

Outside UNC

Member, Rocky Mountain Regional Center of Excellence for Emerging Infections and Biodefense, Scientific Steering and Review Committee, 2004-2009

Professional Meetings/Societies

Meeting participation
2010 Department of Molecular and Structural Biochemistry, North Carolina State University
National Foundation for Infectious Diseases, Thirteenth Annual Conference on Vaccine Research, Bethesda, MD
American Society for Microbiology, Division T Lecturer
2009 National Institute for Allergy and Infectious Diseases, Post-Doctoral Career Day Panel, National Press Club, Washington, DC
Emerging Issues Forum, Entrepreneurs Panel, Chapel Hill, NC
2008 Triangle Area Research Directors Council, Research Triangle Park, NC
2007 Molecular Analysis of Tuberculosis Immunity, Albert Einstein College of Medicine, New York
Bioethics and Biodefense Meeting, Johns Hopkins School of Advanced International Studies, Washington, DC
Enabling Innovation for Global Health, Duke University, Durham, NC
The Biodesign Institute, Arizona State University, Tempe, AZ
Making Technology Transfer Work for Global Health, Duke University, Durham, NC
2006 Association of University Technology Managers Annual Symposium, Orlando
Triangle Virology Association, Research Triangle Park, NC
2005 NIH Biodefense Workshop
University of Utrecht, Netherlands, Symposium on Molecular Advances in Vaccinology

Dept. of Biology, Indiana University, Bloomington

Society membership

American Society for Virology
American Association for the Advancement of Science
American Society for Microbiology
North Carolina Society for Microbiology
Phi Kappa Phi
Sigma Xi

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Tal Kafri. M.D., Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Yuen EY, Liu W, **Kafri T**, van Praag H, Yan Z. Regulation of AMPA Receptor Channels and Synaptic Plasticity by Cofilin Phosphatase Slingshot in Cortical Neurons. J Physiol. 2010 May 4.

2. Boris Kantor, Hong Ma, Jennifer Webster-Cyriaque **Kafri, T.** Epigenetic activation of unintegrated HIV-1 genomes by gut-associated short chain fatty acids: Implications for HIV infection. 2009 PNAS Nov 3;106(44):18786-91.

3. Matthew Bayer, Boris Kantor, Adam Cockrell, Hong Ma, Brian Zeithaml, Xiangping Li, Thomas McCown, and **Kafri, T.** "A Large U3 Deletion Causes Increased In Vivo Expression from a Nonintegrating Lentiviral Vector". 2008. *Mol Therapy* Dec;16(12):1968-76.

4. Li, C., Hirsch, M., Asokan, A., Zeithaml, B., Ma H, **Kafri, T.,** Samulski R.J. AAV2 Capsid Specific CytotoxicT lymphocytes only Eliminate vector transduced Cells Co-expressing the AAV2 Capsid in vivo. 2007. *J Virol*.

5. Bahi, A., Boyer, F., **Kafri, T**., Dreyer, J.L. "Silencing urokinase in the ventral tegmental area in vivo induces changes in cocaine-induced hyperlocomotion." 2006. J Neurochem. 98(5):1619-31.

6. Cockrell, A.S., Ma, H., Fu, K., McCown, T.J., **Kafri, T.** "A trans-lentiviral packaging cell line for high titer conditional self-inactivating HIV-1 vectors." 2006. Mol Ther. 14(2):276-84.

Reviews & commentaries

1. Cockrell,A., **Kafri,T**. "Gene delivery by lentivirus vectors". Mol Biotechnol. 2007 Jul;36(3):184-204.

2. **Kafri,T.** "Air-conditioning for regulated transgene expression." 2005. *Gene Therapy*. 12(5):383-5.

Editorial Responsibilities

Editorial boards

Current HIV-1 Research. 2003 to present.

Ad hoc reviewer for:

Aids Reseaerch, Gene Therapy, Human Gene Therapy, Molecular Therapy, PLosOne

Proceeding of the National Academy of Science, Retrovirology, Virology

Grants/Contracts

T. Kafri, PI.
Dates: 12/01/200 - 11/30/2005
Title: "Lentiviral vector based gene therapy for liver diseases"
NIDDK, 1 RO1 DK58702-05
Direct cost: $219,000 Effort: 35%

T. Kafri, Co-Investigator. J. Samulski, PI
Dates: 09/30/1999 - 07/31/2006
Title: "Gene Therapy of Pulmonary and Hematologic Disorders"
NIHHL, 1 PO1 HL66973-01A1
Direct cost: $183,236 Effort: 23%

T. Kafri, PI of pilot feasibility project. R. Boucher Project PI
Dates: 12/01/2003 - 09/28/2008
Title: "Molecular Therapy Core Center"
NIHHL, 1 PO1 DK065988-01
Direct cost: $ 46,000 Effort: 10%

T. Kafri, Co-Investigator. F. French, PI
Dates: 07/19/2005 - 03/31/2010
Title: "Prostate Cancer. Transition to Androgen-Independence"
NCI, 5P01 CA077739-07
Direct cost: $76,000 (Portion of Kafri's project) Effort: 10%

T. Kafri, PI.
Dates: 09/30/2006 - 07/31/2009
Title: "Novel Viral Vector Delivery of Efficient shRNA Expression"
NIHHL, R21 PO1 HL086406
Direct cost: $ 121,375 Effort: 25%

T. Kafri, PI.
Dates: 09/30/2007 - 07/31/2011
Title: "Episomal lenti vector for a humanized hemophilia mouse"
NIDDK, 2 RO1 DK58702-06A2
Direct cost: $181,300 Effort: 35%

T. Kafri, Co-Investigator. F. French, PI
Dates: 07/01/2010 - 06/31/2015
Title: "Prostate Cancer. Transition to Androgen-Independence"
NCI, 2 PO1 CA077739-11
Direct cost: $110,125 . Effort: 25%

Grant Review Service

Reviewer for the Technology Foundation STW in the Netherland. (http://www.stw.nl/Infobalie/ReferentenJuryleden.html). Ad hoc member. 2009.

Ad hoc member. NIH/NIDDK. Review of competing supplement to P30 "Core Center of Excellence in Hematology". 2009.

Ad hoc member. NIH. Special Emphasis Panel/Scientific Review Group ZRG1 BST-M. 2009/10

Ad hoc member. NIH study section ADDT. March 2007.

Ad hoc member. NIH study section GTIE. October 2007.

Ad hoc member. NHLBI. Study section for RFA-HL-04-017; "Specialized Centers For Cell-Based Therapy. 2005.

UNC Leadership

UCRF study-section. June 2010.

UNC Lenti- shRNA core. Director. 2008-Present. **20% effort.**

Committee Service

Outside UNC

The National Heart, Lung, and Blood Institute (NHLBI). Gene Therapy Resource Program (GTRP), Scientific Review Board / member 2009-present

Hamner Insitute (CIIT). Institutional Biosafety Committee. Member. 2006- present.

Thermo Scientific / Open Biosystems. Consultant. 2007-present.

Extramural Advisory Committee for NIH program project grant, "Gene Therapy for Metabolic Disorders" (PO1-HD32652). Department of Pediatrics and Institute of Human Genetics, University of Minnesota. 2002-2005

Professional Meetings/Societies

Meeting participation

9th Annual meeting of the American Society of Gene Therapy. Baltimore, Maryland, May 31-June 4, 2006. Session Chair. Poster presenter

10th Annual meeting of the American Society of Gene Therapy. Seattle, Washington, May 30-June 3, 2007. Session Chair. Poster presenter

11th Annual meeting of the American Society of Gene Therapy. Boston, Massachusetts, May 28-June 1, 2008. Session Chair. Poster presenter

12th Annual meeting of the American Society of Gene Therapy. San Diego, California, May 27-30, 2009. Session Chair. Poster presenter

Bational Hemophilia Foundation annual workshop. Chapel Hill, North Carolina. February 2010. Speaker.

Immune Descign Corp. Non-Integrating HIV-1 vectors: Hurdles, Solutions, and Prospective for Clinical Trials. Seattle, Wasington. May 17, 2010. Speaker.

9th Annual meeting of the American Society of Gene Therapy. Washington, DC, May 19-22, 2010. Session Chair. Poster presenter

Society leadership

American Society of Gene Therapy Infectious diseases committee. Member. 2007- 2009

American Society of Gene Therapy. Educational committee. Member. 2007- 2010

Society membership

American Society of Gene Therapy. 2000-present.

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Thomas H. Kawula, PhD
Professor
Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Fuller, JR., TM. Kijek, S. Taft-Benz, and **TH. Kawula** (2009). Environmental and intracellular regulation of *Francisella tularensis ripA*. *BMC-Microbiology* Oct 12;9:216.
2. Williams, JC, RR. Craven, **TH. Kawula** and GK. Matsushima (2009). TAM receptors are dispensable in the phagocytosis and killing of bacteria. *Cellular Immunology* 259(2):128-34.
3. Hall, JD, M. Braunstein, SL. Kurtz, NW. Rigel, JP. Morrison, AM. Fong, DD. Patel and **TH. Kawula** (2009). The Impact of chemokine receptor CX3CR1 deficiency during respiratory infection with *Mycobacterium tuberculosis* or *Francisella tularensis*. *Clinical Experimental Immunology*. 156: 278-84.
4. Valention, MD, Hensley, LI, Skrombolas, D, McPherson, PL, Woolard, MD, **Kawula TH**, Frelinger JA, and Frelinger JG (2009). Identification of a dominant CD4 T cell epitope in the membrane lipoprotein Tul4 from *Francisella tularensis* LVS. *Molecular Immunology*. 46(8-9):1830-8.
5. Hall JD, Woolard MD, Gunn BM, Craven RR, Taft-Benz S, Frelinger JA, **Kawula, TH** (2008). Infected-host-cell repertoire and cellular response in the lung following inhalation of *Francisella tularensis* Schu S4, LVS, or U112. *Infection and Immunity*. 76(12):5843-52.
6. Fuller JR, Craven RR, Hall JD, Kijek TM, Taft-Benz S, **Kawula TH** (2008). RipA, a cytoplasmic membrane protein conserved among *Francisella* species, is required for intracellular survival. *Infection and Immunity*. 76(11):4934-43.
7. Craven RR, Hall JD, Fuller JR, Taft-Benz S, **Kawula TH** (2008). *Francisella tularensis* invasion of lung epithelial cells. *Infection and Immunity*. 76(7):2833-42.
8. Woolard MD, Hensley LL, **Kawula TH**, Frelinger JA (2008). Respiratory *Francisella tularensis* live vaccine strain infection induces Th17 cells and prostaglandin E2, which inhibits generation of gamma interferon-positive T cells. *Infection and Immunity*. 76(6):2651-9.
9. Jiang J, Parker CE, Fuller JR, **Kawula TH**, Borchers CH (2007). An immunoaffinity tandem mass spectrometry (iMALDI) assay for detection of *Francisella tularensis*. Analytical Chemistry Acta. 605(1):70-9. PMID: 18022413
10. Su J, Yang J, Zhao D, **Kawula TH**, Banas JA, Zhang JR (2007). Genome-wide identification of *Francisella tularensis* virulence determinants. *Infection and Immunity*. 75(6):3089-101.

11. Hall JD, Craven RR, Fuller JR, Pickles RJ, **Kawula TH** (2007). *Francisella tularensis* replicates within alveolar type II epithelial cells *in vitro* and *in vivo* following inhalation. *Infection and Immunity*. 75(2):1034-9.
12. Woolard MD, Wilson JE, Hensley LL, Jania LA, **Kawula TH**, Drake JR, Frelinger, JA. (2007). *Francisella tularensis*-infected macrophages release prostaglandin E2 that blocks T cell proliferation and promotes a Th2-like response. *Journal of Immunology*. 178(4):2065-74.
13. Fulcher RA, Cole LE, Janowicz DM, Toffer KL, Fortney KR, Katz BP, Orndorff PE, Spinola SM, and **Kawula TH** (2006). Expression of *Haemophilus ducreyi* collagen binding outer membrane protein NcaA is required for virulence in swine and human challenge models of Chancroid. *Infection and Immunity*. 74:2651-8.

Editorial Responsibilities

Editorial boards:

Infection and Immunity 1996 - present

Ad hoc reviewer for:
Applied and Environmental Microbiology, Archives of Microbiology, BMC – Microbiology, Cell Host and Microbe, Cellular Microbiology, FEMS Microbiology Letters, Genes to Cells, Journal of Bacteriology, Microbiology, Molecular Microbiology

Grants/Contracts

Principal Investigator
09/01/08 – 08/31/11
Francisella tularensis Interactions with Airway Epithelial Cells
NIH/NIAID - 1 R56 AI 069339
Total direct costs $500,000
25% Effort

Principal Investigator
06/01/09 – 05/31/11
Francisella tularensis Pathogenesis
NIH/NIAID - 1 R56 AI082870
Total direct costs 500,000
30% Effort

Principal Investigator
04/1/09 - 03/31/12
Route of Infection Shapes Immune Response to Francisella tularensis
NIH/NIAID (SERCEB) - U54-AI057157
Total direct costs $989,500
10% Effort

Coinvestigator
7/1/09 - 6/30/14
Principal Investigator – Jeffry A. Frelinger
Immune Evasion by Francisella. tularensis
NIH/NIAID - 1 R01 AI078345-01A2
Total direct costs $1,250,000
10% Effort

Grant Review Service

2006 - 2010	Member, National Institutes of Health, BACP Study Section
2009	Special Emphasis Panel, Program Project Reviewer NIAID
2008	Special Emphasis Panel, Program Project Reviewer NIAID
2004-06	Chairman, National Institutes of Health, F13 Infectious Diseases and Microbiology
2006	Special Emphasis Panel, Program Project Reviewer NIAID
2005	National Institutes of Health, BM-1 Bacteriology and Mycology Study Section (Ad Hoc)
2005	National Institutes of Health, NIAID Regional Centers of Excellence in Biodefense and Emerging Disease Research review committees,
2004	Member and Chairman, National Institutes of Health, F08 Prokaryotic & Eukaryotic Molecular Biology & Genetics

UNC Leadership

- Advisory and Leadership Board, Sexually Transmitted Infections Training Grant. 2001 – present
- Advisory and Leadership Board, Microbial Pathogenesis Training Grant. 2001 – present
- Director, University Fellows/Co-Director Royster Society of Fellows, The Graduate School. 2006 – 2009
- Member, Administrative Board of the Graduate School. 2003 – 2009.
- Chair, Faculty Search Committee, Department of Microbiology and Immunology, 2009

Committee Service

University of North Carolina, Chapel Hill

- Search Committee Member for Associate Dean, Graduate School 2003
- Member, Institutional Biosafety Committee. 2001 – 2006

Professional Meetings/Societies

Meeting organization

Session Chair, 10th Annual International Symposium on *Haemophilus ducreyi* Pathogenesis and Chancroid. London, UK. June 2009

Member, Organizing Committee for the Fifth International Conference on Tularemia. Woods Hole, MA. November 2006.

Member, Organizing Committee for the eighth International Chancroid Symposium, Amsterdam, The Netherlands. June 2005

Meeting participation

1. Identifying immuno-suppressive effectors secreted by *Francisella tularensis*. Invited speaker, National Region Centers of Excellence Bacterial Secretion Workshop. Seattle, WA. 2010
2. Determining the function of the cytoplasmic membrane protein RipA. Invited Speaker, 6th International Conference on Tularemia. Berlin, Germany. 2009
3. CdtB interactions with anti-apoptotic proteins; a mechanism of cytotoxicity independent of DNase activity? Invited speaker, 10th Annual International Symposium on *Haemophilus ducreyi* Pathogenesis and Chancroid. London, UK. 2009
4. Promiscuity, Immune Suppression and Host Defense Evasion, Francisella tularensis Virulence Mechanisms at Play in Pulmonary Disease. Invited speaker, National NIAID RCE Conference, Chicago IL. 2008
5. Identifying and Isolating Francisella tularensis Infected Cells in the Lung. Invited speaker, International Conference on Biomedical Imaging. Bethesda, MD. 2007
6. The role of Cytolethal Distending Toxin in *Haemophilus ducreyi* Pathogenesis. Invited Speaker, International Meeting of the International Society of Sexually Transmitted Diseases Researchers, Seattle, WA. 2007
7. Francisella tularensis Interactions with Alveolar Type II Epithelial Cells. Invited speaker National NIAID RCE Meeting. St. Louis, MO. 2007
8. *Francisella tularensis* Virulence Mechanisms Contributing to Pulmonary Disease. Invited speaker Fifth International Conference on Tularemia. Woods Hole, MA. 2006
9. Inhaled Francisella tularensis Invades and Replicates within Type 2 Alveolar Epithelial Cells. Invited speaker, National NIAID RCE Meeting. New York, NY. 2006
10. *Francisella tularensis* Interactions with Lung Epithelial Cells. Invited speaker, Tularemia Workshop. Jiminy Peak, NH. 2005
11. A Cytolethal Distending Toxin (*cdtABC*) Deficient Strain of *Haemophilus ducreyi* Elicits Immunity to Infection by Wild Type Organisms in the Swine Model of Chancroid. Invited speaker, International Meeting of the International Society of Sexually Transmitted Diseases Researchers, Amsterdam. 2005
12. *Francisella tularensis* Alveolar Epithelial Cell Invasion. Invited speaker, National Institutes of Health, National meeting for the Regional Centers of Excellence. 2005

Society membership

American Society for Microbiology, 1984 - present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

David Klapper, Ph.D.

Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Venugopal, Divakaramenon, Klapper, David, Srouji, Antoine, Bhonsle, Jayendra, Borschel, Richard, Mueller, Allen, Russel, Amanda, Williams, Brittany, Hicks, Rickey (2010) Novel antimicrobial peptides that exhibit activity against select agents and other drug resistant bacteria. Bioorganic & Medicinal Chemistry. **18:**5137-5147

Bordeerat, N.K., Georgieva, N.I., Klapper, D.G., Collins, L.B., Cross, T.J., Borchers, C.H., Swenberg, J.A., Boysen, G. (2009) Accurate Quantitation of Standard Peptides Used for Quantitative Proteomics. Proteomics. **9:**3639-3644.

Kang-Sickel, J.C., Fox, D.D., Nam, T.G., Jayaraj, K., Ball, L.M., French, J.El, Klapper, D.G., God, A., Nylander-French, L.A. (2008) S-arylcysteine-keratin Adducts as Biomarkers of Human Dermal Exposure to Aromatic Hydrocarbons. Chemical Research and Toxicology. **21:**852 – 858.

Palma, E., Klapper, D.G., Cho, M.J. (2005) Antibodies as Drug Carriers III:Design of Oligonucleotides with Enhanced Binding Affinity for Immunoglobulin G. Pharmaceutical Research. **22:**122-127.

Warren, M.R.E., Parker, C.E., Mocanu, V. Klapper, D., Borchers, C.H. (2005) Electrospray Ionization Tandem Mass Spectrometry of Model Peptides Reveals Diagnostic Gragment Ions for Protein Ubiquitination. Rapid Communications in Mass Spectrometry. **19:**429 – 437.

Mahassni, S.H., Klapper, D.G., Hiskey, R.G. (2005) Purification of a Murine IgM Monoclonal Antibody. Hybridoma. **28:**189-197.

Editorial Responsibilities

Editorial boards

Journal of Biological Chemistry, 1994 - 2005

Ad hoc reviewer for: Journal of Biological Chemistry, Hybridoma

Grants/Contracts

Collaborator 12/01/09 - 11/30/11
Anka Veleva, Ph.D. (PI)
Peptide Based Targeting for Advanced Molecular PET Imaging of Tumor Angiogenesis

UNC UCFR grant $33,000.00
Direct costs to Facility $8170.00

Collaborator
Melanie Joy, Ph.D. (PI)
No title at this time
UNC UCFR grant (not sure of total award)
Direct costs to Facility (not sure of the dollar amount at this time)

Committee Service

University of North Carolina, Chapel Hill

School of Medicine Conflict of Interest Committee

School of Medicine Promotions (Assistant Professor to Associate Professor with tenure) Committee

Faculty Committee on Athletics (2003 – 2005)

Professional Meetings/Societies

Society membership

American Association of Immunologists 1975 - present

American Society For Biochemistry and Molecular Biology 1994 - present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Stanley M. Lemon MD

Visiting Professor (permanent appointment pending)

Primary Appointment: Department of Medicine

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. A.L. Wozniak, S. Griffin, D. Rowlands, M. Harris, M. Yi, **S.M. LEMON**, and S.A. Weinman. Intracellular proton conductance of the hepatitis C virus p7 protein and its contribution to infectious virus production. *PLoS Pathogens*. 6:e1001087, 2010.

2. S. Stavrou, Z. Feng, **S.M. LEMON**, R.P. Roos. Different strains of Theiler's murine encephalomyelitis virus antagonize different sites in the type I interferon pathway. *J. Virol.* 84:9181-9, 2010.

3. M. Gal-Tanamy, R. Zemel, L. Bachmatov, R.K. Jangra, R. Villanueva, MK. Yi, **S.M. LEMON**, I. Benhar, and R. Tur-Kaspa. Inhibition of protease-inhibitor resistant hepatitis C virus replicons and infectious virus by intracellular intrabodies. *Antiviral Research*. 88:95-106, 2010.

4. R.A. Villanueva, R.K. Jangra, MK. Yi, R. Pyles, N. Bourne, and **S.M. LEMON**. miR-122 does not modulate the elongation phase of hepatitis C virus RNA synthesis in isolated replicase complexes. *Antiviral Research*. 88:119-23, 2010.

5. R. Jangra, M. Yi, and **S.M. LEMON.** miR-122 regulation of hepatitis C virus translation and infectious virus production. *J. Virol.* 84:6615:25, 2010.

6. R. Jangra, M. Yi, and **S.M. LEMON**. DDX6 (Rck/p54) is required for efficient hepatitis C virus replication but not IRES-directed translation. *J. Virol.* 84:6810-24, 2010.

7. T. Wang, R.V Campbell, M. Yi, **S.M. LEMON**, and S.A. Weinman. Role of hepatitis C virus core protein in viral-induced mitochondrial dysfunction. *J. Viral Hepat*. In press, 2010.

8. S. Shetty, S. Kim, T. Shimakami, **S.M. LEMON**, and M.-R. Mihailescu. Hepatitis C virus genomic RNA dimerization is mediated via a kissing complex intermediate. *RNA* 16:913-25, 2010.

9. A.G.N. Angus, D. Dalrymple, S. Boulant, D. McGivern, R.F. Clayton, M.J. Scott, R. Adair, S. Graham, A.M. Owsianka, P. Targett-Adams, K. Li, T. Wakita, J. McLauchlan, **S.M. LEMON**, A.H. Patel. The requirement of cellular DDX3 for hepatitis C virus replication is unrelated to its interaction with the viral core protein. *J. Gen. Virol.*, 91:122-32, 2010.

10. J.G. Fox, Y. Feng, E.J. Theve, R.C. Fry, J.L.A. Fiala, A.L. Doernte, M. Williams, A.R. Raczynski, J.L. McFaline, J.M. Essigmann, D.B. Schauer, S.R. Tannenbaum, P.C. Dedon, S.A. Weinman, **S.M. LEMON**, A.B. Rogers. Gut microbes define liver cancer risk in mice. *Gut*, 59:88-97, 2010.

11. N. Wang, Q. Dong, J. Li, R.K. Jangra, M. Fan, A.R. Brasier, **S.M. LEMON**, L.M. Pfeffer, and K. Li. Viral induction of the zinc-finger antiviral protein is IRF3-dependent but NF-kB-independent. *J. Biol. Chem.* 285: 6080-90, 2010

12. Y. Liang, T. Shilagard, S.Y. Xiao, N. Snyder, D.T. Lau, L. Cicalese, H. Weiss, G. Vargas, and **S. M. LEMON**. Visualizing hepatitis C virus infections in human liver by two-photon microscopy. *Gastroenterology*, 137:1448-58, 2009

13. N. Wang, Y. Liang, S. Devaraj, J. Wang, **S.M. LEMON**, K. Li, Toll-like receptor 3 mediates establishment of a cellular antiviral state against hepatitis C virus. *J. Virol.*, 83:9824-34, 2009.

14. T. Weatherford, D. Chavez, K.M. Brasky, **S.M. LEMON,** A. Martin, R.E. Lanford. Lack of adaptation of chimeric GBV-B/hepatitis C virus in the marmoset model: Possible effects of bottleneck. *J. Virol.,* 83: 8062-73, 2009.

15. D.R. McGivern, R.A Villanueva, S. Chinnaswamy, C.C. Kao and **S.M. LEMON**. Impaired replication of hepatitis C virus containing mutations in a conserved NS5B retinoblastoma protein-binding motif. *J. Virol.*, 83:7422-33, 2009.

16. H. Lerat, L. Kammoun, I. Hainault, E. Mérour, C. Callens, **S.M. LEMON**, F. Foufelle, and J.-M. Pawlotsky. Hepatitis C virus (HCV) proteins induce lipogenesis and defective triglyceride secretion in transgenic mice expressing the HCV full-length open reading frame. *J. Biol. Chem.*, 284: 33466-33474, 2009

17. MK. Yi, Y. Ma, J. Yates, and **S.M. LEMON**. *trans*-Complementation of an NS2 Defect in a late step in hepatitis C virus (HCV) particle assembly and maturation. *PLoS Pathogens*, 5(5):e1000403 2009

18. L. Warter, L. Cohen, Y. Benureau, D. Chavez, Y. Yang, F. Bodola, **S.M. LEMON**, C. Traboni, R.E. Lanford and A. Martin. A cooperative interaction between nontranslated RNA sequences and NS5A protein promotes *in vivo* fitness of a chimeric hepatitis C/GBV-B virus. *PLoS ONE*, 4(2): e0004419, 2009.

19. M. Gal-Tanamy, Z-Y. Keck, M. Yi, J.A. McKeating, A.H. Patel, S.K.H. Foung, and **S.M. LEMON**. In vitro selection of a neutralization-resistant hepatitis C virus escape mutant. *Proc. Nat'l Acad. Sci. USA.* 105:19450-5, 2008.

20. Y. Liang, H. Ishida, O. Lenz, T-I. Lin, O. Nyanguile, K. Simmen, R.B. Pyles, N. Bourne, M. Yi, K. Li, **S.M. LEMON**. Antiviral suppression versus restoration of RIG-I signaling by hepatitis C protease and polymerase inhibitors. *Gastroenterology*, 135:1710-18, 2008

21. Y. Yang, MK Yi, P. Simmonds, and **S.M. LEMON**. Identification of a conserved RNA replication element (*cre*) within the $3D^{pol}$-coding sequence of hepatoviruses. *J. Virol.* 82:10118-28, 2008

22. Y. Ma, J. Yates, Y. Liang, **S.M. LEMON**, and M. Yi. NS3 helicase domains involved in infectious intracellular hepatitis C virus particle assembly. *J. Virol.* 82:7624-39, 2008

23. S. Chinnaswamy, I. Yarbrough, S. Palaninathan, R. Kumar, V. Vijayaraghavan, B. Demeler, **S.M. LEMON**, J.C. Sacchettini, and C.C. Kao. A locking mechanism regulates RNA synthesis and host protein interaction by the hepatitis C virus polymerase. *J. Biol. Chem.* 283:20535-20546, 2008

24. Z-Y. Keck, O. Olson, M. Gal-Tanamy, J. Xia, A.H. Patel, M. Dreux, F-L. Cosset, **S.M. LEMON**, and S.K.H. Foung. A point mutation leading to hepatitis C virus escape from neutralization by a monoclonal antibody to a conserved conformational epitope. *J. Virol.*. 82:6067-6072, 2008

25. Z-Y. Keck, T-K. Li, J. Xia, M. Gal-Tanamy, O. Olson, S.H. Li, A. Patel, J.K. Ball, **S.M. LEMON** and S.K.H. Foung. Definition of a conserved immunodominant domain on HCV E2 glycoprotein by neutralizing monoclonal antibodies. *J. Virol.* 82:6061-6066, 2008

26. D.T.Y. Lau, P.M. Fish, M. Sinha, D.M. Owens, **S.M. LEMON**, and M. Gale, Jr. Interferon regulatory factor-3 activation, hepatic interferon-stimulated gene expression and immune cell infiltration in HCV patients. *Hepatology*, 47:799-809, 2008.

27. M. Shen, Q. Wang, Y. Yang, H.B. Parthak, J.J. Arnold, C. Castro, **S.M. LEMON**, and C.E. Cameron. Human rhinovirus type 14 gain-of-function mutants for oriI utilization define residues of 3C(D) and $3D^{pol}$ that contribute to assembly and stability of the picornavirus VPg uridylylation complex. *J. Virol.,* 81: 12485-12495, 2007

28. T. Munakata, Y. Liang, S. Kim, D.R. McGivern, J. Huibregtse, A. Nomoto, and **S.M. LEMON**. Hepatitis C virus-induced, E6AP-dependent degradation of the retinoblastoma protein. *PLoS Pathog* 3:1335-47, 2007.

29. M.J. Saderholm, **S.M. LEMON**, and B.W. Erickson. Characterization of deltoid, a chimeric protein containing the oligomerization site of hepatitis delta antigen. *Biopolymers*, 88:764-73, 2007

30. R. Sampath, K.L. Russell, C. Massire, M.W. Eshoo, V. Harpin, L.B. Blyn, R. Melton, C. Ivy, T. Pennella, F. Li, H. Levene, T.A. Hall, B. Libby, N. Fan, D.J. Walcott, R. Ranken, M. Pear, A. Schink, J. Drader, D. Moore , D. Metzgar , L. Addington , R. Rothman, C.A. Gaydos, S. Yang, K. St. George, M.E. Fuschino, A.B. Dean, D. Stallknecht, G. Goekjian, S. Yingst, M. Monteville, M.D. Saad, C.A.Whitehouse, C. Baldwin, K.H. Rudnick, S.A. Hofstadler, **S.M. LEMON** and D.J. Ecker. Global surveillance of emerging influenza virus genotypes by mass spectrometry. *PLoS ONE,* 2:e489, 2007

31. H. Ishida, K. Li, M. Yi, and **S.M. LEMON**. P21-activated kinase is activated through the mammalian target of rapamycin/p70 S6 kinase pathway and regulates the replication of hepatitis C virus in human hepatoma cells J. *Biol. Chem*. 282:11836-48, 2007

32. Z. Chen, R. Rijnbrand, R. Jangra, S.G. Devaraj, L. Qu, Y. Ma, **S.M. LEMON**, and K. Li. Ubiquitination and proteasomal degradation of interferon regulatory factor-3 induced by the bovine viral diarrhea virus Npro. *Virology* 366:277-92, 2007

33. Y. Yang, Y. Liang, L. Qu, Z. Chen, M. Yi, K. Li, and **S.M. LEMON**. Disruption of innate immunity due to mitochondrial targeting of a picornaviral protease precursor. *Proc. Nat'l Acad. Sci. USA.* 104:7253-8, 2007

34. Z. Chen, Y. Benureau, R. Rijnbrand, J. Yi, T. Wang, L. Warter, S. Weinman, R.E. Lanford, S.A. Weinman, **S.M. LEMON**, A. Martin, and K. Li. GB virus B disrupts RIG-I signaling by NS3/4A mediated cleavage of the adaptor protein MAVS. *J. Virol.*, 81:964-76, 2007.

35. M. Yi, Y. Ma, J. Yates, and **S.M. LEMON.** Compensatory mutations in E1, p7, NS2 and NS3 enhance yields of cell culture-infectious inter-genotypic chimeric hepatitis C virus. *J. Virol.,* 81:629-38, 2007.

36. P. Targett-Adams, T. Schaller, G. Hope, R.E. Lanford, **S.M. LEMON**, A. Martin, and J. McLauchlan. Signal peptide peptidase cleavage of GB virus B core protein is required for productive infection in vivo. *J. Biol. Chem.,* **281,** 29221-29227, 2006.

37. R.L. Tripathi, P. Krishnan, Y. He, T. Middleton, T. Pilot-Matias, C.M. Chen, D.T. Lau, **S.M. LEMON**, H. Mo, W. Kati, and A. Molla. Replication efficiency of chimeric replicons containing NS5A-5B genes derived from HCV-infected patient sera. *Antiviral Res.* **73**:40-9, 2207.

38. Y. Hara, K. Hino, M. Okuda, T. Furutani, I. Hidaka, Y. Yamaguchi, M. Korenaga, K. Li, S.A. Weinman, **S.M. LEMON**, and K. Okita. Hepatitis C virus core protein inhibits deoxycholic acid-mediated apoptosis despite generating mitochondrial reactive oxygen species. *J Gastroenterology,* **41,** 257-268l, 2006.

39. T. Furutani, K. Hino, M. Okuda, T. Gondo, S. Nishina, A. Kitase, M. Korenaga, S-Y. Xiao, S.A. Weinman, **S.M. LEMON**, I. Sakaida, and K. Okita. Hepatic iron overload induces hepatocellular carcinoma in transgenic mice expressing the hepatitis C virus polyprotein. *Gastroenterology*, **130,** 2087-2098, 2006.

40. Y-M. Loo, D. Owen, K. Li, A. Erickson, C.L. Johnson, P. Mar-Fish, S. Carney, T. Wang, H. Ishida, M. Yoneyama, T. Fujita, T. Saito, C. Hagedorn, D.T.-Y. Lau, W.M. Lee, S.A. Weinman, **S.M. LEMON** and M. Gale, Jr. Viral and therapeutic control of IPS-1 function during hepatitis C virus infection. *Proc. Nat'l Acad. Sci. USA* 103:6001-6006, 2006.

41. C.L. Jopling, M.Y. Yi, A.M. Lancaster, **S.M. LEMON**, and P. Sarnow. Modulation of hepatitis C virus RNA abundance by a liver-specific microRNA. *Science* 309:1577-1581, 2005. [*Commentaries*: S. Amoils, HCV's little helper, *Nature Reviews Microbiology* **3**:828, 2005; N. Appel and R. Bartenschlager, A novel function for a micro RNA: Negative regulators can be positive for the hepatitis C virus, *Hepatology* 43:612-615, 2006].

42. MK. Yi, R.A. Villanueva, D.L Thomas, T. Wakita and **S.M. LEMON**. Production of infectious genotype 1a hepatitis C virus (Hutchinson strain) in cultured human hepatoma cells. *Proc. Nat'l Acad. Sci. USA* 103:2310-5, 2006.

43. MK. Yi, X. Tong, A. Skelton, R. Chase, T. Chen, A. Prongay, S.L. Bogen, A.K. Saksena, F.G. Njoroge, R.L. Veselenak, R. Pyles, N. Bourne, B.A. Malcolm, and **S.M. LEMON**. Mutations conferring resistance to SCH6, a novel hepatitis C virus NS3/4A protease inhibitor: Reduced RNA replication fitness and partial rescue by second-site mutations. *J. Biol. Chem.* 281:8205-8212, 2006

44. V.V. Keasler, H. Lerat, C.R. Madden, M.J. Finegold, E.M.A. Mohammed, S.J. Forbes, **S.M. LEMON**, D.L. Hadsell, S.J. Grona1, and B.L. Slagle. Increased liver pathology in hepatitis C virus transgenic mice expressing the hepatitis B X protein. *Virology* 347:466-475, 2006.

45. T. Munakata, M. Nakamura, Y. Liang, K. Li, and **S. M. LEMON**. Down regulation of the Rb tumor suppressor by the hepatitis C virus NS5B RNA-dependent RNA polymerase. *Proc. Nat'l Acad. Sci. USA* **102**:18159-64, 2005

46. D.T.-Y. Lau, B.A. Luxon, S.-Y. Xiao, M. Beard, **S.M. LEMON**. Intrahepatic gene expression profiles and a-smooth muscle actin patterns in hepatitis C virus induced fibrosis. *Hepatology* 42:273-81, 2005

47. N. Bourne, R.B. Pyles, MK. Yi, R.L. Veselenak, M.M. Davis, **S.M. LEMON**. Screening for Hepatitis C virus antiviral activity with a cell-based secreted alkaline phosphatase reporter replicon system. *Antiviral Res*. 67:76-82, 2005

48. J. Sun, B. Tumurbaatar, J. Jia, H. Diao, F. Bodola, **S.M. LEMON**, W. Tang, D.G. Bowen, G.W. McCaughan, P. Bertolino and T-S. Chan. Parenchymal expression of CD86/B7.2 contributes to hepatitis C virus-related liver injury. *J. Virol.*, 79:10730-39, 2005.

49. J.C. Ferreon, A. C. M. Ferreon, K. Li, and **S. M. LEMON**. Molecular determinants involved in TRIF proteolysis by the hepatitis C virus NS3/4A protease. *J. Biol. Chem.* 280:20483-92, 2005

50. K. Li, Z. Chen, N. Kato, M. Gale, Jr., and **S. M. LEMON**. Distinct poly-I:C and virus-activated interferon signaling pathways leading to interferon-b production in hepatocytes. *J. Biol. Chem.* 280:16739-47, 2005

51. R. Rijnbrand, Y. Yang, L. Beales, F. Bodola, K. Goettge, R.E. Lanford, **S.M. LEMON**, and A. Martin. A chimeric flavivirus with 5' nontranslated RNA sequence from hepatitis C virus causes hepatitis in tamarins. *Hepatology*, 41:986-94, 2005.

52. S. Locarnini, T. Shaw, J. Dean, D. Colledge, A. Thompson, K. Li, **S.M. LEMON**, G.G. Lau, and M.R. Beard. Cellular response to conditional expression of the hepatitis B virus precore and core proteins in cultured hepatoma (Huh-7) cells. *J. Clin. Virol.* 32:113-21, 2005.

53. E. Foy, K. Li, R. Sumpter, Jr., M. Y. Loo, C. Johnson, C. Wang, P. Fish, M. Yoneyama, T. Fujita, **S. M. LEMON**, and M. Gale, Jr. 2004. Control of antiviral defenses through hepatitis C virus disruption of RIG-I signaling. *Proc. Nat'l. Acad. Sci. USA* 102:2986-91, 2005

54. K. Li, E. Foy, J. C. Ferreon, M. Nakamura, A. C. M. Ferreon, M. Ikeda, S. C. Ray, M. J. J. Gale, and **S. M. LEMON**. Immune evasion by hepatitis C virus NS3/4A protease-mediated proteolysis of the TLR adaptor protein TRIF. *Proc. Nat'l. Acad. Sci. USA* 102:2992-7. 2005

55. R. Sumpter, Jr., M. Y. Loo, E. Foy, K. Li, M. Yoneyama, T. Fujita, **S. M. LEMON**, and M. J. Gale, Jr. 2004. A cellular RNA helicase, RIG-I, determines permissiveness to hepatitis C virus RNA replication. *J. Virol*. 79:2689-99, 2005.

Reviews & commentaries

1. **S.M. LEMON**. Induction and evasion of innate antiviral responses by hepatitis C virus. *J. Biol. Chem.* 285:22741-7, 2010.

2. **S.M. LEMON**, J.A. McKeating, T. Pietschmann, D.N. Frick, J.S. Glenn, T.L. Tellinghuisen, J. Symons, P.A. Furman. Development of novel therapies for hepatitis C. *Antiviral Research* 86:79–92, 2010.

3. T. Shimakami, R.E. Lanford, and **S.M. LEMON**. Recent successes and continuing challenges in the development of new treatment modalities for hepatitis C. *Curr. Opin. Pharmacol.*, 9:537-44, 2009.

4. R.E. Lanford, M. Evans, V. Lohmann, B. Lindenbach, M. Gale, Jr., B. Rehermann, K.-M. Chang, and **S.M. LEMON**. The accelerating pace of HCV research: A summary of the 15th International Symposium on Hepatitis C Virus and Related Viruses. *Gastroenterology* 136:9-16, 2009

5. D.R. McGivern, **S.M. LEMON**. Tumor suppressors, chromosomal instability and hepatitis C virus-associated liver cancer. *Ann. Rev. Pathol.* 4:399-415, 2008

6. R.T. Chung, M. Gale, Jr., S.J. Polyak, **S.M. LEMON**, T.J. Liang, and J.H. Hoofnagle. Mechanisms of action of interferon and ribavirin in chronic hepatitis C. *Hepatology* 47:306-20, 2008.

7. A. Martin and **S.M. LEMON**. Hepatitis A virus: From discovery to vaccines. *Hepatology* 30(S1):S164-S172, 2006

Editorial Responsibilities

Editorial boards

Gastroenterology, 2008-present
Journal of Biological Chemistry, 2007-present
Journal of Virology, 1996-2001; 2004-present
Antiviral Research, 2004-present
Hepatology Research, 2008-present

Ad hoc reviewer for:

Science, Nature, Nature Medicine, PNAS, Virology, Hepatology

Grants/Contracts

P20-CA127004-01 "University of Kentucky SPORE in GI Cancer"
Program Director: B. Mark Evers, University of Kentucky
National Cancer Institute
9/1/2009-8/31/2012

Project 2: "Hepatitis C Virus and Tumor Suppressor Proteins"
Project PI: S.M. Lemon
9/1/2009-8/31/2012 ($159,477 current year direct costs) $488,064 total direct costs.

RO1-AI081903-01 "B Cell Immunity to Hepatitis C Virus"
Principal Investigator: Steven Foung, Stanford University
National Institute of Allergy and Infectious Diseases
Stanford subcontract to UTMB
Subcontract PI: S.M. Lemon
9/1/2009-8/30/2010 ($125,000 direct costs - ARRA award)

R21-AI081058-02 "Intrahepatic IRF-3 and NF-kB Signaling and Interferon Responses in Hepatitis C" Principal Investigator: S.M. Lemon.
National Institute of Allergy and Infectious Diseases,
2/1/09-1/31/11 ($150,000 current year direct costs), $275,000 total direct costs.

RO1-DA024565-03 "Mechanisms of Hepatitis C Virus Evolution"
Principal Investigator: Stuart Ray, Johns Hopkins University
National Institutes on Drug Abuse
Hopkins subcontract to UTMB
Subcontract PI: S.M. Lemon
9/1/2007-8/30/2012 ($89,198 current year direct costs), $658,956 total costs

UC7-AI70083-04 "Galveston National Laboratory Operations"
Principal Investigator: S.M. Lemon (transferred to J.W. LeDuc, 5-1-10)
National Institute of Allergy and Infectious Diseases
5/03/06-4/30/11 ($15,000,000 current year total costs), $53,785,873 total costs

U19-AI40035-14 "Southeastern Cooperative Hepatitis C Research Center"
Program Director: S.M. Lemon
National Institute of Allergy and Infectious Diseases
8/1/96 - 6/30/10 ($1,385,787 current year total costs), $7,220,644 total costs.

Project 1: "Selection of cell culture-adapted hepatitis C RNA"
Project PI: S.M. Lemon ($190,000 current year direct costs), $985,509 total direct costs.

*Core 1: "*Administrative Core"
Core Director: S.M. Lemon ($29,000 current year direct costs), $159,275 total direct costs.

N01-AI25488 "Drug Development for Opportunistic Infections - Hepatitis C"
Principal Investigator: Nigel Bourne, Co-investigator: S.M. Lemon
National Institute of Allergy and Infectious Diseases
9/23/02-09/22/10 ($896,013 current year total costs) $6,505,605 total costs.

R41-AI072859 "HCV Genotyping and Drug Resistance Analysis by ESI-MS"
Principal Investigator: Lawrence Blyn. Ibis Biosciences, Inc.
STTR subcontract from Ibis Biosciences, Inc. to UTMB
Subcontract PI: S.M. Lemon.
National Institute of Allergy and Infectious Diseases
3/01/08-2/28/10, $212,480 total direct costs.

UC6-AI58588 "National Biocontainment Laboratory (NBL) Cooperative Construction Agreement"
Principal Investigator: S.M. Lemon
National Institute of Allergy and Infectious Diseases
9/1/03-6/30/09, $110,000,000 total costs; 6/1/06: $5,000,000 supplement

R13-AI077295 "Hepatic Inflammation and Immunity 2008 Conference"
Principal Investigator: S.M. Lemon
National Institute of Allergy and Infectious Diseases
1/25/08-1/27/08, $25,000 total direct costs

R24-RR15081 "Chimeric virus primate model of hepatitis C"
Principal Investigator: S.M. Lemon, MD

National Center for Research Resources, NIH
2/1/02-01/31/06, $800,000 total direct costs.

004952-0067-2003 "Functional characterization of drug-resistant mutants of hepatitis C virus (HCV) NS3/4A protease"
Principal Investigator: S.M. Lemon
Advanced Technology Program, Texas Higher Education Coordinating Board
1/1/04-12/31/05, $250,000 total direct costs.

Grant Review Service

NIH VIRO-A MAY 2009

Honors/Awards 2005-2010

John Ender's Award for Contributions in Medical Virology
Infectious Disease Society of America
October, 2009

Fellow, American Association for the Advancement of Science
October, 2007

Bruce Witte Annual Lecturer, Hepatitis B Foundation
April, 2007

UNC Leadership

Interim Director, Carolina Vaccine Institute (July 2010-present)

Committee Service

Outside UNC

National Science Advisory Board for Biosecurity (NSABB)
U.S. Department of Health & Human Services
2005- present

Forum on Microbial Threats (formerly the Forum on Emerging Infections)
Board on Global Health, Institute of Medicine, 2001-present
CHAIR, 2004-2007; VICE-CHAIR, 2001-2004

Blue Ribbon Advisory Panel
National Institute of Allergy and Infectious Diseases
Microbiology and Infectious Disease Genomics (2010)

Board of Scientific Councilors, National Center for Infectious Diseases
Centers for Disease Control and Prevention, 2003 – 2007
CHAIR, 2004-2007

Committee on Advances in Technology and the Prevention
of Their Application to Next Generation Biowarfare Threats
National Research Council (Institute of Medicine)
CO-CHAIR, 2003-2006.

University of Texas Medical Branch committees:

Risk Assessment and Biocontainment Committee, 2005 – 2010
Executive Committee of the Faculty of Medicine, 1997-2010
UTMB-UT Austin MD-PhD Program Committee, 2004 – 2005

Professional Meetings/Societies

Meeting organization

Chairman, Organizing Committee, "HCV 2008" the 15th International Symposium on Hepatitis C and Related Viruses, San Antonio, TX, October, 2008.

Co-Organizer: Hepatic Inflammation and Immunity, Galveston, TX, January 2008.

Society leadership

Council Member
Association of American Physicians
2009-present

CHAIR-ELECT, CHAIR, RETIRING CHAIR
Section N Medical Sciences,
American Association for the Advancement of Science.
2004-2007

Society membership (continuous since 2005)

Association of American Physicians
American Society for Clinical Investigation
American Clinical and Climatological Association (2005-2010)
Alpha Omega Alpha
Infectious Disease Society of America (Fellow)
American Society for Virology
American Society for Microbiology
American Association for the Advancement of Science (Fellow)
American Association for the Study of Liver Diseases

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Zhi Liu, Ph.D.
Professor
Primary Appointment: Department of Dermatology
Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Li, N., Park, M., Zhao, M., Hilario-Vargas, J., McInnes, D.M., Prisayanh, P., Liu, Z., and Diaz, L.A. (2010) The Thomsen-Friedenreich antigen-binding lectin jacalin interacts with desmoglein 1 and abrogates the pathogenicity of pemphigus foliaceus autoantibodies in vivo. Journal of Investigative Dermatology In press.

Li, N., Zhao, M., Wang, J., Liu, Z., Diaz, L.A. (2009) Involvement of the apoptotic mechanism in pemphigus foliaceus autoimmune injury of the skin. Journal of Immunology **182**, 711-717.

Li, Z., Garantziotis, S., Jia, W., Potts, E., Lalani, S., Liu, Z., He, Y-W., Foster, W.M., Hollingsworth, J.W. (2009) The extracellular matrix protein mindin regulates trafficking of murine eosinophils into the airspace. Journal of Leukocyte Biology **85**, 124-131.

Liu, Z., Sui, W., Zhao, M., Li, Z., Li, N., Thresher, R., Giudice, G.J., Fairley, J.A., Sitaru, C., Zillikens, D., Ning, G., Marinkovich, P., and Diaz, L.A. (2008) Subepidermal Blistering Induced by Human Autoantibodies to BP180 Requires Innate Immune Players in a Humanized Bullous Pemphigoid Mouse Model. Journal of Autoimmunity **31,** 331-338.

Berkowitz, P., Liu, Z., Diaz, L.A., and Rubenstein, D.S. (2008) Autoantibodies in the autoimmune disease pemphigus foliaceus induce blistering via p38MAPK dependent signaling in the skin. American Journal of Pathology **173**,1628-1636.

Chen, M., Doostan, A., Bandyopadhyay, P., Remington, J., Wang, X., Hou, Y., Liu, Z., and Woodley, D.T. (2007) The Cartilage Matrix Protein Subdomain of Type VII Collagen Is Pathogenic for Epidermolysis Bullosa Acquisita. American Journal of Pathology **170**, 2009-2018.

Kaufmann, W.K., Nevis, K.R., Qu, P., Ibrahim, J.G., Zhou, T., Zhou, Y., Simpson, D.A., Helms-Deaton, J., Cordeiro-Stone, M., Moore, D.T., Thomas, N.E., Hao, H., Liu, Z., Shields, J.M., Scott, G.A., and Sharpless, N.E. (2007) Defective Cell Cycle Checkpoint Functions in Melanoma Are Associated with Altered Patterns of Gene Expression. Journal of Investigative Dermatology **128**, 175-187.

Liu, Z., Zhao, M., Li, N., Diaz, L.A., and Mayadas, T.N. (2006) Differential roles of β2 integrins in experimental autoimmune bullous pemphigoid. Blood **107**,1063-1069.

Woodley, D.T, Ram, R., Doostan, A., Bandyopadhyay, P., Huang, Y., Hou, Y., Keene, D.R., Liu, Z., and Chen, M. (2006) Induction of epidermolysis bullosa acquisita in mice by passive transfer of autoantibodies from patients. Journal of Investigative Dermatology **126**,1323-1330.

Zhao, M., Trimbeger, M.E., Li, N., Diaz, L.A., Shapiro, S.D., and Liu, Z. (2006) Role of Fc receptors in autoimmune bullous pemphigoid. Journal of Immunology **177**, 3398-3405.

Berkowitz, P., Hu, P., Warren, S., Liu, Z., Diaz, L.A., and Rubenstein, D.S. (2006) p38MAPK inhibition prevents disease in pemphigus vulgaris mice. Proceedings of National Academy of Sciences USA **103**, 12855-12860.

Nelson, K.C., Zhao, M., Schroeder P.R., Li, N., Westel, R.A., Diaz, L.A., and Liu, Z. (2006) Role of different pathways of the complement cascade in experimental bullous pemphigoid. Journal of Clinical Investigation **116**, 2892-2900.

Liu, Z., Li, N., Diaz, L.A., Shipley, J.M., Senior, R.M., and Werb, Z. (2005) Synergy between a plasminogen cascade and MMP-9 in autoimmune disease. Journal of Clinical Investigation **115**, 879-887.

Woodley, D.T., Chang, C., Saadat, P., Ram, R., Liu, Z., and Chen, M. (2005) Evidence that anti-type VII collagen Antibodies are pathogenic and responsible for the clinical, histological, and immunological Features of Epidermolysis Bullosa Acquisita. Journal of Investigative Dermatology **124**, 958-964.

Li, N,, Zhao, M., Hilario-Vargas, J., Prisayanh, P., Warren, S.J.P., Diaz, L.A., Anderson, C.L., Roopenian, D.C., and Liu, Z. (2005) Complete FcRn dependence for IVIG therapy in autoimmune skin blistering diseases. Journal of Clinical Investigation **115**, 3440-3450.

Berkowitz, P., Hu, P., Liu, Z., Diaz, L.A., Enghild, J.J., Chua, M.P., and Rubenstein, D.S. (2005) Desmosome signaling: Inhibition of p38MAPK prevents pemphigus vulgaris IgG induced cytoskeleton reorganization. Journal of Biological Chemistry **280**, 23778-23784, 2005.

Xiao, H., Heeringa, P., Liu, Z., Huugen, D., Hu, P., Maeda, N., Falk, R.J., and Jennette, J.C. (2005) Aggravation of anti-myeloperoxidase antibody-induced glomerulonephritis by bacterial lipopolysaccharide: role of tumor necrosis factor-alpha. American Journal of Pathology **167**, 47-58.

Reviews & commentaries

Lessey, E., Li, N., Diaz, L.A., and Liu, Z. (2008) Complement and cutaneous autoimmune blistering disease. Immunological Research **41**, 223-232.

Leighty, L., Li, N., Diaz, L.A., and Liu, Z. (2007) Experimental models for the autoimmune and inflammatory blistering disease, bullous pemphigoid. Archives of Dermatological Research **299**, 417-422.

Liu, Z., Li, N., and Diaz, L.A. (2006) Inhibition of pemphigus vulgaris by targeting CD40-CD154 co-stimulatory pathway: a step toward antigen-specific therapy? Journal of Investigative Dermatology **126**, 11-13.

Editorial Responsibilities

Ad hoc reviewer for:
Archives of Dermatology, Archives of Dermatological Research, Biochimica et Biophysica Acta, British Journal of Dermatology, Clinical and Experimental Allergy, Clinical Immunology, Experimental Dermatology, FEBS Letters, Journal of Autoimmunity, Journal of Biological Chemistry, Journal of Clinical Investigation, Journal of Dermatological Science, Journal of Experimental Medicine, Journal of Immunology, Journal of Investigative Dermatology, Proceedings of National Academy of Sciences, and Protein Expression and Purification.

Grants/Contracts

Principal Investigator 05/15/2010 – 05/14/2015
"Innate Immunity in Bullous Pemphigoid"
NIH/NIAMS R01 AI079240
$1,250,000
30% effort

Principal Investigator 09/15/2008 – 09/14/2012
"Immunopathogenesis of Bullous Pemphigoid"
NIH/NIAMS R01 AI40768
$900,000
50% effort

Co-Investigator 04/01/2008 – 03/30/2013
(PI Luis Diaz)
"Etiology and Pathogenesis of Pemphigus"
NIH/NIAMS R01 AR32599
$1,089,000
10% effort

Co-Investigator 09/01/2007 – 08/31/2012
"Pemphigus and Pemphigoid"
NIH/NIAMS R37 AR32081
$1,053,500
10% effort

Grant Review Service
Member: NIH/NIAMS, the Arthritis, Connective Tissue and Skin Study Section (ACTS), 2009-2013
Ad hoc member: NIH Skin Disease Research Center P30 Study Section, 2008
Ad hoc member: NIH/NIAMS, ACTS, 2006, 2007, 2008

Ad hoc member: NIH Innate Immunity and Inflammation Study Section, 2006

Committee Service
University of North Carolina, Chapel Hill

Member, Faculty Hearing Committee, 2007 - 2009

Professional Meetings/Societies

Meeting participation

Attendee, Society for Investigative Dermatology Annual Meeting, Atlanta, 2010
Speaker, Society for Investigative Dermatology Annual Meeting, Montreal, 2009
Speaker, International Investigative Dermatology Meeting, Kyoto, Japan, 2008
Attendee, Society for Investigative Dermatology Annual Meeting, Los Angles, 2007
Speaker, Cell/Tissue Damage and autoimmunity Conference, Baltimore, 2007
Speaker, Advances in Pemphigus and Pemphigoid. Paris, France, 2006.
Speaker, European Society for Dermatological Research, Paris, 2006
Speaker, International Pemphigus Foundation Conference. Bethesda, NIH, 2005.

Society membership
American Association of Immunologists (2002-)
The Society for Investigative Dermatology (1993-)
American Society for Cell Biology (1992-)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

David M. Margolis, M.D.

Professor

Primary Appointment: Department of Medicine

Joint Appointment(s): Department of Microbiology and Immunology, Department of Epidemiology

Publications

Primary literature

1. Gandhi RT, Zheng L, Bosch RJ, Chan ES, Margolis DM, Read S, Kallungal B, Palmer S, Medvik K, Lederman MM, Alatrakchi N, Jacobson JM, Wiegand A, Kearney M, Coffin J, Mellors JW, Eron JJ, on behalf of the AIDS Clinical Trials Group A5244 team. The Effect of Raltegravir Intensification on Low-level Residual Viremia in HIV-Infected Patients on Antiretroviral Therapy: A Randomized Controlled Trial. *PLoS Med.* **In press.**
2. Smith K., Zheng L., Bosch R., Margolis DM, Tenorio A., Napolitano L., Saag M., Connick E., Gross B., Francis I., Valdez H., Muurahainen N., Stocker V., Pollard R. Treatment with Recombinant Growth Hormone Is Associated with Modest Improvement in CD4 Lymphocyte Reconstitution in HIV-Infected Persons on Antiretroviral Therapy: Results of ACTG A5174. (2010) *AIDS Res Human Retro* **26**: 425-432.
3. Archin NA, Cheema M, Parker D, Wiegand A, Bosch R, Coffin J, Eron J, Cohen M, and Margolis DM. Antiretroviral intensification and valproic acid have limited effect on residual HIV-1 viremia or resting CD4+ cell infection. (2010) *PLoS One*; **5**:e9390.
4. Robertson KR, Su Z, Margolis DM, Krambrink AR, Havlir DV, Evans S, Skiest DJ for the A5170 study team. Neurocognitive effects of treatment interruption in stable HIV-positive patients in an observational cohort. (2010) *Neurology*; **74**:1260-1266
5. Archin NM, Keedy KS, Espeseth AS, Dang H, Hazuda DJ, and Margolis DM. Expression of Latent Human Immunodeficiency Type-1 is Induced by Novel and Selective Histone Deacetylase Inhibitors. AIDS. 2009; 23:1799-806.
6. Choudhary SK, Rezk NL, Ince WL, Cheema M, Zhang L, Su L, Swanstrom R, Kashuba AD, Margolis DM. Suppression of HIV-1 viremia with reverse transcriptase and integrase inhibitors, CD4+ T cell recovery, and viral rebound upon therapy interruption in a new model for HIV treatment in the humanized $Rag^{-/-}$ $\gamma_c^{-/-}$ mice. J Virol. 2009. 83:8254–8258. PMID: 19494021
7. Levesque MC, Moody AM, Hwang KK, Marshall D, Whitesides J, Amos J, Gurley T, Allgood S, Kuraoka M, Haynes BB, Parker DC, Shaheen NJ, Plonk S, Cohen MS, Tomaras G, Goepfert P, Shaw G, Eron J, Hicks CB, Liao HX, Markowitz M, Kelsoe G, Margolis DM, and Haynes BF. Transmitted/Founder HIV-1 Induces B Cell Polyclonal Differentiation and Apoptosis With Massive Gastrointestinal Tract Germinal Center Loss In the Earliest Stages of Infection. PLoS Med. 6(7): e1000107. doi:10.1371/journal.pmed.1000107
8. Keedy KS, Archin NM, Gates AT, Espeseth AS, Hazuda DJ, and Margolis DM. A limited group of class I histone deacetylases act to repress human immunodeficiency virus type-1 expression. J Virol. 2009; 88:4749–4756. PMID: 19279091.

9. Archin NM, Espeseth A, Parker D, Cheema C, Hazuda DJ, Margolis DM. Expression of Latent HIV Induced by the Potent HDAC Inhibitor Suberoylanilide Hydroxamic Acid. AIDS Res Hum Retro. 2009; 25:207-212.
10. Wilkin TJ, DiRienzo G, Droll K, McKinnon J, Fletcher C, Margolis DM, Bastow B, Thal G, Woodward W, Godfrey C, Swindells S. Regimen Simplification to Atazanavir-Ritonavir Alone as Maintenance Antiretroviral Therapy After Sustained Virologic Suppression: Final 48-Week Results. J. Infect Diseases 2009; 199:866-71.
11. Skiest DJ, Krambrink A, Su Z, Robertson KR, Margolis DM and the A5170 study team. Improved Measures of Quality of Life, Lipid Profile and Lipoatrophy after Treatment Interruption in HIV-Infected Patients with Immune Preservation: a substudy of ACTG 5170. J Acquir Immune Defic Syndr. 2008; 49:377-83.
12. Vahey MT, Wang Z, Ockenhouse CF, Su Z, Nau ME, Krambrink A, Skiest DJ, Margolis DM. Differential Expression of Genes Associated with the Regulation of Apoptosis Predicts Progression in Persons Who Discontinue Antiretroviral Therapy. AIDS Res Hum Retro. 2008; 24:1047-66
13. Hare CB, Mellors J, Krambrink A, Su Z, Skiest DJ, Margolis DM, Patel SS, Barnas D, Frenkel L, Coombs R, Aweeka F, Morse GD, Haas DW, Boltz V, Palmer S, Coffin J, Havlir, DV. Detection of NNRTI Resistant HIV-1 after Discontinuation of Virologically Suppressive Antiretroviral Therapy. Clin Infect Diseases 2008; 47:421–424.
14. Archin NA, Eron JJ, Palmer S, Hartmann-Duff A, Martinson JA, Wiegand A, Bandarenko N, Schmitz JL, Bosch RJ, Landay AL, Coffin JM, Margolis DM. Standard ART and Valproic Acid Have Limited Impact on the Persistence of HIV Infection in Resting CD4+ T Cells. AIDS 2008; 22:1131-1135
15. Bowman MC, Ballard TE, Ackerson CJ, Feldheim DL, Margolis DM, Melander C. Inhibition of HIV Fusion with Multivalent Gold Nanoparticles. J Am Chem Soc 2008; 130:6896-7.
16. Choudhary, S.K., Archin, N.M., Margolis, D.M. Hexamethylbisacetamide and Disruption of Human Immunodeficiency Virus Type 1 Latency in CD4+ T Cells. J Infectious Diseases 2008; 197:1162–1170.
17. Busti AJ, Bedimo R, Margolis DM, Hardin DS. Improvement in insulin sensitivity and dyslipidemia in protease inhibitor-treated adult, male patients after switch to atazanavir/ritonavir. J. Invest. Med. 2008; 56:539-544.
18. Jiang G, Espeseth A, Archin NM, Hazuda DJ, and Margolis DM. c-Myc and Sp1 contribute to proviral latency by recruiting HDAC1 to the Human Immunodeficiency Virus Type 1 promoter. J. Virology 2007; 81:10914-23.
19. Margolis DM, Mukherjee L, Hogg E, Fletcher C, Ogata-Arakaki D, Petersen T, Rusin D, Martinez A, Adams E, Mellors J, and Adult AIDS Clinical Trials Group A5165 team. The Safety and Antiviral Activity of b-D-2,6-Diaminopurine Dioxolane (DAPD) with or without Mycophenolate Mofetil (MMF) in Multidrug-resistant HIV Infection (AIDS Clinical Trials Group study A5165). AIDS 2007; 21:2025-2032.
20. Skiest, D.J., Su, Z., Havlir, D.V., Robertson, K.R., Coombs, R.W., Cain, P., Peterson, T., Kambrick, A.,Jahed, N., McMahon, D., Margolis, D.M. Antiretroviral Treatment Interruption in HIV-infected Patients with Preserved Immune Function is Associated with a Low Rate of Clinical Progression: A Prospective Study. J. Infect. Diseases. 2007; 195:1426-36.
21. Lederman, M.M., Smeaton, L., Smith, K., Rodriguez, B., Pu, M., Wang, H., Sevin, A., Tebas, P., Sieg, S.F., Medvik, K., Margolis, D.M., Pollard, R., Ertl H.C.J., Valdez, H. In

chronic HIV-1 infection, Cyclosporine A provides no sustained immunologic benefit to persons starting suppressive antiretroviral therapies – results of a randomized controlled trial of the AIDS Clinical Trials Group: A5138. J. Infect. Diseases. 2006; 194:1677–85

22. Bedimo, R.J., Ghurani, R., Nsuami, M., Turner, D., Kvanli, M.B., Brown, G., and Margolis. D.M. Lipid abnormalities in HIV/HCV co-infected patients. HIV Medicine. 2006; 7:530–536
23. Swindells, S, DiRienzo, G., Wilkin, T, Fletcher, C.V. Margolis, D.M., Thal, G.D., Godfrey, C., Bastow, B., Ray, M.G., Wang, H., Coombs, R.W., McKinnon, J., Mellors, J.W., for the AIDS Clinical Trials Group 5201 Study Team. A prospective, open-label pilot trial of regimen simplification to atazanavir/ritonavir alone as maintenance antiretroviral therapy after sustained virologic suppression. JAMA. 2006; 296:806-14.
24. Busti, A.J., Tsikouris, T.P., Peeters, M.J., Das, S.R., Canham, R.M., Abdullah, S.M., and Margolis, D.M. A prospective evaluation of the effect of atazanavir on the QTc-interval and QTc-dispersion in HIV-positive patients. HIV Medicine 2006; 7:317-320.
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26. Klichko, V., Kaur, R.J., Archin, N., Lehrman, G, and Margolis, D.M. Hexamethylbisacetamide remodels the Human Immunodeficiency Virus type 1 promoter and induces Tat-independent HIV-1 expression without cellular activation. J. Virology. 2006; 80:4570–4579
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Reviews & commentaries

1. Choudhary SK, Margolis DM. Curing HIV: Pharmacologic Approaches to Target HIV-1 Latency. Ann. Rev. Pharmacology. *In press*
2. Margolis DM. Mechanisms of HIV Latency: An Emerging Picture of Complexity. Curr HIV/AIDS Rep. 2010; 7:37-43.
3. Keedy KK, Margolis DM. Therapy for Persistent HIV. Trends Pharm Sci. 2010; 31:206-211.
4. Richman DD, Margolis DM, Delaney M, Greene WC, Hazuda D, Pomerantz R. The Challenge of a Cure for HIV Infection. Science. 2009; 323:1304-1307.
5. Bowman MC, Archin NM, Margolis DM. Pharmaceutical approaches to eradication of persistent HIV infection. Expert Rev. Mol. Med. 2009; 11:e6.
6. Margolis DM. Confronting proviral Infection. Current HIV/AIDS Reports 2007, 4:60–64
7. Jiang G, Choudhary S, Margolis DM. Molecular mechanisms of persistent proviral HIV-1 infection. In: Persistent and Latent Infection by HIV-1 and Related Lentiviruses, Ed: AM Brown 2007: 111-126
8. Margolis, D.M., Archin, N.A. Attacking HIV provirus: therapeutic strategies to disrupt persistent infection. Infect. Dis.-Drug Targets. 2006; 6:369-76.
9. Archin, N., and Margolis, D.M. Attacking Latent HIV Provirus: from mechanism to therapeutic strategies. Curr. Opinions HIV AIDS, 2006; 1:134-140.

Editorial Responsibilities

Editorial boards

Editorial Board, *AIDS Research and Therapy, 2010-*
Editorial Board, *Journal of Virology,* 2008-
Editorial Board, *AIDS,* 2006-
HIV Editor-in-chief, *Contagion*, 2004-2006
Medical Editor, National AIDS Treatment Advocacy Project, 2003-2008
Medical Editor, amfAR Research Global Link, 2003-2005

Ad hoc reviewer for:

AIDS Res. and Human Retrovirol., Annals of Internal Medicine, Antiviral Therapy, Current HIV Research, Clinical Pharm. & Therapeutics, DNA and Cell Biology, Gene, Immunity, Journal of AIDS, Journal of Biological Chemistry, Journal of Clinical Investigation, Journal of Human Virology, Journal of Immunology, Journal of Infectious Diseases, Journal of Virology, Molecular and Cellular Biology, Mol. & Cellular Endocrinology, Nucleic Acids Research, The Pediatric Infectious Dis. Journal, PLoS Pathogens, PLos One, Proc. Natl. Acad. Sci. USA, Virology

Grants/Contracts

10/04-9/08: Veteran's Administration Research Service Merit Award: Inhibiting residual replication: towards eradication of HIV infection $566,400; P.I.
1/05-12/05: NIAID, NIH: AIDS Clinical Trials Group, extension $1,228,674; P.I.
6/02-5/07: NIAID, NIH: R01 award: Repression of HIV transcription $1,125,000; P.I.
4/05-3/08: NIAID, NIH: R01 award: Clearing persistently HIV-infected resting CD4+ lymphocytes. $2,293,565; P.I.
7/08-6/09: Bristol-Myers Squibb Fellows Training Program. Gold Nanoparticle Therapeutics in the Treatment of HIV-1. $20,000 (mentor of fellow MC Bowman, MD PhD)

5-RO1-AI45297 (Margolis, David M.) 07/01/99-07/31/09
2-R56-AI045297-11A1 (Margolis, David M.) 08/15/07-07/31/09
NIH/NIAID $225,000
Repression of HIV Transcription-A Pathway to Quiescence

5-RO1-AI064074-04 (Margolis, David M.) 03/15/2005 - 02/28/09
NIH/NIAID $465,159
Clearing Persistently HIV-Infected CD4+ T Lymphocytes

5 U01-AI067854-04 (Haynes, B.) 07/01/07-06/30/12
Duke University $393,870
Center for HIV/AIDS Vaccine Immunology (CHAVI)
Acute HIV-1 Infection Prospective Cohort Study

5 U01 AI069423-03 (PI: Eron, Joseph) 02/01/07-11/30/13
NIH/NIAID $2,218,601
UNC AIDS Clinical Trials Unit

The Effect of HDAC inhibition and Intensified ART Therapy on the Frequency of HIV in

Resting CD4 Cells 07/01/06-12/31/09
Trimeris/Roche Pharmaceuticals $238,670

107168-44-RGRL (Margolis, David M.) 07/01/08-06/30/09
amfAR $100,000
HDAC Inhibition and chromatin remodeling to disrupt proviral latency

5 T32 AI007151-31 (Margolis, David M.) 06/01/08-05/31/13
NIH/NIAID $223,990
Infectious Disease Pathogenesis Training Program

1 R01 MH085597-01A1 (Margolis, David M.) 04/01/09-01/31/14
NIH/NIAID $253,587
Nanocrystal delivery to the CNS to improve HIV Therapy

1R21 AI81613-01A1 (Choudhary, S.M.) 04/01/09-03/31/10
NIH/NIAID $150,000
Modeling HIV-1 Eradication Therapies in the hu-Rag2-/- gamma c-/- Mouse Model

UNC TRACS grant (Margolis, David M.) 06/01/2009-5/31/2010
UNC CTSA $49,978
Testing HIV microbicides in a humanized mouse model

Investigator-initiated Study Program (Margolis) 05/01/09-04/30/10
Merck Research Laboratories $50,000
Assay development to measure the effect of HDAC inhibitors on HIV infection in vivo.

R01 MH085597-01A1 04/01/09-01/31/14
NIH/NIAID $253,587
Nanocrystal delivery to the CNS to improve HIV Therapy

R34 AI084553-01 (Margolis) 05/01/09-04/30/10
NIH/NIAID $75,000
The in vivo effect of HDAC inhibitors on HIV gene expression in resting CD4+ T cells.

U19AI082608-01 (Margolis) 07/01/2009-06/30/2011
NIH/NIAID $2,690,324
Innovative therapies to eliminate persistent HIV Infection

No Number Assigned (Gay) 06/25/08-06/24/11 .60 calendar
Tibotec Therapeutics Clinical Affairs $261,914
TMC125HIV4004 Pilot Study to Evaluate HIV Viremia and Persistence in Acutely HIV-Infected Antiretroviral Naïve Patients Treated with Darunavir/ritonavir and Etravirine

3 R33 AI71940 (Garcia-Martinez) 06/01/10-06/31/11 .60 calendar
NIAID $333,850

1R01DA030156 - 01 (Margolis) 07/01/10-06/30/15
NIH/NIDA $528,956
HIV Latency, Epigenetics, and Therapeutics

Grant Review Service

Medical Research Council (U.K.) (ad hoc 1999)
V.A. Merit Review, Infectious Diseases subcommittee (ad hoc 2000, 2004, 2005)
NIH special emphasis panel, Centers for AIDS Research 2001
NIH AIDS and Related Research Study Section 1 (ad hoc 2002)
NIAID/NCI Inter-Institute Program for Development of AIDS-related Therapeutics (2003, 2004)
Canadian Institute of Health Research (ad hoc 2005)
Swiss National Science Foundation (ad hoc 2006)
American Foundation for AIDS Research (amfAR) scientific advisory board (2002-present)
2004-08: Division of AIDS Research Advisory Committee (ARAC), NIAID, NIH
NIAID AIDS Clinical Studies & Epi. Study Section (ad hoc 2003, 2004, standing 2010-2014)

Honors/Awards

William J. Way award for contributions to HIV medicine, Duke University School of Medicine, 2005

Elected Member, American Society for Clinical Investigation, 2005

Committee Service

University of North Carolina, Chapel Hill

Department of Medicine, Tenure/promotion review committees: 2007, 2008
2005-08: Executive Committee, UNC Carolina Clinical Trials Center
UNC Faculty Committee on Research (2008-2011)

Outside UNC

2004-06: Member, Laboratory Evaluation Subcommittee, NIAID AACTG
2005-07: Member, Optimization of Antiretroviral Therapy Committee, NIAID AACTG
2006-08: AIDS Clinical Trials Strategic Working Group, NIAID, NIH
2007- : Member, Translational Research and Drug Development Committee, NIAID AACTG
2004-08: Division of AIDS Research Advisory Committee (ARAC), NIAID, NIH
2007-08: Division of AIDS Research Clinical Trials Networks Strategic Working Group, ARAC liason

Professional Meetings/Societies

Invited/Keynote Lecturer:

1. Keynote Lecture: Residual virus, latency, and eradication strategies. Mid-Atlantic SIV Research Group Symposium, Frederick, MD, July 2010

2. Epigenetic regulation of HIV expression. Centennial Retrovirology Symposium, Prague, Czech Republic, May 2010
3. Epigenetic Regulation of Proviral HIV Infection. Institute Genetique et Moleculaire, Montpelier, France, March 2010.
4. Anti-HIV Latency Drugs. International Symposium on HIV & Emerging Infectious Diseases, Marseille, France, March 2010
5. "Any problem, when examined carefully, becomes more complicated: Designing Eradications Trials." 4rth International Workshop on HIV Persistence during Therapy, St Maarten, December 2009.
6. World AIDS Day Distinguished Speaker: "Attacking Persistent Infection: towards a complete response to treatment." Walter Reed Army Institute of Research, Silver Spring MD, December 2009.
7. World AIDS Day Invited Speaker: "Towards therapies to eradicate HIV Infection" Glaxo SmithKline World AIDS Day symposium, Research triangle Park, NC, December 2009.
8. Invited lecture: "Towards Eradication: the challenge of finding a cure for HIV infection." Czech Science Academy, Prague, Czech Republic, October 2009.
9. Inaugural lecture: 1rst annual conference of GESIDA (Spanish AIDS National Study Group): "Towards Eradication: the challenge of finding a cure for HIV infection." Madrid, October 2009.
10. Keynote Lecture: HDAC Inhibitors and HIV Latency: lost in translation? 16th West Coast Retrovirus meeting, Palm Springs, CA October 2009.
11. Prospects for Eradication: Host factors determining viral latency. 5th IAS Conference on HIV Pathogenesis, Treatment and Prevention (IAS 2009), Cape Town, South Africa, July 2009.
12. State of the Art Plenary: Eradication of HIV infection: any problem, however complicated, if looked in the right way, becomes more complicated. XVII International HIV Drug Resistance Workshop: Basic Principles & Clinical Implications. Fort Meyers FL, June 2009.
13. Drexel University College of Medicine, Dept. of Microbiology and Immunology Research Seminar Series. The Challenge of a Cure for HIV: persistent infection and what to do about it. Philadelphia, PA; June 2009.
14. Plenary Lecture: Curing HIV: pharmacological approaches to persistent HIV infection. 10th International Conference on HIV Pharmacology, Amsterdam, April 2009.
15. Mechanisms that Maintain Proviral Latency: Targets for Future Therapeutics. Third International Workshop on HIV Persistence during Therapy, St Maarten, December 2007.
16. Attacking latent HIV: towards therapies for persistent HIV infection. 10th Annual International Meeting of the Institute of Human Virology. Baltimore, MD. November 2006.
17. Targeting the Reservoir. Symposium on HIV Treatment. 44th Annual Meeting of the IDSA. Toronto, CA, October 2006.
18. Opportunities in translational research: HIV as a paradigm. Keynote address: Texas Tech Health Sciences Center Annual Research Day, Amarillo, TX. August 2006
19. Histone deacetylase inhibition: towards eradication of HIV infection. Case CFAR conference, Cleveland, OH, June 2006.

20. Predictors of HIV Disease Progression in Patients Who Stop ART with CD4 Cell Counts >350 cells/mm^3 D Skiest, D Havlir, R Coombs, E Adams, P Cain, T Petersen, D Rusin, C Jennings, K Robertson, D Margolis, and the ACTG 5170 Team 13th Annual Conference on Retroviruses and Opportunistic Infections, Denver, CO, February 2006.
21. Histone deacetylase inhibition in vivo depletes latent HIV infection. D.M. Margolis. Second International Workshop on HIV Persistence during Therapy. Saint Martin, FWI, December 2005.
22. Rapid Depletion of Latent HIV infection in vivo. D.M. Margolis. Plenary lecture. West Coast Retrovirus meeting. Palm Springs, CA. October 2005.

Abstract presentation:

1. Persistent low-level viremia despite clinically successful antiretroviral therapy appears correlated with more frequent resting CD4+ T cell infection. NM Archin, J Anderson, KS Keedy, KM Barton, M Cheema, R Sackmann, A Wiegand, JD Kuruc, , JJ Eron, MS Cohen, JM Coffin , R Swanstrom and DM Margolis. AIDS 2010 - XVIII International AIDS Conference, Vienna, Austria, July 2010.
2. HIV Eradication and the Development of Drug resistance in Humanized Mice. PW Denton, SK Choudhary, DM Margolis and JV Garcia. AIDS 2010 - XVIII International AIDS Conference, Vienna, Austria, July 2010.
3. Correlation of Peak and Duration of Viremia with Resting CD4+ T-Cell Infection in Acute HIV Infection. NM Archin, M Cheema, R Sackmann, A Sugarbaker, L Ngo, J Kuruc, C Gay, MS Cohen, J Eron, and DM Margolis. 16th Annual Conference on Retroviruses and Opportunistic Infections, San Francisco CA, February 2010; abstr. 464
4. Correlation of peak and duration of viremia and resting CD4+ T-cell infection in Acute HIV Infection. NM Archin, DC Parker, M Cheema, A Sugarbaker, L Ngo, J Kuruc, J Skepanski, S Fiscus, C Gay, M Kerkau, A Mayo, J Schmitz, MS Cohen, J Eron, and DM Margolis. Center for HIV-AIDS Vaccine Immunology (CHAVI) Annual Meeting, Durham, NC, October 2009
5. Raltegravir (RAL) intensification does not reduce low-level residual viremia in HIV-1-infected patients on antiretroviral therapy (ART): results from ACTG A5244. R. Gandhi, S. Zheng, R. Bosch, E. Chan, D. Margolis, S. Read, B. Kallungal, H. Sprenger, J. Janik, J. Jacobson, A. Wiegand, M. Kearney, S. Palmer, J. Coffin, J. Mellors, J. Eron, AIDS Clinical Trials Group A5244 Team. 5th IAS Conference on HIV Pathogenesis, Treatment and Prevention (IAS 2009), 19-22 July 2009 - Cape Town, South Africa
6. Expression of Latent Human Immunodeficiency Type-1 (HIV-1) is Induced by Targeted Inhibition of Selected Histone Deacetylases. DM Margolis, NM Archin, KS Keedy, A Espeseth, AT Gates, H Dang, and DJ Hazuda. Keystone Symposium on HIV Immunobiology. Keystone, CO. April 2009.
7. Induction of B Cell Polyclonal Differentiation and Apoptosis With Massive Gastrointestinal Tract Germinal Center Loss In the Earliest Stages of HIV-1 Infection. BF Haynes, MA Moody, MC Levesque, KKi Hwang, GM Shaw, G Tomaras, C Hicks, M Markowitz, T Kepler, S Munshaw, G Kelsoe, DM Margolis, and HX Liao, Keystone Symposium on HIV Vaccines. Keystone, CO. April 2009.

8. Analysis of Immunoglobulin Sequences Derived From Plasmablasts/Plasma Cells in Acute HIV-1 Infection Subjects. S Munshaw, HX Liao, A Dixon, X Chen, A Nagel, R Parks, JF Whitesides, DJ Marshall, J Amos, Y Yang, F Gao, MC Levesque, GD Tomaras, A Moody, G Kelsoe, DM Margolis, M Markowitz, BF Haynes and TB Kepler. Keystone Symposium on HIV Vaccines. Keystone, CO. April 2009.
9. Production and characterization of blood, bone marrow and terminal ileum anti-HIV antibodies from subjects with acute/early HIV-1 infection. KK Hwang, M McAdams, SM Xia, M Gustilo, G Tomaras, DM Margolis, TC Shea, CB Hicks, M Markowitz, SM Alam, HX Liao, and BF Haynes. Keystone Symposium on HIV Vaccines. Keystone, CO. April 2009.
10. Characterization of the Specificities of Bone Marrow and Blood Plasmablasts/Plasma Cells in Acute HIV-1 Infection Subjects. H-X Liao, A Dixon, X Chen, A Nagel, S Munshaw, R Parks, JF Whitesides, DJ Marshall, J Amos, Y Yang, F Gao, TB Kepler, MC Levesque, GD Tomaras, A Moody, G Kelsoe, TC Shea, DM Margolis, M Markowitz, and BF Haynes. Keystone Symposium on HIV Vaccines. Keystone, CO. April 2009.
11. Resting CD4+ T cell infection is limited by antiretroviral therapy during acute infection, and appears correlated with total exposure to viremia. NM Archin, DC Parker, A Sugarbaker, J Kuruc, C Hicks, McCauley MB, Cohen MS, J Eron, C Gay, and DM Margolis for the NC STAT Program and the NIH CHAVI. 16th Annual Conference on Retroviruses and Opportunistic Infections, Montreal PQ, February 2009; abstr. 514
12. Multiple Class I Histone Deacetylases Maintain HIV-1 Transcriptional Repression during Proviral Latency. K Keedy, N Archin, A Gates, A Espeseth, D Hazuda, and D Margolis. 16th Annual Conference on Retroviruses and Opportunistic Infections, Montreal PQ, February 2009; abstr. 263
13. Differential Representation of HIV-1 gp41 Immunodominant Versus Membrane Proximal Epitope-Specific B Cells in Subjects Chronically Infected with Clade B HIV-1. MA Moody, TC Gurley, S Allgood, PD McNair, MS Drinker, HX Liao, M Markowitz, D Margolis, CB Hicks, SM Alam, DJ Marshall, JF Whitesides, MC Levesque, BF Haynes. Center for HIV-AIDS Vaccine Immunology (CHAVI) Annual Meeting, Durham, NC, September 2008
14. HIV RNA in GALT does not correlate with Plasma HIV RNA levels in Acute HIV Infection DC Parker, NM Archin, A Sugarbaker, N Shaheen, J Eron, L Ngo, J Kuruc, C Hicks, S Fiscus, C Gay, M Kerkau, S McCoy, K McGee, JF Whitesides, J Schmitz, Cohen MS, and DM Margolis. Center for HIV-AIDS Vaccine Immunology (CHAVI) Annual Meeting, Durham, NC, September 2008
15. Efficacy of NNRTI-Based Antiretroviral Therapy initiated during Acute HIV Infection. C Gay, A Johnson, S McCoy, J Kuruc, K McGee, L McNeil, M Kerkau, C Pilcher, D Margolis, P Leone, S Fiscus, G Ferrari, C Hicks, J, The Duke-UNC Acute HIV Infection Consortium. AIDS 2008 - XVII International AIDS Conference, Mexico City, Mexico August 2008.
16. Baseline Results from ACTG 5244: Persistent Viremia Despite Long-term Suppressive Antiretroviral Therapy (ART): Gandhi RT, Palmer S, Bosch R, Zheng S, Demeter L, Leavitt R, Margolis D, Read S, Coffin J, Mellors J, Eron J for the A5244 team. AIDS 2008 - XVII International AIDS Conference, Mexico City, Mexico August 2008.

17. Differential Expression of Genes Associated with Apoptosis Predicts CD4 Decline after Interruption of ART in ACTG A5170. M Vahey, Z Wang, Z Su, A Krambrink, D Skiest, and D Margolis. 15th Annual Conference on Retroviruses and Opportunistic Infections, Boston MA, February 2008; abstr. 339
18. Absence of Protease Resistance with Virologic Rebound by Single Genome Sequencing on Atazanavir/Ritonavir as Simplified Maintenance Therapy: ACTG 5201. J McKinnon, T Wilkin, S Swindells, G DiRienzo, C Fletcher, D Margolis, G Thal, B Bastow, K Droll, J Mellors, and the A5201 Study Group. 15th Annual Conference on Retroviruses and Opportunistic Infections, Boston MA, February 2008; abstr. 890
19. HIV-1 Inhibition with Multivalent Gold Nanoparticles. MC Bowman, E Ballard, C Akerson, J D'Antonio, D Feldheim, C Melander, and D Margolis. 15th Annual Conference on Retroviruses and Opportunistic Infections, Boston MA, February 2008; abstr. 744
20. Diagnosing Acute HIV Infection in North Carolina: Challenges and Opportunities. K McGee, S Kim, A Johnson, J Kuruc, S McCoy, L McNeil, C Gay, D Margolis, J Eron, and C Hicks. 15th Annual Conference on Retroviruses and Opportunistic Infections, Boston MA, February 2008; abstr. 699
21. The North Carolina CHAVI Cohort: the first 14 months. Hicks C, Gay C, Margolis D, McGee K, Kuroc J, Beagle S, Kerkau M, Fiscus S, McCoy S, Leone P, Eron J. Center for HIV-AIDS Vaccine Immunology (CHAVI) Annual Meeting, Durham, NC, September 2007
22. Resting CD4+ T cell infection in acute HIV infection reflects early control of viral replication. NM Archin, J Eron, L Ngo, J Kuruc, C Hicks, N Bandarenko, S Fiscus, C Gay, M Kerkau, S McCoy, K McGee, J Whitesides, J Schmitz, Cohen MS, and DM Margolis. Center for HIV-AIDS Vaccine Immunology (CHAVI) Annual Meeting, Durham, NC, September 2007
23. Antiretroviral Treatment of Acute HIV Infection: Symptomatic bias, cytokines and chemokines. Cohen, MS, Gay, C, Stacey, A, Dibben, O, McCoy, S, Kuruc, J, McGee, K, Fiscus, S, Margolis, D, Eron, J, Hicks, C, Borrow, P. Center for HIV-AIDS Vaccine Immunology (CHAVI) Annual Meeting, Durham, NC, September 2007
24. Chronically HIV-1 infected subjects have detectable peripheral blood memory B cells to gp140 envelope but not to the gp41 membrane proximal external region 2F5 epitope. M Bonsignori, MA Moody, MS Drinker, SM Alam, E Petzold, CB Hicks, DM Margolis, N Archin, JF Whitesides and BF Haynes. AIDS Vaccine 2007 Conference; August 2007; Seattle WA
25. Patient reported symptoms improve following prolonged treatment interruption: ACTG 5170 quality of life results. Skiest D., Krambrink A., Su Z., Robertson K., Havlir D., Margolis D. 4th IAS Conference, Sydney, Australia, July 2007.
26. Standard ART and Valproic Acid have Limited Impact on Persistent HIV Infection of Resting CD4+ T Cells. NM Archin, J Eron, S Palmer, L Ngo, A Hartmann Duff, N Bandarenko, J Schmitz, A Wiegand, JM Coffin, AL Landay, RJ Bosch, Cohen MS, DM Margolis. 16th International HIV Drug Resistance Workshop, Barbados, June 2007
27. This Is Your Brain Off Drugs: Neurocognitive Function before and after ART Discontinuation in Patients with High CD4 Nadir (ACTG A5170). K Robertson, Z Su, A

Krambrink, S Evans, D Havlir, D Margolis, D Skiest, and ACTG 5170 team. 14th Annual Conference on Retroviruses and Opportunistic Infections, Los Angeles CA, February 2007; abstr. 113

28. c-Myc and Sp1 Recruit Histone Deacetylase-1 to the HIV-1 Promoter: Combinatorial Mechanisms Maintain Latency. G Jiang, A Espeseth, D Hazuda, and D Margolis. 14th Annual Conference on Retroviruses and Opportunistic Infections, Los Angeles CA, February 2007; abstr. 225
29. Expression of Latent HIV Induced by a Selective Class I HDAC Inhibitor. N Archin, A Espeseth, A Duff, M Cheema, D Parker, D Hazuda, and D Margolis. 14th Annual Conference on Retroviruses and Opportunistic Infections, Los Angeles CA, February 2007; abstr. 501
30. In Chronic HIV-1 infection, Cyclosporine A Provides No Sustained Immunologic Benefit to Persons Starting ART. M Lederman, L Smeaton, K Smith, B Rodriguez, H Wang, P Tebas, S Sieg, D Margolis, C Pilcher, H Valdez, and AIDS Clinical Trials Group A5138 team. 14th Annual Conference on Retroviruses and Opportunistic Infections, Los Angeles CA, February 2007; abstr. 129
31. Attacking latent HIV: towards eradication of HIV infection. Archin N, Hartmann Duff A, Eron J, Ngo L, Bandarenko N, Schmitz J, Leone P, Pilcher C, Jiang G, Hicks CB, Wohl D, Fiscus S, Swanstrom R, Cohen M, Margolis D. AIDS 2006 - XVI International AIDS Conference, Abstract no. TUPE0059
32. Treatment with recombinant human growth hormone (r-hGH) leads to increased thymic output in HIV-Infected subjects with incomplete immune rReconstitution on highly active antiretroviral therapy (HAART). Smith K., Zheng L., Bosch R., Margolis D., Tenorio A., Napolitano L., Pollard R., Connick E., Gross B., Frances I., Wang R., Muurahainen N., Stocker V., ACTG Protocol Team. AIDS 2006 - XVI International AIDS Conference. Abstract no. MOAX0403.
33. Resistance Mutations to Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) After Discontinuation of a Virologically Suppressive Regimen. CB Hare, J Mellors, A Krambrink, Z Su, D Skiest, D Margolis, S Patel, D Barnas, L Frenkel, R Coombs, F Aweeka, G Morse, D Haas, R Kim, V Boltz, S Palmer, J Coffin, DV Havlir. 15th International HIV Drug Resistance Workshop, Sitges, Spain, June 2006
34. Multi-Genome Sequencing (MGS): A New, Sensitive Method of Detecting Low Frequency Drug–Resistant Mutants. D Barnas, Mary Kearney, V Boltz, S Patel, F Maldarelli, B Hare, D Havlir, Z Su, A Krambrink, D. Margolis, S Palmer, J Coffin, and J Mellors. 15th International HIV Drug Resistance Workshop, Sitges, Spain, June 2006
35. A Phase I/II Randomized, Double-blind, Placebo-controlled Pilot Study of beta-D-2,6-Diaminopurine Dioxolane Vs DAPD + Mycophenolate Mofetil in Treatment-experienced Subjects (ACTG 5165). D Margolis, L Mukherjee, E Hogg, C Fletcher, D Ogata-Arakaki, T Petersen, D Rusin, A Martinez, E Adams, J Mellors, and Adult AIDS Clinical Trials Group A5165 team. 13th Annual Conference on Retroviruses and Opportunistic Infections, Denver, CO, February 2006.
36. Differences in Calculated Glomerular Filtration Rates in Efavirenz- or Tenofovir-treated Adults in ESS40006. Melanie Thompson, R Haubrich, D Margolis, S Schneider, R

Schooley, K Pappa, J Sail, L Yau, and J Hernandez. 13th Annual Conference on Retroviruses and Opportunistic Infections, Denver, CO, February 2006.

Society leadership
2008-12: Infectious Diseases Society of America research committee

Society membership

American Association for the Advancement of Science 1984-present

American College of Physicians, 1988-present (Fellow)

Infectious Diseases Society of America, 1991-present (Fellow)

American Society for Microbiology, 1992-present

American Society for Clinical Investigation, 2005-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Silva Markovic-Plese, M.D., M.S.

Assoicate Professor

Primary Appointment: Department of Neurology

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Buie, L.K., Rasmussen, C.A., Porterfield, E.C. (2010) Self-complementary AAV Virus (scAAV) Override AAV Transduction Inability and Confer Long-term Expression to the Trabecular Meshwork of Living Animals, *Investigative ophthalmology and visual sciences,* **51**(1):236-248.

Ramgolam, V., Sha, Y., Jin, J. (2009) Interferon-beta Inhibits Human Th17 Cell Differentiation, *J Immunol,* **15**;183(8): 5418-5427.

Markovic-Plese, S., Jewells, V., Speer, D. (2009) Combining beta interferon and atorvastatin may increase disease activity in multiple sclerosis, *Neurology,* **72**(22):1965-1966.

Cohen, J.A., Imrey, P.B., Calabresi, P.A. (2009) Results of the Avonex Combination Trial (ACT) in relapsing-remitting MS*, Neurology,* **72**(6): 535-41.

Zhang, X., Jin, J., Tang, Y. (2009) IFN-beta1a inhibits the secretion of Th17-polarizing cytokines in human dendritic cells via TLR7 up-regulation, *J Immunol*, **15**;182(6):3928-3936.

Montes, M., Zhang, X., Berthelot, L. (2009) Oligoclonal myelin-reactive T-cell infiltrates derived from multiple sclerosis lesions are enriched in Th17 cells*, Clin Immunol,* **130**(2): 133-144.

Zhang, X., Jin, J., Tang, Y. (2008) Simvastatin Inhibits IL-17 Secretion by Targeting Multiple IL-17-regulatory Cytokines and by Inhibiting the Expression of IL-17 Transcription Factor RORC in CD4+ Lymphocytes. *J Immunol*.**15**;180(10):6988-6996.

Zhang, X., Tang, Y., Danuta, S. (2008) Degenerate TCR recognition and dual DR2 restriction of autoreactive T cells: Implications for the initiation of the autoimmune response in multiple sclerosis. *Eur J Immunol.* **38**(5):1297-1309.

Cohen, J.A., Calabresi, P.A., Chakraborty, S. (2008) Avonex Combination Trial in relapsing--remitting MS: rationale, design and baseline data. *Mult Scler.* **14**(3):370-82.

Kasper, L.H., Everitt, D., Leist, T.P. (2006) The Multiple Sclerosis Investigators. A phase I trial of an Interleukin-12/23 monoclonal antibody in relapsing remitting multiple sclerosis. *Curr Med Res Opin,* **22**(9): 1671-1678, Erratum published in *Curr Med Res Opin*. Nov 2007

Tyor, W.R., Singh, I., Vollmer, T.L. (2006) The Use of Statins in Multiple Sclerosis, *Int MS Care,* **8**:10-12.

Peng, X., Jin, J, Giri, S. (2006) Immunomodulatory Effects of 3-Hydroxy-3-Methylglutaryl Coenzyme-A Reductase Inhibitors, Potential Therapy for Relapsing Remitting Multiple Sclerosis, *J Neuroimmunol,* **178**:130-139.

Markovic-Plese, S., Hemmer, B., Pinilla, C. (2005) High Level of Cross-Reactivity in Influenza Virus Hemagglutinin-Specific CD4+T Cell Response: Implications for the Initiation of Autoimmune Response in Multiple Sclerosis*, J Neuroimmunol,* **169**: 31-38.

Lindzen, E., Gilani, A., Markovic-Plese, S. (2005) Acute Disseminated Encephalomyelitis Following Liver Transplant, *Arch Neurol*, **62**(4):650-652.

Reviews & commentaries

Zhang, X., Markovic-Plese, S. (2010) Interferon Beta Inhibits the Th17 Cell-mediated Autoimmune Response in Patients with Relapsing Remitting Multiple Sclerosis, *Clin Neurol Neurosurg*, **112**(7):641-645.

Ramgolam, V., Markovic-Plese, S. (2010) Interferon-beta Inhibits Th17 Cell Differentiation in Patients with Multiple Sclerosis*, Endocrine Metabolic Immune Disorders-Drug Targets,* **10**(2):161-167

Markovic-Plese, S. (2009) Degenerate TCR Recognition, Autoreactive T-cells, and the Autoimmune Response in Multiple Sclerosis, An Update, *The Neuroscientist,* **15**(3): 225-231.

Zhang, X., Markovic-Plese, S. (2008) Statins' Immunomodulatory Potential Against Th-17 - mediated Autoimmune Response. *Immunologic Research.* **41**(3): 165-174.

Montes, M., Jin, J.P., Markovic-Plese, S. (2006) Characterization of Cellular Infiltrates from MS Lesions in Various Stages of Development, *Current Topics in Neuroimmunology,* 59-64.

Markovic-Plese, S., Gaylord, S., Mann, D.J. (2006) Chapter 101. Multiple Sclerosis. In: Netters Internal Medicine. Second Edition. Marschall S. Runge and M. Andrew Greganti, Eds. Icon Learning Systems, Teterboro, NJ. 2006.

Markovic-Plese, S. (2005) Modulation of Inflammatory Response in Multiple Sclerosis by Altered Peptide Ligand*, MSQR,* **24**: 5-9.

Editorial Responsibilities

Ad hoc reviewer for:

Acta Haemotologica, American Journal of Pathology, American Journal of Neuro Radiology, Archivum Immunologiae Therapiae Experimentalis, Atherosclerosis, Clinical Immunology,

Diabetologia, European Journal of Clinical Investigation, European Journal of Immunology, Expert Opinion in Biological Therapy, Expert Review of Clinical Immunology, International Multiple Sclerosis Care, Journal of Clinical Immunology, Journal of Immunology, Journal of Neuroimmunology, Journal of Neuroscience Research, Journal of Rehabilitation Research and Development, Neurology.

Grants/Contracts

2010 A twenty-four week, two arm, pilot trial to evaluate remyelination/demyelination, cortical gray matter volume and iron deposition in the CNS and immune status of subjects with relapsing remitting multiple sclerosis (RR MS) treated with Rebif 44 mcg subcutaneously (Sc) three times a week (tiw) compared to a healthy control group, Serono/Pfizer, Co-investigator, total direct cost $198,948

2010 Investigator Initiated Preclinical Study: Alemtuzumab-induced Prolonged Suppression of the Autoimmune Response is Initiated During the Early Phase of the Immunological Reconstitution in Patients with Relapsing Remitting Multiple Sclerosis, Genzyme Inc., Principal Investigator, total direct cost $226,027

2009-2012 National Multiple Sclerosis Society Research Grant: RG 4107A1/1 Immunomodulatory Effects of Statins, Principal Investigator, total direct cost $363,887, 25% effort

2009 Investigator Initiated Study: Characterization of immunological reconstitution following alemtuzumab therapy in patients with relapsing remitting multiple sclerosis, Genzyme Inc, Principal Investigator, total direct cost $341,200

2008-2013 National Multiple Sclerosis Society Center Award: Novel Immune Pathways in MS Pathogenesis and Therapy, J. Ting PI, total direct cost $825,000; S. Markovic-Plese Co-PI direct cost $165,000

2007-2010 Investigator Supported Study, Charactetization of Interferon Beta-1b-Induced Tolerizing Effect in Dendritic Cells, Bayer Inc., Prinicipal Investigator, total direct cost $253, 178

2006-2009 Independent Medical Grant: Interferon Beta-1a Induction of Tolerizing Effect in Dendritic Cells and Gamma Delta Cells on the Autoimmune Response in Multiple Sclerosis, Serono/Pfizer, Principal Investigaror, total direct cost $340,692

2005-2010 Independent Medical Grant: Gene Expression Analysis of the Effects of Interferon b-1a and Atorvastatin Combination Treatment of Isolated Clinical Syndrome Suggestive of Multiple Sclerosis, Serono/Pfizer, Principal Investigator, total direct cost $402,018

2004-2007 Investigator Initiated Study: Early IFN b-1a and Simvastatin Combination Therapy in Clinically Isolated Syndrome Suggestive of MS, Biogen/Idec, Principal Investigator, total direct cost $30,972

2003-2008 Career Development Award KO8 NS045871-01: The Mechanisms of Autoimmune Response Initiation in Multiple Sclerosis, NINDS, Prinicipal Investigator, total direct cost $776,750

Grant Review Service

Department of Defense Congressionally Directed Medical Research Program, study section member, MS/Autoimmunity, 2010, 2009
American National Multiple Sclerosis Society, Postdoctoral Fellowship application review, 2009
Immune Tolerance Network, NIH, grant concept proposal review, 2009
Fondazione Cariplo, Italy, grant proposal review, 2009
Canadian National Multiple Sclerosis Society, study section member, Pediatric Demyelinating Disease, 2008
NIAID, study section member, Collaborative Network for Clinical Research on Immune Tolerance, 2006

Honors/Awards

2007 Distinguished Clinician Award, National Multiple Sclerosis Society, Eastern North Carolina Chapter
2003-2008 K08 Career Development Award, The Mechanisms of Autoimmune Response Initiation in Multiple Sclerosis, NINDS

Professional Meetings/Societies

Meeting organization

Program Organizing Committee member, Dubrovnik 5th International Conference on Multiple Sclerosis, Dubrovnik, Croatia, 2009

Co-chair, oral presentation session, Multiple Sclerosis: Clinical Immunology, American Academy of Neurology, Honolulu HI, 2002

Co-chair, oral presentation session, Multiple Sclerosis: Animal Models, American Academy of Neurology, Denver, CO, 2001

Meeting participation

Sha, Y., Troiani, L., Chopra, M., Markovic-Plese, S: IL1R1 induces human Th17 cell differentiation in an IRF4-dependent manner, 97th American Association of Immunologists Meeting, 2010, Baltimore, MD, postdoc poster presentation

Zhang, X., Tao, Y., Troiani, L., Jin, J., Tang, Y., Markovic-Plese, S.: Exogenous intereferon beta (IFNB)-1a restores deficient endogenous IFNb/endosomal TLR signaling in patients with relapsing remitting multiple sclerosis, 7th International Congress on Autoimmunity, 2010, Ljubljana, Slovenia, oral presentation

Zhang, X., Tao, Y., Jin, J., Tang, Y., Markovic-Plese, M.: IL-11 producing cells are a new T-cell subset that promotes Th17 differentiation in patients with clinically isolated syndrome suggestive

of multiple sclerosis, American Academy of Neurology, 2010 Annual Meeting, Toronto, Canada, poster presentation

Zhang, X., Choudhary N., Markovic-Plese, S.: Alemtuzumab therapy selectively depletes Th1 and Th17, but induces Treg cells *in-vivo* in patients with relapsing remitting multiple sclerosis, BIT's 2nd Annual International Congress of Antibody-2010, Bejing, China, postdoc oral presentation

Zhang, X., Tao, Y., Wang, J., Markovic-Plese, S: Simvastatin inhibits Th17 cell differentiation in patients with relapsing remitting multiple sclerosis, American Neurological Association, 134th Annual Meeting, 2009, Baltimore, MD, postdoc oral presentation

Zhang, X., Tao, Y., Jin, J., Tang, Y., Markovic-Plese, S.: A critical role of Th17 cells in the initiation of autoimmune response in early multiple sclerosis (MS), Ist International Conference on Immune Tolerance, 2009, Boston, MA, postdoc poster presentation

Ramgolam, S., D. Speer, N. Choudhary, and S. Markovic-Plese. Interferon beta (IFNB)-1b changes B-cell cytokine secretion orofile and inhibits Th17 cell differentiation. *Neurol Suppl. 3.* A104-105, 2009. Presentation Chosen for Multiple Sclerosis Scientific Highlights Session of AAN, postdoc oral presentation

Zhang, X., Speer, D., Markovic-Plese, S.: Statins affect Th17-mediated autoimmune respo;nse in multiple sclerosis, *J Neuroimmunol, Issue 2, Vol 203, 2008, 9th International Congress of Neuroimmunology, Forth Worth, Texas, poster presentation*

Zhang, X., Tang, Y., Rogan, S., Jin, J., Speer, D., Markovic-Plese, S.: Differential gene and protein expression profiles in patients with clinically isolated syndrome (CIS) suggestive of MS, *Mult Scler, Suppl 1, Vol 14, P689, World Congress on Treatment and Research in Multiple Sclerosis, Motreal, Canada, poster presentation*

Zhang, X., Rogan, S., Jin, J., Speer, D., Markovic-Plese, M.: Proteomic Characterization of Cerebrospinal Fluid and Genomic Characterization of Preripheral Blood Mononuclear Cells in Patients with Clinically Isolated Syndrome Suggestive of Multiple Sclerosis, *Neurol Suppl 1, Vol 70, P7.132, 60th Annual Meeting of the American Academy of Neurology, Chicago, IL, 2008. Poster presentation*

Zhang, X., Tang, Y., Montes, M., Jin, J., Ramgolam, V., Markovic-Plese, S.: Interferon Beta-1a Modulates the Innate Immune Response-mediated Regulation of Adaptive Immunity in Early Multiple Sclerosis, *Neurol Suppl 1, Vol 70, P7.130, 60th Annual Meeting of the American Academy of Neurology, Chicago, IL, 2008, poster presentation*

Markovic-Plese, S., Speer, D., Jin, J., Chen, Y., Smrtka, J., Ingram, L., Jewells, V.L: Statin and Intramuscular Interferon Beta-1a Combination Therapy is Safe and Well-tolerated in Patients with Clinically Isolated Syndrome Suggestive of Multiple Sclerosis, a Pilot study, *Multiple Sclerosis, Suppl 2, Vol 13, 2007, poster presentation*

Zhang, X., Montes, M., Jin, J., Tang, Y., Peng, X., Sujkowska, D., Markovic-Plese, S. Transcriptional and Proteomic Profiling of Statins' Immunomodulatory Effect in Multiple Sclerosis, *Neurol Suppl 1, Vol 68, 2007*. Presentation Chosen for Multiple Sclerosis Scientific Highlights Session of AAN, poster presentation

Zhang, X., Tang, Y., Montes, M., Jin, J., Ramgolam, V., Markovic-Plese, S. Interferon Beta-1a Modulates the Innate Immune-response-mediated Regulation of Adaptive Immunity in Early Multiple Sclerosis; *94th Annual Meeting of the American Association of Immunologists*, Miami Beach, FL, 2007, poster presentation

Montes, M., Kondo, T., W. Bruck, W., Jewells, V., Armao, D., Smrtka, J., Pinilla, C., Markovic-Plese, S.: Characterization of Oligoclonally Expanded T-Cells Derived from Multiple Sclerosis (MS) Lesions, The 8th International Congress of Neuroimmunology, Nagoya, Japan, 2006, oral presentation

Markovic-Plese, S, Sujkowski, D, Tang, Y, Martin, R, Pinilla, C: Characterization of CD4+ Cells with High Degree of TCR Flexibility in Patients with MS, American Association of Immunologyst annual meeting, Boston, MA, 2006, poster presentation

Montes, M, Jewells V, Armao D, Smrtka J, Tang, Y, Sujkowski, D, Markovic-Plese, S: Characterization of T-Cells Derived from Acute and Chronic Multiple Sclerosis Lesions, *Neurol. Suppl 2., Vol 66, No5, S42.005, 2006.* Presentation Chosen for Multiple Sclerosis Scientific Highlights Session of AAN.

Jewells, V., Chen, Y., Markovic-Plese, S., Smrtka, J., Lin, W. Identifying White Matter Abnormalities with Diffusion Tensor Imaging in CIS Patients, 19th Annual Meeting Of The Consortium Of Multiple Sclerosis Centers, Orlando, FL, 2005

Society membership

Active Member	American Academy of Neurology	2001-present
Trainee Member	American Academy of Neurology	1993-2001
Member	American Association of Immunologists	1999-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Glenn Matsushima, Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology & Immunology

Publications

Primary literature

Angelill-Scherrer, A., Burnier, L., Flores, N., Savi, P., DeMol, M., Schaeffer, P., Herbert, M., Lemke, G., Goff, S., **MATSUSHIMA, G.K**., Earp, S., Vesin, C., Hoylaerts, M.F., Plaisance, S., Collen, D., Conway, E.M., Werhle-Haller, B., and Cameliet, P. 2005. Role of Gas6 receptors in platelet signaling during thrombus stabilization: implications for anti-thrombotic therapy. *J. Clin. Invest*. 115:237-46.

Dupree, JL, Mason, JL, Marcus, JR, Stull, M, Levinson, R, **MATSUSHIMA, GK**, and Popko B. 2006. Oligodendrocytes assist in the maintenance of sodium channel clusters independent of the myelin sheath. *Neuron Glia Biol.* 1:1-14.

Li, Y., Gerbod-Giannone, M-C, Seitz, H., Cui, D., Thorp, E., Tall, A.R., **MATSUSHIMA, G.K**., and Tabas, I. 2006. Cholesterol-induced apoptotic macrophages elicit an inflammatory response in phagocytes that is partially attenuated by the Mer receptor. *J. Biol. Chem.* 281:6707-6717.

Graham DK, Slazberg DB, Kurtzberg J, Sather S, **MATSUSHIMA GK**, Keating, AK, Liang X, Lovelll M, Williams SA, Dawson TL, Schell MJ, Anwar AA, Snodgrass, HR, and Earp HS. 2006. Ectopic expression of the proto-oncogene Mer in pediatric T cell acute lymphoblastic leukemia. *Clin. Caner Res*. 12:2662-2669.

Qian Y, Conway KL, Lu X, Seitz HM, **MATUSHIMA GK**, and Clarke SH. 2006. Autoreactive MZ and B-1 B cell activation by Faslpr is coincident with an increased frequency of apoptotic lymphocytes and a defect in macrophage clearance. *Blood*: 108: 974-982.

Sen P, Wallet MA, Yi Z, Huang Y, Henderson M, Mathews CE, Earp HS, **MATSUSHIMA G**, Baldwin Jr AS, Tisch RM. 2006. Apoptotic cells induce Mer tyrosine kinase-dependent blockade of NF-kB activation in dendritic cells. *Blood* 109:653-660.

Seitz, HA, Camenisch, TD, Lemke G, Earp HS, and **MATSUSHIMA GK**. 2007. Macrophage and dendritic cells uses different Axl/Mertk/Tyro3 receptors in clearance of apoptotic cells. *J. Immunol*. 178:5635-5642.

Wallet, MA, Sen, P, Flores, RR, Wang, Y, Yi, Z, Huang, Y, Mathews, CE, Earp HS, **MATSUSHIMA, G**, Wang, B and Tisch R. 2008. Mertk is required for apoptotic cell-induced T cell tolerance. *J. Exper. Med*. 205:219-232.

Angelillo-Scherrer A, Burnier, L, Lambrechts, D, Fish, RJ, Tjwa, M, Paisance, S, Sugamele, R, DeMol, M, Martinez-Sria, E, Maxwell, PH, Lemke, G, Goff, SP, **MATSUSHIMA, GK**, Earp HS, Chanson, M, Collen D, Izui, S, Schapira, M, Conway, EM, and Cameliet, P. 2008. Role of Gas6 in erythropoiesis and anemia in mice. *J. Clin. Invest*. 118:583-596.

Hiremath, M.M., Chen, V.S., Suzuki, K., Ting, J. P.-Y., **MATSUSHIMA, G.K**. 2008. MHC class II exacerbates demyelination *in vivo* independently of T cells. *J. Neuroimmunol.* 203:23-32.

Taylor, L.C., Gilmore, W., and **MATSUSHIMA, G.K**. 2009. SJL mice exposed to cuprizone intoxication reveals strain and gender pattern differences in demyelination. *Brain Pathol*. 19:467-479.

Gohlke, P.R., Williams, J.C., Vilen, B.J., Dillon, S.R., Tisch, R., and **MATSUSHIMA, G.K**. 2009. The receptor tyrosine kinase Mertk regulates dendritic cell production of BAFF. *Autoimmunity* 42:182-197.

Wallet, M.A., Flores, R.R., Wang, Y., Yi, Z., Kroger, C.J., Mathews, C.E., Earp, H.S., **MATSUSHIMA, G.K**., Wang, B., and Tisch, R. 2009. Mertk regulates thymic selection of autoreactive T cells. *PNAS* 106:4810-4815.

Yi, Z., **MATSUSHIMA, G.K**., Earp, H.S., Wang, B., and Tisch, R. 2009. A novel role for cSrc and STAT3 in apoptotic cell-mediated Mertk-dependent immunoregulation of dendritic cells. *Blood* 114:3191-3198.

Williams, J.C., Craven, R.R., Earp, H.S., Kawula, T.H., and **MATSUSHIMA, G.K**. 2009. TAM receptors are dispensable in the phagocytosis and killing of bacteria. *Cellular Immunology* 259: 128-134.

Taylor, L.C., Gilmore, W., Ting, J.P., **MATSUSHIMA, G.K**. 2010. Cuprizone induces similar demyelination in male and female C57BL/6 mice and results in disruption of the estrous cycle. *J. Neurosci. Res*. 88: 391-402.

Williams, J.C., Wagner, NJ., Earp, HS., Vilen, BJ., and **MATSUSHIMA, G.K**. 2010. Increased hematopoietic cells in the *mertk*$^{-/-}$ mouse peritoneal cavity: a result of augmented migration. *J. Immunol*. 184:6637-6648.

Taylor, LC., Puranam, K., Gilmore, W., Ting, JP., and **MATSUSHIMA, GK**. 2010. 17beta-estradiol protects male mice from cuprizone-induced demyelination and oligodendrocyte loss. *Neurobiol. Dis*. 39:127-137.

<u>*Reviews & commentaries*</u>

Seitz, H.A. and **MATSUSHIMA, G.K**. Dendritic cells in systemic lupus erythematosus. 2010. *International Reviews of Immunology* 29:184-209.

Editorial Responsibilities

<u>*Editorial boards*</u>

Journal of Biochemistry ('07-'12)

<u>*Ad hoc reviewer for:*</u>
American Journal of Pathology, Brain Pathology, Glia, International Immunology, Journal of Immunology, Journal Leukocyte Biology, Journal of Neuroimmunology, Journal of Neuroscience, Journal of Neuroscience Research, Nature Reviews Immunology

Grants/Contracts

CoPI, 8/01/99 – 7/31/05
PI: Patrick Flood
Title: Inhibition of Inflammation
Comp. Oral Health Res. Ctr. (Project 6), NIH-NIDR P60-DE13079-01
Total Direct costs to Matsushima $743,623
Effort: 10%

Collaborator, 12/02/00-11/31/05
PI: Jenny Ting
Title: Class II MHC and Demyelination
NIH-NINDS RO1

Total Direct Cost to Matsushima: $41,700
Effort: 5%

Principal Investigator, 4/01/03-1/31/09
Title: Gender Susceptibility in Demyelinating Disease
NIH-NIAID RO1 AI051770
Total Direct Costs: $900,000
Effort: 25%

Principal Investigator, 4/01/07-3/31/08
Title: Mechanism of remyelination
National Multiple Sclerosis Society, RG3898A
Total Direct Costs: $168,076
Effort: 25%

Principal Investigator, 12/10-11/31/09
Title: Clearance of Apoptotic Cells
NIH-NIAID RO1AI050736
Total Direct Costs: $1,250,000
Effort: 20%

Principal Investigator, 6/01/07-5/30/10
Title: The effect of nerve growth factor mimetic in demyelination and remyelination
NINDS R21NS058436
Total Direct Costs: $275,000

Collaborator, 4/01/08-3/31/13
PI: Jenny Ting
Title: National Multiple Sclerosis Collaborative MS Center
National Multiple Sclerosis Society, CA1033C
Total Direct Cost to Matsushima: $74,000

Grant Review Service
Member, National Multiple Sclerosis Society
Study section: Advisory committee on Fellowships
7/1/04-current

Ad hoc member, Israeli Science Foundation
Study section: research grants
3/2010

Ad hoc member, Multiple Sclerosis Research Australia
MRSA Study section: Postdoctoral Fellowships

Committee Service

University of North Carolina, Chapel Hill

Member: Institutional Committee on Animal Use & Care (5/04-6/07)

Member: Graduate Student Task Force Committee (1/05-4/07)

Member: Biomedical and Biological Science Program Executive Committee (5/07-10/09)

Professional Meetings/Societies

Meeting participation

Speaker, Poster, Gordon Research Conference, Connecticut College, CT, 2005.

Posters, American Assoc. Immunologists Conf. Boston, MA, 2006

Poster, Society for Neuroscience Annual Conf. San Diego, CA, 2007.

Society membership

American Association of Immunologists ('07-current)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Steve Meshnick, MD, PhD

Professor

Primary Appointment: Department of Epidemiology

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Taylor, S.M., Juliano, J.J., Trottman, P.A., Griffin, J.B., Landis, S.H., Kitsa, P., Tshefu, A.K., Meshnick, S.R. High-throughput pooling and real-time PCR-based strategy for malaria detection. J Clin Microbiol. **48**:512-9, 2010.

Joubert, B.R, Franceschini, N, Mwapasa, V., North, K.E., Meshnick, S.R. Regulation of CCR5 Expression in Human Placenta: Insights from a Study of Mother-To-Child Transmission of HIV in Malawi PLoS ONE Feb 15;5(2):e9212, 2010

Gay, C.L., Mwapasa, V., Murdoch, D.M., Kwiek, J.J., Fiscus, S.As., Meshnick, S.R., Cohen, M.S. Acute HIV infection among pregnant women in Malawi. Diagn. Microbiol. Infect. Dis. **66**:356-360, 2010.

Kalilani, L., Mofolo, I., Chaponda, M., Rogerson, S.J. and Meshnick, S.R. The Effect of timing and frequency of *Plasmodium falciparum* infection during pregnancy on the risk of low birth weight and maternal anemia. Trans. R. Soc. Trop. Med. Hyg. **104**:416-22,2010.

Joubert, B.R., Lange, E., Franceschini, N., North, K.E., and Meshnick, S.R. A whole genome association study of mother-to-child transmission of HIV in Malawi. Genome Medicine **2**:17, 2010.

Joubert, B.R., North, K.E., Franceschini, N., Wang, Y., Mwapasa, V., Meshnick, S.R., Lange, E.M. Comparison of Genome Wide Variation between Malawians and African HapMap Populations. J. Hum. Gen. **55:**366-74.

Vinayak, S., Alam, T, Sem, R., Shah, N.K., Susanti, A.I., Lim, P., Muth, S., Maguire, J.D., Rogers, W.O., Fandeur, T., Barnwell, J.W., Escalante, A.A., Wongsrichanalai, C., Ariey, F., Meshnick, S.R., Udhayakumar, V. Multiple genetic backgrounds of the amplified Plasmodium falciparum multidrug resistance (pfmdr1) gene and selective sweep of 184F mutation in Cambodia. J. Infect. Dis. **201**:1551-60, 2010.

Vinayak, S., Alam, M.T., Mixson-Hayden, T., McCollum, A.M., Sem, R., Shah, N.K., Lim, P., Muth, S., Rogers, W.O., Fandeur, T., Barnwell, J.W., Escalante, A.A., Wongsrichanalai, C.,

Ariey, F., Meshnick, S.R., Udhayakumar, V. Origin and evolution of sulfadoxine resistant Plasmodium falciparum. PLoS Pathog. Mar 26;6(3):e1000830, 2010.

Ataíde, R., Hasang, W., Wilson, D.W., Beeson, J.G., Mwapasa, V., Molyneux, M.E., Meshnick, S.R., Rogerson, S.J. Using an Improved Phagocytosis Assay to Evaluate the Effect of HIV on Specific Antibodies to Pregnancy-Associated Malaria. PLoS One. 2010 May 25;5(5):e10807

Landis, S.H., Lokomba, V., Atibu, J., Ananth, C.V., Ryder, R.W., Hartmann, K.E., Thorp, J.M. Jr., Tshefu, A., Meshnick, S.R.. Impact of Maternal Malaria and Under-nutrition on Intrauterine Growth Restriction: A Prospective Cohort Study in Democratic Republic of Congo Epid. Infect. **137**:294-304, 2009.

Landis, S.H., Ananth, C.V., Lokombo, V., Hartmann, K.E., Thorp, J.M., Jr., Horton, A., Atibu, J., Ryder, R.W., Tshefu, A., Meshnick, S.R. An Ultrasound Derived Foetal Size Nomogram for a Sub-Saharan African Population: A Longitudinal Study. Ultrasound Obst. Gyn. **34:**379-86, 2009.

Lim. P., Alker, A.P., Khim, N., Shah, N.K., Incardona, S., Doung, S., May Bouth, D., Bouchier, C., Mercereau-Puijalon, O., Meshnick, S.R., Wongsrichanalai, C., Fandeur, T., Le Bras, J., Ringwald, P., and Ariey, F. Pfmdr1 copy number and artemisinin derivatives combination therapy failure in falciparum malaria in Cambodia Malaria J. **8**(1):11, 2009.

Kapito-Tembo, A.P., Mwapasa, V., Samanyika, Y., Meshnick, S.R., Bowie, C., Banda, D., Bitilinyu, J., Radke, S. Prevalence of and Risk Factors for *Schistosoma hematobium* Infection among School children in Blantyre, Malawi. PLoS Neglected Trop. Dis. **3**(1):e361, 2009.

Pettifor, A., Taylor, E., Nku, D., Duvall, S., Tabala, M., Mwandagalirwa, K., Meshnick, S., and Behets, F. Free distribution of insecticide treated bed nets to pregnant women in Kinshasa: an effective way to achieve 80% use by women and their newborns. Trop Med Int Health. **14**:20-8, 2009.

Juliano, J.J., Randrianarivelojosia, M., Ramarosandratana, B., Ariey, F., and Meshnick, S.R. Nonradioactive Heteroduplex Tracking Assays for Antimalarial Resistance Surveillance: Detection of Minority-Variant Chloroquine-Resistant Plasmodium falciparum Parasites in Madagascar. Malaria J. **8**:47, 2009.

Feng, G., Aitken, E., Yosaatmadja, F., Kalilani, L., Meshnick, S.R., Jaworowski, A., Simpson, J.A. Rogerson, S.J. Antibodies to variant surface antigens of Plasmodium falciparum infected erythrocytes associated with protection from treatment failure and development of anaemia in pregnancy J. Infect. Dis. **200**:299-306, 2009.

Juliano, J.J., Bacon, D.J., Wang, X., and Meshnick, S.R. Novel dhps and pfcrt polymorphisms in *Plasmodium falciparum* detected by heteroduplex tracking assay. Am. J. Trop. Med. Hyg. **80**:734-6, 2009.

Purfield, A.E., Tidwell, R.R., Meshnick, S.R. DB75, a novel diamidine, targets the nucleus and exhibits stage-specific activity in *Plasmodium falciparum* Malaria J. **8**:104, 2009.

Juliano, J.J., Ariey, F., Sem, R., Tangpukdee, N., Krudsood, S., Olson, C., Looareesuwan, S., Rogers, W.O., Wongsrichanalai, C., and Meshnick, S.R. Misclassification of drug failures in *Plasmodium falciparum* clinical trials in Southeast Asia. J. Infect. Dis. **200**:624-628, 2009.

Becker-Dreps, S., Biddle, A.K., Pettifor, A., Musuamba, G., Imbie, D.N., Meshnick, S.R., Behets, F. Cost-effectiveness of adding bednet distribution for malaria prevention at antenatal clinics in Kinshasa, Democratic Republic of the Congo. Am. J. Trop. Med. Hyg. **81**:496-502, 2009.

Kwiek, J.J., Mwapasa, V., Alker, A.P., Muula, A.S., Misiri. H.E., Molyneux. M.E., Rogerson, S.J., Behets, F,M,, Meshnick, S.R.. Socio-demographic characteristics associated with HIV and syphilis seroreactivity among pregnant women in Blantyre, Malawi, 2000-2004. Malawi Med J. **20**(3):80-5, 2008.

Lanteri, C.A., Tidwell, R.R., and Meshnick, S.R. The Mitochondrion is a Site of Trypanocidal Action of the Aromatic Diamidine, DB75, in Bloodstream Forms of Trypanosoma brucei. Antimicrob. Agents Chemother. **52**:875-82, 2008.

Dembo, E.G., Mwapasa, V., Montgomery, J., Craig, A.G., Porter, K., Meshnick, S.R., Molyneux, M.E., and Rogerson, S.J. The Impact of HIV Infection in Pregnant Women on Variant Specific Immunity to Malaria. Clin. Vaccine Immunol. **15**:617-21, 2008

Boeuf, P., Tan, A., Romagosa, C., Radford, J., Mwapasa, V., Molyneux, M.E., Meshnick, S.R., Nicholas H. Hunt, N.H., Rogerson, S.J. Placental hypoxia during placental malaria. J. Infect. Dis. **197**:757-65, 2008.

Purfield, A., Tidwell, R.R., Meshnick, S.R. Interactions of DB75, a Novel Antimalarial Agent, with Other Antimalarial Drugs In Vitro Antimicrob Agents Chemother. **52**:2253-5, 2008.

Kwiek, J.J., Russell, E.S., Dang, K.K, Burch, C.L., Mwapasa, V., Meshnick, S.R., and Swanstrom, R. The molecular epidemiology of HIV-1 envelope diversity during HIV-1 subtype C vertical transmission in Malawian mother-infant pairs. AIDS **22**:863-7, 2008.

Kwiek, J.J., Arney, L.A., Harawa, V., Pedersen, B., Mwapasa, V., Rogerson, S.J. and Meshnick, S.R. Maternal-fetal DNA admixture is associated with intrapartum HIV-1 mother-to-child transmission in Blantyre, Malawi. J. Infect. Dis. **197**:1378-81, 2008.

Alvarez-Martínez, M.J., Moreno, A. Miro, J.M., Eugenia Valls, M., Rivas, P.V., de Lazzari, E., Sued, O., Benito, N., Domingo, P., Ribera, E., Santin, M., Sirera, G., Segura, F., Vidal, F., Rodriguez, F., Riera, M., Cordero, M.E., Arribas, J.R., Jimenz de Anta, M.T., Gatell, J.M., Wilson, P.E., Meshnick, S.R. and the Spanish PCP Working Group. Prevalence of Pneumocystis jirovecii DHPS Mutations and Their Influence on *P. jirovec*i Pneumonia Survival in Spanish

HIV-Infected Patients in the Combined Antiretroviral Therapy Era. Diagn Micro. Inf. Dis. **62**: 34–43, 2008.

Juliano, J.J., Trottman, P., Mwapasa, V., and Meshnick, S.R. Detection of the DHFR-164L Mutation in *Plasmodium falciparum* Infections from Malawi by Heteroduplex Tracking Assay Am. J. Trop. Med. Hyg. **78**:892-4, 2008.

Shah, N.K., Alker, A.P., Sem, R., Susanti, A.I., Muth, S., Maguire, J.D., Duong, S., Ariey, F., Meshnick, S.R. and Wongsrichanalai, C. Molecular surveillance for multidrug-resistant *Plasmodium falciparum* in Cambodia. Emerg. Infect. Dis. **14**:1637-40, 2008

Pettifor, A., Taylor, E., Nku, D., Duvall, S., Tabala, M., Meshnick, S.R., and Behets, F. Bed net ownership, use, and perceptions among women seeking antenatal care in Kinshasa, Democratic Republic of the Congo (DRC): opportunities for improved maternal and child health. BMC Public Health **8**:331, 2008.

Alker, A.P., Kazadi, W.M., Kutelemeni, A.K., Bloland, P.B., Tshefu, A.K., Meshnick, S.R. Dhfr and dhps genotype and in vivo resistance to sulfadoxine-pyrimethamine in children with falciparum malaria in the Democratic Republic of the Congo. Trop. Med. Int. Health **13**: 1384–1391, 2008.

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Kwiek., J.J., Alker, A.P., Wenink, E.C., Chaponda, M., Kalilani, L.V., and Meshnick, S.R. Estimating true antimalarial efficacy by heteroduplex tracking assay in patients with complex *Plasmodium falciparum* infections. Antimicrob. Agents Chemother. **51**:521-7, 2007

Kessl, J.J., Moskalev, N.V., Gribble, G.W., Nasr, M.,, Meshnick, S.R., Trumpower, B.L. Parameters determining the relative efficacy of hydroxy-naphthoquinone inhibitors of the cytochrome bc1 complex. Biochem. Biophys. Acta **1767**:319–326, 2007.

Alker, A.P., Lim, P., Sem, R., Shah, N.K., Yi, P., Mey Bouth, D., Tsuyuoka, R., Maguire, J.D., Fandeur, T., Ariey, F., Wongsrichanalai, C., Meshnick, S.R. Pfmdr1 and in vivo resistance to artesunate-mefloquine in falciparum malaria on the Thai-Cambodian border. Am. J. Trop. Med. Hyg. **76:**641-647, 2007.

Msyamboza, K., Amanor, A., Kazembe, P., Brabin, B.J., Meshnick, S. and Mwapasa, V. In-vivo parasitological response to sulfadoxine-pyrimethamine in pregnant women in Southern Malawi. Malawi Med J. **19:**11-15, 2007.

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Pregnant Malawian Women with *P. falciparum* malaria and HIV-1 Infection. J. Infect. Dis. **196**:38-42, 2007.

Juliano, J.J., Kwiek, J.J., Cappell, K., Mwapasa, V., Meshnick, S.R. Minority Variant *pfcrt* K76T Mutations. Emerg. Infect. Dis. **13:**873-877,2007.

Pedersen, B.R., Kamwendo, D., Blood, M., Mwapasa, V., Molyneux, M.E., Rogerson, S.J., Zimmerman, P.A., and Meshnick, S.R. CCR5 Haplotypes and Mother-to-Child HIV Transmission in Malawi . PLoS ONE **2(9)**:e838, 2007.

Kalilani, L., Mofolo, I., Chaponda, M., Rogerson, S.J., Alker, A.P., Kwiek, J.J., Meshnick, S.R. A Randomized Controlled Pilot Trial of Azithromycin or Artesunate Added to Sulfadoxine-Pyrimethamine as Preventive Therapy for Malaria in Pregnancy. PLoS ONE **2(11):**e1166, 2007.

Wissmann, G., Alvarez-Matinez, M.J., Meshnick, S.R., Dihel, A.R.S., and Prolla, J.C. Absence of dihydropteroate synthase mutations in *Pneumocystis jiroveci* from Brazilian AIDS patients. J. Euk. Microbiol. **53**:305-7, 2006.

Malhotra, I., Mungai, P., Muchiri, E., Kwiek, J.J., Meshnick, S.R., and King, C.L. Congenital *P. falciparum* malaria acquired antenatally in Kenya. J. Infect. Dis. **194**:176-83, 2006.

Alvarez-Martinez, M, Miró, J.M., Valls, M.E., Moreno, A., Rivas, P.V., Solé, M., Benito, N., Domingo, P., Muñoz, C., Rivera, E., Zar, H.J., Wissmann, G., Diehl, A.R.S, Prolla, J.C., Jiménez de Anta, M.T., Gatell, J.M., Wilson, P.E., Meshnick, S.R., and the Spanish PCP Working Group. Sensitivity and specificity of nested and real time PCR for the detection of *Pneumocystis jiroveci* in clinical specimens. Diagn. Microbiol. Infect. Dis. **56**:153-60, 2006.

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Lanteri, C.A., Stewart, M.L., Brock, J.M., Meshnick, S.R., Tidwell, R.R., Barrett, M.P. Roles for the *Trypanosoma brucei* P2 Transporter in DB75 uptake and resistance. Mol. Pharmacol. **70**:1585-92, 2006.

Kessl, J.J., Ha, K.H., Merritt, A.K., Lange, B.B., Hill, P., Meunier, B., Meshnick, S.R., Trumpower, B.L. Cytochrome b mutations that modify the ubiquinol binding pocket of the cytochrome bc1 complex and confer anti-malarial drug resistance in *Saccharomyces cerevisiae*. J. Biol. Chem. **280**:17142-8, 2005.

Nelson, A., Purfield, A., McDaniel, P., Uthaimongkol, N., Buathong, N., Sriwichai, S., Miller, R.S., Wongsrichanalai, C., and Meshnick, S.R. *Pfmdr1* genotyping and in vivo mefloquine resistance on the Thai-Myanmar border. Am. J. Trop. Med. Hyg. **72:**586-592, 2005.

Ngrenngarmlert, W., Kwiek, J.J., Kamwendo, D.D., Ritola, K., Swanstrom, R., Wongsrichanalai, C., Ittarat, W. and Meshnick. S.R. Measuring Allelic Heterogeneity in

Plasmodium falciparum by Heteroduplex Tracking Assay. Am. J. Trop. Med. Hyg. **72:**694-701, 2005.

Yeramian, P., Meshnick, S.R., Krudsood, S., Chalermrut, K., Silachamroon, U., Tangpukdee, N., Allen, J., Brun, R., Kwiek, J., Tidwell, R., and Looareesuwan, S. Efficacy of DB289 in Thai patients with *Plasmodim vivax* and acute uncomplicated *P. falciparum* infections. J. Infect. Dis. **192:**319-322, 2005.

Patnaik, P., Jere, C.J., Miller, W.C., Hoffman, I.F., Wirimi, J., Pendame, R., Meshnick, S.R., Taylor, T.E., Molyneux, M.E., and Kublin, J.G. Incidence of malaria parasitemia in a cohort of rural Malawian adults according to HIV serostatus, HIV-1 RNA concentration and CD4 count. J. Infect Dis **192**:984-91, 2005.

Abrams, E.T, Kwiek, J., Mwapasa, V., Kamwendo, D.D., Tadesse, E., Lema, V.M., Molyneux, M.E., Rogerson, S.J., Meshnick, S.R. Malaria during pregnancy and fetal hematological status in Blantyre, Malawi. Malaria J. **25**:4:39, 2005.

Alker, A.P., Mwapasa, V, Purfield, A., Rogerson, S.J., Molyneux, M.E., Kamwendo, D., Tadesse, E., Chaluluka, E., and Meshnick, S.R. Mutations associated with sulfadoxine-pyrimethamine and chlorproguanil resistance in *Plasmodium facliparum* from Blantyre, Malawi. Antimicrob. Agents. Chemother. **49**:3919-21, 2005.

Wilson, P.E., Kazadi, W., and Meshnick, S.R. Rare Congolese *Plasmodium falciparum* DHFR Alleles. Mol. Biochem. Parasitol. **144**:227-9, 2005.

Kwiek, J.J., Mwapasa, V., Milner, D.A. Jr., Alker, A.P., Miller, W.C., Tadesse, E., Molyneux, M.E., Rogerson, S.J., and Meshnick, S.R.. Maternal-fetal microtransfusion and HIV-1 mother-to-child transmission in Malawi. PLoS. Med. Nov 22;3(1):e10, 2005.

Kessl, J.J., Ha, K.A., Merritt, A.K., Meshnick. S.R. and Trumpower, B.L. Molecular basis of *Toxoplasma gondii* atovaquone resistance modeled in *Saccharomyces cerevisiae*. Mol. Biochem. Parasitol., **146**:255-8, 2005.

Reviews & commentaries

Rogerson, S.J., Wijesinghe, R., and Meshnick, S.R. Immunity as a determinant of treatment outcome in malaria. Lancet Infect. Dis. **10:**51-59, 2010.

Juliano, J.J., Gadalla, N., Sutherland, C.J., and Meshnick, S.R. The Perils of PCR: Misclassification of antimalarial drug trial outcomes. Trends Parasitol. **26**:119-24, 2010.

Juliano, J.J., Taylor, S.M., and Meshnick, S.R. PCR-adjustment in Antimalarial Trials – Molecular malarkey? J. Infect. Dis. 200:5-7, 2009.

Abrams, E.T., and Meshnick, S.R. Malaria during pregnancy in endemic areas: a lens for examining maternal-fetal conflict. Am. J. Hum. Biol. **21**:643-50, 2009.

Wongsrichanalai, C. and Meshnick, S.R. Declining Artesunate-Mefloquine Efficacy against Falciparum Malaria on the Cambodia–Thailand Border Emerging Infectious Diseases **14:**716-719, 2008.

Fidock, D.A., Eastman, R.T., Ward, S.A., and Meshnick, S.R. Recent highlights in antimalarial drug resistance and chemotherapy research. Trends Parasitol. **24**:537-44, 2008.

Meshnick, S.R. and Rogerson, S.J. Pathogenesis of Malaria in Pregnancy. Microbiol. Australia 20:204-7, 2008.

Kessl, J.J., Meshnick, S.R., Trumpower, B.L. Molecular Basis of Atovaquone Resistance in Parasites and Pathogenic Fungi. Parasitol. Today **23**:494-501, 2007.

Plowe CV, Roper C, Barnwell JW, Happi CT, Joshi HH, Mbacham W, Meshnick SR, Mugittu K, Naidoo I, Price RN, Shafer RW, Sibley CH, Sutherland CJ, Zimmerman PA, Rosenthal PJ. World Antimalarial Resistance Network (WARN) III: Molecular Markers for Drug Resistant Malaria. Malaria J. **6**:121, 2007.

Rogerson, S.J., Mwapasa, V., Meshnick, S.R. Malaria in Pregnancy: Linking Immunity and Pathogenesis to Prevention. Am. J. Trop. Med. Hyg. **77(Suppl. 6)**:14-22, 2007.

Wilson, P.E., Alker, A.P., and Meshnick, S.R. Real-Time PCR Methods for Monitoring Antimalarial Drug Resistance. Trends Parasitol. **21**:278-83, 2005.

Meshnick, S.R., Alker, A.P. Amodiaquine and combination chemotherapy for malaria. Am. J. Trop. Med. Hyg. 73: 821-23, 2005.

Editorial Responsibilities

Editorial boards

American Journal of Tropical Medicine and Hygiene (1989 – present),

Antimicrobial Agents and Chemotherapy (1994 – present),

Journal of Infectious Diseases (2006- present).

Ad hoc reviewer for:

Acta Tropica, American Journal of Tropical Medicine, Antimicrobial Agents and Chemotherapy, Clinical Immunology, Clinical Infectious Diseases, Emerging Infectious Diseases, Epidemiology, Epidemiological Reviews,Eukaryotic Cell, International Journal of Parasitology, International Journal of Physical and Organic Chemistry, Infection and Immunity, Journal of AIDS, Journal of Biological Chemistry, Journal of Infectious Diseases, Journal of Immunology, Journal of Virology, Journal of Clinical Microbiology, Journal of Antimicrobial Chemotherapy, Lancet, Malaria Journal, Trends in Molecular Medicine, Placenta, PNAS, PLoSOne, PLoS Medicine,PLoS Neglected Tropical Diseases, Sexually Transmitted Diseases, Transactions of the Royal Society of Tropical Medicine, Trends in Biochemical Sciences, Trends in Parasitology, Tropical Medicine and International Health

Grants/Contracts

Principal Investigator 02/01/2008 – 01/31/2011
Prevalence and fitness of drug resistant minority variant mutations in Plasmodium
NIH, 1-R21-AI076785-01A1
DC: $262,903.83
% effort: 15

Principal Investigator 01/01/09 – 12/31/2010
Center for Accurate Data on Endemic and Emerging Infectious Diseases in Developing Countries
Gillings Innovation Labs UNC-CH, GIL 200710.0001
DC: $247,803.00
% effort: 15

Principal Investigator 09/28/07 - 06/30/10
International HIV-associated Opportunistic Pneumonias (IHOP) Study
UCSanFran/NIH
DC: $126,244.00
% effort: 9

Principal Investigator 5/1/08 - 4/30/13
Consortium Agreement Relating to the Malaria in Pregnancy Consortium
Gates Foundation
DC: $187,857.50
% effort: 6

Principal Investigator 5/19/08 – 4/30/13
UNC Clinical Translation Science Award
National Center for Research Resources, 1-UL1-RR025747-01
DC: $7,315,055.00
% effort: 10

Principal Investigator 9/23/08 – 9/22/10
The effect of protease inhibitors on the incidence of malaria: An Ancillary Study to AACTG 5208
Abbott Laboratories Corp
DC: $155,971.97
% effort: 15

Grant Review Service

Member, UNC TraCS Study Section, March, 2009-present

Ad hoc member, CDC review panels, March, 2008 and January, 2009

Ad hoc reviews, NIH, Nov, 2005, Mar, 2006, Oct, 2006, Oct, 2007, June, 2009

NIH ACTG study section, Jan, 2006; NIH ICIDR study section, Oct, 2009

Ad hoc reviews, Wellcome Trust (11/05, 9/07, 2/09, 2/10), Australian NHMRC (5/08, 3/09)

Committee Service

University of North Carolina, Chapel Hill
MSTP (MD,PhD program) Executive and Admission committees; TraCS Study Section. Interviewer, UNC Fulbright Review Committee.

Professional Meetings/Societies

Meeting participation

My group presented between 5 and 10 papers at each of the following *American Society of Tropical Medicine and Hygiene* meetings:

- Washington DC, Dec 11-15, 2005.
- Atlanta, Nov 12-16, 2006
- Philadelphia, Nov 4-8, 2007
- New Orleans, Dec 7-11, 2008
- Washington, DC, Nov 18-22, 2009

Invited Speaker, ICAAC, Sept 27-30, 2006, San Francisco,CA.

Invited speaker, Medicines for Malaria Venture (MMV)-World Health Organization (WHO) Informal consultation on methods and techniques for clinical trials on antimalarial drug efficacy: genotyping to identify parasite populations May, 29 - 31 2007, Amsterdam, The Netherlands

Invited speaker, Molecular Aspects of Malaria, Lorne, Australia, Feb 4-7, 2008.

Invited speaker, Expert Meeting on Biomarkers for Pregnancy Malaria, Nov 13, 2008, Annecy, France.

Invited speaker, Consultation on Malaria Elimination in India, New Delhi, June 25-27, 2009.

Invited speaker, Infectious Diseases: Novel Strategies for the Design & Development of Vaccines & Drugs, Tata Institute for Fundamental Research, Mumbai, Jan 5-9, 2010.

Society membership

American Society of Tropical Medicine and Hygiene

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Virginia L. Miller, Ph.D.

Professor and Assistant Dean of Graduate Education

Primary Appointment: Department of Genetics

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Bachman, M. A., **Miller**, **V. L.** & Weiser, J. N. (2009) Mucosal lipocalin 2 has pro-inflammatory and iron-sequestering effects in response to bacterial enterobactin. *PLoS Pathogens* **5**,1-11.

Walker, K. A. & **Miller, V. L.** (2009) Synchronous gene expression of the *Yersinia enterocolitica* Ysa Type III secretion system and its effectors. *Journal of Bacteriology* **191,**1816-1826.

Lawrenz, M. B., Lenz, J. D. & **Miller, V. L.** (2009) A novel autotransporter adhesin is required for efficient colonization during bubonic plague. *Infection and Immunity* **77**, 317-326.

Witowski, S. E., Walker, K. A. & **Miller, V. L.** (2008) YspM, a newly identified Ysa type III secreted protein of *Yersinia enterocolitica*. *Journal of Bacteriology* **190,** 7315-7325.

Cathelyn, J. S., Ellison, D. W., Hinchliffe, S. J., Wren, B. W. & **Miller, V. L.** (2007) The RovA regulons of *Yersinia enterocolitica* and *Yersinia pestis* are distinct: Evidence that many RovA-regulated genes were acquired more recently than the core genome. *Molecular Microbiology* **66**,189-205.

Lawrenz, M. B., & **Miller, V. L**. (2007) Comparative analysis of the regulation of *rovA* from the pathogenic *Yersiniae*. *Journal of Bacteriology* **189**, 5963-5975.

Barton, E. S., White, D. W., Cathelyn, J. S., Brett-McClellan, K. A., Engle, M., Diamond, M. S., **Miller**, **V. L.** & Virgin IV, H. W. (2007) Herpesvirus latency protects the host from bacterial infection: Latency as mutualistic symbiosis. *Nature* **447**, 326-329. [Faculty of 1000 pick] [Commentary in *Nature Reviews in Microbiology*]

Handley, S. A., & **Miller, V. L.** (2007) General and specific host responses to bacterial infection in Peyer's patches: A role for stromelysin-1 (matrix metalloproteinase-3) during *Salmonella enterica* infection. *Molecular Microbiology* **64**, 94-110.

Lawlor, M. S., O'Connor, C. & **Miller, V. L.** (2007) Yersiniabactin is a virulence factor for *Klebsiella pneumoniae* during pulmonary infection. *Infection and Immunity* **75**, 1463-1472.

Mildiner-Earley, S., Walker, K. A. & **Miller, V. L.** (2007) Environmental stimuli identified affecting expression of the Ysa type three secretion locus. *Advances in Experimental Medicine and Biology* **603**, 211-216.

Lathem, W. W., Price, P. A., **Miller**, **V. L.** & Goldman, W. E. (2007) A plasminogen-activating protease specifically controls the development of primary pneumonic plague. *Science* **315**, 509-513. [Faculty of 1000 pick]

Axler-DiPerte, G. L., **Miller**, **V. L.** & Darwin, A. J. (2006) YtxR, a conserved LysR-like regulator that induces the expression of genes encoding a putative ADP-ribosyltransferase toxin homologue in *Yersinia enterocolitica*. *Journal of Bacteriology* **188**, 8033-8044.

Cathelyn, J. S., Crosby, S. D., Lathem, W. W., Goldman, W. E. & **Miller V. L.** (2006) RovA a global regulator of *Y. pestis* specifically required for bubonic plague. *Proceedings of the National Academy of Science USA* **103**,13514-13519.

Lawlor, M. S., Handley, S. A. & **Miller**, **V. L.** (2006) Comparison of the host response to wild type and *cpsB* mutant *Klebsiella pneumoniae* infections. *Infection and Immunity* **74**, 5402-5407.

Ellison, D. W. & **Miller**, **V. L.** (2006) H-NS represses *inv* transcription in *Yersinia enterocolitica* through competition with RovA and interaction with YmoA. *Journal of Bacteriology* **188**, 5101-5112.

Handley, S. A., Dube, P. H. & **Miller, V. L.** (2006) Histamine signaling through the H_2 receptor in the Peyer's Patch is important for controlling *Yersinia enterocolitica* infection. *Proceedings of the National Academy of Science USA* **103**, 9268-9273. [Commentary in same issue by L. Hoffman and S. Miller, pg. 9377-9378] [Faculty of 1000 pick]

Mildiner-Earley, S., & **Miller**, **V. L.** (2006) Characterization of a novel porin involved in systemic *Yersinia enterocolitica* infection. *Infection and Immunity* **74**, 4361-4365.

Lathem, W. W., Crosby, S. D., **Miller, V. L**., & Goldman, W. E. (2005) Progression of primary pneumonic plague: A mouse model of infection, pathology, and bacterial transcriptional activity. *Proceedings of the National Academy of Science USA* **102**, 17786-17791. [Commentary in *Nature Reviews in Microbiology*]

Lawlor, M. S., Hsu, J., Rick, P. D. & **Miller**, **V. L.** (2005) Identification of *Klebsiella pneumoniae* virulence determinants using an intranasal infection model. *Molecular Microbiology* **58**, 1054-1073.

Handley, S. A., Newberry, R. D. & **Miller**, **V. L.** (2005) *Yersinia enterocolitica* invasin dependent and independent mechanisms of systemic dissemination. *Infection and Immunity* **73**, 8453-8455.

Reviews & commentaries

Ellison, D. W. & **Miller**, **V. L.** (2006) Regulation of virulence by members of the MarR/SlyA family. *Current Opinion in Microbiology* **9**,153-159.

Editorial Responsibilities

Editorial boards

Gut Microbes – Editorial Board	2009 - present
Science – Board of Reviewing Editors	2005 - present
Faculty of 1000	2001- present
Molecular Microbiology - Senior Editor	1993 - 2006
Current Opinion in Microbiology - Editorial Board member	1998 - present
International Journal of Medical Microbiology, Advisory Board	1999 - present

Ad hoc reviewer for:

Genomics, Journal of Bacteriology, Infection and Immunity, Microbiology, Molecular Microbiology, PLoS Genetics, PLoS One, PLoS Pathogens, Proceedings of the National Academy of Science USA, Science,

Grants/Contracts

Principal Investigator, 02/28/09-03/31/13
RovA regulon and virulence of *Yersinia enterocolitica*
NIAID R01 AI52167
$1,250,000 Direct Costs
3.6 calendar months

Principal Investigator, 02/01/05-1/31/10 (NCE)
YsrRS regulon of *Y. enterocolitica*
NIAID R01 AI63299
$775,000 Direct Costs
(no salary; was 1.8 calendar months)

Project Leader, 03/01/09-02/28/14
(PI: Fred Sparling)
Yersinia autotransporters (Yaps): Structure, function and host response
NIAID U54 AI057157
$409,672 Direct Costs for the first two years
1.2 calendar months

Principal Investigator, 05/15/09-04/30/11
Role of Yaps in *Y. pestis* pathogenesis
NIAID R56 AI078930
$498,293 Direct Costs
3.0 calendar months

Completed

Principal Investigator, 03/01/05-02/28/07

Autotransporter proteins and virulence of *Y. pestis*
NIAID R21 AI64313
$400,000 Direct Costs
Project Leader, 07/01/07-02/29/08
(PI: Sam Stanley)
New targets for plague prevention and therapy
NIAID U54 AI057160
$43,134 Direct Costs

Principal Investigator, 07/01/02-06/30/07
RovA regulon and virulence of *Yersinia enterocolitica*
NIAID R01 AI52167
$1,473,820 Direct Costs

Project Leader, 08/01/06-02/28/07
(PI: Sam Stanley)
Transcriptional regulation and response during bubonic and pneumonic plague
NIAID U54 AI057160
$18,531 Direct Costs

Principal Investigator, 04/01/01-02/28/06
Virulence networks in *Salmonella*
NIAID R01 AI46589
$875,000 Direct Costs

Grant Review Service
Ad hoc reviewer for National Institutes of Health:
CGR: 11/05
ZRG-1 BCMB-B: 02/09

Review Panel for the Triangle Community Foundation/Burroughs Wellcome Fund awards: Hitchings Fund for Health Research and Science Education, and Gertrude B. Elion Mentored Medical Student Research Awards (4/09, 4/10)

Ad hoc reviewer for the Howard Hughes Medical Institute 2008 HHMI Investigator Competition

UNC Leadership

Committee Service

University of North Carolina, Chapel Hill
Dean's Advisory Committee (*Ex Officio member*), 9/08-present
MSTP Executive Committee, 9/08-present
MSTP Advisory Committee, 9/08-present
Microbiology & Immunology Departmental Postdoctoral Group Advisor, 7/09-present

Faculty Search Committee, Department of Microbiology & Immunology, 1/09-5/09

Outside UNC
Advisory Board for Great Lakes Regional Center of Excellence (GLRCE) (December 2009 – present)

Systems Biology Working Group for NIAID Systems Biology Program Centers (Fall 2009 – present)

External Site Review of the Graduate Training Program in Molecular Virology and Microbiology of the Interdisciplinary Graduate Biomedical Program, University of Pittsburgh School of Medicine (June 15-16, 2009)

External Site Review of the University of Texas Southwestern Medical Center at Dallas Molecular Microbiology Graduate Program, Dallas, TX (April 13-14, 2009)

External Site Review of the University of Maryland School of Medicine's Molecular Microbiology and Immunology Graduate Program, Baltimore, MD (November 13-14, 2008)

Chair of External Site Review of the Division of Biological Sciences Program at University of Montana, Missoula (April 3-4, 2008)

Professional Meetings/Societies

Meeting organization
5th ASM Biodefense Research Meeting (Co-Chair), Washington DC – February 27th-March 2nd, 2007

9th International Symposium on *Yersinia* (October 10-14th, 2006) – Scientific Advisory Board

4th ASM Biodefense Research Meeting (Vice Chair), Washington DC – February 15-18th, 2006

Meeting participation
1) Invited Speaker at "The Carleen Collins Symposium on Microbial Pathogenesis"; Seattle, Washington, September 20, 2008
2) Invited Speaker at Gordon Conference on Microbial Toxins and Pathogenicity, Proctor Academy; Andover, NH July 13-18, 2008
3) Keynote Speaker at the Stanford Digestive Disease Center Annual Symposium, 2008 – "Through the Intestinal Tract with Gun and Camera". May 3, 2008 [In honor of Dr. Stanley Falkow]
4) Keynote Speaker at the Molecular Basis of Infectious Diseases (MBID) Retreat 2008, Sponsored by the Molecular Basis of Infectious Diseases Training Program and Center for Extracellular Matrix Biology; Center of Emerging and Re-Emerging Infections, Univ. of Texas Health Science Center at Houston, March 28th, 2008. Also, lead Workshop on Career Development in Microbiology/Infectious Diseases.

5) Merck/AAAS Distinguished Lecture Series Speaker, Vassar College Departments of Biology and Chemistry, February 8th, 2007
6) Keynote Speaker at the Molecular Virology and Microbiology Graduate Program Retreat, University of Pittsburgh, School of Medicine, May 26th, 2006
6) Sixteenth Annual Clowes Memorial Lecture, The University of Texas, Dallas – November 10th, 2005
7) Plenary Lecturer for the 2005 International Meeting of the Federation of the Korean Microbiological Societies, October 13th
8) Invited Speaker and Session Chair for the Microbial Pathogenesis & Host Response meeting (CSH), September 14-18th, 2005

Society leadership

American Academy of Microbiology- Distinguished Service Award Selection Committee (Chair)	7/05 - 6/2008
American Society for Microbiology Conferences Committee	9/02-2009

Society membership

American Society for Microbiology, 1986-present

American Association for the Advancement of Science, 1986-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Cary Moody, Ph.D

Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary Literature

Moody, C.A**.** and L.A. Laimins. 2009. Human Papillomaviruses Activate the ATM DNA Damage Pathway for Viral Genome Amplification Upon Differentiation. *PLoS Pathogens*. **5**(10), p.e1000605.

Côté-Martin, A., Moody, C.A., Fradet-Turcotte, A., D'Abramo, C., Lehoux, M., Joubert, S., Poirier, G.G, Coulombe, B., Laimins, L.A., and J. Archambault. 2008. The Human Papillomavirus E1 Helicase Interacts with the WD Repeat Protein p80 to Promote Maintenance of the Viral Genome in Keratinocytes. *Journal of Virology*. **83**, 1271-1283.

Moody C.A., Fradet-Turcotte, A., Archambault, J., Laimins, L. 2007. Human Papillomaviruses Activate Caspases Upon Epithelial Differentiation to Induce Viral Genome Amplification. *Proceedings of the National Academies of Sciences.* **104**, 19541-19546.

Moody, C.A., R.S. Scott, C-A Nathan, L.S. Young, J.W. Sixbey. 2005. Modulation of the Cell Growth Regulator mTOR by Epstein-Barr Virus-Encoded LMP2A. *Journal of Virology.* **79**, 5499-5506.

Reviews & Commentaries

Moody, C.A. and L.A. Laimins. 2010. HPV Oncoproteins: Pathways to Transformation. *Nature Reviews Cancer*. Epub ahead of print.

Moody, C.A., and L.A. Laimins. 2009. The Life Cycle of Human Papillomaviruses. In: *DNA Tumor Viruses*, Damania B and Pipas J (ed). Springer Press, New York, New York. Pgs 75-104.

Scott, R.S., C.A. Moody, and J.W. Sixbey. 2005. Epstein-Barr Virus and Oral Malignancies. In: Robertson E (ed). *Epstein-Barr virus: Pathogenesis, Molecular Biology, and Infection*. Horizon Scientific Press/Caister Academic Press, Norfolk, U.K.

Grants/Contracts

Principal Investigator, 10/01/08 – 08/31/2013

The Role of Caspase Activation in the HPV Life Cycle
National Cancer Institute, 1K99CA137160-01
Total Direct Costs $661,369
100% Effort

Principal Investigator, 07/01/2006 -08/31/08
The Role of E7 in the Life Cycle of HPV
American Cancer Society, PF-06-177-01-MBC
Total Direct Costs $138,000
100% Effort

Honors/Awards

National Institutes of Health K99 Pathway to Independence Award Recipient, 2008-Present.
Katten-Muchin-Rosenman Travel Scholarship Award. Northwestern University, July, 2006.
American Cancer Society. Post-Doctoral Fellowship Recipient, 2006-2008.
National Institute of Arthritis and Musculoskeletal and Skin Diseases Fellowship Recipient, 2005-2006.
Chancellor's Award for Best Ph.D. thesis. LSUHSC, Shreveport, LA. May, 2005.

Professional Meetings/Societies

Meeting Participation

Speaker, DNA Tumor Virus Meeting. Madison, WI. July 2010.
Speaker, DNA Tumor Virus Meeting. Oxford, UK. July 2009.
Speaker, 25th International Papillomavirus Conference. Malmo, Sweden. May 2009.
Speaker, DNA Tumor Virus Meeting. Madison, WI. July 2008.
Speaker, Manipulation of Nuclear Processes by DNA Tumor Viruses. Charleston, SC. March 2008.
Speaker, DNA Tumor Virus Meeting. Trieste, Italy. July 2007.
Speaker, DNA Tumor Virus Meeting. La Jolla, CA. July 2006.
Poster Presenter, DNA Tumor Virus Meeting. Cambridge, England. July 2005.

Society membership

American Society for Microbiology, 2000-2009

International Association for Research on EBV and Associated Diseases, 2000-2005

American Society for Virology, 1997-2005

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Nathaniel J. Moorman, Ph.D.

Assistant Professor

Primary Appointment: Department of Microbiology & Immunology

Publications

Primary literature

Terhune SS, **Moorman, NJ**, Cristea, IM, Rout, MP, Chait, BM, Shenk, T. (2010) Human cytomegalovirus protein pUL29/28 promotes efficient viral replication through interactions with pUL38 and the NuRD complex. PLoS Pathogens Jun 24;6(6):e1000965

Cristea, IM, **Moorman, NJ**, Terhune, SS, Cuevas, CD, O'Keefe, ES, Rout MP, Chait, BT, Shenk T. (2010) Human Cytomegalovirus pUL83 Stimulates Activity of the Viral Immediate-Early Promoter through its Interaction with the Cellular IFI16 Protein. Journal of Virology Aug;84(15):7803-14

Paden, CR, Forrest, JC, **Moorman, NJ**, Speck, SH. (2010) MHV68 LANA is essential for virus reactivation from splenocytes, but not long term carriage of viral genome. Journal of Virology Jul;84(14):7214-24.

Moorman, NJ, Shenk, T. (2010) Rapamycin-resistant mTORC1 activity is required for Herpesvirus Replication. Journal of Virology. 84(10):5260-9

Moorman, NJ, Sharon-Friling, R, Shenk, T, Cristea, I. (2010) A targeted spatial-temporal proteomic approach implicates multiple cellular trafficking pathways in human cytomegalovirus virion maturation. Molecular & Cellular Proteomics. 9(5):851-60

Pancheva D, Savaryn, JP **Moorman, NJ**, Shenk T, Terhune, SS. (2009) Human cytomegalovirus UL28 and UL29 open reading frames encode a spliced mRNA and stimulate accumulation of immediate-early RNAs. Journal of Virology. 83(19):10187-97

Moorman NJ, Cristea IM, Terhune SS, Rout MP, Chait BT, Shenk T. (2008) Human cytomegalovirus protein UL38 inhibits host cell stress responses by antagonizing the tuberous sclerosis protein complex. Cell Host & Microbe. 3(4):253-62

Terhune S.S., Torigoi E., **Moorman N.J.**, Silva M., Qian Z., Shenk T., Yu D. (2007) Human cytomegalovirus protein UL38 blocks apoptosis. Journal of Virolology. 81(7):3109-23

Evans, A.G., **Moorman, N.J.**, Willer, D.O., Speck, S.H. (2006) The M4 gene of gammaHV68 encodes a secreted glycoprotein and is required for the efficient establishment of splenic latency. Virology. 344(2):520-31

Grants/Contracts

Principal Investigator**,** 01/01/2007 - end 12/31/2009
"Analysis of pUL38 Function during Human Cytomegalovirus Infection"
American Cancer Society, PF-07073-01-MBC

Total direct costs $138,000
100% effort

Professional Meetings/Societies

Meeting organization

American Cancer Society Postdoctoral Fellows Meeting, Member Organizing Committee, 2009, Seattle, WA

Meeting participation

34th International Herpesvirus Workshop, Ithaca, NY, 2009; poster presenter

57th American Society of Mass Spectrometry Annual Meeting, Philadelphia, PA, 2009; speaker

32nd International Herpesvirus Workshop, Asheville, NC, 2007; speaker and poster presenter

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

John Newbold Ph.D,

Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Guo, H., Mason, W.S., Aldrich, C.E., Saputelli, J.R., Miller, D.S., Jilbert, A.R., and Newbold, J.E. (2005). Identification and characterization of avihepadnaviruses isolated from exotic anseriformes maintained in captivity. J.Virology 79: 2729-2742.

Lin, L., Prassolov, A., Funk, A., Quinn, L., Hohenburg, H., Frolich, H., Newbold, J., Ludwig, A., Will, H., Sirma, H., and Steinbach, F. (2005). Evidence from nature: interspecies spread of heron hepatitis B viruses. J. General Virology 86: 1335-1342.

Ad hoc reviewer for:

Antimicrobial Agents and Chemotherapy, Archives in Virology, EMBO Journal, Journal of Infectious Disease, Journal of Molecular Biology, Journal of Virology, The Pediatric Infectious Disease Journal, Virology.

Committee Service

University of North Carolina, Chapel Hill

Member, Faculty Grievance Committee, 2006 - 2008

Member, SOM Review Committee for Appointments and Promotions to Full Professor, 2005 - 2009

Member, SOM Student Promotions Committee, 2000 - current

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Robert A. Nicholas, Ph.D.

Professor and Vice Chair

Primary Appointment: Department of Pharmacology

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Fedarovich A, Nicholas RA, Davies C. (2010) Unusual conformation of the SxN motif in the crystal structure of penicillin-binding protein A from Mycobacterium tuberculosis. *Journal of Molecular Biology* **398(1)**, 54-65.
2. Zhao S, Duncan M, Tomberg J, Davies C, Unemo M, Nicholas RA (2009) Genetics of chromosomally mediated intermediate resistance to ceftriaxone and cefixime in *Neisseria gonorrhoeae*. *Antimicrobial Agents Chemotherapy*, **53(9),** 3744-3751.
3. Peddi S, Nicholas RA, Gutheil WG (2009) *Neisseria gonorrhoeae* Penicillin-Binding Protein 3 Demonstrates a Pronounced Preference for N(epsilon)-Acylated Substrates. *Biochemistry*, **48(24)**, 5731-5737.
4. Sesma JI, Esther CR Jr, Kreda SM, Jones L, O'Neal W, Nishihara S, Nicholas RA, Lazarowski ER (2009) Endoplasmic reticulum/golgi nucleotide sugar transporters contribute to the cellular release of UDP-sugar signaling molecules. *Journal of Biological Chemistry* **284(18)**, 12572-12583.
5. Hillmann P, Ko GY, Spinrath A, Raulf A, von Kügelgen I, Wolff SC, Nicholas RA, Kostenis E, Höltje HD, Müller CE. (2009) Key determinants of nucleotide-activated G protein-coupled P2Y(2) receptor function revealed by chemical and pharmacological experiments, mutagenesis and homology modeling. *Journal of Medicinal Chemistry* **52(9)**, 2762-2775.
6. Powell AJ, Tomberg J, Deacon AM, Nicholas RA, Davies C. (2009) Crystal structures of penicillin-binding protein 2 from penicillin-susceptible and penicillin–resistant strains of *Neisseria gonorrhoeae* reveal an unexpectedly subtle mechanism for antibiotic resistance. *Journal of Biological Chemistry* **284(2)**, 1202-1212.
7. Vernel-Pauillac F, Nandi S, Nicholas RA, Goarant C. (2008) Genotyping as a tool for antibiotic resistance surveillance of *Neisseria gonorrhoeae* in New Caledonia: evidence of a novel genotype associated with reduced penicillin susceptibility. *Antimicrobial Agents Chemotherapy* **52(9)**, 3293-3300.
8. Magnone M, Basile G, Bruzzese D, Guida L, Signorello MG, Chothi MP, Bruzzone S, Millo E, Qi AD, Nicholas RA, Kassack MU, Leoncini G, Zocchi E. (2008) Adenylic dinucleotides produced by CD38 are negative endogenous modulators of platelet aggregation. *Journal of Biological Chemistry* **283**, 24460-24468.
9. Fricks IP, Maddileti S, Carter RL, Lazarowski ER, Nicholas RA, Jacobson KA, Harden TK. (2008) UDP is a competitive antagonist at the human $P2Y_{14}$ receptor. *Journal of Pharmacology and Experimental Therapeutics* **325(2)**, 588-594.
10. Moreschi I, Bruzzone S, Bodrato N, Usai C, Guida L, Nicholas RA, Kassack MU, Zocchi E, De Flora A. (2008) NAADP+ is an agonist of the human $P2Y_{11}$ purinergic receptor. *Cell Calcium* **43(4)**, 344-355.
11. Lindberg R, Fredlund H, Nicholas R, Unemo M (2007) Neisseria gonorrhoeae isolates with reduced susceptibility to cefixime and ceftriaxone: association with genetic polymorphisms in penA, mtrR, porB1b, and ponA. *Antimicrobial Agents Chemotherapy* 51(6):2117-22.

12. Folster JP, Dhulipala V, Nicholas RA, Shafer WM. (2007) Differential regulation of *ponA* and *pilMNOPQ* expression by the MtrR transcriptional regulatory protein in *Neisseria gonorrhoeae*. *Journal of Bacteriology* **189(13)**, 4569-77.
13. Josephine HR, Charlier P, Davies C, Nicholas RA, Pratt RF. (2006) Reactivity of Penicillin-Binding Proteins with Peptidoglycan-Mimetic b-Lactams: What's Wrong with These Enzymes? *Biochemistry* **45(51)**, 15873-15883.
14. Fedarovich A, Tomberg J, Nicholas RA, Davies C. (2006) Structure of the N-terminal domain of human CEACAM1: binding target of the opacity proteins during invasion of *Neisseria meningitidis* and *N. gonorrhoeae*. *Acta Crystallographica Section D: Biological Crystallography* **62**, 971-979.
15. Moreschi, I., Bruzzone, S., Nicholas, R.A., Fruscione, F., Sturla, L., Benvenuto, F., Usai, C., Meis, S., Kassack, M.U., Zocchi, E., De Flora, A. (2006) Extracellular NAD^+ is an agonist of the human $P2Y_{11}$ purinergic receptor in human granulocytes. *Journal of Biological Chemistry* **281(42)**, 31419-31429.
16. Okada, S., Nicholas, R.A., Kreda, S.M., Lazarowski, E.R., and Boucher, R.C. (2006) Physiological regulation of ATP release at the apical surface of human airway epithelia. *Journal of Biological Chemistry* **281(32)**, 22992-23002.
17. Powell, A., Liu, C.-J., Nicholas, R.A., and Davies, C. (2006) Crystal structures of the lytic transglycosylase MltA from *N. gonorrhoeae* and *E. coli*: insights into interdomain movements and substrate binding. *Journal of Molecular Biology* **359**, 122-136.
18. Olesky, M., Zhao, S., Rosenberg, R.L., and Nicholas, R.A. (2006) Porin-mediated antibiotic resistance in *Neisseria gonorrhoeae*: Ion, solute, and antibiotic permeation through PIB proteins with *penB* mutations. *Journal of Bacteriology* **188**, 2300-2308.
19. Houston, D., Ohno, M., Nicholas, R.A., Jacobson, K.A., and Harden, T.K. (2006) [^{32}P]2-iodo-N(6)-methyl-(N)-methanocarba-2'-deoxyadenosine-3',5'-bisphosphate ([^{32}P]MRS2500), a novel radioligand for quantification of native $P2Y_1$ receptor. *British Journal of Pharmacology* **147**, 459-467.
20. Hu, M., Nandi, S., Davies, C., and Nicholas, R.A. (2005) High-level chromosomally mediated tetracycline resistance in *Neisseria gonorrhoeae* results from a point mutation in the *rpsJ* gene encoding ribosomal protein S10 in combination with the *mtrR* and *penB* resistance determinants. *Antimicrobial Agents Chemotherapy*, **49**, 4327-4334.
21. Nicola, G., Fedarovich, E., Nicholas, R.A., and Davies, C. (2005) A large displacement of the SxN motif of Cys115-modified penicillin-binding protein 5 from *E. coli*. *Biochemical Journal* **392(1)**, 55-63.
22. Qi, A.D., Wolff, S.C., and Nicholas, R.A. (2005) The apical targeting signal of the $P2Y_2$ receptor is located in its first extracellular loop. *Journal of Biological Chemistry* **80**, 29169-29175.
23. Zhao, S., Tobiason, D., Seifert, H.S., and Nicholas, R.A. (2005) The *penC* mutation conferring antibiotic resistance in *Neisseria gonorrhoeae* arises from a mutation in the PilQ secretin that interferes with multimer assembly and prevents antibiotic influx. *Molecular Microbiology* **57**, 1238-1251
24. Nicola, G., Peddi, S., Stefanova, M., Nicholas, R.A., Gutheil, W.G., and Davies, C. (2005) Crystal structure of *Escherichia coli* PBP 5 bound to a tripeptide boronic acid inhibitor: a role for Ser110 in deacylation. *Biochemistry* **44(23)**, 8207-8217.
25. Wolff, S.C., Qi, A.D., Harden, T.K., Nicholas, R.A. (2005) Polarized expression of human P2Y receptors in epithelial cells from kidney, lung, and colon. *American Journal of Physiology (Cell Physiology)* **288(3)**, C624-C632.

Reviews & commentaries

1. Shafer WM, Folster JP, Nicholas RA. Molecular Mechanisms of Antibiotic Resistance Expressed by the Pathogenic *Neisseria*. In: Genco CA, Wetzler L, eds. *Neisseria: Molecular Mechanisms of Pathogenesis*. Norfolk, UK: Caister Academic Press; 2010:245-270.

Editorial Responsibilities

Editorial boards
2005-present Editorial Board, American Journal of Physiology
1999-present Editorial Board, Molecular Pharmacology

Ad hoc reviewer for:

Antimicrobial Agents and Chemotherapy, Biochemistry, Biomed Central, European Journal of Pharmacology, Journal of Bacteriology, Journal of Biological Chemistry, Journal of Clinical Microbiology, Journal of Physiology, Journal of the American Chemical Society, Molecular Microbiology

Grants/Contracts

Current

Principal Investigator 04/01/1996 - 05/31/2011
"Mechanisms of Antibiotic Action in *Neisseria gonorrhoeae*"
NIH/NIAID, 2 R01 AI036901-11
$250,000 direct costs/yr
% effort: 30

Principal Investigator 07/01/2002 – 11/30/2011
"P2Y Receptor Trafficking in Epithelial Cells"
NIH/NHBLI, 5 R01 HL071131-04
$238,000 direct costs/yr
% effort: 25

(PI: Davies, C) 02/01/2003 - 01/31/2012
"Molecular Targets in Peptidoglycan Synthesis"
NIH/NIGMS, 2 R01 GM066861-05
$58,400 direct costs/yr (consortium agreement)
% effort: 10

(PD: Nicholas, RA) 07/01/1975 – 06/30/2010
"Predoctoral Training in Pharmacological Sciences"

NIH/NIGMS, 5-T32-GM007040-34
5-T32-GM007040-34 (PD: Nicholas, RA)
$405,228 direct costs/yr
% effort: 0

Previous

(PI: Nicholas, RA) 2007-2009
"Desensitization and Internalization of the $P2Y_1$ receptor"

American Heart Association, Mid-East Affiliate, AHA 0755493U,
$60,000 direct costs /yr

(PI: Harden, TK) 04/01/1987-12/31/2008
"P2Y-purinergic receptors"
National Institutes of Health, 5-R01-GM038213-19
~$25,000/yr

Honors/Awards

2004-2005 Recipient, Teaching Excellence Award in Pharmacology

UNC Leadership

Committee Service

2005-present Member, Administrative Board for the Graduate School
2005-present Member, Academic Policy Committee for the Graduate School
2006-2007 Member of Search Committee: Assistant Dean of Graduate Studies
2007-2009 Chair, Space Committee/Organizing Committee to facilitate the move to Genetic Medicine Building
2007-2008 Chair, Cell Signaling Admissions Committee for the Biological and Biomedical Sciences Program (BBSP)

Outside UNC

2008-present Executive Committee, ASPET Division for Molecular Pharmacology

Professional Meetings/Societies

Meeting participation

2005 Experimental Biology (attendee)
2006 Experimental Biology (attendee)
International Pathogenic Neisseria Conference (speaker and poster presenter)
2007 Experimental Biology (attendee)
2008 International Pathogenic Neisseria Conference (speaker and poster presenter)
Purines 2008 (presenter, oral)
2009 Experimental Biology (attendee)

Society leadership

2001-2004 Secretary-Treasurer of ASPET Division for Molecular Pharmacology (elect, current, and past)
2005-2008 President of ASPET Division for Molecular Pharmacology (elect, current, and past)

Society membership

American Society for Microbiology (ASM)
American Society for Pharmacology and Experimental Therapeutics (ASPET)
American Society for Cell Biology (ASCB)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

David B. Peden, MD, MS

Professor of Pediatrics, Medicine & Microbiology/Immunology & Toxicology

Primary Appointment: Department of Pediatrics

Joint Appointment: Department of Microbiology/Immunology

Publications

Primary literature

Wu W, Samet JM, **Peden DB**, Bromberg PA. (2010) Phosphorylation of p65 Is Required for Zinc Oxide Nanoparticle-induced Interleukin 8 Expression in Human Bronchial Epithelial Cells Environmental Health Perspectives 118(7):982-987.

Peden D, Bush R. (2010) Advances in Environmental and Occupational Respiratory Diseases in 2009. Journal of Allergy & Clinical Immunology 125(3):559-562.

Hernandez ML, Harris B, Lay JL, Diaz-Sanchez D, Devlin RB, Bromberg PA, Kleeberger SR, Alexis NE, **Peden DB**. (2010) Comparative Airway Inflammatory Response of Normal Volunteers to Ozone and Endotoxin Challenge. Inhalation Toxicology 22(8):648-656.

Alexis NE, Lay JC, Hazucha M, Harris B, Hernandez ML, Bromberg PA, Kehrl H, Diaz-Sanchez D, Kim C, Devlin RB, **Peden DB**. (2010) Low level ozone exposure induces airways inflammation and modifies cell surface phenotypes in healthy humans. Inhalation Toxicology 22(7):593-600.

Loughlin, CE, Esther CE, Lazarowski, ER, Alexis NE, **Peden DB**. (2010) Neutrophilic inflammation is associated with altered airway hydration in stable asthmatics. Respiratory Medicine 104(1):29-33.

Alexis NE, Zhou H, Lay JC, Harris B, Hernandez ML, Lu TS, Bromberg PA, Diaz-Sanchez, D, Devlin RB, Kleeberger SR, **Peden, DB.** (2009) The Glutathione-S-Transferase Mu 1 null genotype modulates ozone-induced airway inflammation in humans. Journal of Allergy and Clinical Immunology 124(6):1222-1228.

Steinberg DG, Kagen SL, Epstein PR, Demain JG, **Peden DB**, Bernstein JA. (2009) Environment, public policy, and human health: implications of current events for the next generation of patients and physicians. Allergy and Asthma Proceedings 30(3):215-216.

Zhou, H, Tang Y, Alexis NE, Almond M, Donohue JF, LaForce CF, Bromberg PA, **Peden, DB**. (2009) Influence of C-159T SNP of CD14 gene promoter on lung function in smokers with chronic bronchitis. Respiratory Medicine 103(9):1358-1365.

Wagner JG, Harkema JR, Jiang Q, Illek B, Ames BN, **Peden DB**. (2009) Gamma-tocopherol attenuates ozone-induced exacerbation of allergic rhinosinusitis in rats. Toxicology Pathology 37(4):481-491.

Bush RK, **Peden DB**. (2009) Advances in environmental and occupational disorders in 2008. Journal of Allergy and Clinical Immunology 123(3):575-578.

Wu W, Alexis NE, Bromberg PA, Jaspers I, **Peden DB.** (2009) Mechanisms of LPS-induced CD40 Expression in Human Peripheral Blood Monocytic Cells. Biochemical and Biophysical Research Communications 379(2):573-577.

Lay JC, Alexis NE, Zeman KL, **Peden DB**, Bennett WD. (2009) Mild Asthmatics Demonstrate Enhanced *In Vivo* Uptake of Inhaled Particles by Airway Phagocytes Compared to Normal Volunteers. Thorax 64(4):313-320.

Hernandez, M, Zhou H, Robinette C, Zhou B, Hatch G, Alexis N, **Peden D.** (2009) Combination treatment with high-dose vitamin C and alpha-tocopherol does not enhance respiratory-tract lining fluid vitamin C levels in asthmatics. Inhalation Toxicology 21(3):173-81.

Wu W, Silbajoris RA, Cao D, Bromberg PA, Zhang Q, **Peden DB**, Samet JM. (2008) Regulation of Cyclooxygenase-2 Expression by cAMP Response Element and mRNA Stability in a Human Airway Epithelial Cell line Exposed to Zinc. Toxicology and Applied Pharmacology 231(2):260-266.

Schaumann F, Müller M, Braun A, Lüttig B, **Peden DB**, Hohlfeld JM, Krug N. (2008) Endotoxin augments myeloid dendritic cell influx into the airways in allergic asthma patients. American Journal of Respiratory and Critical Care Medicine 177(12):1307-1313.

Wiser J, Alexis NE, Jiang Q, Wu W, Roubey, R, **Peden DB**. (2008) *In vivo* gamma tocopherol supplementation decreases systemic oxidative stress and cytokine responses of human monocytes in normal and asthmatic subjects. Free Radical Biology and Medicine 45(1):40-9.

Alexis NE, Lay JL, Hazucha MJ, Bromberg PA, Almond, MA, Linn W, Gong H, Tal-Singer R, **Peden DB**. (2008) Anti-inflammatory effects of corticosteroid treatment on airway neutrophil and monocyte response to ozone exposure in normal volunteers. Environmental Health Perspectives116:799–805.

Wagner JG, Jiang Q, Harkema JR, Ames BN, Illek B, Roubey RAS, **Peden DB**. (2008) Gamma-tocopherol prevents airway eosinophilia and mucous cell hyperplasia in experimentally-induced allergic rhinitis and asthma. Clinical and Experimental Allergy 38(3), 501–511.

Esch RE, Bush RK, **Peden DB**, Lockey RF. (2008) Sublingual-oral administration of standardized allergenic extracts:phase I safety and dosing results. Annals of Allergy, Asthma and Immunology 100(5):475-481.

Lorenz E, Muhlebach MS, Tessier PA, Alexis NE, Hite RD, Seeds MC, **Peden DB**, Meredith W. (2008) Differential expression of S100A8/A9 and S100A12 in acute and chronic lung diseases. Respiratory Medicine 102(4):567-573.

Wu W, Alexis NE, Chen X, Bromberg PA, **Peden DB**. (2008) Involvement of Mitogen-activated Protein Kinases and NFκB in LPS-induced CD40 Expression on Human Monocytic Cells. Toxicology and Applied Pharmacology 228(2):135-143.

Alexis, NE, Brickey WJ, Lay,JC, Wang Y, Roubey RAS, Ting JPY, **Peden DB**. (2008) Cell surface phenotype and genomic characterization of airway cell responses of asthmatics to inhaled endotoxin. Annals of Allergy, Asthma and Immunology 100(3):206-215.

Wagner JG, Jiang Q, Harkema JR, Illek B, Patel DD, Ames BN, **Peden DB**. (2007) Ozone Enhancement of Lower Airway Allergic Inflammation is Prevented By γ-Tocopherol. Free Radicals in Biology and Medicine 43(8):1176-1188.

Lay, JC, Alexis NE, Kleeberger SR, Roubey RAS, Harris BD, Hazucha MJ, Bromberg PA, Devlin RB, **Peden DB**. (2007) Ozone Enhances Markers of Innate Immunity and Antigen Presentation on Airway Monocytes in Healthy Individuals. Journal of Allergy and Clinical Immunology 120(3):719-722.

Svendsen E, Yeatts KB, **Peden D**, Orton S, Alexis NE, Creason J, Williams R, Neas L. (2007) Circulating neutrophil CD14 expression counteracts the inverse association of ambient PM 2.5 and PM10-2.5 on lung function in asthmatic children. Annals of Allergy, Asthma and Immunology 99(3):244-253.

Yeatts K, Svendsen E, Creason, J, Alexis N, Herbst M, Scott J, Kupper L, Williams R, Neas L, Cascio W, Devlin RB, **Peden DB.** (2007) Coarse Particulate Matter ($PM_{2.5-10}$) Affects Heart Rate Variability, Blood Lipids and Circulating Eosinophils in Adults with Asthma. Environmental Health Perspectives 115: 709-714.

Kongerud J, Madden MC, Hazucha M, **Peden DB.** (2006) Nasal responses of asthmatic and non-asthmatic volunteers to diesel exhaust particles. Inhalation Toxicology 18(9):589-594.

Fuhlbrigge AL, Guilbert T, Spahn J, **Peden D**, Davis K. (2006) The influence of variation in type and pattern of symptoms on assessment in pediatric asthma. Pediatrics 118(2):619-625.

Alexis NE, Lay JC, Zeman K, Bennett WE, **Peden DB**, Soukup J, Devlin RB, Becker S. (2006) Biological material on inhaled coarse fraction particulate matter activates airway phagocytes in vivo in healthy volunteers. Journal of Allergy and Clinical Immunology 117(6):1396-403.

Alexis NE, **Peden DB**. (2006) Inflammatory response of the airway to inhaled endotoxin correlates with BMI in atopic asthmatic but not normal volunteers. Journal of Allergy and Clinical Immunology 117(5):1185-1186.

Schaffer HS, **Peden D**, Morrell D, (2006) Syncope and Anaphylaxis in a Child with Systemic Mastocytosis. Journal of the American Academy of Dermatology 54:S210-213.

Alexis NE, Muhlebach MS, **Peden DB**, Noah TL. (2006) Attenuation of Innate Immune Function of Lung Phagocytes in Early CF. Journal Cystic Fibrosis 5(1):17-25.

Noah, TL, Tudor GE, Ivins SS, Murphy PC, **Peden DB**, Henderson FW. (2006) Repeated measurement of nasal lavage fluid chemokines in school-age children with asthma. Annals of Allergy, Asthma and Immunology 96(2):304-310.

Editorial Responsibilities

Editorial boards
Journal of Allergy and Clinical Immunology, Associate Editor, 3/05-3/10
Annals of Allergy and Clinical Immunology, Editorial Board, 5/04-date
Journal of Allergy and Clinical Immunology, Editorial Board, 3/03-date

Ad hoc reviewer for:

American Journal of Physiology, American Journal of Respiratory and Critical Care Medicine, Clinical and Experimental Allergy, Environmental Health Perspectives, Experimental Lung Research, Faculty of 1000, Journal of Allergy and Clinical Immunology, Journal of the American Medical Association, New England Journal of Medicine

Grants/Contracts

Principal Investigator, 03-01-2008 to 02-28-2013
"Immunobiology of Acute Environmental Asthma"
National Institutes of Health-NIAID. U19AI077437
Total direct costs $1,200,000/year
Percent Effort: 25%

Principal Investigator, 10-01-2009 - 09-30-2011
Investigating gene x environment interaction using human exposures to O3 & LPS.
National Institutes of Health (NIEHS-1RC1ES018417)
Total Direct Costs: $660,000 over entire funding period
Percent effort: 15%

Principal Investigator, 07-01-2007 - 01-31-2015
"Health effects of exposure to air pollutants in humans."
Environmental Protection Agency CR 83346301
Total Direct Costs: $1,800,000/year
Percent effort: 5%

Project Leader, 09-01-2006 - 0 9-01-2011

PI: Richard Boucher
"SCCOR in Host Factors in Chronic Lung Diseases" Project IV "Smoking and airway innate host defense: in vivo studies"
National Institutes of Health-NHLBI P50HL084934
Total Direct Costs: $300,000 direct costs for project
Percent Effort: 20%

Core Director, 07-01-2008 - 06-30-2013
"UNC Clinical Translation Science Award" in response to RFA-RM-07-007 (Institutional Clinical and Translational Science Award)
National Institutes of Health-NCRR U54-RR024382-01A1
Total Direct Costs $11,497,887/year
Percent Effort 5%

Grant Review Service
Chair, Clinical Science SEP ZAT1, NCCAM RB 01 6/12/2009
Member, NCRR Special Emphasis Panel, ZRR1 CR-1(01) CTSA 1 02/10/09 - 02/11/09
Member, Clinical Trials Review Group, NHLBI, June 2008
Chair, Clinical Science Study Section (R21), NCCAM June, 2008
Chair, Clinical Science Study Section (R21), NCCAM Feb, 2008
Chair, Clinical Science Study Section (R21), NCCAM Oct, 2007
Chair, Clinical Science Study Section (R21) 2007/1 ZAT1 NCCAM June 4-5, 2007
Member, PPG review, HLBP workgroup, NHLBI, April 3, 2007
Chair, ZAT1 JH (21) Special Emphasis Panel, NCCAM, March 14 2007
Chair, Clinical Science Study Section (R21) 2007/1 ZAT1 JH (18) NCCAM Oct 30-31 2006
Member, Special Emphasis Panel DCES-001 Directors Challenge, NIEHS, Aug 15, 2006
Chair, Clinical Science Study Section (R21) 2006/10 ZAT1 JH (16), June 12-13 2006
Member, NCCAM Clinical Science Study Section (R21) ZAT1 JH (15), Feb13 2006
Participant, NIEHS Strategic Planning Forum, Oct 17-18, 2005
Chair; Special Emphasis Panel (ZAT G 15 1) CERC Program 7/12/2005

Honors/Awards

Best Doctors in America 2007-2008

Committee Service

University of North Carolina, Chapel Hill

Ad Hoc Chair, Scientific Integrity Review, UNC School of Medicine, 2009
Member, Research Advisory Committee, UNC School of Medicine (9/2007-date)
Member, Chair Search Committee, Department of Microbiology/Immunology (6/2007-12/2007)
Dean's Advisory Committee (2002-present)
Chair, Graduate Dissertation Committee, Curriculum in Toxicology, UNC SOM & Public Health, 2005-present.
Member, Graduate Dissertation Committee, Curriculum of Genetics, UNC SOM,

2008-present

Outside UNC

Vice Chair & Committee Member, Accreditation Council for Graduate Medical Education, 01/2008-7/2014.

Member, Co-chair (2005), Chair (2006), American Board of Allergy and Immunology, 01/01/2003-12/31/2008.

Member, Air Quality Committee, State of North Carolina Environmental Management Commission (01/01/2009-present)

Member, Groundwater Committee, State of North Carolina Environmental Management Commission (01/01/2009-present)

Professional Meetings/Societies

Meeting organization

Session Chair, AAAAI Program Directors Winter Meeting (New Orleans, La 01/12/2008; San Antonio, Texas, 01/10/2009; Chicago, IL, 01/09/2010).

Meeting participation

Guest Lecturer, Boston City Wide Allergy & Immunology Rounds, Boston, MA, April 13, 2010.
Guest speaker, West Virginia American Academy of Pediatrics (AAP) Meeting, Hilton Garden Inn, Morgantown, WV, April 9-10, 2010.
Speaker, NC TraCS Symposium: Translational Research to Address Health Disparities across the Lifespan, Chapel Hill, NC March 19, 2010.
Speaker, 2010 National Air Quality Conferences Air Quality Forecasting, Mapping, and Monitoring and Communicating Air Quality. Sponsored by the US Environmental Protection Agency, Raleigh, NC, March 17, 2010.
Speaker, Plenary Session "New Environmental Aspects in Allergy and Asthma" of the 2009 World Allergy Conference of the World Allergy Organization, Buenos Aires, Argentina, December 9, 2009.
Speaker, The 36th Annual Postgraduate Course of the Alexander Spock Symposium| "Genetic & Public Health Frontiers of Pediatric Medicine", Duke University Medical Center, Durham, NC, November 7, 2009
Speaker, 4th International Conference on Oxidative/Nitrosative Stress and Disease", New York Academy of Sciences, New York, NY, October 30, 2009.
Speaker, 2009 International Conference of the American Thoracic Society, May 2009.
Speaker, Symposium "The Science of Alternative Medicine in Allergy: A Tribute to Stephen Straus" at the Annual Meeting of the American Academy of Allergy, Asthma and Immunology, March 14, 2009.
Speaker, American Academy of Allergy, Asthma and Immunology at the Cannon Caucus Room of the US House of Representatives, Washington DC, March 13, 2009.

Speaker, 2008 Southeast Allergy, Asthma & Immunology Society Annual Meeting, October 18, 2008, The Homestead, Hot Springs, VA.
Speaker, Symposium "Childhood bronchiectasis: views from around the world" 2008 ATS International Conference, May 18, 2008, Toronto, Ont., Canada.
Lecturer, Department of Microbiology and Immunology, UNC-CH 3/31/08.
Speaker, The American Academy of Allergy, Asthma & Immunology Annual Meeting, Philadelphia, PA 3/15/2008.
Speaker, Research Seminar, Division of Allergy and Immunology, Crieghton University, Omaha, NE 11/16/07.
Speaker, Nebraska Academy of Allergy, Asthma & Immunology 11/15/07, Omaha, NE
Guest Speaker, 44th Congress of the European Societies for Toxicology, Amsterdam, The Netherlands, 10/08/2007.
Speaker, Research Seminar, Department of Pediatrics, Mount Sinai School of Medicine, New York, NY 6/14/2007.
Speaker, Symposium "What Makes an Allergen Allergenic?" The American Academy of Allergy, Asthma & Immunology Annual Meeting, San Diego, CA, 2/27/2007.
Speaker, Pediatric Grand Rounds, Duke University, Durham, NC 1/23/2007.
Speaker, 2006 Dees Symposium on Allergy and Immunology, Duke University, Durham, NC 10/28/2006
Speaker, Airway Biology Forum, Duke University, Durham, NC 9/15/2006.

Attendee, Workshop "Enhancing Capacity to Study Gene-Environment Interactions in Complex Traits". Harvard School of Public Health, Cambridge, MA 6/18/2006
Speaker, "COPD in Never Smokers" Workshop, NHLBI/NIOSH, Bethsda, MD 5/1-2/2006.
Speaker, Environmental Cardiology Research Group, Department of Medicine, East Carolina University, Greenville, NC 4/27/06.
Speaker, Pediatric Grand Rounds, East Carolina University, Greenville, NC 4/27/06.
Speaker, Asthma and the Environment Seminar Series, Asthma Program, NHEERL, US EPA, Research Triangle Park, NC 4/10/2006.
Speaker, Long Island Allergy & Asthma Society Meeting, Long Island, NY 1/26/2006.
Speaker, American College of Chest Physicians Annual Meeting, Montreal, CA, Oct 31, 2005.
Speaker, American Academy of Pediatrics Annual Meeting, Washington DC, October 9, 2005.
Speaker, University of Southern California, Department of Preventive Medicine Seminar. Los Angeles, CA, October 8, 2005.

Society leadership

Elected Board of Directors, Co-chair elect 2004-2005, Chair 2006, American Board of Allergy & Immunology (term 01/01/2003-01/01/2008)
Chair, EORD Interest Section (American Academy of Allergy, Asthma & Immunology), 2005.
Elected Board of Directors, American Academy of Allergy, Asthma and Immunology (3/2010-3/2014)

Society membership

American Academy of Allergy, Asthma and Immunology, 2005-present
American Board of Allergy and Immunology, 2005-present
American Academy of Pediatrics, 01/01/1992-present
American College of Allergy, Asthma and Immunology, 2007-present
American Thoracic Society, 2005-present
Clinical Immunology Society, 2005-present
North Carolina Medical Society, 2009-2010
North Carolina Thoracic Society, 2005-present
Society for Pediatric Research, 2005-present
Society of Toxicology, 2007-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Raymond John Pickles Ph.D.

Associate Professor of Microbiology and Immunology

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Kwilas AR, Yednak MA, Zhang L, Liesman R, Collins PL, Pickles RJ, Peeples ME. Respiratory Syncytial Virus Engineered to Express CFTR Corrects the Bioelectric Phenotype of Human Cystic Fibrosis Airway Epithelium In Vitro. J. Virol. 2010 May 26;84(15)7770-81.

Eby JC, Ciesla WP, Hamman W, Donato GM, Pickles RJ, Hewlett EL, Lencer WI. Selective translocation of the Bordetella pertussis adenylate cyclase toxin across the basolateral membranes of polarized epithelial cells. J Biol Chem. 2010 Apr 2;285(14):10662-70.

Schaap-Nutt A, Scull MA, Schmidt AC, Murphy BR, Pickles RJ. Growth restriction of an experimental live attenuated human parainfluenza virus type 2 vaccine in human ciliated airway epithelium in vitro parallels attenuation in African green monkeys. Vaccine. 2010 Mar 24;28(15):2788-98.

Heiniger RW, Winther-Larsen HC, Pickles RJ, Koomey M, Wolfgang MC. Infection of human mucosal tissue by Pseudomonas aeruginosa requires sequential and mutually dependent virulence factors and a novel pilus-associated adhesin. Cell Microbiol. 2010 Mar 12;1298)1158-73.

Schaap-Nutt A, D'Angelo C, Scull MA, Amaro-Carambot E, Nishio M, Pickles RJ, Collins PL, Murphy BR, Schmidt AC. Human parainfluenza virus type 2 V protein inhibits interferon production and signaling and is required for replication in non-human primates. Virology. 2010 Feb 20;397(2):285-98.

Li W, Zhang L, Johnson JS, Zhijian W, Grieger JC, Ping-Jie X, Drouin LM, Agbandje-McKenna M, Pickles RJ, Samulski RJ. Generation of novel AAV variants by directed evolution for improved CFTR delivery to human ciliated airway epithelium. Mol Ther. 2009 Dec;17(12):2067-77.

Ayora-Talavera G, Shelton H, Scull MA, Ren J, Jones IM, Pickles RJ, Barclay WS. Mutations in H5N1 influenza virus hemagglutinin that confer binding to human tracheal airway epithelium. PLoS One. 2009 Nov 18;4(11):e7836.

Kwilas S, Liesman RM, Zhang L, Walsh E, Pickles RJ, Peeples ME. Respiratory syncytial virus grown in Vero cells contains a truncated attachment protein that alters its infectivity and dependence on glycosaminoglycans. J Virol. 2009 Oct;83(20):10710-8.

Zhang L, Button B, Gabriel SE, Burkett S, Yan Y, Skiadopoulos MH, Dang YL, Vogel LN, McKay T, Mengos A, Boucher RC, Collins PL, Pickles RJ. CFTR delivery to 25% of surface epithelial cells restores normal rates of mucus transport to human cystic fibrosis airway epithelium. PLoS Biol. 2009 Jul;7(7):e1000155.

Li W, Zhang L, Johnson JS, Pickles RJ, Samulski, RJ. "Generation of Novel AAV Variants by Directed Evolution for Improved CFTR Delivery to Human Ciliated Airway Epithelium." Molecular Therapy 2009 Jul 14;17(12)2067-77.

Kesimer M, Scull M, Brighton B, Demaria G, Burns K, O'Neal W, Pickles RJ, Sheehan JK. "Characterization of exosome-like vesicles released from human tracheobronchial ciliated epithelium: a possible role in innate defense." FASEB J. 2009 Jun;23(6):1858-68.

Scull MA, Gillim-Ross L, Santos C, Roberts KL, Bordonali E, Subbarao K, Barclay WS, Pickles RJ. "Avian Influenza virus glycoproteins restrict virus replication and spread through human airway epithelium at temperatures of the proximal airways". PLoS Pathogens. 2009 May;5(5):e1000424.

Lei Y, Moore CB, Liesman RM, O'Connor BP, Bergstralh DT, Chen ZJ, Pickles RJ, Ting JP. "MAVS-mediated apoptosis and its inhibition by viral proteins'. PLoS ONE. 2009;4(5):e5466.

Allen IC, Scull MA, Moore CB, Holl EK, McElvania-TeKippe E, Taxman DJ, Guthrie EH, Pickles RJ, Ting JP. "The NLRP3 inflammasome mediates in vivo innate immunity to influenza a virus through recognition of viral RNA." Immunity. 2009 Apr;30(4):556-65.

Limberis MP, Vandenberghe LH, Zhang L, Pickles RJ, Wilson JM. "Transduction efficiencies of novel AAV vectors in mouse airway epithelium in vivo and human ciliated airway epithelium in vitro." Mol Ther. 2009 Feb;17(2):294-301.

Bukreyev A, Marzi A, Feldmann F, Zhang L, Yang L, Ward JM, Dorward DW, Pickles RJ, Murphy BR, Feldmann H, Collins PL. "Chimeric human parainfluenza virus bearing the Ebola virus glycoprotein as the sole surface protein is immunogenic and highly protective against Ebola virus challenge." Virology. 2009 Jan 20;383(2):348-61.

Kesimer M, Kirkham S, Pickles RJ, Henderson AG, Alexis NE, Demaria G, Knight D,

Thornton DJ, Sheehan JK. "Tracheobronchial air-liquid interface cell culture: a model for innate mucosal defense of the upper airways?" Am J Physiol Lung Cell Mol Physiol. 2009 Jan;296(1):L92-L100.

Becker MM, Graham RL, Donaldson EF, Rockx B, Sims AC, Sheahan T, Pickles RJ, Corti D, Johnston RE, Baric RS, Denison MR. "Synthetic recombinant bat SARS-like coronavirus is infectious in cultured cells and in mice." Proc Natl Acad Sci U S A. 2008 16;105:19944-9.

Donaldson EF, Yount B, Sims AC, Burkett S, Pickles RJ, Baric RS. "Systematic assembly of a full-length infectious clone of human coronavirus NL63." J Virol. 2008 82(23):11948-57.

Bartlett EJ, Cruz AM, Esker J, Castaño A, Schomacker H, Surman SR, Hennessey M, Boonyaratanakornkit J, Pickles RJ, Collins PL, Murphy BR, Schmidt AC. "Human parainfluenza virus type 1 C proteins are nonessential proteins that inhibit the host interferon and apoptotic responses and are required for efficient replication in nonhuman primates." J Virol. 2008 82(18):8965-77.

Bartlett EJ, Hennessey M, Skiadopoulos MH, Schmidt AC, Collins PL, Murphy BR, Pickles RJ. "Role of interferon in the replication of human parainfluenza virus type 1 wild type and mutant viruses in human ciliated airway epithelium." J Virol. 2008 82(16):8059-70.

Sims AC, Burkett SE, Yount B, Pickles RJ. "SARS-CoV replication and pathogenesis in an in vitro model of the human conducting airway epithelium." Virus Res. 2008 Apr;133(1):33-44.

Sheahan T, Rockx B, Donaldson E, Sims A, Pickles R, Corti D, Baric R. "Mechanisms of zoonotic severe acute respiratory syndrome coronavirus host range expansion in human airway epithelium." J Virol. 2008 Mar;82(5):2274-85.

Rockx B, Sheahan T, Donaldson E, Harkema J, Sims A, Heise M, Pickles R, Cameron M, Kelvin D, Baric R. "Synthetic Reconstruction of Zoonotic and Early Human SARS-CoV Isolates that Produce Fatal Disease in Aged Mice." J Virol. 2007 81(14):7410-23.

Chapman J, Abbott E, Alber DG, Baxter R, Bithell SK, Henderson EA, Carter MC, Chambers P, Chubb A, Cockerill S, Collins PL, Dowdell VC, Keegan SJ, Kelsey RD, Lockyer MJ, Luongo C, Najarro P, Pickles RJ, Simmonds M, Taylor D, Tyms S, Wilson LJ and Powell KL. "RSV 604 A novel inhibitor of respiratory syncytial virus replication". Antimicrobial Agents & Chemotherapy 2007 51(9):3346-53.

Sheehan JK, Kesimer M, Pickles R. "Innate immunity and mucus structure and function." Novartis Found Symp 2006 279: p155-166.

Deming D, Sheahan T, Heise M, Yount B, Davis N, Sims A, Suthar M, Harkema J,

Whitmore A, Pickles R, West A, Donaldson E, Curtis K, Johnston R, Baric R. "Vaccine Efficacy in Senescent Mice Challenged with Recombinant SARS-CoV bearing Epidemic and Zoonotic Spike Variants." PLoS Med. 2006; 3(12):e525, p2359-2375.

Hall JD, Craven RR, Fuller JR, Pickles RJ, Kawula TH. "Francisella tularensis replicates within alveolar type II epithelial cells in vitro and in vivo following inhalation." Infect Immun. 2007; 75(2): p1034-1039.

Sheahan T, Deming D, Donaldson E, Pickles R, Baric R. "Resurrection of an "extinct" SARS-CoV isolate GD03 from late 2003." Adv Exp Med Biol. 2006; 581: p547-550.

Sims AC, Yount B, Burkett SE, Baric RS, Pickles RJ. "SARS CoV replication and pathogenesis in human airway epithelial cultures." Adv Exp Med Biol 2006; 581: p535-538.

Thompson CI, Barclay WS, Zambon MC, Pickles RJ. "Infection of human airway epithelium by human and avian strains of influenza a virus." J Virol. 2006; 80: p8060-8068.

McKay T, Patel M, Pickles RJ, Johnson LG, Olsen JC. "Influenza M2 envelope protein augments avian influenza hemagglutin pseudotyping of lentiviral vectors." Gene Ther. 2006; 13(8): p715-724.

Sims AC, Baric RS, Yount B, Burkett SE, Collins PL, Pickles RJ. "Severe acute respiratory syndrome coronavirus infection of human ciliated airway epithelia: role of ciliated cells in viral spread in the conducting airways of the lungs." J Virol. 2005; 79(24): p15511-15524.

Tarran R, Button B, Picher M, Paradiso AM, Ribeiro CM, Lazarowski ER, Zhang L, Collins PL, Pickles RJ, Fredberg JJ, Boucher RC. "Normal and cystic fibrosis airway surface liquid homeostasis. The effects of phasic shear stress and viral infections." J Biol Chem. 2005;280(42): p35751-35759.

Das S, Palmer OP, Leight WD, Surowitz JB, Pickles RJ, Randell SH, Buchman CA. "Cytokine amplification by respiratory syncytial virus infection in human nasal epithelial cells." Laryngoscope. 2005; 115(5): p764-768.

Zhang L, Bukreyev A, Thompson CI, Watson B, Peeples ME, Collins PL, Pickles RJ. "Infection of Ciliated Cells by Human Parainfluenza Virus Type 3 in an In Vitro Model of Human Airway Epithelium." J Virol. 2005; 79(2): p1113-1124.

Editorial Responsibilities

Editorial boards

Associate Editor, PLoS Pathogens, March 2010-present.

Ad hoc reviewer for:

American J of Respiratory Cell and Molecular Biology	*ad hoc reviewer* since 2001
Gene Therapy	*ad hoc reviewer* since 2000
Human Gene Therapy	*ad hoc reviewer* since 1999
Journal of Clinical Investigation	*ad hoc reviewer* since 1999
Journal of Virology	*ad hoc reviewer* since 2000
Nature	*ad hoc reviewer* since 2007
Nature Biotechnology	*ad hoc reviewer* since 2000
Nature Medicine	*ad hoc reviewer* since 2000
PLOS One	*ad hoc reviewer* since 2009
Virology	*ad hoc reviewer* since 2003

Grants/Contracts

SERCEB Baric (PI) 6/1/09-5/31/14
Role: Co-Investigator (5%)

1 R01 DE 018304-01 Dittmer (PI) 2/1/07-1/31/12
NIH/NIDCR $250,000
ART Modulation of Viral Pathogenesis in Oral Epithelia
Role: Co-Investigator (5%)

1 P50 HL 084934-01 Boucher (PI) 9/15/06-7/31/11
NIH/NHLBI $215,884
SCCOR in Host Factors in Chronic Lung Disease, Project II: ASL volume and innate defense in CF and COPD Airways
Role: Co-Investigator (10%)

1 P50 HL 084934-01 Boucher (PI) 9/15/06-7/31/11
NIH/NHLBI $146,797
SCCOR in Host Factors in Chronic Lung Disease, Core D: Diagnostic Molecular Microbiology Core
Role: Co-Investigator (5%)

5 R01 HL 077844-02 Pickles (PI) 9/6/05-6/30/10
NIH/NHLBI $244,125
CFTR Delivery to Ciliated Airway Cells by PIV Vectors
Role: Principal Investigtor (32.5%)

1 R21 AI 079521-01 Sims (PI) 7/1/08-6/30/10
NIH/NIAID $150,000
Targeted Gene Expression from NL63 Vaccine Vectors
Role: Co-Investigator (5%)

SCHWAB07I0 Pickles (PI) 10/1/07-3/31/10
Cystic Fibrosis Foundation $40,000
Does Respiratory Viral Infection Predispose to Bacterial Superinfection in CF?
Role: PI (5%)

1 R56 AI 069339-01A2 Kawula (PI) 9/15/08-8/31/09
NIH/NIAID $250,000
Francisella Tularensis Interactions with Airway Epithelial Cells
Role: Co-Investigator (5%)

5 P01 HL 051818-13 Samulski (PI) 8/20/04-6/30/09
NIH/NHLBI $275,612
Gene Therapy for Cystic Fibrosis, Project III: Respiratory Syncytial Virus-Based Vectors for CFTR
Role: Project Leader (20%)

5 R21 HL 080098-02 Pickles (PI) 6/1/05-5/31/07
NIH/NHLBI $122,063
Viral-Bacterial Interactions in the Airway Epithelium
Role: Principal Investigator (25%)

R026-CR02 Boucher (PI) 7/1/05-6/30/07
Cystic Fibrosis Foundation $40,000
Epithelial Function in Cystic Fibrosis, Project 7: Viral Infection of Inflamed Human Airway Epithelium
Role: Project Leader (5%)

5 R01 EB 00761-02 Superfine (PI) 9/30/02-9/29/07
NIH/NIBIB
3D Force Microscopy for Microrheology and Active Transport.
Role: Co-Investigator

Corixa Corporation Testing Agreement. Pickles (PI). 1/1/04-12/31/08
NIH
Testing Corixa Anti-Viral AGP's on Human Airway Epithelial Cultures.
Role: Principal Investigator (5 %).

University of North Carolina Medical Alumni Endowment Fund Grant: Pickles 01/07/04-30/06/07
SARS Infection of Human Airway Epithelium
Role: Principle Investigator (0%).

GABRIEL04G0 Gabriel (PI) 4/1/05-3/31/07
Cystic Fibrosis Foundation $90,000
How Much CFTR is Required to Restore Function to CF Human Airway Epithelium
Role: Co-Investigator

5 P01 HL 66943-04 Samulski (PI) 9/30/01-7/31/06
NIH/NHLBI
Gene Therapy for Pulmonary & Hematologic Disorders, Project 3: Extra Cellular Barriers to Gene Transfer in the Lung.
Role: Co-Investigator

Grant Review Service

NHLBI Special Emphasis Study Section, "*Infectious Agents in Origins of Chronic Lung Disease*" November 2005.

NIH Study Section Temporary Member, Medical B. 2000.

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Name: Scott E Plevy, M.D.

Associate Professor

Primary Appointment: Department of Medicine

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Sandborn WJ, Colombel JF, Frankel M, Hommes D, Lowder J, Mayer L, **Plevy S**, Stokkers P, Travis S, Assche GV, Baumgart D, Targan S. (2010) Anti-CD3 Antibody Visilizumab is Not Effective in Patients with Intravenous Corticosteroid-Refractory Ulcerative Colitis. *Gut*, in press.
2. Sheikh SZ, Matsuoka K, Kobayashi T, Li F, Rubinas T, **Plevy SE**. (2010) Interferon-γ is a negative regulator of interleukin-23 in murine macrophages and experimental colitis. *Cutting Edge*: *Journal of Immunology*, 184:4069-4073.
3. Baumgart DC, Targan SR, Dignass AU, Mayer L, Assche GV, Hommes DW, Hanauer SB, Mahadevan U, Reinisch W, **Plevy SE**, Salzberg BA, Buchman AL, Mechkov GM, Krastev ZA, Lowder JN, Frankel MB, Sandborn WJ. (2010) Prospective Randomized Open-label Multicenter Phase I/II Dose Escalation Trial of Visilizumab (HuM291) in Severe Steroid-Refractory Ulcerative Colitis. *Inflammatory Bowel Diseases*, 16:620-629.
4. Davé S, Tilstra J, Matsuoka K, Li F, DeMarco R, Stolz DB, Sepulveda A, Fink M, Lotze MT, **Plevy S**. (2009) Ethyl Pyruvate Decreases HMGB1 Release and Ameliorates Murine Colitis. *Journal of Leukocyte Biology*, 86:1-11.
5. Han X, Uchida K, Jurickova I, Koch D, Willson T, Samson C, Bonkowski E, Trauernicht A, Kim MO, Tomer G, Dubinsky M, **Plevy S**, Kugathsan S, Trapnell BC, Denson LA. (2009) Granulocyte-Macrophage Colony-Stimulated Factor Autoantibodies in Murine Ileitis and Progressive Ileal Crohn's Disease. *Gastroenterology*, 136:1261-1271.
6. Regueiro M, Schraut W, Baidoo L, Kip KE, Sepulveda AR, Pesci M, Harrison J, **Plevy SE**. (2009) Infliximab Prevents Crohn's Disease Recurrence After Ileal Resection. *Gastroenterology*, 136:441-450.
7. Sheikh S, Uno J, Matsuoka K, **Plevy S**. (2008) Abnormal mucosal immune response to altered bacterial flora following restorative proctocolectomy in patients with ulcerative colitis: serologic measures, immunogenetics, and clinical correlations. *Clinical Immunology*, 127:270-279.
8. **Plevy S**, Salzberg B, Van Assche G, Regueiro M, Hommes D, Sandborn W, Hanauer S, Targan S, Mayer L, Mahadevan U, Frankel M, Lowder J. (2007) A Phase I Study of Visilizumab, a Humanized Anti-CD3 Monclonal Antibody, in Severe Steroid-Refractory Ulcerative Colitis. *Gastroenterology*, 133:1414-22.
9. Davé S, Tilstra JS, Matsuoka K, Li F, Karrasch T, Uno JK, Sepulveda AR, Jobin C, Baldwin AS, Robbins PD, **Plevy SE**. (2007) Amelioration of chronic murine colitis by peptide mediated transduction of the IκB kinase (IKK) inhibitor NEMO binding domain (NBD) peptide. *Journal of Immunology*, 179:7852-9.

10. Beatty PL, **Plevy SE**, Sepulveda AR, Finn OJ. (2007) Transgenic expression of Human MUC1 in IL-10-/- mice accelerates inflammatory bowel disease and progression to colon cancer. *Cutting Edge: Journal of Immunology*, 179:735-9.
11. Regueiro M, Siemanowski B, Kip KE, **Plevy S**. (2007) Infliximab dose intensification in Crohn's disease. *Inflammatory Bowel Diseases*, 13:1093-1099.
12. Bogunovic M, Dave SH, Tilstra JS, Chang DT, Harpaz N, Xiong H, Mayer LF, **Plevy SE**. (2007) Enteroendocrine cells express functional Toll-like receptors. *American Journal of Physiology Gastrointestinal Liver Physiology*, 292:G1770-83.
13. Regueiro M, Radin JC, **Plevy S**. (2006) Infliximab for Hospitalized Patients with Severe Ulcerative Colitis. *Journal of Clinical Gastroenterology*, 40:476-481.
14. Hegazi RAF, Rao KN, Mayle A, Sepulveda AR, Otterbein LE, **Plevy SE**. (2005) Carbon Monoxide Ameliorates Chronic Murine Colitis Through a Heme Oxygenase-1 Dependent Pathway. *Journal of Experimental Medicine*, 202:1703-1713.
15. Meier CB, Hegazi RA, Aisenberg J, Legnani PE, Nilubol N, Cobrin GM, Duerr RH, Gorfine SR, Bauer JJ, Sachar DB, **Plevy SE**. (2005) Innate Immune Receptor Genetic Polymorphisms in Pouchitis: Is CARD15 a Susceptibility Factor? *Inflammatory Bowel Diseases*, 11:965-971.
16. Regueiro M, Kip K, Cheung O, Hegazi R, **Plevy S**. (2005) Cigarette Smoking and Age of Diagnosis. *Inflammatory Bowel Diseases*, 11:42-47.

Reviews & commentaries

1. Sheikh SZ, **Plevy S**. The role of the macrophage in sentinel responses in intestinal immunity. Clin Opinions Gasterol; in press.
2. Sandborn WJ, Colombel JF, Schreiber S, **Plevy SE**, Pollack PF, Robinson AM, Chao J, Mulani P. (2010) Dosage Adjustment During Long-Term Adalimumab Treatment for Crohn's Disease: Clinical Efficacy and Pharmacoeconomics. *Inflammatory Bowel Diseases*, in press.
3. Long M, **Plevy S**. (2009) Poorly Responsive Ulcerative Colitis in the Hospital. *Clinical Gastroenterology and Hepatology*, 7:635-640.
4. Levy LC, **Plevy S**. (2008) Farm Animals and Inflammatory Bowel Disease: Old MacDonald had Poor Hygiene. *Gastroenterology*, 134:886-887.
5. Matsuoka K, **Plevy S**. (2007) Salvation through death: preaching the dogma of apoptosis. *Inflammatory Bowel Diseases*, 13:1446-1447.
6. Meier C, **Plevy S**. (2007) Therapy insight: how the gut talks to the joints—inflammatory bowel disease and the spondyloarthropathies. *Nature Clinical Practice Rheumatology*, 3:667-674.
7. Tilstra J, Rehman KK, Hennon T, **Plevy SE**, Clemens P, Robbins PD. (2007) Protein transduction: identification, characterization and optimization. *Biochemical Society Transactions*, 35:811-815.
8. Abreu MT, **Plevy S**, Sands BE, Weinstein R. (2007) Selective Leukocyte Apheresis for the Treatment of Inflammatory Bowel Disease. *Journal of Clinical Gasteroenterology*, 41:874-888.
9. Barrie A, **Plevy S**. (2006) Treatment of Immune-Mediated Extraintestinal manifestations of Inflammatory bowel disease with Infliximab. *Gastroenterology Clinics of North America*, 35:883-893.

10. Sheikh S, **Plevy S**. (2006) Medical Management of Surgical Inflammatory Bowel Disease? Current Concepts and Future Possibilities. *Seminars in Colon and Rectal Surgery*, 17:50-54.
11. Barrie AM, **Plevy SE**. (2005) The interleukin-12 family of cytokines: Therapeutic targets for inflammatory bowel disease. *Clinical and Applied Immunology Reviews*, 5:225-240.
12. Hochberg MC, Lebwohl MG, **Plevy SE**, Yocum DE. (2005) The benefit/risk profile of TNF-blocker agents. *Seminars in Arthritis and Rheumatism*, 34:819-836.

Book Chapters

1. Ruffner MA, **Plevy SE**, Cheung AT. (2010) Applications of Nucleotide-based Therapy in the Treatment of Inflammatory Bowel Disease in Gene Therapy for Autoimmune and Inflammatory Diseases. Birkhauser publishers, Basel Switzerland. Chernajovsky Y, Robbins P, eds. Chapter 2, 21-39.
2. Kirkham B, Kavanaugh A, Barker J, **Plevy SE** eds. The Handbook of Biological Therapy. Oxford University Press. 2008. Section 1:2-18; Section 4:122-148.
3. Sharif S, **Plevy S**, Finn OJ, Whitcomb DC. (2005) Hereditary Pancreatitis and Its Link to Pancreatic Cancer in Pancreatic Cancer. Van Hoff DD, Evans DB, Hruban RH, eds. Chapter 8, 119-132. Jones and Bartlett publishers, Sudbury, MA.

Editorial Responsibilities

Editorial boards

Associate Editor, Journal of Immunology, 2009 to present

Basic Science Section Editor, Inflammatory Bowel Diseases, 1999-2006

Ad hoc reviewer for:

American Journal of Gastroenterology, Clinical Gastroenterology and Hepatology, Gastroenterology, Immunity, Inflammatory Bowel Diseases, Journal of Clinical Gastroenterology, Journal of Experimental Medicine, Journal of Immunology, Journal of Leukocyte Biology, Molecular and Cellular Biology, Nature

Grants/Contracts

Principal Investigator**,** start 07/01/2010 - end 06/30/2011
"Macrophage Gene Expression in Mucosal Inflammation"
NIH/NIDDK, 2 R01-DK-054452
Total direct costs $225,000
30% effort

Principal Investigator, start 11/30/2009 – present
"Safety and Pharmacokinetics of Single Dose Intravenous Anti-IL-23 Antibody SCH 900222 in Subjects With Crohn's Disease"
Schering-Plough Corporation
Total direct costs $58,635
5% effort

Principal Investigator, start 10/23/2009 - present
"Observational Study of Biomarkers in Subjects with Inflammatory Bowel Disease (IBD) Compared with Non-IBD Control Subjects"
Genentech, Inc.
Total direct costs $42,159
5% effort

Co-Principal Investigator, start 12/01/2009 - end 11/30/2010
(PI First Name: Ted PI Last Name: Denson)
"Biomarkers of IBD Behavior and Treatment Response"
NIH/NIDDK, R01-DK-078683
Total direct costs to Plevy $347,940
10% effort

Director, Immunotechnologies Assay Core, start 12/01/2009 – end 06/30/2011
(PI First Name: Robert PI Last Name: Sandler)
NIH/NIDDK, P30- DI-34987
Total direct costs to Plevy $66,000
5% effort

Grant Review Service

Chair, American Gastroenterology Association Rustgi International Travel Award Review Panel	2009 -
Co-Chairman, Crohn's and Colitis Foundation of America National Scientific Advisory Council (NSAC) Research Training Awards Committee	2008 -
Member Grants Review Committee, American Gastroenterological Association Foundation for Digestive Health and Nutrition	2007 -
Member, American Gastroenterological Association Pilot Grant Review Panel	2007 -
Member, American Gastroenterological Association Foundation Student Abstract Prize Review Panel	2007 -
Chair, American Gastroenterological Association Fellowship to Faculty Transition Award Review Panel	2007 -
Chair, American Gastroenterological Association Rustgi International Travel Award Review Panel	2007 -

Charter Member, NIDDK; Gastrointestinal Mucosal Biology and Pathobiology Study Study Section	2006 -
NIDDK; Review Committee P30 Core Center Grant	2005
NIDDK; Special Emphasis Panel: Program Announcement "Small Clinical Research Grants in Digestive Diseases and Nutrition"	2002 - 2005

Honors/Awards

- American Society for Clinical Investigation 2007

UNC Leadership

Director, Immunotechnologies Assay Core

Committee Service

University of North Carolina, Chapel Hill

Member, Radiation Safety Committee	2008 -

Outside UNC

Vice Chair, Education Committee, Federation of Clinical Immunology Societies	2009 -
Co-Organizer, Keystone Symposia: "Innate, Adaptive and Regulatory Immune Responses to Intestinal Microbiota"	2009 -
Member, National Scientific Advisor Committee, Crohn's and Colitis Foundation of America Research Awards Committee	2008 -
Member, Data and Safety Monitoring Board. A Phase III, multicenter, placebo-controlled, randomized, double-blind study to evaluate the safety & efficacy of PROCHYMAL intra-venous infusion for the induction of remission in subjects ex-periencing treatment-refractory moderate-to-severe CD	2007 - 2009
Member, Data Monitoring Committee. A Randomized, Double-Blind, Placebo-Controlled Evaluation of the Safety, Efficacy, and Pharmacokinetics of Multiple Doses of Basilixi-Mab, with Concomitant Corticosteroids, in Steroid Refractory Ulcerative Colitis	2007 - 2009
Federation of Clinical Immunology Societies (FOCiS): FOCiS Centers of Excellence Steering Committee	2006 - 2009

AGA Institute Council, Immunology, Microbiology and Inflammatory Bowel Diseases Section Nominating Committee	2006 - 2008
University of North Carolina at Chapel Hill Center for Gastrointestinal Biology and Disease Executive Committee P30 DK34987	2006 -
University of North Carolina Basic Science Training Grant: Gastroenterology Research Steering Committee, USPHS T32 DK 07737-11	2006 -
Director, Federation of Clinical Immunology Societies (FOCiS) Center of Excellence, University of North Carolina School of Medicine	2006 -
External Advisory Committee, Type I Diabetes TrialNet (NIH)	2006 -
External Advisory Panel, Immune Tolerance Network (NIAID)	2005
Steering Committee, Autoimmunity Centers of Excellence; National Institutes of Health, NIAID	2003 - 2006
Executive Committee and Chapter Medical Advisory Committee Western Pennsylvania/West Virginia Chapter, Crohn's and Colitis Foundation of America	2003 - 2006
Professional Education Committee, Crohn's and Colitis Foundation of America	2003 - 2006
Clinical Director, University of Pittsburgh Autoimmunity Center of Excellence	2003 - 2006
University of Pittsburgh Interdisciplinary Biomedical Graduate Program Admissions Committee (Department of Immunology Representative)	2002 - 2006
Chair, Data and Safety Monitoring Board, National Institutes of Health, NIDDK. A Randomized Controlled Trial of Rosiglitazone for Ulcerative Colitis. 1 R01 DK059961-01	2002 - 2006
Steering Committee, GI Young Investigators Award Program; The REGAL (Research Excellence in GI & Liver) Awards	2002 - 2006
Member, Advances in Inflammatory Diseases, Crohn's and	2001 -

Colitis Foundation of America's Clinical & Research Conferences Committee

Director, Federation of Clinical Immunology Societies Center of Center of Excellence, University of Pittsburgh School of Medicine 2001 - 2006

Professional Meetings/Societies

Meeting organization

1. Course Director, Federation of Clinical Immunology Societies FOCiS 2010. Interventional Immunology. Boston, MA, June 24, 2010.
2. Co-Moderator, 2009 Crohn's and Colitis Foundation of America Clinical and Research Conference: 8th Annual Advances in Inflammatory Bowel Diseases. "Understanding the Clinical Aspects of Crohn's Disease and Ulcerative Colitis: Implications for the Basic Scientist". Hollywood, FL, December 5, 2009.
3. Moderator, 2009 AGA Institute Spring Postgraduate Course Program. "Applying New Evidence to Clinical Practice: IBD". Digestive Disease Week 2009, Chicago, IL, June 3, 2009.
4. Session Chair, Digestive Disease Week 2009: "Damage-Associated Molecular Patterns (DAMPs) and Alarmins in Intestinal Inflammation". Chicago, IL, May 30, 2009.
5. Co-Chair, Federation of Clinical Immunology Societies. Center of Excellence Director's Meeting. Macrophage Program: "Clinical Immunology and Biology". Boston, MA, June 4, 2008.
6. Session Chair, Digestive Disease Week. "In vivo Regulation of T Cells by Antigen Presenting Cells". San Diego, CA, May 19, 2008.
7. Block Symposium Co-Chair, The American Association of Immunologists. "Mucosal Surfaces: Inflammation Control Centers". San Diego, CA April 7, 2008.
8. Co-Chair, Federation of Clinical Immunology Societies. Scientific Program: "Genetics". San Diego, CA, June 10, 2007.
9. Chair, Digestive Disease Week oral abstract session. "Innate Immune Responses and Regulation of Apoptosis in Intestinal Inflammation". Washington, DC, May 21, 2007.
10. Chair, American Gastroenterology Association Clinical Practice Session. "Therapy for Crohn's Disease: Optimizing Benefits and Minimizing Risks". Digestive Disease Week. Washington, DC, May 21-22 2007.
11. Director, University of Pittsburgh School of Medicine CME Symposium. Future Possibilities for Treating the Complicated Patient. "The IL-12 Family in Immune-Mediated Inflammatory Disorders". Pittsburgh, PA, April 6, 2006.

Meeting participation

1. Course Director, Federation of Clinical Immunology Societies FOCiS 2010. Interventional Immunology. Boston, MA, June 24, 2010.

2. Visiting Professor, University of British Columbia, Centre for Immunity in Health and Disease. "Regulation of Homeostatic Pathways and Macrophage Activation in IBD". Vancouver, British Columbia, June 9, 2010.
3. Invited Speaker, Clinical Immunology Society Corporate Thursday: New Biotherapeutics and Immune Deficiency. "Novel Biologics in IBD". Philadelphia, PA, May 20, 2010.
4. Faculty CME Speaker, 2010 Update in Gastroenterology & Hepatology Conference, University of North Carolina Department of Medicine. "Rational Use of Biologics in IBD". Friday Center, Chapel Hill, NC, April 16, 2010.
5. Faculty Speaker, Autoimmune Disease Conference. University of North Carolina School of Nursing. "Understanding Inflammatory Bowel Disease. Chapel Hill, NC, April 8, 2010.
6. Invited Speaker, Crohn's and Colitis Foundation of America, Illinois Chapter, Inflammatory Bowel Disease Education Symposium: State of the Art: New Advances and Treatments of IBD. "My Patient has Moderate to Severe IBD: What we have and what to use when it doesn't work"; "New Targets for Treatment in IBD: What is in the Pipeline". Chicago, IL, March 13, 2010.
7. Visiting Professor, University of Chicago Medical Center, Inflammatory Bowel Disease Center. "Macrophage Homeostatic Pathways and IBD". Chicago, IL, March 11-12, 2010.
8. Invited Speaker, Federation of Clinical Immunology Societies 2010 Advanced Course in Basic and Clinical Immunology. "New and Emerging Immune Therapies". Scottsdale, AZ, February 27, 2010.
9. Invited Speaker, 2009 Crohn's and Colitis Foundation of America Clinical and Research Conference: 8th Annual Advances in Inflammatory Bowel Diseases. "Macrophages in IBD". Hollywood, FL, December 5, 2009.
10. Co-Moderator, 2009 Crohn's and Colitis Foundation of America Clinical and Research Conference: 8th Annual Advances in Inflammatory Bowel Diseases. "Understanding the Clinical Aspects of Crohn's Disease and Ulcerative Colitis: Implications for the Basic Scientist". Hollywood, FL, December 5, 2009.
11. Invited Speaker, 2009 Crohn's and Colitis Foundation of America Clinical and Research Conference: 8th Annual Advances in Inflammatory Bowel Diseases. "Unanswered Research Questions in the Immunology of IBD". Hollywood, FL, December 4, 2009.
12. Invited Faculty, 2009 Crohn's and Colitis Foundation of America Clinical and Research Conference: 8th Annual Advances in Inflammatory Bowel Diseases. Progress in IBD Therapy: Achieving Current and Future Therapeutic Goals: "Where Are We Heading: Future Trends in IBD Therapy". Hollywood, FL, December 4, 2009.
13. Invited Speaker, The 3rd Annual & US Collaboration Conference in Gastroenterology (JUCC):
"Positioning of Biologics for IBD Treatment". Tokyo, Japan, November 20, 2009.
14. Visiting Professor, Massachusetts General Hospital Center for the Study of Inflammatory Bowel Disease Workshop. "Macrophages Coordinate Sentinel Responses in Intestinal Immunity". Boston, MA, November 14, 2009.
15. Visiting Professor, The 64th Japan Society of Coloproctology Congress: "Postoperative management of Crohn's disease: preventing endoscopic recurrence and altering the natural course of disease". Fukuoka, Japan, November 9 & 10, 2009.
16. Invited Speaker, American College of Gastroenterology 2009 Regional Postgraduate CME Course. "IBD Updates—Things You Need to Know". Williamsburg, VA, September 13, 2009.

17. Invited Speaker, Federation of Clinical Immunology Societies 2009 Research Symposium: Mucosal Autoimmunity. "Macrophage Tolerance to the Enteric Microbiota and Inflammatory Bowel Disease". San Francisco, CA, June 13, 2009.
18. Invited Speaker, Federation of Clinical Immunology Societies 2009 Interventional Immunology Course. "Targeting Innate Immunity". San Francisco, CA, June 11, 2009.
19. Moderator, 2009 AGA Institute Spring Postgraduate Course Program. "Applying New Evidence to Clinical Practice: IBD". Digestive Disease Week 2009, Chicago, IL, June 3, 2009.
20. Invited Speaker, Digestive Disease Week 2009: Meet the Professor Luncheon Session. "Medical Therapy of Ulcerative Colitis". Chicago, IL, June 3, 2009.
21. Session Chair, Digestive Disease Week 2009: "Damage-Associated Molecular Patterns (DAMPs) and Alarmins in Intestinal Inflammation". Chicago, IL, May 30, 2009.
22. Invited Speaker, Biologic Therapies Summit III: Focusing on Infections, Malignancies, Cardiovascular Disease and Other Comorbidities in Special Populations. "New Agents in Gastroenterology". Cleveland Clinic, Cleveland, OH, May 8, 2009.
23. Invited Faculty, Crohn's Disease: Understanding the Cause and the Treatment. "New Biologics: What's Here and What's Coming". Yale Medical School, New Haven, CT, April 17, 2009.
24. Invited Speaker, 2009 Biological Therapeutics for Autoimmune Diseases Symposium. "The Changing Face of Treatment for Inflammatory Bowel Disease". Leader, Breakout Session: "Managing Autoimmune Diseases for the Non-Specialist: IBD". Northwestern University, Feinberg School of Medicine, Chicago, IL, April 4, 2009.
25. Invited Speaker, University of Pennsylvania The 6th Penn Inflammatory Bowel Disease Symposium: Current Update and Future Directions. "The Innate Immune System in IBD" and "When All Else Fails--Uncommon Therapies". Philadelphia, PA, March 20, 2009.
26. Invited Speaker, Pacific Northwest IBD Symposium. "Anti-adhesion Therapy and Their Role in IBD". Seattle, WA, March14, 2009.
27. Invited Speaker, Federation of Clinical Immunology Societies 2009 Advanced Course in Basic and Clinical Immunology. "New and Emerging Immune Therapies". Scottsdale, AZ, February 21, 2009.
28. Invited Speaker, 2009 Keystone Symposium: Innate, Adaptive and Regulatory Immune Responses to Intestinal Microbiota. "Protective Role of Heme Oxygenase and PI3 Kinase Isoforms". Chair, "Dendritic Cell Function at Mucosal Surfaces"; "Translation of Basic Research to Biomedical Applications". Taos, NM, January 14-17, 2009.
29. Visiting Professor, University of Alabama at Birmingham Grand Rounds. "What Doesn't Kill You Makes You Stronger: Macrophage Activation, Carbon Monoxide, and IBD", "IBD Research & Treatment-Update". Birmingham, AL, January 12, 2009.
30. Visiting Professor, Eastern Virginia Medical School, Department of Internal Medicine, Grand Rounds. "Optimizing the Management of Crohn's Disease". Norfolk, VA, December 10, 2008.
31. Invited Speaker, 2008 National Crohn's and Colitis Foundation of America Clinical and Research Conference: 7th Annual Advances in Inflammatory Bowel Diseases. "What is the Role of Adaptive Immune System Research in IBD?" Hollywood, FL, December 6, 2008.
32. Visiting Professor, Brigham-Womens Hospital. "What Doesn't Kill You Makes You Stronger: Macrophage Activation, Carbon Monoxide, and IBD". Boston, MA, November 10, 2008.

33. Invited Speaker, South Carolina Gastroenterology Association Physician/Patient IBD Update. "The Clinical Value of New Biologics in IBD", "New Biologics in IBD". Columbia, SC, October 25, 2008.
34. Visiting Professor, Johns Hopkins University School of Medicine. Topics in Gastroenterology & Liver Disease 34th Annual CME course. "New Biologics: Integrating Natalizumab and Other New Biologics in your IBD Practice", "Difficult IBD Cases: Roundtable Discussions" (Co-facilitator), "Choosing Wisely in Therapy of Moderate to Severe IBD" (Co-Facilitator). Baltimore, MD, October 15, 2008.
35. Visiting Professor, Mayo Clinic, Division of Gastroenterology and Hepatology. "What Doesn't Kill You Makes You Stronger: Carbon Monoxide, Macrophage Inhibition, and IBD". Rochester, MN, September 8, 2008.
36. Invited Speaker, 3rd Annual DAMPs and Alarmins Symposium. "Inflammatory Bowel Disease". Pittsburgh, PA, September 2, 2008.
37. Invited Speaker, Crohn's and Colitis Foundation of America CME Physician/Patient Education Day. "Anti-TNF Therapy & Natalizumab in Crohn's Disease", "Immunosuppressants and Anti-TNF Therapy in Ulcerative Colitis", "Evolving Research in IBD", "Update on Medical Treatment of IBD". Atlanta, GA, August 23, 2008.
38. Visiting Professor, University of Maryland School of Medicine. "Best of DDW: Advances in Diagnosis". Baltimore, MD, June 21, 2008.
39. Session Chair, Federation of Clinical Immunology Societies. "Translational Uses of Humanized Mice". Boston, MA, June 7, 2008.
40. Federation of Clinical Immunology Societies. Trainee Satellite Symposium. Interventional Immunology Course: "Harnessing the Th1 and Th17 Pathways for Treatment of IBD". Boston, MA, June 5, 2008.
41. Co-Chair, Federation of Clinical Immunology Societies. Center of Excellence Director's Meeting. Macrophage Program: "Clinical Immunology and Biology". Boston, MA, June 4, 2008.
42. Session Chair, Digestive Disease Week. "In vivo Regulation of T Cells by Antigen Presenting Cells". San Diego, CA, May 19, 2008.
43. American Gastroenterology Association Spring Postgraduate Course. Session III-IBD, Digestive Disease Week. "Role of Genes, Cytokines & Environment in IBD". San Diego, CA, May 17, 2008.
44. Faculty CME Speaker, UNC Physician/Patient Education Day, Department of Medicine. "The Clinical Value of New Biologics in IBD". Friday Center, Chapel Hill, NC, May 3, 2008.
45. Invited Speaker, 2nd Annual Exchange on Advances in IBD. "Pathogenesis of Crohn's Disease Pathophysiology: Recent Insights". Valencia, Spain, April 25, 2008.
46. Block Symposium Co-Chair, The American Association of Immunologists. "Mucosal Surfaces: Inflammation Control Centers". San Diego, CA April 7, 2008.
47. Visiting Professor, University of Southern California. Grand Rounds. "Pathophysiology of IBD". Los Angeles, CA, April 3 & 4, 2008.
48. Crohn's and Colitis Foundation of America IBD Education Symposium. Knowledge is Power. "Beyond Anti-TNFs: What Does the Future Hold?"; "Genetics". Rosemont, IL, March 29, 2008.

49. Annenberg Center for Health Sciences. Advancing IBD Management through Mentoring-Evolving Concepts with Biologics in Inflammatory Bowel Disease. "The Immunopathologyphysiology of IBD-2008 Update". Rancho Mirage, CA, February 29, 2008.
50. Visiting Professor, Duke University, Department of Immunology. "Pathogenesis of IBD". Durham, NC, January, 2008.
51. Crohn's and Colitis Foundation of America Research and Clinical Conference: 6th Annual Advances in the Inflammatory Bowel Diseases. "Future Strategies Targeting the Adaptive Immune System for IBD Treatment". Aventura, FL, December 9, 2007.
52. Collaborations in IBD: A Fellows Mentoring Program 2007. "Surgery in IBD: Pre- and Postoperative Considerations". Chandler, AZ, November 10, 2007.
53. Visiting Professor, Emory University. "What Doesn't Kill You Makes You Stronger: Carbon Monoxide, Macrophage Inhibition, and IBD". Atlanta, GA, November 2, 2007.
54. Invited Speaker, Gastroenterology International Round Table. "New Advances in Crohn's disease and Ulcerative Colitis". Toronto, Canada, September 27, 2007.
55. Co-Chair, Federation of Clinical Immunology Societies. Scientific Program: "Genetics". San Diego, CA, June 10, 2007.
56. Chair, Digestive Disease Week oral abstract session. "Innate Immune Responses and Regulation of Apoptosis in Intestinal Inflammation". Washington, DC, May 21, 2007.
57. Chair, American Gastroenterology Association Clinical Practice Session. "Therapy for Crohn's Disease: Optimizing Benefits and Minimizing Risks". Digestive Disease Week. Washington, DC, May 21-22 2007.
58. Annenberg Center for Health Sciences: Advancing IBD Management through Mentoring-Evolving Concepts with Biologics in Inflammatory Bowel Disease. "The Immunopathologyphysiology of IBD to Determine Specific Targets for Biologic Therapy". Rancho Mirage, CA, May 4, 2007.
59. Faculty CME Speaker, North Carolina University School of Medicine, Department of Medicine. "Current Perspectives on Treatment and Management of Moderate-to-Severe Crohn's Disease". Chapel Hill, NC, April 16, 2007.
60. University of Pennsylvania 5th Inflammatory Bowel Disease Symposium. "What the Clinician Needs to Know About Innate Immunity", "Novel Approaches to Treating Ulcerative Colitis". Co-Chair: "Difficult and Illustrative Cases". Philadelphia, PA, March 23-24, 2007.
61. 5th Annual Advances in the Inflammatory Bowel Diseases. 2006 National Crohn's and Colitis Foundation of America Research and Clinical Conference: "Future Strategies Against Adaptive Immunity for IBD Treatment". Miami, FL, December 3, 2006.
62. Visiting Professor, Rush University Medical Center. Internal Medicine Grand Rounds: "Biologic Therapy in IBD: Changing Treatment Paradigms". Chicago, IL, November 8, 2006.
63. Annual University of Pennsylvania Multidisciplinary Approach to the Treatment of Immune-Mediated Inflammatory Disorders Symposium. "Basic Immunology for the Clinician: Cytokines and Chemokines". Philadelphia, PA, November 4, 2006.
64. Invited Speaker, Johns Hopkins School of Medicine, Gastroenterology Grand Rounds. "Recent Advances in Biological Therapy for Crohn's Disease". Baltimore, MD, October 26, 2006.
65. Invited Speaker, American Academy of Blood Bank Medicine Annual Meeting. "Role of Selective Adsorptive Apheresis in IBD Treatment". Miami, FL, October 23, 2006.

66. Centocor Annual International Gastroenterology Round Table. "Anti-IL-12, Anti-IL-23 and Anti-CD Strategies in IBD". Amsterdam, Netherlands, September 15, 2006.
67. Invited Speaker and Symposium Co-Chair, 12th International Conference on Ulcer Research. "Optimizing Anti-TNF Therapy in Crohn's Disease", "IBD – Basic Science". Osaka, Japan, July 8-9, 2006.
68. Invited Speaker, 10th Annual United States/Japan GI Research Meeting. "What Doesn't Kill You Makes You Stronger: Carbon Monoxide, Macrophage Inhibition, and IBD". Tokyo, Japan, June 30, 2006.
69. Invited Speaker, Federation of Clinical Immunology Societies Trainee Satellite Symposium. "Inflammatory Bowel Disease 2006 – An Update". San Francisco, CA, June 1, 2006.
70. Invited Speaker, American Gastroenterology Association Symposium. Digestive Disease Week. "Immune Reactions to Luminal Nutrients". Los Angeles, CA, May 22, 2006.
71. Invited Speaker, University of Rochester Medical Center. Invited Speaker Series: "Immunomodu-lation in Human and Murine Inflammatory Bowel Disease". Rochester, NY, May 4, 2006.
72. Director, University of Pittsburgh School of Medicine CME Symposium. Future Possibilities for Treating the Complicated Patient. "The IL-12 Family in Immune-Mediated Inflammatory Disorders". Pittsburgh, PA, April 6, 2006.
73. Broad Medical Research Program. Fourth Annual Investigator Meeting. Oral Presentation: "*Clostridium perfringens* as a Novel Therapeutic Vehicle in Inflammatory Bowel Disease". Los Angeles, CA, March 23-24, 2006.
74. Visiting Professor, Duke University Medical Center Gastroenterology Grand Rounds. "TNF Antagonists: Evolution of the Treatment of Inflammatory Bowel Diseases". Durham, NC, February 16, 2006.
75. Visiting Professor, University of Cincinnati Medical Grand Rounds. "Biologic therapy in IBD: high tech to low tech". Cincinnati, OH, January 12, 2006.
76. Visiting Professor, University of Kentucky Gastroenterology Grand Rounds. "What doesn't kill you, makes you stronger: Carbon Monoxide, macrophages, and IBD". Lexington, KY, December 9, 2005.
77. Invited Speaker, Crohn's and Colitis Foundation of America 4th Annual Advances in the Inflammatory Bowel Diseases. "Strategies Against T cells/TNF/Cytokines". Miami Beach, Florida, December 3, 2005.
78. 4th Annual Western Canada IBD Symposium. "Future Therapies in UC". Banff, AB, Canada, November 20, 2005.
79. American College of Rheumatology Annual Scientific Meeting. "Gastroenterology Update for the Rheumatologist". San Diego, CA, November 13, 2005.
80. University of Calgary Gastrointestinal Research Group: Immunology Research Group Annual Symposium 2005. "Novel Therapeutics of IBD: Targeting the Lymphocyte". Kananaskis, Alberta, Canada, October 28, 2005.
81. Japanese Gastroenterology Round Table. "Altering the Natural Course of Crohn's Disease: Benefit/Risk Assessment of Infliximab Therapy". Tokyo, Japan, October 22, 2005.

Society Leadership

Vice Chair, Education Committee, Federation of Clinical Immunology Societies	2009 -

Society membership

The American Physiological Society	2007 -
American Society for Clinical Investigation	2007 -
Society for Mucosal Immunology	2004 -
American Association of Immunologists	2004 -
American Society for Biochemistry and Molecular Biology	2003 -
Crohn's and Colitis Foundation of America	1996 -
American Gastroenterological Association	1994 –

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Name: **Nancy Raab-Traub**

Academic Title: **Sarah Graham Kenan Professor**

Primary Appointment: **Department of Microbiology & Immunology**

Publications

Primary literature

Fotheringham JA, Mazzucca S, Raab-Traub N. (2010) Epstein Barr Virus Latent Membrane Protein-2A-Induced DeltaNp63alpha expression is associated with impaired epithelial-cell differentiation. *Oncogene* **29**:4287-96

Kung CP, Raab-Traub N. Epstein-Barr Virus Latent Membrane Protein 1 Modulates Distinctive NF-{kappa}B Pathways through C-Terminus-Activating Region 1 To Regulate Epidermal Growth Factor Receptor Expression. (2010) *J Virol.* **84**:6605-14.

Everly DN Jr, Mainou BA, Raab-Traub N. (2009) Transcriptional downregulation of p27KIP1 through regulation of E2F function during LMP1-mediated transformation. *J Virol.* **83**:12671-9.

Shair KH, Schnegg CI, Raab-Traub N. (2009) Epstein-Barr virus latent membrane protein-1 effects on junctional plakoglobin and induction of a cadherin switch. *Cancer Res.* **69**:5734-42.

Everly DN Jr, Mainou BA, Raab-Traub N. (2009) Transcriptional downregulation of p27KIP1 through regulation of E2F function during LMP1-mediated transformation. *J Virol.* **83**:12671-9.

Wheless SA, Gulley ML, Raab-Traub N, McNeillie P, Neuringer IP, Ford HJ, Aris RM. (2008) Post-transplantation lymphoproliferative disease: Epstein-Barr virus DNA levels, HLA-A3, and survival. *Am J Respir Crit Care Med*. **178**:1060-5.

Edwards RH, Marquitz AR, and Raab-Traub N. (2008) Epstein-Barr virus BART microRNAs are produced from a large intron prior to splicing. *J Virol*. **82**:9094-9106.

Shair KH, Schnegg CI, and Raab-Traub N. (2008) EBV latent membrane protein 1 effects on plakoglobin, cell growth, and migration. *Cancer Res*. **68**:6997-7005.

Siler, CA and Raab-Traub, N. (2008) Rhesus Lymphocryptovirus Latent Membrane Protein 2A Activates beta-catenin signaling and Inhibits Differentiation in Epithelial Cells. *Virology* **377**: 273-279.

Kung, C.P and Raab-Traub, N. (2008) Epstein-Barr Virus Latent Membrane Protein 1 Induces Expression of the Epidermal Growth Factor Receptor Through Effects on Bcl-3 and STAT3. *J Virol*. **82**: 5486-5493.

Everly, D, Mainou, B, and Raab-Traub, N. (2008) The Id Proteins Contribute to the Growth of Rodent Fibroblasts During LMP1-Mediated Transformation. *Virology* **376**:258-269.

Shair, KHY., Bendt, KM., Edwards, RH, Bedford, EC, Nielsen, JN, and Raab-Traub, N. (2007) EBV Latent Membrane Protein-1 activates Akt, NFkB and Stat3 in B cell lymphomas. *PLOS Pathogens*, **3:**166. Epub.

Thornburg, NJ, Kusano S., and Raab-Traub, N. (2007) Induction of EGFR expression by EBV LMP1 is mediated by NF-kB p50 homodimer/bcl3 complexes. *J. Virol.* **81**:12954-66.

Mainou, BA, Everly, D and Raab-Traub, N. (2007) Unique signaling properties of CTAR1 in LMP1-mediated transformation. *J Virol*. **81**:9680-92.

Mainou, BA, and Raab-Traub, N. (2006) LMP1 strain variants: biological and molecular properties. *J Virol*. **80**:6458-68.

Tierney RJ, Edwards RH, Sitki-Green D, Croom-Carter D, Roy S, Yao QY, Raab-Traub N, and Rickinson AB. (2006) Multiple Epstein-Barr virus strains in patients with infectious mononucleosis: comparison of ex vivo samples with in vitro isolates by use of heteroduplex tracking assays. *J Infect Dis*. **193**:287-97.

Cai, X., Schafer A., Lu S, Bilello JP, Desrosiers RC, Edwards R, Raab-Traub N, and Cullen BR. (2006) Epstein-Barr virus microRNAs are evolutionarily conserved and differentially expressed. *PLoS Pathog* **2**:23. Epub.

Thornburg N, Kulwichit W., Edwards, B., Shair HJ, Bendt KM, and Raab-Traub, N. (2006) LMP1 Signaling and Activation of NF-κB in LMP1 Transgenic Mice. *Oncogene,* **25**:288-97.

Mainou B., Everly D., and Raab-Traub, N. (2005) Epstein-Barr Virus Latent Membrane Protein 1 CTAR1 Mediates Rodent and Human Fibroblast Transformation through Activation of PI3K. *Oncogene* **24**:6917-6924.

Wakisaka N, Yoshizaki T, Raab-Traub N, Pagano JS. (2005) Ribonucleotide reductase inhibitors enhance cidofovir-induced apoptosis in EBV-positive nasopharyngeal carcinoma xenografts. *Int J Cancer*. **116**:640-5.

Morrison, JA and Raab-Traub, N. (2005) The Roles of the ITAM and PY motifs of Epstein-Barr virus latent membrane protein 2A in the inhibition of epithelial cell differentiation and activation of β-catenin. *J. Virol*. **79**:2375-2382.

Ardila-Osorio, H., Pioche-durieu, C., Puvio-Dutilleul, F., Clausse, B., Wiels, J., Miller, W., Raab-Traub, N. and Busson, P. (2005) TRAF interactions with raft-like buoyant complexes, better than TRAF rates of degradation, differentiate signaling by CD40 and EBV latent membrane protein 1. *Int J Cancer*. **113**:267-75. .

Reviews & commentaries

Raab-Traub, N. Chapter 12. Epstein-Barr Virus Transforming Proteins: Biologic Properties and Contribution to Oncogenesis. DNA Tumor Viruses. (Springer, NYC, NY). 2009.

Raab-Traub, N. Chapter 55. EBV-Induced Oncogenesis. In: The Human Herpesviruses: Biology, Therapy, and Immunoprophylaxis. (Cambridge Press, Cambridge, UK). 2007.

Raab-Traub, N. Epstein Barr Virus in the Pathogenesis of NPC. In: Epstein-Barr Virus (Caister Academic Press, Norfolk, UK), 2005

Raab-Traub, N. Epstein Barr Virus in the Pathogenesis of NPC. In: Epstein-Barr Virus: Pathogenesis, Molecular Biology, and Infection Control. Horizon Press, 2005.

Editorial Responsibilities

Editorial boards
Associate Editor; Journal of Virology - 2002 - present
Associate Editor; Cancer Research 2001 - present
Associate Editor; Molecular Carcinogenesis 1990 - present
Editorial Board; Journal of Virology 1991 - 2002
Editorial Board; Virology 1998 - 2007
Editorial Board; Current Molecular Medicine 1999 - present

Ad hoc reviewer for:

American Journal of Pathology, Blood, International Journal of Cancer, Journal of National Cancer Institute, Journal of Infectious Diseases, Oncogene, Proceedings of National Academy of Science, Science

Grants/Contracts
Principal Investigator: Raab-Traub 07/01/10-6/30/15
EBV Expression in Nasopharyngeal Carcinoma
National Cancer Institute 2-RO1-CA32979-18
Total Direct Costs: $250,000
% Effort: 20.00%

Principal Investigator: Raab-Traub 8/01/04-7/31/10
Epstein-Barr Virus: Activation of WNT
National Cancer Institute 1 RO1 CA 103634-01
Total Direct Costs: $250,000.00
% Effort 20.00%

Principal Investigator: Raab-Traub 12/01/09-11/30/14
EBV BART miRNAs: Identification of Targets and Characterization of the Effects on Cellular Growth Regulation
R01CA138811-01A1
Total Direct Costs: $250,000
% Effort: 20%

Principal Investigator: Raab-Traub 08/01/05-7/31/10
Herpesviral Oncogenesis, Latency and Reactivation - Administrative Core
National Cancer Institute 2-P01-CA19014-25 $55,751
% Effort: 5%

Principal Investigator: Raab-Traub 08/01/05-7/31/10 Herpesviral Oncogenesis, Latency and Reactivation - #6 Transformation by EBV Latent Membrane Protein 1 (LMP1)
National Cancer Institute 2-P01-CA19014-25
Total Direct Costs: $252,748
% Effort: 20%

Grant Review Service

NCI Scientific Review Group-Parent Subcommittee C, member, 2005- 2009.

Honors/Awards

Croucher Foundation Speaker, Hong Kong, 2006
Sarah Graham Kenan Distinguished Professor, 2006
American Society for Virology State of the Art Lecturer, Ithaca, 2008
Henle Lecture, International Association for the Study of the Epstein-Barr Virus, Guangzhou, PRC. 2008
Fellow of the American Academy of Microbiology, 2009
Hyman Battle Distinguished Cancer Research Award, 2009

UNC Leadership

Program Leader for Virology in the Lineberger Comprehensive Cancer Center 1990-present
Lineberger Program Planning Committee 1995-present

Committee Service

University of North Carolina, Chapel Hill
Pilot Woods Award Selection Committee 2001-present
Jefferson-Pilot Selection Committee 2001-present
Research Advisory Council 2003-2006
Search Committee, Chairman of Biochemistry, 2006.
Post-tenure review committee, 2007.
Space committee - 2009 -present

Outside UNC
AACR Nominating Committee 2003 – 2005
AACR Award for Outstanding Achievement in Cancer Research committee 2005-2008
AACR Laboratory Research Award Selection Committee 2005-2008
AACR Clowes Award Selection Committee 2005-2008

Professional Meetings/Societies

Meeting organization
International Symposium on EBV, International Organizing Commitee, Boston, 2006.
International Workshop on Herpesviruses, Co-chairman, Asheville, NC, 2007
East-West Symposium on Nasopharyngeal Carcinoma, International Organizing Committee, Brisbane, 2007
International Symposium on EBV, International Organizing Commitee, Guangzhou, 2008.
International Symposium on Nasopharyngeal Carcinoma, Marrakech, 2009
NCI - Workshop on Novel Viruses Associated with Human Cancer. Grave's Mountain, VA, 2010

Meeting participation

Invited Speaker: 12th International Conference on Immunobiology and Prophylaxis of Herpesvirus Infection – Osaka, Japan 2005

Invited Speaker: ASM Conference on Immune Evasion, Acapulco, Mexico, 2005

Invited Speaker: International Meeting of the Institute of Human Virology, Baltimore, MD, 2005

Invited Speaker: NCI Workshop on Viral Oncogenes, Santa Fe, 2005

Invited Speaker: East-West Symposium on Nasopharyngeal Carcinoma, Toronto, 2005

Invited Speaker: Croucher Foundation Symposium on Nasopharyngeal Carcinoma, Hong Kong, 2006

Invited Speaker: East-West Symposium on Nasopharyngeal Carcinoma, Brisbane, 2007

Invited Speaker: 7th Annual Symposium on Virology, Lincoln, Nebraska 2007

Invited Speaker: 13th International Conference on Immunobiology and Prophylaxis of Herpesvirus Infection – Orvieta, Italy 2007

Invited Speaker: American Society for Virology "State of the Art" speaker. Ithaca, NY, 2008

Henle Lecture, International Association for the Study of the Epstein-Barr Virus, Guangzhou, PRC. 2008

Invited Speaker: AACR " Infection and Cancer: Biology, Therapeutics, and Prevention", Hong Kong 2008

Invited Speaker: 4th International Symposium on Nasopharyngeal Carcinoma, Marrakech, 2009

Invited Speaker: NCI - Workshop on Novel Viruses Associated with Human Cancer. Grave"s Mountain, VA, 2010

Society leadership
American Society for Microbiology. Chairman, DNA Viruses, 1997-98
International Epstein-Barr Virus Association. Governing Board, 1992-2006. Treasurer, 1994-2006

Society membership
American Society for Microbiology
American Society for Virology
American Association for the Advancement of Science
International Epstein-Barr Virus Association
American Association for Cancer Research

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

John F. Rawls, Ph.D.

Assistant Professor

Primary Appointment: Department of Cell and Molecular Physiology

Joint Appointment(s): Department of Microbiology and Immunology

Publications

Primary literature

1. Rawls, J.F., Mahowald, M.A., Ley, R.E., and Gordon, J.I. (2006) Reciprocal gut microbiota transplants from zebrafish and mice to germ-free recipients reveal host habitat selection. *Cell* **127**(2): 423-433.

2. Rawls, J.F., Mahowald, M.A., Goodman, A.L., Trent, C.M., and Gordon, J.I. (2007) In vivo imaging and genetic analysis link bacterial motility and symbiosis in the zebrafish gut. *Proceedings of the National Academy of Science U.S.A.* **104**(18): 7622-7627.

3. Pham, L.N., Kanther, M., Semova, I., and Rawls, J.F. (2008) Methods for generating and colonizing gnotobiotic zebrafish. *Nature Protocols* **3**(12): 1862-1875.

4. Flynn, E.J., Trent, C.M., and Rawls, J.F. (2009) Ontogeny and nutritional control of adipogenesis in zebrafish (*Danio rerio*). *Journal of Lipid Research* **50**(8): 1641-1652.

5. Volkman, H.E., Pozos, T.C., Zheng, J., Davis, J.M., Rawls, J.F., and Ramakrishnan, L. (2010) Tuberculous granuloma induction via interaction of a bacterial secreted protein with host epithelium. *Science* **327**(5964): 466-469.

6. Shen, X.J., Rawls, J.F., Randall, T., Burcal, L., Mpande, C.N., Jenkins, N., Jovov, B., Abdo, Z., Sandler, R.S., and Keku, T.O. (2010) Molecular characterization of mucosal adherent bacteria and associations with colorectal adenomas. *Gut Microbes* **1**(3):1-10.

Reviews & commentaries

1. Rawls, J.F. (2007) Enteric infection and inflammation alter gut microbial ecology. *Cell Host & Microbe* **2**(2): 73-74.

2. Camp, J.G., Kanther, M., Semova, I., and Rawls, J.F. (2009) Patterns and scales in gastrointestinal microbial ecology. *Gastroenterology* **136**(6): 1989-2002.

3. Kanther, M., and Rawls, J.F. (2010) Host-microbe interactions in the developing zebrafish. *Current Opinion in Immunology* **22**: 10-19.

Editorial Responsibilities

Editorial boards

2008-present Associate Editor, *Gut Microbes*

Ad hoc reviewer for:

AJP Gastrointestinal & Liver Physiology, Cell Host & Microbe, Developmental Dynamics, Digestive Diseases & Sciences, Gastroenterology, Gene Expression Patterns, ISME Journal, Journal of Lipid Research, PLoS One, PLoS Pathogens, PNAS, Research in Microbiology

Grants/Contracts

Principal Investigator, 7/1/2008-6/30/2013
"Microbial regulation of host nutrient metabolism"
NIH/NIDDK 5 R01 DK 081426-02
Total direct costs $1,000,000
20% effort

Principal Investigator, 7/1/2008-6/30/2012
"Genetic analysis of commensal host-bacterial interactions in the zebrafish intestine"
Pew Scholars in the Biomedical Sciences
Total direct costs $240,000
0% effort

Co-Investigator, 04/01/09-03/31/14
(PI, Temitope Keku)
"Intestinal Microbiota, Diet and Risk of Colorectal Adenomas"
NIH/NCI 1 R01 CA 136887-01
Total direct costs $62,500
5% effort

Principal Investigator, 01/12/2009-31/11/2010
"Forward genetic analysis of adipogenesis in zebrafish"
University Cancer Research Fund (UNC-CH) Pilot Research Project
Total direct costs $49,926
0% effort

Principal Investigator, 5/01/2006 – 4/30/2010
"Microbial regulation of host nutrient metabolism in gnotobiotic zebrafish"
NIH/NIDDK 5 K01 DK 073695-04
Total direct costs $391,600
70% effort

Pilot and Feasibility Award Co-Investigator, 6/1/2008-7/31/2009
(PI, Robert Sandler)
"A novel NF-κB reporter system for studying host-microbe interaction and inflammation in the zebrafish intestine"
NIH/NIDDK 5 P30 DK 034987-23
Total direct costs $29,559
0% effort

Co-Principal Investigator, 03/14/09-03/13/10
(PI, MatthewWolfgang)
"Establishment of the Microbiome Core Facility at UNC School of Medicine"
North Carolina Biotechnology Center Institutional Development Grant
Total direct costs $227,933
0% effort

Pilot and Feasibility Award Principal Investigator, 4/1/2008-3/31/2009
(PI James Swenberg)
"Dietary protein mediates bacterial regulation of host energy balance"
NIH/NIEHS 5 P30 ES 010126-08
Total direct costs $25,000
0% effort

Pilot and Feasibility Award Principal Investigator, 4/1/2007-3/31/2009
(PI Steven Ziesel)
"Nutritional and genetic analysis of zebrafish adipogenesis"
NIH/NIDDK 5 P30 DK 056350-07 (Zeisel)
Total direct costs $46,362
0% effort

Pilot and Feasibility Award Principal Investigator, 6/1/2007-10/31/2008
(PI, Robert Sandler)
"Innate immune responses to the gut microbiota in gnotobiotic zebrafish"
NIH/NIDDK 5 P30 DK 034987-22
Total direct costs $29,559
0% effort

Principal Investigator, 12/1/2002-11/30/2005
"Postembryonic gut development in gnotobiotic zebrafish"
NIH/NIDDK 5 F32 DK 62675-03
Total direct costs $50,548
100% effort

Grant Review Service

Ad hoc member, National Institutes of Health: Special Emphasis Panel/Scientific Review Group ZRG1 DKUS-A (58, 2009/10)

Ad hoc member, French National Research Agency: Integrated Mechanisms of Inflammation Program (2010/05)

Honors/Awards

2008 Pew Scholar in the Biomedical Sciences, Pew Charitable Trust

UNC Leadership

Director, UNC Zebrafish Aquaculture Core Facility

Committee Service

University of North Carolina, Chapel Hill

Member, Interdisciplinary Program in Biomedical Sciences Graduate Admissions Committee (2006-2007)

Member, Qualifying Exam Committee, Curriculum in Genetics and Molecular Biology (2008-2009, Chair in 2009)

Member, Molecular, Cellular, and Developmental Biology Admissions Committee, Biological and Biomedical Sciences Program (2007-present)

Member, Microbiome Core Facility Executive Committee (2007-present)

Faculty Advisor, Zebrafish Undergraduate Research Outreach Program (Joshua Hall, Director) (2010-present)

Professional Meetings/Societies

Meeting organization

Organizer, Triangle Zebrafish Group Meeting (2006, 2009)

Organizer, UNC Microbiome Research Symposium (2010/06)

Meeting participation

Speaker, 22nd Annual U.S. Kavli Frontiers of Science Symposium, Arnold and Mabel Beckman Center of the National Academies, Irvine CA (4-6 Nov. 2010).

Speaker, UNC Microbiome Research Symposium, UNC-CH, NC (2 June 2010).

Attendee, 9th International Meeting on Zebrafish Development and Genetics, Madison, WI (16-20 June 2010)

Speaker, 10th Annual Conference and Retreat, Center for Molecular Studies in Digestive and Liver Diseases, University of Pennsylvania School of Medicine, Philadelphia, PA (8 June 2009).

Invited Attendee, 15th Annual German-American Kavli Frontiers of Science Symposium, National Academy of Sciences and Alexander von Humboldt Foundation, Irvine, CA (5-6 June 2010).

Speaker, 109th General Meeting of the American Society for Microbiology, Symposium: The lure of the zebrafish for deciphering host-pathogen interactions, Philadelphia, PA (18 May 2009).

Speaker, 2009 Annual Meeting of the Pew Scholars and Latin American Fellows Program, Playa Fortuna, Puerto Rico (10 Mar. 2009).

Speaker, 3rd Strategic Conference of Zebrafish Investigators, Asilomar, CA (24-28 Jan. 2009).

Attendee, 2nd American Society for Microbiology Conference on Beneficial Microbes, San Diego, CA (12-16 Oct. 2008).

Speaker, 8th International Conference on Zebrafish Development and Genetics, University of Wisconsin, Madison, WI (27 June 2008).

Speaker, Digestive Disease Week, Translational Symposium: The Human Microbiome, San Diego, CA (19 May 2008).

Speaker, 21st Annual North American Cystic Fibrosis Conference, Symposium: Mucosal Pathogen Interactions, Anaheim, CA (5 Oct. 2007).

Speaker, Model Systems for Infectious Disease and Cancer in Zebrafish, Univ. of Leiden, Netherlands (18 July 2007).

Speaker, Triangle Zebrafish Meeting, North Carolina Central University, Durham, NC (18 April 2007).

Speaker, Commensal Bacteria in Health and Disease Symposium, UNC-CH, NC (22 Sept. 2006).

Speaker, 7th International Conference on Zebrafish Development and Genetics, University of Wisconsin, Madison, WI (13-18 June 2006).

Speaker, Symbiosis Symposium, University of Wisconsin, Madison, WI "Host-microbial interactions in the zebrafish digestive tract" (13 June 2006).

Speaker, Joint Meeting of the Association for Gnotobiotics and the Society of Microbial Ecology in Health & Disease, Washington University, St. Louis, MO (6 June 2006).

Society membership

American Society for Microbiology (2004-present)
American Physiological Society (2009-present)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Matthew R. Redinbo, Ph.D.
Professor and Chair, Department of Chemistry
Primary Appointment: Department of Chemistry
Joint Appointment: Department of Biochemistry and Biophysics

Publications

Primary literature

1. Hemmert, A.C., Otto, T.C., Weirdl, M., Edwards, C.C., Fleming, C.D., MacDonald, M., Cashman, J.R., Potter, P.M., Cerasoli, D.M., and **Redinbo, M.R.** (2010). Human carboxylesterase 1 stereoselectively binds the nerve agent cyclosarin and spontaneously hydrolyzes the nerve agent sarin. *Molecular Pharmacology,* in press.

2. Orans, J., Johnson, M.D.L., Coggan, K.A., Sperlazza, J.R., Heiniger, R.W., Wolfgang, M.C., and **Redinbo, M.R.** (2009). Crystal structure analysis reveals *Pseudomonas* PilY1 as an essential calcium-dependent regulator of bacterial surface motility. *Proceedings of the National Academy of Sciences USA*, **107**, 1065-1070. (Direct Submission)

Highlight on the AAAS Science Update Daily radio broadcast on February 11, 2010. Also highlighted on the AAAS Science Update weekly podcast, January 22, 2010. Covered by national and international news outlets, including UPI.

3. Ekins, S., Kortagere, S., Iyer, M., Reschly, E.J., Lill, M.A., Redinbo, M.R., and Krasowski, M.D. (2009). Challenges predicting ligand-receptor interactions of promiscuous proteins: the nuclear receptor PXR. *PLoS Computational Biology*, **5**, e1000594.

4. Kennedy, S.A., Frazier, M.L., Steiniger, M., Mast, A.M., Marzluff, W.F., and **Redinbo, M.R.** (2009). Crystal structure of the HEAT domain from the pre-mRNA processing factor Symplekin. *Journal of Molecular Biology,* **392**, 115-128.

5. Guogas, L.M., Kennedy, S.A., Lee, J.-H., and **Redinbo, M.R.** (2009). A novel fold in the TraI relaxase-helicase C-terminal domain is essential for conjugative DNA transfer. *Journal of Molecular Biology*, **386**, 554-568.

6. Teotico, D.G., Bischof, J.J., Peng, L., Kliewer, S.A., and **Redinbo, M.R.** (2008). Structural basis of PXR activation by the hops constituent colupulone. *Molecular Pharmacology*, **74**, 1512-1520.

Received the cover of the December 2008 issue of *Molecular Pharmacology.*

7. Teotico, D.G., Frazier, M.L., Ding, F., Dokholyan, N.V., Temple, B.R., and **Redinbo, M.R.** (2008). Active nuclear receptors exhibit highly correlated AF-2 domain motions. *PLoS Computational Biology* **4**, e1000111.

8. Wang, H., Li, H., Moore, L.B., Johnson, M.D.L., Maglich, J.M., Goodwin, B., Ittoop, O.R.R., Wisely, B., Creech, K., Parks, D.J., Collins, J.L., Willson, T.M., Kalpana, G.V., Xie, W., **Redinbo, M.R.**, Moore, J.T., and Mani, S. (2008). The phytoestrogen coumestrol is a naturally-occurring antagonist of the human pregnane X receptor (PXR). *Molecular Endocrinology*, **22**, 838-857.

9. Wierdl, M., Tsurkan L., Hyatt, J.L., Edwards, C.C., Hatfield, M.J., Morton, C.L., Houghton, P.J., Danks, M.K., **Redinbo, M.R.**, and Potter, P.M. An improved human carboxylesterase for enzyme/prodrug therapy with CPT-11. *Cancer Gene Therapy*, **15**, 183-192.

10. Xiong, Y., Patana, A.S., Miley, M.J., Zielinska, A.K., Bratton, S.M., Miller, G.P., Goldman, A., Finel, M., **Redinbo, M.R.**, Radominska-Pandya, A. The First Aspartic Acid of the DQxD Motif for Human UDP-Glucuronosyltransferase 1A10 Interacts with UDP-Glucuronic Acid During Catalysis. *Drug Metabolism and Disposition*, **36**, 517-522.

11. Schaaf, G., Ortlund, E.A., Tyeryar, K., Mousley, C., Ile, K., Garret, T., Ren, J., Woolls, M.,Raetz, C.R.H., **Redinbo, M.R.,** and Bankaitis, V. A. (2008). Functional anatomy of phospholipid binding and regulation of phosphoinositide homeostasis by proteins of the Sec14-superfamily. *Molecular Cell*, **29,** 191-206.

Highlighted by *Faculty of 1000 Biology.*

12. Ortlund, E.A., Bridgham, J.T., **Redinbo, M.R.,** and Thornton, J.W. (2007). Crystal structure of an ancient protein: evolution by conformational epistasis. *Science*, **317**, 1544-1548.

Coverage of this paper includes a news article in the same issue of *Science*, in *Nature Reviews Molecular Cell Biology*, and articles in the *New York Times*, Raleigh *News and Observer*, *Daily India*, *New Zealand Today*, and several other international papers, as well as an interview on WCHL radio. It was also chosen as Exceptional with the highest score possible of 9 on *Faculty of 1000 Biology.*

13. Lujan, S.A., Guogas, L.M., Ragonese, H., Matson, S.W., and **Redinbo, M.R.** (2007). Disrupting antibiotic resistance propagation by inhibiting the conjugative DNA relaxase. *Proceedings of the National Academy of Sciences USA*, **104**, 12282-12287. (Direct, Track II, Submission)

Coverage of this paper includes a 3-minute live national interview with Hannah Storm on the CBS *Early Show* (July 13, 2007), in print at *BBC On-Line, Scientific American* (both print and on-line editions), the Raleigh *News and Observer* (and subsequently picked up by nationally be numerous newspapers), *Daily India, Manchester Today* (and dozens of international newspapers), and on the radio at WCHL in Chapel Hill and the South African Broadcasting Company. Scientific highlights include *Nature Reivews Drug Discovery* (September, 2007).

14. Miley, M.J., Zielinska, A.K., Keenan, J.E., Bratton, S.M., Radominska-Pandya, A., and **Redinbo, M.R.** (2007). Crystal structure of the cofactor-binding domain of the human phase II drug-metabolism enzyme UDP-glucuronosyltransferase 2B7. *Journal of Molecular Biology*, **369**, 498-511.

15. Fleming, C.D., Edwards, C.C., Kirby, S.D., Maxwell, D.M., Potter, P.M., Cerasoli, D.M., and **Redinbo, M.R.** (2007). Crystal structures of human carboxylesterase 1 in covalent complexes with the chemical warfare agents soman and tabun. *Biochemistry*, **46**, 5063-5071.

16. Xue, Y., Moore, L.B., Orans, J., Peng, L., Bencharit, S., Kliewer S.A., and **Redinbo, M.R.** (2007). Crystal structure of the pregnane X receptor-estradiol complex provides insights into endobiotic recognition. *Molecular Endocrinology,* **21**,1028-1038.

17. Wadkins, R.M., Hyatt, J.L., Edwards, C.C., Tsurkan, L., **Redinbo, M.R.,** Wheelock, C.E., Jones, P.D., Hammock, B.D., and Potter, P.M. (2007). Analysis of mammalian carboxylesterase inhibition by trifluoromethylketone-containing compounds. *Molecular Pharmacology*, **71**, 713-723.

18. Xue, Y., Chao, E., Zuercher, W.J., Willson, T.M., Collins, J.L., and **Redinbo, M.R.** (2007). Crystal structure of the PXR-T1317 complex provides a scaffold to examine the potential for receptor antagonism. *Bioorganic and Medicinal Chemistry*, **15**, 2156-2166.

19. Wang, H., Huang, H., Li, H., Teotico, D.G., Sinz, M., Baker, S.D., Staudinger, J., Kalpana, G., **Redinbo, M.R.,** and Mani, S. (2007). Activated PXR is a target for ketoconazole and its analogues. *Clinical Cancer Research*, **13**, 2488-2495.

20. Bencharit, S., Edwards, C.C., Morton, C.L., Howard-Williams, E.L., Kuhn, P., Potter, P.M., and **Redinbo, M.R.** (2006). Multisite promiscuity in the processing of endogenous substrates by human carboxylesterase 1. *Journal of Molecular Biology,* **363**, 201-214.

21. Huang, H., Wang, H., Sinz, M., Zoeckler, M., Staudinger, J., **Redinbo, M.R.**, Teotico, D.T., Locker, J., Kalpana, G.V., and Mani, S. (2006). Inhibition of drug metabolism by blocking the activation of nuclear receptors by ketoconazole. *Oncogene,* **26**, 258-268.

22. Noble, S.N., Carnahan, V.E., Moore, L.B., Luntz, T., Wang. H., Ittoop, O.R., Stimmel, J.B., Davis-Searles, P.R., Watkins, R.E., Wisely, G.B., LeCluyse, E.L., Tripathy, A., McDonnell, D.P., and **Redinbo, M.R.** (2006). Human PXR forms a tryptophan zipper-mediated homodimer. *Biochemistry*, **45**, 8579-8589.

See highlight in *Nature Chemical Biology,* **2**, 405 (2006), and in *Faculty of 1000 Biology*.

23. Solomon, I.H., Hager, J.M., Safi, R., McDonnell, D.P., **Redinbo, M.R.**, and Ortlund, E.A. (2005). Crystal structure of the human LRH-1 DBD DNA complex reveals Ftz-F1 domain positioning is required for receptor activity. *Journal of Molecular Biology,* **354**, 1091-1102.

24. Fleming, C.D., Bencharit, S., Edwards, C.C., Hyatt, J.L., Tsurkan, L., Feng, B., Fraga, C., Morton, C.L., Howard-Williams, E.L., Potter, P.M., and **Redinbo, M.R.** (2005). Structural insights into drug processing by human carboxylesterase 1: tamoxifen, mevastatin and inhibition by benzil. *Journal of Molecular Biology*, **352**, 165-177.

25. Huang, H., Fleming, C.D., Nishi, K., **Redinbo, M.R.**, and Hammock, B.D. (2005). Stereospecific hydrolysis of pyrethroid-like fluorescent substrates by human and other mammalian liver carboxylesterases. *Chemical Research in Toxicology,* **18**, 1371-1377.

26. Ortlund, E.A., Lee, Y., Solomon, I.H., Hager, J.M., Safi, R., Choi, Y., Guan, Z., Tripathy, A., Raetz, C.R.H., McDonnell, D.P., Moore, D.D., and **Redinbo, M.R.** (2005). Modulation of human nuclear receptor LRH-1 activity by phospholipids and SHP. *Nature Structural and Molecular Biology*, **12**, 357-363.

See highlight in *Nature Reviews Cancer,* **5**, 246 (2005); preview in *Cell Metabolism*, **1**, 153-155 (2005).

27. Chrencik, J.C., Orans, J., Moore, L.B., Xue, Y., Peng, L., Collins, J.C., Wisely, G.B., Lambert, M.H., Kliewer, S.A., and **Redinbo, M.R.** (2005). Structural disorder in the complex of human PXR and the macrolide antibiotic rifampicin. *Molecular Endocrinology*, **19**, 1125-1134.

*Reviews and commentaries (*indicates Peer-Reviewed)*

1. Radominska-Pandya, A., Bratton, S.M., **Redinbo**, **M.R.**, and Miley, M.J. (2009). The crystal structure of human UDP-glucuronosyltransferase 2B7 C-terminal end is the first authentic UGT target to be revealed: the significance for UGTs from both the 1A and 2B families. *Drug Metabolism Reviews*, in press.

2. Biswas, A., Mani, S., **Redinbo, M.R.,** Krasowski, M.D., Li, H., Ekins, S. (2009). Elucidating the 'Jekyll and Hyde' nature of PXR: the case for discovering antagonists or allosteric antagonists. *Pharmaceutical Research,* **26**, 1807-1815.

3. **Redinbo, M.R.** and Cheng, Y. (2009). Book Review of "Nuclear receptors as drug targets: Methods and principles in medicinal chemistry, Volume 39. Edited by Eckhard Ottow and Hilmar WeinmannAG, Berlin, Germany). Series edited by R. Mannhold, H. Ku" *Journal of the American Chemical Society*, **131**, 4552.

4. Potts, R.G., Lujan, S.A., and **Redinbo, M.R.** (2008). Winning the asymmetric war: new strategies for combating antibacterial resistance. *Future Microbiology,* **3**, 119-123.

5. * Ingraham, H.A. and **Redinbo, M.R.** (2005). Orphan nuclear receptors adopted by crystallography. *Current Opinion in Structural Biology,* **15**, 1-8.

6. *Orans, J., Teotico, D.G., and **Redinbo, M.R.** (2005). The nuclear xenobiotic receptor PXR: recent insights and new challenges. *Molecular Endocrinology,* **19**, 2891-2900.

7. Carnahan, V.E. and **Redinbo, M.R.** (2005). Structure and function of the human nuclear xenobiotic receptor PXR. *Current Drug Metabolism*, **6**, 357-367.

8. ***Redinbo, M.R.** and Potter, P.M. (2005). Mammalian carboxylesterases: from drug targets to protein therapeutics. *Drug Discovery Today*, **10**, 313-325.

Editorial Responsibilities

Editorial boards
Molecular Endocrinology: 2005-2008

Ad hoc reviewer for:
Acta Crystallographica, Biochemistry, Drug Discovery Today, EMBO Journal, Journal of Bacteriology, Journal of Biological Chemistry, Journal of Medicinal Chemistry, Nature, Nature Structural Biology, Nucleic Acids Research, Science

Grants/Contracts

Principal Investigator, 06/01/2008 – 05/31/2013
"Structure and Inhibition of the Conjugative DNA Relaxase-Helicase"
Agency: NIH-Natl. Inst. Aller. Infec. Dis; Type: R01 AI78924, 5-50974
Total Direct: $1,250,000
35% effort

Principal Investigator, 02/02/2003 – 01/14/2014
"Improving CPT-11 Efficacy Using Structural and Chemical Biology"
Agency: NIH-National Cancer Institute; Type: R01 CA98468, 5-50183
Total Direct: $935,000
30% effort

Principal Investigator, 10/01/2006 – 05/31/2011
"Novel Protein-Based Therapeutics for Nerve Agent Detoxification"
Agency: NIH-Natl. Inst. Neur. Dis. Stroke; Type: U01 NS58089, 5-51037
Total Direct: $726,000
20% effort

Co-Principal Investigator, 03/01/2009 – 02/28/2010
P.I.: Virginia L. Miller (UNC Chapel Hill)
"Yersinia Autotransporters (Yaps): Structure, Function and Host Response to Plague"
Agency: NIH; Type: Southeast Regional Center of Excellence for Emerging Infections & Biodefense
Total Direct: $284,915
10% effort

Principal Investigator, 04/01/2010 – 03/31/2011
"Enzyme Production for Nerve Agent Detection and Elimination"
5% effort; April 1, 2010 – March 31, 2011
Agency: DARPA; Type: Research Grant
Total Direct: $58,000
5% effort

Grant Review Service

NIH Study Section Reviewer
"Molecular Structure and Function B, "June 22-23, 2006
"Countermeasures Against Chemical Threats (CounterACT)," August 10-11, 2006; April 16, 2008

Honors/Awards

Academic Leadership Fellow, UNC Institute for the Arts and Humanities, 2010-2011

Committee Service

University of North Carolina, Chapel Hill
Genome Science Building Core Design Group, UNC Chapel Hill, 2007-2010
Chair, Search Committee, Structural Biology Faculty Position, Center for Integrative Chemical Biology and Drug Discovery, UNC Chapel Hill, 2008-2009
Scientific Advisory Board, Center for Integrative Chemical Biology and Drug Discovery, UNC Chapel Hill, 2007 – present.

Outside UNC
Advisory Committee, Burroughs Wellcome Career Award in the Biomedical Sciences,
August, 2005 – present.
Member, U.S. National Committee for Crystallography, part of the National Academy of Arts and Sciences, term 2004-2006.
Reviewer, Structural Biology Section of Faculty of 1000 On-Line Biomedical Literature Review, 2002 – present.

Professional Meetings/Societies

Society Membership

American Crystallographic Association; Member, 1992 – present.
American Association for the Advancement of Sciences; 1991-1994, 1997 – present.
American Chemical Society 1991 - present.

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Anthony R. Richardson, Ph.D.

Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Burnside, K., Lembo, A., de Los Reyes, M., Iliuk, A., Bintran, N.T., Connelly, J.E., Lin, W.J., Schmidt, B.Z., **Richardson, A.R.**, Fang, F.C., Tao, W.A. and Rajagopal, L. (2010) Regulation of hemolysin expression and virulence of *Staphylococcus aureus* by a serine/threonine kinase and phosphatase. *PLoS One*. June 11; 5(6):e11071.

Hoffman, L.R., **Richardson, A.R.**, Houston, L.S., Kulasekara, H.D., Martens-Habbena, W., Klausen, M., Burns, J.L., Stahl, D.A., Hassett D.J., Fang, F.C. and Miller, S.I. (2010) Nutrient availability as a mechanism for selection of antibiotic tolerant *Pseudomonas aeruginosa* within the CF airway. *PLoS Pathogens* Jan 8; 6(1):e1000712.

Richardson, A.R., Soliven, K.C., Castor, M.E., Barnes, P.D., Libby, S.J. and Fang, F.C. (2009) The Base Excision Repair System of *Salmonella enterica* serovar Typhimurium Counteracts DNA Damage by Host Nitric Oxide. *PLoS Pathogens* 5(5): e10000451.

Richardson, A.R., Libby, S.J. and Fang, F.C. (2008) A nitric oxide-inducible lactate dehydrogenase allows *Staphylococcus aureus* to resist innate immunity. *Science* 319:1672-1676.

Wang, W., **Richardson, A.R.**, Martens-Habbena, W., Stahl, D.A., Fang, F.C., and Hansen E.J. (2008) Identification of a repressor of a truncated denitrification pathway in *Moraxella catarrhalis*. *Journal of Bacteriology.* 190(23). 7762-7772.

Velayudhan, J., Castor, M., **Richardson, A.R.**, Main-Hester, K.L. and Fang, F.C. (2007) The role of ferritins in the physiology of *Salmonella enterica* sv. Typhimurium: a unique role for ferritin B in iron-sulfur cluster repair and virulence. *Molecular Microbiology* 63:1495-1507

Richardson, A.R., Dunman, P.M., and Fang, F.C. (2006) The nitrosative stress response of *Staphylococcus aureus* is required for resistance to innate immunity. *Molecular Microbiology* 61:927-939.

Editorial Responsibilities

Ad hoc reviewer for:

Infection and Immunity, Journal of Bacteriology, Microbiology

Grants/Contracts

Principal Investigator, start 03/15/2010 - end 02/29/2012
"Polyamines in *Staphylococcus aureus* Physiology and Pathogenesis"
NIH-NIAID, R21AI088158
Total direct costs $275,000
33% effort

Professional Meetings/Societies

Meeting participation

Speaker, Biothreat Agents Workshop, 2010, Charlotte, NC.

Poster, Gordon Research Conference (Staphylococcal Diseases), 2009, Waterville Valley, NH.

Speaker, Molecular Pathogenesis and Host Response, 2009, Cold Spring Harbor Laboratories, NY.

Speaker, Conference on Gram-Positive Pathogens, 2008, Omaha, NE

Speaker, ASM General Meeting, 2008, Boston, MA.

Speaker, ASM NW Branch Meeting, 2007, Seattle, WA.

Poster, Conference on Gram-Positive Pathogens, 2006, Omaha, NE

Society membership

American Society for Microbiology, …2005-present

Department of Microbiology & Immunology

Stefanie Sarantopoulos, MD, PhD

Assistant Professor

Primary Appointment: Department of Medicine

Joint Appointment: Department of Microbiology & Immunology

Publications

Primary literature

Ofran Y, Kim HT, Brusic V, Blake L, Mandrell M, Wu CJ, **Sarantopoulos S**, Roberto Bellucci, Keskin DB, Soiffer RJ, Antin JP, Ritz J. Diverse patterns of T cell response against multiple newly identified human Y chromosome encoded minor histocompatibility epitopes. *Clin Canc Res. 2010; 16:1642-51.*

Ho V, Vanneman M, Kim H, Pasek M, Cutler C, Koreth J, Alyea E, **Sarantopoulos S**, Antin J, Ritz J, Canning C, Kutok J, Mihm M, Dranoff G and Soiffer R. Biologic activity of irradiated, autologous, GM-CSF secreting leukemia cell vaccines early after allogeneic stem cell transplantation. *PNAS* 2009; 106(37):15825-30.

Sarantopoulos S, Stevenson KE, Kim HT, Cutler CS, Bhuiya NS, Schowalter M, Vincent T. Ho, Soiffer RJ, Antin JH, and Ritz R. BAFF Altered B Cell Homeostasis and Excess BAFF in Human Chronic Graft Versus Host Disease. *Blood 2009; 113:3865-74.*

Sittler T, Zhou J, Park J, Yuen NK, **Sarantopoulos S**, Mollick J, Salgia R, Giobbie-Hurder A, Dranoff G, Hodi FS. Concerted Potent Humoral Immune Responses to Autoantigens Are Associated with Tumor Destruction and Favorable Clinical Outcomes without Autoimmunity. *Clin Cancer Res 2008; 14(12):3896-905.*

Sarantopoulos S, Stevenson KE, Kim HT, Bhuiya NS, Cutler CS, Soiffer RJ, Antin JH, Ritz, J. High BAFF/Blys in Patients with Active Chronic Graft Versus Host Disease. *Clin Cancer Research 2007; 13:6167-6114.*

Ad hoc reviewer for:
Biology of Bone Marrow Transplantation, Blood, Hematologica, Molecular Biology Reports

Grants/Contracts

Principal Investigator, start 07/01/2009- end 06/30/2012
Title: The BCR-Activated B Cell: A Novel Therapeutic Target in Chronic GVHD
NMDP, 09-4569 (Amy Strelzer Manasevit Award)
$69,784
15% effort

Subcontractor, start 09/30/09- end 09/29/14
Principal Investigator: Stephanie Lee, (
Title: Immune Mediated Disorders after Allogeneic HCT
U54 RFA-OD-08-001 (Lee, Stephanie)
$51,861 (year 2 only)
0% effort

Primary Investigator, start 01/31/10- end 01/31/11
Title: Improving Overall Survival in Patients with Leukemia and Lymphoma
TRIAD GOLFERS AGAINST CANCER (Greensboro Golfers)
$25,000
0% effort

Primary Investigator, start 09/01/10- end 08/31/11
Title: Improving Overall Survival in Patients with Leukemia and Lymphoma
UNC Excellence Fund
$7,000

Honors/Awards
The Leukemia & Lymphoma Society Fellow Award, 2005
The Jock & Bunny Adams Research and Educational Endowment 'Seed' Grant Award, 2005
NIH Paul Calebrisi K12 Harvard Cancer Center. 2007
Dunkin Donuts Rising Star Award (received two separate awards), 2007 and 2009
Forbeck Foundation Award, 2008
Amy Strelzer Manasevit Award, 2009
Triad-Greensboro Golfers Against Cancer Award, 2010

Committee Service

University of North Carolina, Chapel Hill

Tissue Procurement in Hematologic Malignancy (am co-primary investigator on protocol and serve on two committees, one that reviews requests for tissue (the so-called HOTPC) and one that meets with tissue procurement core facility members to review quality control and tissue storage and to establish optimal lab protocols for these.

Professional Meetings/Societies

Meeting participation

Educational Session:
Was an invited speaker at international meeting. Gave a one-hour long educational session at the **American Society of Bone Marrow Transplantation** in Tampa FL in 2009, entitled, " B Cells and BAFF in Chronic GVHD."
Oral Presentations:

Sarantopoulos S, Bhuiya NS, Cutler CS, Wu CJ, Brusic V, Robert J. Soiffer RJ, Antin JH, and Ritz J. Characterization of B Cell Target Antigens in Patients with Chronic Graft Versus Host Disease. Selected for Oral Presentation at **American Society of Blood and Marrow Transplantation Meeting**, San Diego, CA, February 2008.

Sarantopoulos S, Stevenson KE, Kim HT, Bhuiya NS, Corey S. Cutler CS, Alyea EP, Ho VT, Soiffer RJ, Antin JH, and Ritz J. High BAFF and BCR-Activated B Cells in Patients with Progressive Chronic Graft Versus Host Disease After Rituximab Treatment. Selected for Oral Presentation at **American Society of Blood and Marrow Transplantation Meeting**, San Diego, CA, February 2008.

Sarantopoulos, S., Stevenson, K.E., Kim, H.T., Bhuiya, N.S., Cutler, C.S., Soiffer,R.J., Antin, J.H., Ritz, J. Chronic GVHD is Associated with a BAFF Driven BCR-Activated B Cell Repertoire. **The American Society of Hematology**, Poster Selected for Oral Presentation in Atlanta, GA, December 2007.

Sarantopoulos, S., Bhuiya, N.S., Stevenson, K.E., Kim, H.T., Cutler, C.S., Soiffer, R.J., Ritz, J. High BAFF/Blys Results in Increased Numbers of Plasmablasts in Human Chronic Graft Versus Host Disease. Poster Selected for Oral Presentation at the **"Biology of B Cells in Health and Disease" Keystone Meeting in Banff**, Canada, February 2007.

Sarantopoulos, S., Stevenson, K.E., Kim, H.T., Bhuiya, N.S., Cutler, C.S., Soiffer,R.J., Antin, J.H., Ritz, J. BAFF/Blys levels correlate with disease activity and alter peripheral B cell subsets in patients with chronic GVHD. **The American Society of Hematology**, Poster Selected for Oral Presentation in Orlando, FL on December 12, 2006

Poster Presentations:

Sarantopoulos S, Cutler C, Makari-Judson G, Ropp P, Washel W, Brusic V, DeLuca D, Saldivar J.-S, Soiffer RJ, Antin JH and Ritz J. Factor VIII is a Potential Autosomal B Cell Minor Histocompatibility Antigen in Chronic GVHD. Poster presentation. **The American Society of Hematology** 2009 Blood (ASH Annual Meeting Abstracts) 114: Abstract 1167.

Sarantopoulos S, Stevenson KE, Kim HT, Cutler CS, Bhuiya NS, Schowalter M, Ho VT, Soiffer RJ, Antin JH, and Jerome R. High BAFF:B Cell Ratios and Circulating Activated B Cells in Chronic GVHD. Poster presentation. **American Society of Blood and Marrow Transplantation Meeting** February 2009 BBMT Vol 15, Issue 2, Supplement:115-116.

Sarantopoulos, S., Zorn, E., Bhuiya, N.S., Kim, H.T., Levin, J., Soiffer, R.J., Cutler, C.S., Antin, J.H., Ritz, J.R. Elevated B Cell Activating Factor (BAFF) in Patient Plasma after Allogeneic Stem Cell Transplantation is a Potential Biomarker for Chronic Graft Versus Host Disease. Poster presentation. **American Society of Blood and Marrow Transplantation Meeting** February 2006 BBMT 12 (Supplement 1): 56.

Society membership

Member, American Society of Hematology, 2003

Member, American Society for Blood and Marrow Transplantation, 2003

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

R. Balfour Sartor, M.D.

Distinguished Professor

Primary Appointment: Department of Medicine

Joint Appointment(s): Department of Microbiology & Immunology

Publications

Primary literature

Reid G, Gaudier E, Guarner F, Huffnagle GB, Macklaim J, Munoz AM, Martini M, Ringel-Kulka T, Sartor RB, Unal RR, Verbeke K, Walter J. (2010) Responders and non-responders to probiotic interventions: How can we improve the odds? *Gut Microbes*, in press.

Frank DN, Robertson CE, Hamm C, Kpadeh Z, Zhang T, Chen H, Zhu W, Sartor RB, Boedeker EC, Harpaz N, Pace NR, Li E. (2010) Disease phenotype and genotype are associated with shifts in intestinal associated microbiota in inflammatory bowel diseases. *Inflammatory Bowel Diseases*, in press.

Uno JK, Rao KN, Matsuoka K, Sheikh SZ, Kobayashi T, Li F, Steinbach EC, Sepulveda AR, Vanhaesebroeck B, Sartor RB, Plevy SE. (2010) Altered macrophage function contributes to colitis in mice defective in the phosphoinositide-3 kinase subunit p110delta. *Gastroenterology*, in press.

Wu S, Liao AP, Xia Y, Li YC, Li JD, Sartor RB, Sun J. (2010) Vitamin D receptor negatively regulates bacterial-stimulated NF-(kappa)B activity in intestine. *American Journal of Pathology*, in press.

Hansen JJ, Holt L, Sartor RB. (2009) Gene expression patterns in experimental colitis in IL-10 deficient mice. *Inflammatory Bowel Diseases*, 15:890-899.

Walton KW, Holt L, Sartor RB. Lipopolysaccharide activates innate immune responses in murine intestinal myofibroblasts through multiple signaling pathways. *Am J Physiol Gastrointest Liver Physiol*., 296:G601-11, 2009.

Rhee KJ, Wu S, Wu XQ, Huso DL, Karim B, Franco AA, Rabizadeh S, Golub J, Mathews LE, Shin J, Sartor RB, Golenbock D, Hamad A, Gan CM, Housseau F, Sears CL. (2009) Induction of persistent colitis by a human commensal enterotoxigenic *Bacteroides fragilis*, in wild type C57BL/6 mice. *Infection and Immunity*, 77:1708-1781.

Albright CA, Sartor RB, Tonkonogy SL. (2009) Endogenous antigen presenting cell-derived IL-10 inhibits T lymphocyte responses to commensal enteric bacteria. *Immunology Letters*, 123:77-87.

Kim JS, An H, Rieter WJ, Esserman D, Taylor KM, Sartor RB, Lin W, Lin W, Tarrant TK. (2009) Multimodal optical and Gd-based nanoparticles for imaging in inflammatory arthritis. *Clin Exper Rheum*, 27: 580-586.

Moran JP, Walter J, Tannock GW, Tonkonogy SL, Sartor RB. (2009) *Bifidobacterium animalis* causes extensive duodenitis and mild colonic inflammation in monoassociated interleukin-10 deficient mice. *Inflammatory Bowel Diseases*, 15:1022-1031.

Hoffmann M, Kim SC, Sartor RB, Haller D. (2009) *Enterococcus faecalis* strains differentially regulate Alix/AIP1 protein expression and ERK 1/2 activation in intestinal epithelial cells in the context of chronic experimental colitis. *J. Proteome Res*., 8:1183-1192.

Velázquez P, Wei B, McPherson M, Mendoza LMA, Nguyen SL, Turovskaya O, Kronenberg M, Huang TT, Schrage M, Lobato LN, Arditi M, Cheng G, Sartor RB, Newberry RD, Braun J. (2008) Villous B cells of the small intestine are specialized for invariant NK T cell interaction. *Journal of Immunology*, 180:4629-4638.

Purohit V, Bode JC, Bode C, Brenner DA, Choudhry MA, Hamilton F, Kang YJ, Keshavarzian A, Rao R, Sartor RB, Swanson C, Turner JR. (2008) Alcohol, intestinal bacterial growth, intestinal permeability to endotoxin, and medical consequences of a symposium. *Alcohol*, 42:349-61.

Qian BF, Tonkonogy SL, Sartor RB. (2008) Reduced responsiveness of HLA-B27 transgenic rat cells to TGF-β and IL-10-mediated regulation of IFN-γ production. *Inflammatory Bowel Diseases*, 14:921-30.

Qian BF, Tonkonogy SL, Sartor RB. (2008) Aberrant innate immune responses in TLR-ligand activated HLA B27 transgenic rat cells. *Inflammatory Bowel Diseases*, 14:1358-65.

Larmonier CB, Uno JK, Lee KM, Karrasch T, Laubitz D, Thurston R, Midura-Kiela MT, Ghishan FK, Sartor RB, Jobin C, Kiela PR. (2008) Limited effects of dietary curcumin on TH1 driven colitis in IL-10 deficient mice suggest an IL-10 dependent mechanism of protection. *Am J Physiol Gastrointest Liver Physiol*., 295:G1079-91.

Ivanov II, de Llanos Frutos R, Manel N, Yoshinaga K, Rifkin DB, Sartor RB, Finlay BB, Littman DR. (2008) Specific microbiota direct the differentiation of Th17 cells in the mucosa of the small intestine. *Cell Host Microbe*, 4:337-49.

Hassan S, Sainz I, Khan M, Bradford H, Isordia-Salas I, Kashem S, Sartor RB, Colman R. (2007) Antithrombotic activity of kininogen is mediated by inhibitory effects of domain 3 during arterial injury in vivo. *AJP – Heart and Circulatory Physiology*, 292:H2959-H2965.

Shkoda A, Ruiz PA, Daniel H, Kim SC, Rogler G, Sartor RB, Haller D. (2007) Interleukin 10 blocked endoplasmic reticulum stress in intestinal epithelial cells: Impact on chronic inflammation. *Gastroenterology*, 132:190-207.

Hoentjen F, Tonkonogy SL, Dieleman LA, Qian BF, Liu B, Sartor RB. (2007) CD4+ T lymphocytes mediate colitis in HLA B27 transgenic rats monoassociated with nonpathogenic *Bacteroides vulgatus*. *Inflammatory Bowel Diseases*, 13:317-324.

Meng D, Newburg DS, Young C, Baker A, Tonkonogy SL, Sartor RB, Walker WA, Nanthakumar NN. (2007) Bacterial symbionts induce at FUT2-dependent fucosylated niche on colonic epithelium via ERK and JNK signaling. *Am J Physiol Gastrointest Liver Physiol*. 293:G780-G787.

Kim SK, Tonkonogy SL, Karrasch T, Jobin C, Sartor RB. (2007) Dual association of gnotobiotic IL-10-/- mice with two nonpathogenic commensal bacteria induces aggressive pancolitis. *Inflammatory Bowel Diseases*, 13:1457-1466.

Walton KLW, He JP, Kelsall BL, Sartor RB, Fisher NC. (2006) Dendritic cells in germ-free and specific pathogen-free mice are similar in phenotype and antigen presenting function. *Immunology Letters*, 102:16-24.

Walton KLW, Galanko JA, Sartor RB, Fisher NC. (2006) T cell-mediated oral tolerance is intact in germ-free mice. *Clinical and Experimental Immunology*, 143:503-512.

Hoentjen F, Tonkonogy SL, Liu B, Sartor RB, Taurog JD, Dieleman LA. (2006) Adoptive transfer of nontransgenic mesenteric lymph node cells induces colitis in athymic HLA B27 transgenic nude rats. *Clinical and Experimental Immunology*, 143:474-483.

Veltkamp C, Ruhwald R, Giese T, Autschbach F, Kaden I, Veltkamp R, Sartor RB, Stremmel W. (2006) CD4+CD25+ cell depletion from the normal CD4+ T cell pool prevents tolerance towards the intestinal flora and leads to chronic colitis in immunodeficient mice. *Inflammatory Bowel Disease*, 12:437-446.

Qian BF, Tonkonogy SL, Sartor RB. (2006) Luminal bacterial antigen-specific CD4+ T cell responses in HLA B27 transgenic rats with chronic colitis are mediated by both MHC Class II and HLA B27 molecules. *Immunology*, 117:319-328.

Ruiz PA, Shkoda A, Kim SC, Sartor RB, Haller D. (2006) IL-10 gene-deficient mice lack TGF-beta/Smad-mediated TLR2 degradation and fail to inhibit proinflammatory gene expression in intestinal epithelial cells under conditions of chronic inflammation. *Ann. N.Y. Acac. Sci.*, 1072:389-394.

Wilson KH, Brown RS, Andersen GL, Tsang J, Sartor RB. (2006) Comparison of fecal biota from specific pathogen free and feral mice. *Anaerobe*, 12:249-253.

Hoentjen F, Sartor RB, Ozaki M, Jobin C. (2005) STAT3 regulates NF-(kappa)B recruitment to the IL-12p40 promoter in dendritic cells. *Blood*, 105:689-696.

Ruiz PA, Shkoda A, Kim SC, Sartor RB, Haller D. (2005) IL-10 gene-deficient mice lack TGF-β/Smad signaling and fail to inhibit proinflammatory gene expression in intestinal epithelial cells after the colonization with colitogenic *Enterococcus faecalis*. *Journal of Immunology*, 174:2990-2999.

Veltkamp C, Giese T, Meuer S, Autschbach F, Kaden I, Sartor RB, Veltkamp R, Kallinowski B, Stremmel W. (2005) Regulatory CD4+CD25+ cells reverse imbalances in the T cell pool of BM-transplanted Tgε26 mice leading to the prevention of colitis. *Gut*, 54:207-214.

Kim SC, Tonkonogy SL, Albright CA, Tsang J, Balish EJ, Braun J, Huycke MM, Sartor RB. (2005) Variable phenotypes of enterocolitis in interleukin-10-deficient mice monoassociated with two different commensal bacteria. *Gastroenterology*, 128:891-906.

Sainz IM, Isordia-Salas I, Cataneda J, Agelan A, Liu B, DeLa Cadena RA, Pixley RA, Adam A, Sartor RB, Colman RW. (2005) Modulation of inflammation by kininogen deficiency in a rat model of inflammatory arthritis. *Arthritis & Rheumatism*, 52:2549-2552.

Bibiloni R, Fedorak RN, Tannock GW, Madsen KL, Gionchetti P, Campieri M, De Simone C, Sartor RB. (2005) VSL#3 probiotic mixture induces remission in patients with active ulcerative colitis. *American Journal of Gastroenterology*, 100:1539-1546.

Theiss AL, Fuller CR,. Simmons JG, Liu B, Sartor RB, Lund PK. (2005) Growth hormone reduces the severity of fibrosis associated with chronic intestinal inflammation. *Gastroenterology*, 129:204-219.

Bibiloni R, Simon MA, Albright C, Sartor RB, Tannock GW. (2005) Analysis of the large bowel microbiota of colitic mice using PCR/DGGE. *Letters in Applied Microbiology*, 41:45-51.

Qian BF, Tonkonogy SL, Hoentjen F, Dieleman LA, Sartor RB. (2005) Dysregulated luminal bacterial antigen-specific T cell responses and antigen presenting cell function in HLA B27 transgenic rats with chronic colitis. *Immunology*, 116:112-121.

Reviews & commentaries

Hansen J, Gulati A, Sartor RB. (2010) The role of mucosal immunity and host genetics in defining intestinal commensal bacteria. *Current Opinion in Gastroenterology*, in press.

Sartor RB. (2010) Key questions to guide better understanding of host/commensal microbiota interactions in intestinal inflammation. *Mucosal Immunology*, in press.

Packey CD, Sartor RB. (2009) Commensal bacteria, traditional and opportunistic pathogens, dysbiosis and bacterial killing in inflammatory bowel diseases. *Current Opinion in Infectious Diseases*, 22:292-301.

Sartor RB. (2009) Microbial-host interactions in inflammatory bowel diseases and experimental colitis. *Nestle Nutr Workshop Ser Pediatr Program*, 64: 121-132.

Sartor RB. (2008) Microbial influences in inflammatory bowel diseases. *Gastroenterology*, 134:577-594.

Packey CD, Sartor RB. (2008) Interplay of commensal and pathogenic bacteria, genetic mutations and immunoregulatory defects in the pathogenesis of inflammatory bowel diseases. *Journal of Internal Medicine*, 263:597-606.

Sartor RB. (2008) Therapeutic correction of bacterial dysbiosis discovered by molecular techniques. *PNAS*, 105:16413-414.

Sartor RB, Muehlbauer M. (2008) Microbial host interactions in inflammatory bowel diseases: Implications for pathogenesis and therapy. *Current Gastroenterology Report*, 9:497-507.

Sartor RB, Blumberg RS, Braun J, Elson CO, Mayer LF. (2007) CCFA microbial-host interactions workshop: Highlights and key observations. *Inflammatory Bowel Diseases*, 13:600-619, 2007.

Sartor RB. (2007) Bacteria in Crohn's disease: Mechanisms of inflammation and therapeutic implications. *Journal of Clinical Gastroenterology*, 41: S37-S43.

Sartor RB. (2006) Mechanisms of disease: Pathogenesis of Crohn's disease and ulcerative colitis. *Nature Clinical Gastroenterology & Hepatology*, 3:390-407, 2006.

Sartor RB. (2006) Microbial and dietary factors in the pathogenesis of chronic, immune-mediated intestinal inflammation. *Adv. Exp. Med. Biology*, 579:35-54.

Sartor RB, Hoentjen F. (2005) Proinflammatory cytokines and signaling pathways in intestinal innate immune cells. In: Mucosal Immunology, 3rd edition, Chapter 35. J. Mestecky, J. McGhee, W. Strober, eds. Elsevier Publishers, pp. 681-701.

Sartor RB. (2005) Immunomodulatory properties of the gut microflora. In: Gut-Liver Interactions: Basic and Clinical Concepts, Falk Symposium #146, Springer Publishers, pp. 103-112.

Sartor RB. (2005) Probiotic therapy of intestinal inflammation and infections. *Current Opinion in Gastroenterology*, 21:44-50.

Sartor RB. (2005) Role of commensal enteric bacteria in the pathogenesis of immune-mediated intestinal inflammation: lessons from animal models and implications for translational research. *J Pediatr Gastroenterol Nutr*, 40: Suppl S30-S31.

Lees C, Howie S, Sartor RB, Satsangi J. (2005) The hedgehog signaling pathway in the gastrointestinal tract: Implications for development, homeostasis and disease. *Gastroenterology*, 129:1696-1710.

Editorial Responsibilities

Editorial boards

Associate Editor, *Inflammatory Bowel Diseases*	1994-2006
Section Editor, Inflammatory Bowel Diseases	2006-2009
Editorial Board: American Journal of Physiology	2000-2007
Senior Associate Editor, *Gastroenterology*	2001-2006
Editorial Board, *Gut Microbes*	2009-present

Grants/Contracts

Principal Investigator - 8/1/1998-6/30/2013
Colitis induced by immune responses to luminal bacteria-mouse
NIDDK, R01 DK053347
Total direct costs - $2,225,000
% effort – 20%

Principal Investigator - 2/1/1989-6/30/2012
Mechanisms of colitis induced by defined bacterial flora
NIDDK, R01 DK040249
Total direct costs - $1,096,410
% effort – 13%

Principal Investigator - 9/4/2009-8/31/2014
National Gnotobiotic Rodent Resource Center
NIH, P40 RR018603
Total direct costs - $1,986,550
% effort – 12%

Principal Investigator - 10/1/2009-9/30/2010
Prevention and treatment of radiation-induced enteropathy by an oral absorbent, AST-120
Ocera Therapeutics, Inc
Total direct costs - $103,600
% effort – 5%

Co-Investigator - 4/14/2009-4/16/2012
PI- Lloyd Mayer
(SHARE) Inflammatory Bowel Disease Sinai-Helmsley Alliance for Research Excellence Network

The Helmsley Foundation
Total direct costs - $235,830
% effort – 5%

Principal Investigator - 7/1/2009-6/30/2012
CCFA Gnotobiotic Animal Facility
Total direct costs - $390,000
% effort – 5%

Co-investigator - PI of Project 10 - 8/31/2005-7/31/2010
PI – Nelson Chao
(RADCore) Regulation of radiation-induced enteropathy by innate immune responses to commensal bacteria.
Duke University
Total direct costs to Sartor - $700,000
% effort – 15%

Co-investigator - 12/1/1996-11/30/2010
PI – Robert Sandler
Digestive Disease Research Core Center (Center For Gastrointestinal Biology And Disease)
NIDDK, P30 DK034987
Total direct costs to Sartor - $496,539
% effort – 10%

Co-investigator - 12/1/2005-3/31/2011
PI – Christian Jobin
Role of Bacteria in Colitis-associated Colon Cancer
NIDDK, R01 DK073338
Total direct costs to Sartor - $49,000
% effort – 5%

Co-investigator - 6/24/2009-5/31/2010
PI – Ellen Li
Effect of Crohn's disease risk alleles on enteric microbiota
Washington University at St. Louis, WU-10-60/PO2910972A
Total direct costs to Sartor - $61,411
% effort – 5%

Co-investigator - 7/1/2008-6/30/2010
PI – Robert Schwabe
Prevention of hepatic fibrosis by probiotics
Columbia University, R21 AT003878
Total direct costs to Sartor - $50,000
% effort – 2%

Co-investigator - 8/1/2008-7/31/2013

PI – Robert Schwabe
Toll-like receptor signaling in hepatic fibrogenesis
Columbia University, R01 DK076920
Total direct costs to Sartor - $106,250
% effort – 2%

Co-investigator - 7/1/2008-6/30/2010
PI – Edson Rocha
Bacteroides iron/heme acquisition and storage mechanisms in Bacteroides colonization and pathology
East Carolina University, R21 AI079183
Total direct costs to Sartor - $71,712
% effort – 2%

Grant Review Service

Member NIDDK C Study Section, National Institutes of Health (Chairman 2004-2006)	2001-2006
Member NIDDK Study Section GMPB	2010-present
Ad hoc member multiple NIDDK study sections	1990-present
Ad hoc member Crohn's and colitis Foundation of America (CCFA) Study sections, member Initiatives Committee review panel	1985-present

Honors/Awards

American Association of Physicians elected member	2010
Basic Science Achievement Award, CCFA	2009
America's Best Doctors	2000-present

UNC Leadership

Director, Multidisciplinary Center for IBD Research and Treatment	1998-present
Co- Director, Center for Gastrointestinal Biology and Disease	2000-present
Co-Chief (Research) Division of Gastroenterology and Hepatology	2003-present
Director, Gnotobiotic Rodent Core Center GI Biology and Disease	2004-present

Committee Service

University of North Carolina, Chapel Hill

Space Committee, School of Medicine	2007-2010
Search Committee for Chair, Biochemistry Dept.	2007

Outside UNC

<u>NIH Committees/Study Sections</u>

Member NIDDK C Study Section, National Institutes of Health (Chairman 2004-2006)	2001-2006
Member NIDDK Study Section GMPB	2010-present
Multiple ad hoc study sections – NIDDK	1990-present

<u>Other advisory boards</u> (e.g. FDA, company boards)

External Advisory Committee for grants– University of Chicago DDRC, Eugene Chang, PI, Program Project Grant – Vanderbilt – Richard Peek, PI, PPG – Mt. Sinai, Lloyd Mayer, PI, PPG – Cedars Sinai – Steph Targan, PI – Advisory Boards – Dannon/ Yakult North American Advisory Board, P&G, Abbott, UCB, Takada, McNeill

Professional Meetings/Societies

Meeting organization

Chairman, Organizing Committee Host- Microbial Interactions (CCFA) 2005

Chair and co-chair annual Digestive Diseases Week, Immunology, Microbiology and Inflammatory Bowel Disease Section 2007-2010

Meeting participation

Average 15-20 meeting/ yr as speaker or moderator

Society leadership

Chief Medical Advisor – Crohn's and Colitis Foundation of America 2007-present

Chair and co-chair Immunology, Microbiology and Inflammatory Bowel Disease Section of the American Gastroenterology Association 2006-2010

American Gastroenterology Association Foundation Council 2007-2010

Society membership

American Gastroenterological Association 1981-present
American Association for the Advancement of Science 1982-present
Society for Intestinal Microecology and Disease 1983-present
Gastroenterology Research Group 1984-present
American Society for Microbiology 1986-present
Society of Mucosal Immunology 1987-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Jonathan S Serody MD

Elizabeth Thomas Professor of Medicine, Microbiology and Immunology

Primary Appointment: Department of Medicine

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. Carlson M, Coghill JM, West MJ, Panoskaltsis-Mortari, A, Wan Y, Tedder T, Blazar BR, **Serody JS**. Trafficking to lymphoid sites is absolutely required for Treg prevention of GvHD. (Am J Transpl in Press).

2. *Van Deventer H, *Burgents JE, Wu QP, Woodford RM, Brickey WJ, Allen IC, Tekippe EM, ****Serody JS**, **Ting JPY. The inflammasome component, NLRP3, impairs antitumor vaccination by enhancing accumulation of peritumoral myeloid derived suppressor cells. Cancer Research (in Press).* and ** equally contributed to work

3. Coghill JM, Carlson MJ, Panoskaltsis-Mortari A, West ML, Burgents JE, Blazar BR, **Serody JS**. Separation of graft-versus-host disease from graft-versus-leukemia responses by targeting C-C chemokine receptor 7 on donor T cells. Blood 115(23): 4914-4922, 2010 (Inside Blood Comment).

4. Burgents, JE, Moran TM, Collier ML, West MJ, Davis NL, Johnston RE, **Serody JS**. The immunosuppressive tumor environment is the main impediment to successful vaccination in neu transgenic mice. J Immunotherapy 33(5): 482-491, 2010.

5. Wood, W, Garg, S, Adamus G, Gabriel D, Shea T, **Serody, J**. Alloimmune Retinopathy associated with antibodies to transducin-α as a complication of chronic GVHD. Biol of Blood and Marrow Transplantation DOI: 10:1016/j 06.012, 2009..

6. Shea TC, Beaven AW, Moore DT, **Serody JS**, Gabriel DA, Chao NK, Gockerman J, Lindley C, Garcia R, Schell M and Rizzieri DA.Sequential high-dose ifosfamide, carboplastin and etoposide with ritucimab for relapsed Hodgkin and large B-cell non-Hodgkin lymphoma: increased toxicity without improvement in progression-free survival. Leukemia & Lymphoma 8(1-8) (epub ahead of print, 2009).

7. Rao, KV, Buie LW, Shea T, Gabriel DA, Comeau T, Irons R, **Serody J**, Eron B. Intravesicular cidofovir for the management of BK virus-associated cystitis. Biol Blood Marrow Transplant 15(3): 391-392, 2009.

8. O'Shaunessey MJ, Vogtenhuber C, Sun K, Sitcheran R, Baldwin AS, Murphy WJ, Dang L, Jaffee B, Palmer E, **Serody JS**, Blazar BR..Ex vivo inhibition of NF-kappaBsignaling in alloreactive T-cells prevents graft-versus-host disease. American Journal of

Transplantation 9(3): 452-462, 2009.

9. Carlson, MJ, West M, Panoskaltsis-Mortari, A, Blazar BR. **Serody JS**. In vivo generated Th17 cells mediate lethal GVHD with severe cutaneous and pulmonary pathology. Blood113(6): 1365-1374, 2009.

10. Taylor PA, Ehrhardt MJ, Lees CJ, Panoskaltsis-Mortari A, Krieg AM, Sharpe AH, Murphy WJ, **Serody JS**, Hemmi H, Akira S, Levy RB, Blazar BR. TLR agonists regulate alloresponses and uncover a critical role for donor APCs in allogeneic bone marrow rejection. Blood 112(8): 3508-3516, 2008.

11. van Deventer HW, Ping QW, Bergstralh DT, Davis BK, O'Connor BP, Ting JPY and **Serody JS**. C-C Chemokine Receptor 5 on Pulmonary Fibrocytes Facilitates Migration and Promotes Metastasis via Matrix Metalloproteinase 9**.** American Journal of Pathology, 173(1): 253-264, 2008.

12. Petermann KB, Rozenberg GI, Zedek D, Groben P, McKinnon KP, Buehler C, Kim W, Shields JM, Bear JE, Thomas NE, **Serody JS**, Sharpless NE. Erk activation induces CD200 expression and T cell suppression in melanoma. Journal of Clinical Investigation 117(12): 3922-3929, 2007.

13. Moran TP, Burgents JE, Long B, Ferrer I, Jaffee EM, Tisch R, Johnston RE, **Serody JS**. Alphaviral-vector transduced dendritic cells are successful therapeutic vaccines against Neu-expressing tumors. Vaccine 25(36):6604-6612, 2007.

14. Taylor PA, Ehrhardt MJ, Lees CJ, Tolar J, Weigel BJ, Panoskaltsis-Mortari A, **Serody JS**, Binkmann V, Blazar BR. Insights into the mechanism of FTY720 and compatibility with regulatory T cells for the inhibition of GVHD. Blood 110(9): 3480-3488, 2007

15. Taylor PA Ehrhardt MJ, Roforth MM, Swedin JM, Panoskaltsis-Mortari A, **Serody JS**, Blazar BR. Preformed antibody, not primed T cells, is the initial and major barrier to bone amrrow engraftment in allosensitized recipients. Blood109(3): 1307-1315, 2007.

16. Gabriel DA, Shea TC, **Serody JS**, Moore, DT, Kirby SL, Harvey, D, Bigelow SH, and Krasnov C. Cytoprotection by Amifostine (Ethyol®) During Autologous Stem Cell Transplantation for Advanced Refractory Hematologic Malignancies. Biology of Blood and Marrow Transplantation 11(12): 1022-1030, 2005.

17. Taylor, PA, Panoskaltsis-Mortari A, Freeman GJ, Sharpe, AH, Noelle RJ, Rudensky AY, Mak TW, **Serody JS**, Blazar BR. Targeting of inducible costimulator expressed on alloreactive T cells down regulates graft-versus-host disease and facilitates engraftment of allogeneic bone marrow. Blood. 105(8): 3372-3380, 2005.

18. Moran, T, Collier, M, McKinnon, KP, Davis NL, Johnston RE, **Serody JS**. A novel viral system for generating antigen-specific T cells. Journal of Immunology. 175(3): 3431-3438, 2005.

19. Wysocki C, McKinnon KM, Raimondo C, Lee H, Su, L, Blazar BR, **Serody JS**. Critical role for CCR5 in the function of CD4CD25+ regulatory T cells during acute GVHD. Blood 2005 July 7 106(9): 3300-3307, 2005.

20. van Deventer H, O'Connor Jr W, Brickey WJ, Aris RM, Ting JPY, **Serody JS**. Critical role for stromal cell production of CCR5 in pulmonary metastasis. Cancer Research 65: 3374-3379, 2005.

21. Hildebrandt, GC, Olkiewicz, KM, Choi S, Corrion LA, Clouthier S, Liu C, **Serody JS**, and Cooke KR. Donor T cell production of RANTES significantly contributes to the development of idiopathic pneumonia syndrome after allogeneic stem cell transplantation. Blood. 105:3372-3380, 2005. (Plenary Manuscript)

Reviews & commentaries

1. **Serody JS**, Coghill JM, Moran TP, Murphy WJ, Blazar BR. T cell subsets and their role in acute GVHD. Blood (invited review).

2. Coghill, J, Carlson M, Moran TJ and **Serody JS**. The biology and therapeutic potential of natural regulatory T-cells in the bone marrow transplant setting. Leukemia and Lymphoma July 25, 1-10, 2008.

3. **Serody J**. The CCR deletion mutation and graft-versus-host disease. Haematologica. 91(12): 1586A, 2006.

4. Gilman A and **Serody JS**. Biology and Management of chronic GVHD. Seminars in Hematology 43(1): 70-80, 2006.

5. Wysocki, C, Panoskaltisis-Mortari, A, Blazar BR, **Serody JS**. Leukocyte migration and GVHD. Blood. 105(11): 4191-4199, 2005.

Editorial Responsibilities

Editorial boards

Journal of Clinical Oncology 2009-present

Ad hoc reviewer for:
American Journal of Transplantation, Biology of Blood and Marrow Transplantation, Blood, Bone Marrow Transplantation, Cancer Research, Clinical Cancer Research, Journal of Clinical Oncology, Journal of Hepatology, Journal of Immunology, Journal of Immunotherapy, Journal of Virology, Leukemia and Lymphoma, Melanoma Research, Proceedings of the National Academy of Sciences USA, Stem Cells, Vaccine

Grants/Contracts

Principal Investigator 10/1/2010-9/30/2013
Blocking Effector Function for the Treatment of GVHD
Leukemia and Lymphoma Society, LLS 180680
Direct Cost: $178,200
% effort: 10

Principal Investigator 4/01/05-12/31/2010
Treg Migration in GVHD
National Institutes of Health, R01 AI064363
Direct Cost: $288,500
% effort: 15

Principal Investigator 9/1/2009-12/31/2010
Treg Migration in GVHD
National Institutes of Health, RO1AI064363-05S1
Direct Cost: $94,500
% effort: 15

Principal Investigator 7/1/2010-6/30/2013
Combined Modality Therapies for the Treatment of Metastatic Breast Cancer
Susan G.Komen For the Cure, KG100307
Direct Cost: $150,000
% effort: 10

Principal Investigator 8/1/2010-7/31/2011
Blocking Selectins in The Treatment of Skin GVHD
Glycomimetics Inc, R41AI069602 15% effort
Direct Cost: $82,500
% effort: 15

Principal Investigator: Flood, P 5/1/2008-7/30/2010
Blockade of NF-kappaB for Prevention/Treatment of GVHD
National Institutes of Health (Flood), R41AI069602
Direct Cost: $142,500
% effort: 15

Principal Investigator: Flood, P 6/1/2009-5/31/2011
Blockade of NF-kappaB for Prevention/Treatment of GVHD
National Institutes of Health (Flood), R41AI069602-03S1
Direct Cost: $62,000
% effort: 15

Principal Investigator: Earp, S 9/1/2006-8/31/2011
Viral Vectors As a Vaccine Platform in Breast Cancer

National Institutes of Health, P50 CA58233
Direct Cost: $148,500
% effort: 15

Principal Investigator 6/1/2009-5/30/2011
Vaccine and conventional therapy for the treatment of metastatic breast cancer.
University Cancer Research Fund,
Direct Cost: $87,500
% effort: 10

Principal Investigator: Earp, S 7/01/09-6/30/10
Immunotherapy for Breast Cancer
Breast Cancer Research Foundation,
Direct Cost: $28,000
% effort: 2

Principal Investigator: Earp, S 6/1/2004-11/30/2010
Cancer Center Core Support Grant
National Institutes of Health, P30CA016086
% effort: 10

Principal Investigator: Key 4/1/2007-3/30/2012
Research Fellowships in Hematology Oncology
National Institutes of Health, T32HL007149
% effort: 5

Grant Review Service

University Cancer Research Fund Grant Review 2009-2010

National Institutes of Health: Transplanation, Tolerance and Tumor Immunology (TTT) Study Section. Permanent Member 2007-2011

Leukemia and Lymphoma Society Translational Research Program. Permanent Member 2005-2011.

LCCC Translational Research Grant Program: Chair 2007-2010

Wellcome Fund Ad Hoc Reviewer 2007

SPORE Parent Committee Permanent Member 2005-2006.

Loan Repayment Program National Institutes of Health Permanent Member 2005-2008.

Honors/Awards

Elizabeth Thomas Endowed Chair in Medicine, Microbiology and Immunology 2006

Castle Connolly America's Top Doctors in Cancer 2005-2010

Castle Connolly America's Top Doctors 2006-2010

UNC Leadership

Leader of the Program in Malignant Hematology Lineberger Comprehensive Cancer Center

Co-Leader Immunology Program Lineberger Comprehensive Cancer Center

Committee Service

UCRF Equipment Committee University of North Carolina, Chapel Hill

Professional Meetings/Societies

Meeting organization

American Society of Hematology Scientific Subcommittee Immunology and Host Defense 2008-present

Society membership

American Society of Hematology: 2005 until present

American Association for the Advancement of Science 2005-present

American Society of Bone Marrow Transplantation 2005-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Lishan Su, PhD

Professor

Primary Appointment: Department of Microbiology & Immunology

Publications:

Primary literature

1. Michael L. Washburn, Grigoriy Kovalev, Selena Barbour, Liguo Zhang, Yang-Xin Fu, and Lishan Su (2009) Clearance of a persistent AAV infection in the liver by modulating the LIGHT-LTbR-HVEM signaling pathway. PlosOne (in press)
2. Johnson, S., Torrice, K., J. Bell, K. Monahan, Q. Jiang, Y. Wang, M. Ramsey, J. Jin, K. Wong, L. Su, D. Zhou and N. Sharpless (2010) In vivo radioprotection through pharmacological quiescence. J. Clin. Inv. (in press)
3. Ince WL, Zhang L, Jiang Q, Arrildt K, Su L, Swanstrom R. (2010) Evolution of the HIV-1 *env* Gene In the Rag2-/-gammac-/- Humanized Mouse Model. *J. Virol.* 84(6):2740-52. PMID: 20042504
4. Choudhary SK, Rezk NL, Ince WL, Cheema M, Zhang L, Su L, Swanstrom R, Kashuba AD, Margolis DM (2009) Suppression of HIV-1 viremia with reverse transcriptase and integrase inhibitors, CD4+ T cell recovery, and viral rebound upon therapy interruption in a new model for HIV treatment in the humanized Rag2-/-gammac-/- mice. *J. Virol.* 83(16):8254-8. PMID: 19494021
5. Sivaraman V, Zhang L, Meissner EG, Jeffrey JL, Su L (2009) The Heptad Repeat (HR) 2 Domain Is the Major Determinant for Enhanced HIV-1 Fusion and Pathogenicity of A Highly Pathogenic HIV-1 Env. *J. Virol.* 83(22):11715-25. PMID: 19726524
6. Lu, X., G. I. Kovalev, H. Chang, E. Kallin, G. Knudsen, L. Xia, P. Ruiz, E. Li, **L. Su**, and Y. Zhang (2008) Inactivation of NuRD Component Mta2 Causes Abnormal T Cell Activation and Lupus-like Autoimmune Disease in Mice. *J Biol Chem.* 283(20):13825-33.
7. Jiang, Q., L. Zhang, R. Wang, M. Washburn, D. Brouwer, S. Barbour, G. Kovalev, D. Unutmaz, and **L. Su** (2008) FoxP3+ Treg Cells Play an Important Role in Acute HIV-1 Infection in Humanized rag2$^{-/-}$gC$^{-/-}$ Mice in vivo. *Blood*. 2008 Jun 10. [Epub ahead of print]/PMID: 18544681
8. Laakso, Meg M., Fang-Hua Lee, Beth Haggarty, Caroline Agrawal, Katrina M. McGeehan, Mark Biscone, George J. Leslie, Josephine Romano, Andrea P.O. Jordan, Eric G. Meissner, **Lishan Su**, James A. Hoxie, and Robert W. Doms (2007) V3 Loop Truncations in HIV-1 Envelope Impart Resistance to Coreceptor Inhibitors and Enhanced Sensitivity to Neutralizing Antibodies. *PLoS Pathogens* (in press)
9. Nordone, S.K., Ignacio. G.A., Golenbock, D.T., Latz, E., Sempowski, G.D., **Su, L.**, Li, L., Dean, G.A. (2007) Toll-like receptor 4 ligation on HIV-1 infected cells does not induce cytokine or virus production. *AIDS Res and Hum Retrovir* (in press)
10. Holmes, D., G. Knudsen, S. Mackey, and **L. Su** (2007) FoxP3 Enhances HIV-1 Gene Expression by Modulating NFkB Occupancy at the LTR in Human T Cells. *J. Biol. Chem.* 282(22):15973-80
11. Qi, J., V. M. Coffield, M. Kondo and **L. Su** (2007) TSLP stimulates expansion of

thymocyte progenitors and thymopoiesis. *BMC Immunology* (in press)

12. Helms, W., M. Townsend, N. Clipstone, and **L. Su** (2007) Modulation of NFAT-Dependent Gene Expression by RhoA. *J. Leuk. Biol.* (Volume 82, August 2007)
13. Zhang, L., G. I. Kovalev, and **L. Su** *HIV-1 Infection And Pathogenesis In A Novel Humanized Mouse Model*. (2006) *Blood,* 109(7):2978-81
14. Meissner, E.G., L. Zhang, S. Jiang and **L. Su** *Envelope/Fusion-dependent depletion of HIV+ thymocytes is correlated with induction of apoptosis*. (2006) *J. Virol.* (22):11019-11030
15. Loomis, R., D. Holmes, A. Elms, R., Solski, P., C. Der, and **L. Su** *Citron, a RhoA Effector, Enhances HIV-1 Viral Release by Modulating Exocytosis*. (2006) *Traffic* 7: 1643–1653
16. Kovalev, G., T. Simon, V. Coffield, D. Franklin, and **L. Su** *Control of Thymocyte Proliferation and Thymus Organ Size by CDK Inhibitors* $p18^{Ink4c}$ *and* $p27^{Kip1}$. (2006) *J. Stem Cells* 1 (2): 97-108
17. Okada, Y., Q. Jiang, M. Lemieux, L. Jeannotte, **Su, L.**, and Y. Zhang *Leukaemic transformation by CALM–AF10 involves in upregulation of Hoxa5 by hDOT1L*. (2006) *Nat Cell Biol.* 8: 1017-1024
18. Qi, J., H. Su, G. Knudsen, W. Helms, and **L. Su** *Delayed functional maturation of natural regulatory T cells in the medulla of postnatal thymus: role of TSLP*. (2006) *BMC Immunology* 7(1):6
19. Meissner, E.G., V. M. Coffield and **L. Su** *Thymic pathogenicity of an HIV-1 envelope is associated with increased CXCR4 binding efficiency and V5-gp41-dependent activity, but notV1/V2-associated CD4 binding efficiency and viral entry*. (2005) *Virology* **336**: 184–197
20. Okada, Y., Q. Feng, Y. Lin, Q. Jiang, Y. Li, V. M. Coffield, **L. Su**, G. Xu and Y. Zhang *hDOCT1L links histone methylation to leukemogenesis*. (2005) *Cell* **121**: 167–178
21. Chang X, Gao JX, Jiang Q, Wen J, Seifers N, **Su L**, Godfrey VL, Zuo T, Zheng P, Liu Y. *The Scurfy mutation of FoxP3 in the thymus stroma leads to defective thymopoiesis*. (2005) *J Exp Med.* **202**(8):1141-51
22. Williams KL, Lich JD, Duncan JA, Reed W, Rallabhandi P, Moore C, Kurtz S, Coffield VM, Accavitti-Loper MA, **Su L**, Vogel SN, Braunstein M, Ting JP. *The CATERPILLER Protein Monarch-1 Is an Antagonist of Toll-like Receptor-, Tumor Necrosis Factor {alpha}-, and Mycobacterium tuberculosis-induced Pro-inflammatory Signals*. (2005) *J Biol Chem.* **280**(48):39914-39924
23. Wysocki CA, Jiang Q, Panoskaltsis-Mortari A, Taylor PA, McKinnon KP, **Su L**, Blazar BR, Serody JS. *Critical role for CCR5 in the function of donor CD4+CD25+ regulatory T cells during acute graft-versus-host disease*. (2005) *Blood* **106**(9):3300-7

Book Chapters and Reviews:

24. Zhang, L., E. Meissner, J. Chen, and L. Su (2010) Current humanized mouse models for studying human immunology and HIV-1 immuno-pathogenesis. Sci China Life Sci, 53: 195–203
25. Holmes D, Jiang Q, Zhang L, and **Su L.** (2008) Foxp3 and Treg cells in HIV-1 infection and immuno-pathogenesis. *Immunol Res.* 2008 Aug 26. [Epub ahead of print]
26. Su, L. (2007) PD-1+ T Cells in HIV-1 Infection: Exhausted and Premature? Blood (in press, Inside Blood commentary)

Editorial Responsibilities

Editorial boards

Member, Editorial Board, Current HIV Research, 2003- 2010
Member, Editorial Board, Stem Cells, 2003- present
Member, Editorial Board, Journal of Stem Cells, 2005- present
Editorial Board Member, Molecular and Cellular Immunology 2010-present
Senior Editorial Board Member, International Journal of Biochemistry and Molecular Biology

Ad hoc reviewer for: Blood, Hum. Gen. Therapy, J. Virol., J. Immunol. J. Biol. Chem., Nat. Med., Proc. Nat. Acad. Sci. (USA), Virology

Grants/Contracts

Principal Investigator
7/1/08 6/30/13
Treg in HIV-1 Replication and Pathogenesis
National Inst. of Health, 5-R01-AI077454-03
Total direct: 250,000.00/year
% effort: 25

Principal Investigator 7/1/09
6/30/11
HIV-1 Replication and Pathogenesis in vivo
National Inst. of Health, 1-R01-AI080432-02
Total direct: 239,056.00/year
% effort: 25

Principal Investigator 9/1/08
8/31/10
A Novel Humanized Mouse Model for Studying HIV/HCV Co-Infection and Liver Disease
National Inst. of Health,1-R21-AA018009-01
Total direct: 275,000.00
% effort: 10

Principal Investigator
5/1/09 4/30/11
Pathogenesis of HCV in a Novel Mouse Model
National Inst. of Health, 1-R21-AI076142-01A2
Total direct: 275,000.00
% effort: 10

Principal Investigator 7/1/09
6/30/11
Ethanol and HBV Infection on HCC Development in a Novel Humanized Mouse Model
National Inst. of Health , 1-R21-AA08372-01
Total direct: 275,000.00
% effort: 5

Principal Investigator: Earp 8/1/06
7/31/11
SPORE in Breast Cancer- Project 2
National Cancer Institute, 5-P50-CA58223-15
Total direct to Su: 20,000/year
% effort: 10

Principal Investigator: Damania 7/1/05
6/30/10
Viral Infection and Primary Pulmonary Hypertension
National Inst. of Health, 5-RO1-HL083469-03
Total direct to Su: 10,000/year
% effort: 5

Principal Investigator: Sparling 3/1/09
2/28/14
SERCEB Southeast Regional Centers of Excellence for Biodefense and Emerging Infectious Diseases
National Inst. of Health, 2-U54 AI057157-07
Total direct to Su: 10,000/year
% effort: 5

Principal Investigator: Kashuba 12/15/09
11/30/10
Preventing HIV Infection in Women: Targeting Antiretrovirals to Mucosal Tissues
Natl Inst Allergies & Infectious Diseases, 1-R34-AI087065-01
Total direct to Su: 6,000
% effort: 3

Recently Completed

Principal Investigator 9/1/98 1/31/08
HIV-1 Replication and Pathogenesis in the Human Thymus
National Inst. of Health, 2-RO1-AI041356-09
(no cost extension requested)

Principal Investigator: Kenne 10/1/06-9/30/08
EBV and HIV-1 pathogenesis in a new mouse model
R21
% effort: 5

Principal Investigator 3/1/2006-2/28/2008
A Novel Mouse Model to Study Human Immune Responses and Vaccines.
SERCEB Developmental Projects
% effort: 10

Principal Investigator 6/1/07-5/31/08
Modulation of T cell activation and HIV-1 replication by FoxP3.
NIH, R56 AI048407-06
% effort: 25

Principal Investigator: Juliano 10/1/2006-9/30/2011
PROJECT 5 (PI: Mike Ramsey, Su, co-PI): Nanofluidics Devices for Rapid Single Cell Analysis of Protein Expression.
Carolina Center of Cancer Nanotechnology Excellence

Principal Investigator 1/1/2006-12/31/2007
HIV mucosal transmission in humanized mice model.
amfAR-106693-39-RFMT

Principal Investigator 09/01/00-08/31/06
A Novel RhoA Effector Involved in Modulating HIV-1 Replication and Pathogenesis.
RO1-AI/GM 48407

Principal Investigator 9/1/2002-8/31/2006
A novel genetic approach to dissecting homing and engraftment of HSPC.
R21-HL72240

Principal Investigator 9/1/02-8/31/05
Adaptive evolution of HIV-1 in "genetically humanized" mouse models
R21-CA99939

Principal Investigator 1/1/2003- 12/31/2005
Genetic Analysis of Chemokine Receptors in T Cell Development
R21 AI53804

Grant Review Service

Member, Ray Wu Prize committee/CBSA: 2009-present
Member, Chinese National Science Foundation Grant Reviews: 2005 to 2007
Member, NIH/NIAID Study Section (AARR1/AMCB): June 2001 to July 2006
Ad hoc reviewer for NIH study section (AAR2) and Chinese NSF: 2000-2010
Ad hoc reviewers for NIH program PO1/U19, RC1 and RO1 grants (2009-2010)

UNC Leadership/Committee Service

University of North Carolina, Chapel Hill

Member: Search committee for faculty members in Lineberger Cancer Center (2008-09)
Member: Flow Cytometer Core Committee (1996 – present)
Member: Search committee for faculty members in CFAR-Microbiology/UNC (2008-09)
Member: Search committee for faculty members in Stem Cell-Genetics/UNC (2007-09)
Chair: Equipment committee for Lineberger Cancer Center (2003-present)
Member: Advisory committee for the curriculum in Genetics & Mol. Biol. (2003-2009)

Outside UNC

Organizing Committee, NC Triangle Immunology Interest Group (2005-present)

Professional Meetings/Societies

Meeting organization

Organizer: 3rd International Symposium on Infection and immunity, Lijiang, China (2009)
Section chair: SCBA annual symposium (July. 2009, Taipei, Taiwan)

Meeting participation as invited speakers:

NIH-Workshop on humanized mouse models/Bethesda, MD, June 2010
International consortium of humanized mouse models/Hanover-Germany, June 2010
4th Pasteur-AREVA Course: Anti-Viral Immunity/Shanghai-China, May 2010
US-Japan AIDS-Hepatitis Meeting: Co-Infection with HIV and Hepatitis Viruses/Portland-OR, Sept. 2009
The 3rd Symposium on Infection & Immunity (Aug. 2009, Lijiang, China)
SCBA annual symposium (July. 2009, Taipei, Taiwan)
The Molecular Biology of HIV-1 Infection (Dec. 2008, Rome)
The 2nd Symposium on Infection & Immunity (Oct. 2008, Beijing)
International Conference on regulatory T cells, Beijing (Oct. 2008)
Upstate humanized mouse model conference, Geneva, NY (May 2008)
The Molecular Biology of HIV-1 Infection (Oct. 2007, Capri)
New Humanized Rodent Models Workshop, NIH (Sept. 2007, Bethesda)
Frontiers in Biological Sciences, Tsinghua University, Beijing (July 2007)
SERCEB Annual Meeting, Gainesville, FL (Oct. 2006)
Mid Atlantic SIV Interest Group Meeting, NCI-Frederick, SAIC-Frederick (Sept. 2006)
The Molecular Biology of HIV-1 Regulatory Proteins (Oct. 2005, Venice)
The 10th SCBA International Symposium (July, 2005, Beijing)
The 1st Symposium on Infection & Immunity (July, 2005, Beijing)

Society leadership

Founding Member, Ray Wu Society of Biomedical Sciences (1997 – present)
Founding member/organizer, NC Triangle Immunology Interest Group (2005-present)

Society membership

Member, American Association of Immunologists (2004 – present)
Member, American Society of Microbiology (1994 – present)
Member, American Association for the Advancement of Science (1991 – present)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Ronald Swanstrom, Ph.D.

Professor

Primary Appointment: Department of Biochemistry and Biophysics

Joint Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Resch W, Parkin N, Watkins T, Harris J, and Swanstrom R. The evolution of human immunodeficiency virus type 1 protease genotypes and phenotypes in vivo under selective pressure of a potent protease inhibitor. (2005) *Journal of Virology* **79**, 10638-10649.

Kitrinos KM, Nelson JAE, Resch W, and Swanstrom R. The effect of a protease inhibitor-induced bottleneck on human immunodeficiency virus type 1 *env* gene populations. (2005) *Journal of Virology* **79**, 10627-10637.

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Harrington PR, Nelson JAE, Kitrinos K, and Swanstrom R. (2007) Independent evolution of human immunodeficiency virus type 1 *env* V1/V2 and V4/V5 hypervariable regions during chronic infection. *Journal of Virology* **81**, 5413-5417.

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R, Tomaras GD, Blattner WA, Goepfert PA, Kilby JM, Saag MS, Delwart EL, Busch MP, Cohen MS, Montefiori DC, Haynes BF, Gaschen B, Athreya GS, Lee HY, Wood N, Seoighe C, Perelson AS, Bhattacharya T, Korber BT, Hahn BH, Shaw GM. Identification and characterization of transmitted and early founder virus envelopes in primary HIV-1 infection. (2008) *Proceedings of the National Academy of Science USA* **105**, 7552-7557.

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Kraus MH, Parrish NF, Shaw KS, Decker JM, Keele BF, Salazar-Gonzalez JF, Grayson T, McPherson DT, Ping L-H, Anderson JA, Swanstrom R, Williamson C, Shaw GM, and Hahn BH. A rev1-vpu polymorphism unique to HIV-1 subtype A and C strains impairs envelope glycoprotein expression from rev-vpu-env cassettes and reduces virion infectivity in pseudotyping assays. (2010) *Virology* **397**, 346-357.

Schnell G, Price RW, Swanstrom R, Spudich S. Compartmentalization and clonal amplification of HIV-1 variants in the cerebrospinal fluid during primary infection. (2010) *Journal of Virology* **84**, 2395-2407.

Masharsky AE, Dukhovlinova EN, Verevochkin SV, Toussova OV, Skochilov RV, Anderson JA, Hoffman I, Cohen MS, Swanstrom R, and Kozlov AP. A significant transmission bottleneck among newly and recently HIV-1 infected injection drug users in St. Petersburg, Russia. (2010) *Journal of Infectious Diseases* **20**, 1697-1702.

Ince IL, Zhang L, Jiang Q, Arrildt K, Su L, and Swanstrom R. Evolution of the HIV-1 *env* gene in the Rag2-/-γC-/- humanized mouse model. (2010) *Journal of Virology* **84**, 2740-2752.

Anderson JA, Ping L-H, Dibben O, Jabara C, Arney A, Hobbs M, Hoffman I, Kazembe P, Jones C, Borrow P, Fiscus S, Cohen MS, Swanstrom R. (2010) HIV-1 Populations In Semen Arise Through Multiple Distinct Mechanisms. *PLoS Pathogens* in press.

Reviews & commentaries

Swanstrom R and Harrington P. The biology of HIV, SIV, and other lentiviruses. Ch. 20, pp. 323-340. In "Sexually Transmitted Diseases", 4th Edition (KK Holmes et al., eds). McGraw-Hill, Inc. 2008.

Cohen MS, Anderson JA, and Swanstrom R. Acute HIV infection: implications for HIV spread, disease progression, and vaccine development. Los Alamos HIV Sequence Database: HIV Database Review Articles 2005, http://hiv-web.lanl.gov/content/hiv-db/REVIEWS/reviews.html.

Patel M, Schnell G, and Swanstrom R. HIV-1 sequence diversity as a window into HIV-1 biology. NIAID, NIH Frontiers in research Vol. 1 (V St Georgiev, KA Western, JJ McGowan, Eds), Humana Press. pp 289-297, 2008.

Anderson JA, Schiffer CA, Lee S-K, and Swanstrom R. Viral protease inhibitors. In "Antiviral Therapy":, Handbook of Experimental Pharmacology Series, R. Bartenschlager and H-G Krausslich, ed. Springer Verlag. 189:85-110, 2009.

Editorial Responsibilities

Editorial boards

Editor, Journal of Virology 2000-2009

Ad hoc reviewer for:

AIDS Research and Human Retroviruses, Antiviral Therapy, BMC Biotechnology, Chemistry and Biology, Clinical Infectious Diseases, Journal of AIDS, Journal of the American Medical Association, Journal of Biological Chemistry, Journal of Immunology, Journal of Infectious Diseases, Journal of Medicinal Chemistry, Journal of Virologic Method, Journal of Virology, Molecular Therapy, Nucleic Acid Research, PLoS ONE, PLoS Pathogens, Proceedings of the National Academy of Sciences, Retrovirology, Virology

Grants/Contracts - Current

Principal Investigator 12/01/98-03/031/15
"Biological Properties of HIV-1 V3 Evolutionary Variants".
NIAID, DHHS: R37 AI44667 [MERIT].
Direct costs $225,000/yr
% effort: 10

Principal Investigator 9/01/93-8/31/13
"Molecular Biology of Viral Diseases".
NIAID, DHHS: T32 AI07419

Direct costs current year: $175,836.

PI: Celia Schiffer 08/01/07-07/31/12
"Targeting Ensembles of Drug Resistant HIV-Protease."
NIGMS, DHHS: P01 GM066524
Total cost year 1: $199,345.

Principal Investigator 8/15/98-5/31/11
"UNC Center For AIDS Research"
NIAID, DHHS: P30 AI50410.
Total cost per year: $2.25 million.
% effort: 30

PI: Bart Haynes 07/14/05-06/30/12
"Center for HIV/AIDS Vaccine Immunology (CHAVI)"
NIAID, DHHS: U01 AI067854.
Direct Costs to RS approx. $250,000/yr.
% effort: 10

PI. D. Montefiori 6/06-6/11
"Comprehensive Antibody Vaccine Immune Monitoring Consortium."
Global HIV/AIDS Vaccine Enterprise.
Direct costs to RS approximately $100,000/yr.

Grant Review Service

NIAID HIVRAD Review (ad hoc 2008)

NIAID T32 Study Section (ad hoc 2009)

NIAID Systems Biology PPG Ad Hoc Study Section (Chair 2010)

UNC Leadership

Director, UNC Center For AIDS Research (1998 to present)

Committee Service

University of North Carolina, Chapel Hill

School of Medicine Salary Equity Committee (member)
Dean's Advisory Committee
Basic Science Chairs and Center Directors Committee
LCCC Virology recruitment search committee

Outside UNC

NCI Board of Scientific Counselors (2001-2006), Member
NIH Office of AIDS Research Council (2010-2013), Member
Ad hoc member of NINDS NeuroAIDS Think Tank (Nov. 2009)
Ad hoc member of NIMH NeuroAIDS Think Tank (Nov. 2009)

External Advisory Board for Duke and Baylor/UTH CFARs
External Advisory Board for Duke HIVRAD grant

Professional Meetings/Societies

Meeting organization - Meeting Scientific Organizing Committee
National Conference on Retroviruses and Opportunistic Infections
HIV Dynamics and Evolution Meeting
AIDS Vaccine Meeting
NIH-Russia HIV Prevention Meeting

Meeting participation
NIAID Conference In Croatia, 2006 (Invited Presentation)
International AIDS Conference, Toronto, 2006 (Invited Presentation)
AIDS Seminars Conference, Mt. Aso, Japan, 2006 (Invited Presentation)
Conf On Retroviruses and Opportunistic Infections, 2007 (Presented at young investigators' premeeting)
AIDS Pathogenesis Meeting, Palm Springs, 2007 (Invited Presentation)
South African Fogarty Reunion Meeting, Durban, 2007 (Invited presentation)
NIH-Sponsored Conference on HIV Vaccines in St. Petersburg, Russia, 2007 (Invited speaker and moderator)
15th International HIV Dynamics and Evolution, Sante Fe, NM 2008. (Abstract selected for oral presentation)
HIV Vaccines and Cancer, St. Petersburg, Russia, 2008 (Invited speaker and session chair)
HIV Transmission Meeting, 2010, Mexico City (Abstract selected for oral presentation)
AIDS Vaccine Meeting in October, Cape Town, 2008 (Invited plenary speaker)
HIV Prevention Meeting in December, Moscow, 2008 (Invited session speaker)
International Conference on Antiviral Research, Miami, 2009 (Invited plenary speaker)
International AIDS Society Meeting, 2009, Cape Town (Session Chair)
NIMH NeuroAIDS Meeting, 2009, Stressa (Session Chair)
NIH Office of AIDS Research Satellite Meeting, 2009, Moscow (Invited speaker)
Retroviruses Meeting, 2010, Cold Spring Harbor Laboratory (Abstract selected for oral presentation)
HIV Transmission, 2010, Vienna (Selected abstract for oral presentation)
HIV Reservoirs, 2010, Vienna (Abstract selected for oral presentation)
International AIDS Society Meeting, 2010, Vienna (Abstract selected for oral presentation)

Society membership

American Society of Microbiology

American Society for Virology

International AIDS Society

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Rita Tamayo, Ph.D.

Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1. **Tamayo, R.**, Patimalla, B., and Camilli, A. (2010) Growth in a biofilm induces a hyperinfectious phenotype in *Vibrio cholerae*. Infection and Immunity. In press.

2. Martinez-Wilson, H.F., **Tamayo, R.,** Tischler, A.D., Lazinski, D.W., and Camilli A. (2008) The *Vibrio cholerae* hybrid sensor kinase VieS contributes to motility and biofilm regulation by altering cyclic diguanylate level. Journal of Bacteriology. 190:6439-6447.

3. **Tamayo, R.**, Schild, S., Pratt, J.T., and Camilli, A. (2008) Role of cyclic d-GMP during El Tor biotype *Vibrio cholerae* infection: Characterization of the in vivo induced cyclic-di-GMP phosphodiesterase CdpA. Infection and Immunity. 76:1617-1627.

4. Benach, J., Swaminathan, S.S., **Tamayo, R.**, Handelman, S.K., Folta-Stogniew, E., Ramos, J.E., Forouhar, F., Neely, H., Seetharaman, J., Camilli, A., and Hunt, J.F. (2007) The structural basis of cyclic diguanylate signal transduction by PilZ domains. EMBO Journal. 26:5153-5166.

5. Schild, S., **Tamayo, R.**, Nelson, E.J., Qadri, F., Calderwood, S.B., and Camilli, A. (2007) Genes induced late in infection increase fitness of *Vibrio cholerae* after release into the environment. Cell Host Microbe. 2:264-277.

6. Pratt, J.T., **Tamayo, R.**, Tischler, A.D., and Camilli, A. (2007) PilZ domain proteins bind cyclic diguanylate and regulate diverse processes in *Vibrio cholerae*. Journal of Biological Chemistry. 282:12860-12870.

7. **Tamayo, R.,** Tischler, A.D., and Camilli, A. (2005) The EAL domain protein VieA is a cyclic diguanylate phosphodiesterase. Journal of Biological Chemistry. 280:33324-33330.

8. **Tamayo, R.**, Choudhury, B., Septer, A., Merighi, M., Carlson, R., and Gunn, J.S. (2005) Identification of *cptA*, a PmrA-regulated locus required for phospho-ethanolamine modification of the *Salmonella enterica* serovar Typhimurium LPS core. Journal of Bacteriology. 187:3391-3399.

9. **Tamayo, R.,** Prouty, A.M., and Gunn, J.S. (2005) Identification and functional analysis of *Salmonella enterica* serovar Typhimurium PmrA-regulated genes. FEMS Immunology and Medical Microbiology. 43:249-258.

Reviews & commentaries

1. Pratt, J.T., **Tamayo, R.,** and Camilli, A. (2010) Role of c-di-GMP in *Vibrio cholerae* virulence. <u>The Second Messenger Cyclic Diguanylate</u>. Eds. A. Wolfe and K. Visick. ASM

Press.

2. **Tamayo, R.,** Pratt, J.T., and Camilli, A. (2007) Cyclic di-GMP and regulation of bacterial pathogenesis. Annual Review of Microbiology. 61:131-148.

Editorial Responsibilities

Editorial boards

Frontiers in Microbiology, 2010-present

Ad hoc reviewer for:

Applied Environmental Microbiology, Infection and Immunity, Journal of Bacteriology, Molecular Microbiology

Grants/Contracts

Investigator (PI, Robert S. Sandler) 07/01/2010-06/31/2012
Center for Gastrointestinal Biology and Disease
NIH/NIDDK, 2 P30 DK034987-25
Title of Project for which R.T. is the principal investigator: Study of Biofilm-Induced Virulence Factors of *Vibrio cholerae* Using the Murine Model of Intestinal Colonization
Total Direct Costs: $24,242
33% effort

Postdoctoral Trainee (PI Laura Liscum) 2007-2009
NIDDK Institutional Training Grant, Pathobiology of Digestive Diseases, DK-007542-21.
100% effort

Postdoctoral Trainee (PI Linden Hu) 2006-2007
NIH Institutional Training Grant, Infectious Disease Training, Pathogenesis/ Host Response, T32 AI07329-14
100% effort

Honors/Awards

2010 University Research Council Award Recipient, UNC-Chapel Hill
2010 Excellence Fund Seed Grant Recipient, UNC-Chapel Hill
2010 CGIBD Pilot/Feasibility Grant, UNC-Chapel Hill
2006 American Society for Microbiology Minority Travel Award for travel to ASM General Meeting

Professional Meetings/Societies

Meeting participation

Gordon Research Conference on Microbial Toxins & Pathogenicity, July 11-16, 2010, Waterville Valley, NH. Poster Presenter.

NIAID Bacterial Waterborne and Emerging Infectious Diseases: Collaborative Research Opportunities in North Africa and the Middle East; Rabat, Morocco, June 28- July 2, 2010. Invited Speaker.

Second Mini-Symposium Marie Curie Early Stage Research Training Programme (European Union IMO Train); April 2006, Karolinska Institutet, Stockholm, Sweden. Invited Speaker.

The 42nd Joint Meeting of the US-Japan Cholera and Other Bacterial Enteric Infections Panel; November 2007, Austin Texas. Poster Presenter.

106th General Meeting of American Society for Microbiology; May 2006, Orlando, Florida. Poster Presenter.

Microbial Pathogenesis and Host Response Meeting; September 2005, Cold Spring Harbor, New York. Poster Presenter.

Society membership

American Society for Microbiology, Member, 2001-present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Jenny Ting, Ph.D.

William Rand Kenan Professor of Microbiology and Immunology

Department of Microbiology and Immunology

Primary literature

1. Taylor, L.C., Gilmore, W., Ting, J.P., & Matsushima, G.K. (2010) Cuprizone induces similar demyelination in male and female C57BL/6 mice and results in disruption of the estrous cycle. *Journal of Neuroscience Research* 88(2):391-402.
2. Allen, I.C., Tekippe, E.M., Woodford, R.M., Uronis, J.M., Holl, E.K., Rogers, A.B., Herfarth, H.H., Jobin, C., & Ting, J.P.Y. (2010) The NLRP3 Inflammasome Functions as a Negative Regulator of Tumorigenesis during Colitis Associated Cancer. *Journal of Experimental Medicine* 10;207(5):1045-56.
3. Gris, D., Ye, Z., Iocca, H.A., Wen, H., Craven, R., Gris, P., Huang, M., Schneider, M., Miller, S.D., & Ting, J.P. (2010) NLRP3 Plays a Critical Role in the Development of EAE by Mediating Th1 and Th17 Responses. *Journal of Immunology.* in press
4. Lord, C.A., Savitsky, D., Sitcheran, R., Calame, K., Wright, J.R., Ting, J.P., & Williams, K.L. (2009) Blimp-1/PRDM1 mediates transcriptional suppression of the NLR gene NLRP12/Monarch-1. *Journal of Immunology* 1;182(5):2948-58.
5. Huang, M.T., Taxman, D.J., Holley-Guthrie, E.A., Moore, C.B., Willingham, S.B., Madden, V., Parsons, R.K., Featherstone, G.L., Arnold, R.R., O'Connor, B.P., & Ting, J.P. (2009) Critical role of apoptotic speck protein containing a caspase recruitment domain (ASC) and NLRP3 in causing necrosis and ASC speck formation induced by Porphyromonas gingivalis in human cells. *Journal of Immunology* 182(4):2395-404.
6. Allen, I.C., Scull, M.A., Moore, C.B., Holl, E.K., McElvania-TeKippe, E., Taxman, D.J., Guthrie, E.H., Pickles, R.J., & Ting, J.P. (2009) The NLRP3 inflammasome mediates in vivo innate immunity to influenza A virus through recognition of viral RNA. *Immunity* 30(4):556-65.
7. Duncan, J.A., Gao, X., Huang, M.T., O'Connor, B.P., Thomas, C.E., Willingham, S.B., Bergstralh, D.T., Jarvis, G.A, Sparling, P.F., & Ting, J.P. (2009) Neisseria gonorrhoeae activates the proteinase cathepsin B to mediate the signaling activities of the NLRP3 and ASC-containing inflammasome. *Journal of Immunology* 182(10):6460-9.
8. Lei, Y., Moore, C.B., Liesman, R.M., O'Connor, B.P., Bergstralh, D.T., Chen, Z.J., Pickles, R.J, & Ting, J.P. (2009) MAVS-mediated apoptosis and its inhibition by viral proteins. *PLOS.* 4(5):5466.
9. Willingham, S.B., Allen, I.C., Bergstralh, D.T., Brickey, W.J., Huang, M.T., Taxman, D.J., Duncan, J.A., & Ting, J.P. (2009) NLRP3 (NALP3, Cryopyrin) facilitates in vivo caspase-1 activation, necrosis, and HMGB1 release via inflammasome-dependent and -independent pathways. *Journal of Immunology* 183(3):2008-15.
10. Jha, S., & Ting, JP. (2009) Inflammasome-associated nucleotide-binding domain, leucine-rich repeat proteins and inflammatory diseases. *Journal of Immunology* 183(12):7623-9.
11. Craven, R.R., Gao, X., Allen, I.C., Gris, D., Bubeck Wardenburg, J., McElvania-Tekippe, E., Ting, J.P., & Duncan, J.A. (2009) Staphylococcus aureus alpha-hemolysin activates the NLRP3-inflammasome in human and mouse monocytic cells. *PLOS.* 4(10):e7446.
12. Iocca, H.A., Plant, S.R., Wang, Y., Runkel, L., Lundsmith, E.T., Hahm, K., van Deventer, H.W., Burkly, L.C. & Ting, J.P. (2008) TNF superfamily member TWEAK exacerbates

inflammation and demyelination in the cuprizone-induced model. *Journal of Neuroimmunology* 194:97-106.
13. Ye, Z.*, Lich, J.D.*, Moore, C.B., Williams, K.L., Duncan, J.A. & Ting, J.P. (2008) ATP binding by Monarch-1/NLRP12 is critical for its inhibitory function. *Molecular Cellular Biology* 28:1841-50.
14. Moore, C.B., Bergstralh, D.T., Duncan, J.A., Lei, Y., Morrison, T.E., Zimmermann, A.G., Accavitti-Loper, M.A., Madden, V.J., Sun, L., Ye, Z., Lich, J.D., Heise, M.T., Chen, Z., & Ting, J.P. (2008) NLRX1 is a novel regulator of mitochondrial antiviral immunity. *Nature* 451:573.
15. Bhat, K.P., Turner, J.D., Myers, S.E., Cape, A.D., Ting, J.P., & Greer, S.F. (2008) The 19S proteasome ATPase Sug1 plays a critical role in regulating MHC class II transcription. *Molecular Immunology* 45:2214-24.
16. McCall, S.H., Sahraei, M., Young, A.B., Worley, C.S., Duncan, J.A., & Ting, J.P., & Marriott, I. (2008). Osteoblasts express NLRP3, a nucleotide-binding domain and leucine-rich repeat region containing receptor implicated in bacterially induced cell death. *Journal of Bone and Mineral Research* 23(1):30-40.
17. Ting, J.P., Lovering, R.C., Alnemri, E.S., Bertin, J., Boss, J.M., Davis, B.K., Flavell, R.A., Girardin, S.E., Godzik, A., Harton, J.A., Hoffman, H.M., Hugot, J.P., Inohara, N., Mackenzie, A., Maltais, L.J., Nunez, G., Ogura, Y., Otten, L.A., Philpott, D., Reed, J.C., Reith, W., Schreiber, S., Steimle, V., & Ward, P.A. (2008) The NLR Gene Family: A Standard Nomenclature. *Immunity* 28(3):285-7.
18. Kim, D., Hoory, T., Monie, A., Ting, J.P., Hung, C.F., & Wu, T.C. (2008) Enhancement of DNA Vaccine Potency through Coadministration of CIITA DNA with DNA Vaccines via Gene Gun. *Journal of Immunology* 180(10):7019-27.
19. Alexis, N.E., Brickey, W.J., Lay, J.C., Wang, Y., Roubey, R.A., Ting, J.P., & Peden, D.B. (2008) Development of an inhaled endotoxin challenge protocol for characterizing evoked cell surface phenotype and genomic responses of airway cells in allergic individuals. *Annals of Allergy and Asthma Immunology* 100(3):206-15.
20. Dan, H.C., Cooper, M.J., Cogswell, P.C., Duncan, J.A., Ting, J,P., & Baldwin. A,S. (2008) Akt-dependent regulation of NF-κB is controlled by mTOR and Raptor in association with IKK. *Genes and Development* 22(11):1490-500.
21. Li, H., Willingham, S.B., Ting, J.P., & Re, F. (2008) Cutting Edge: Inflammasome activation by alum and alum's adjuvant effect are mediated by NLRP3. *Journal of Immunology* 181(1):17-21.
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26. Bergstralh, D.T., Conti, B.J., Moore, C.B., Brickey, W.J., Taxman, D.J., & Ting, J.P. (2007) Global functional analysis of nucleophosmin in Taxol response, cancer, chromatin regulation, and ribosomal DNA transcription. *Experimental Cell Research* 313: 65.
27. Shabman, R.S., Morrison, T.E., Moore, C., White, L., Suthar, M.S., Hueston, L., Rulli, N., Lidbury, B., & Ting, J.P. (2007) Mahalingam S, Heise MT. Differential Induction of Type I

IFN Responses in Myeloid Dendritic Cells by Mosquito and Mammalian-cell-derived Alphaviruses. *Journal of Virology* 81: 237.
28. Lich, J.C., Williams, K.L., Moore, C., Arthur, J., Taxman, D., Davis, B.K., & Ting, J.P. (2007) Monarch-1 Suppresses Non-Canonical NF-kappaB Activation and p52-Dependent Chemokine Expression in Monocytes. *Journal of Immunology* Cutting Edge 178:1256.
29. Duncan, J.A., Bergstralh, D.T., Wang, Y., Willingham, S.B., Ye, Z., Zimmermann, A.G., & Ting, J.P. (2007) Cryopyrin/NALP3 binds ATP/dATP, is an ATPase, and requires ATP binding to mediate inflammatory signaling. *Proceedings of the National Academy of Sciences USA* 104(19):8041.
30. Plant, S.R., Iocca, H., Yang, W., Carson, M. & Ting, J.P. (2007) Lymphotoxin beta receptor: Dual roles in demyelination and remyelination and successful therapeutic intervention using Lt|betaR-Ig protein. *Journal of Neuroscience* 27(28):7429-3.
31. Willingham, S., Bergstrahl, D., O'Connor, W., Duncan, J.A., Flavell, R., & Ting, J.P. (2007) Microbial pathogen-induced necrotic-like cell death mediated by CIAS1/cryopyin and ASC. *Cell, Host and Microbes* 2, 147-159.
32. Arthur, J.C., Lich, J.D., Aziz, R.K., Kotb, M., & Ting, J.P. (2007) Heat Shock Protein 90 Associates with Monarch-1 and Regulates Its Ability to Promote Degradation of NF-κB-Inducing Kinase. *Journal of Immunology* 179(9):6291-6.
33. Moore, C.B., Medina, M.A., van Deventer, H.W., O'Connor, B.P., Cameron, S., Taxman, D.J., Maile, R., Ting, J.P., & Cairns, B.A. (2007) Down-Regulation of Immune Signaling Genes in Patients with Large Surface Burn Injury. *Journal of Burn Care Research* 28: 879.
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49. Zika, E., Fauquier, L., Vandel, L., & Ting, J.P. (2005) Interplay among coactivator-associated arginine methyltransferase 1, CBP, and CIITA in IFN-{gamma}-inducible MHC-II gene expression. *Proceedings of the National Academy of Sciences*. 102:16321.
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Reviews & commentaries

1. Ting, J.P., Duncan, J.A., & Lei, Y. (2010) How the Noninflammasome NLRs Function in the Innate Immune System. *Science* 327(5963):286-90.
2. Davis, B.K., & Ting, J.P. (2010) NLRP3 has a sweet tooth. *Nature Immunology* 11(2):105-6.
3. Ye, Z., & Ting, J.P. (2008) NLR, the nucleotide-binding domain leucine-rich repeat containing gene family. *Current Opinion in Immunology* 20(1):3-9.
4. Ting, J.P., Willingham, S.B., & Bergstralh, D.T. (2008) NLRs at the intersection of cell death and immunity. *Nature Review of Immunology* 8(5):372-9.
5. Moore, C.B., & Ting, J.P. (2008) Regulation of mitochondrial antiviral signaling pathways. *Immunity* 28(6):735-9.
6. Willingham, S.B., & Ting, J.P. (2008) NLRs and the dangers of pollution and aging. *Nature Immunology* 9(8):831-3.
7. O'Connor, B.P., & Ting, J.P. (2008) The evolving role of semaphorins and plexins in the immune system: Plexin-A1 regulation of dendritic cell function. *Immunology Research* 41(3):217-22.
8. Lich, J.D., & Ting, J.P. (2007) Monarch-1/PYPAF7 and other CATERPILLER (CLR, NOD, NLR) proteins with negative regulatory functions. *Microbes and Infection* 9(5):672-6.
9. Duncan, J.A. & Ting, J.P. (2007) Rebuilding Host-Pathogen Interaction from the Ground Up: In Vitro reconstitution of the Inflammasome. *Cell, Host and Microbes* 1:7-9.
10. Lich, J.D., & Ting, J.P. (2007) CATERPILLER (NLR) family members as positive and negative regulators of inflammatory responses. *Proceedings of the American* **Thoracic Society** 4(3):263-6.
11. Ting, J.P., Hoffman, H.A., & Kastner, D. (2006) CATERPILLERs, pyrin, and hereditary immunologic disorders. *Nature Review Immunology* 6:183.

12. Bergstralh, D.T., & Ting, J.P. (2006) Microtubule stabilizing agents: Their molecular signaling consequences and the potential for enhancement by drug combination. *Cancer Treatment Review* 32(3):166.
13. Lich, J.D., Arthur, J.C., & Ting, J.P. (2006) Cryopyrin: in from the cold. *Immunity* 24(3):241.
14. Wright, K.L., & Ting, J.P. (2006) Epigenetic regulation of MHC-II and CIITA genes. *Trends in Immunology* 27(9):405.
15. Ting, J.P., & Davis, B. (2005) CATERPILLER: A novel gene family important in immunity, cell death and diseases. *Annual Review of Immunology*, 23:387-414, Review.
16. Zika, E. & Ting, J.P. (2005) Epigenetic control of MHC-II: Interplay between CIITA and histone modifying Enzymes. *Current Opinion in Immunology* 17(1):58-64.
17. Ting, J.P., & Williams, K.L. (2005) The CATERPILLER family: an ancient family of immune/apoptotic proteins. *Clinical Immunology.* Apr;115(1):33-37, Review.
18. Ting, J.P. (2005) Genomic mining of new genes and pathways in innate and adaptive immunity. In *Genetics of Autoimmunity,* Novartis Foundation Symposium, 231-237.

Editorial Responsibilities

Editorial board
Molecular Cell. Biology, Editorial Board, 1997 – 2008

Ad hoc reviewer for:
Blood, Cancer Research, Cell, European Journal of Immunology, Host and Microbes, International Immunology, Immunity, Journal of Biological Chemistry, Journal of Experimental Medicine, Journal of Immunology, Journal of Virology, Molecular Cell, Molecular Cellular Biology, Nature, Nature Immunology, Nature Neuroscience, Nature Reviews in Immunology, Proceedings of the National Academy of Sciences USA, Science, Trends in Immunology

Grants/Contracts

Program Leader, 12/01/2004-11/30/2010
H. Shelton Earp
Cancer Center Core Support Grant- Program Leadership
National Cancer Institute, 5-P30-CA016086-34
$189,491.00 per year in direct cost (all subsequent grants only list direct cost)
5% effort (was just reviewed, will likely be refunded)

Principal Investigator, 03/01/2005-02/28/2010
M. Tuberculosis and Host-Defense Mechanisms
National Inst. of Health, 5-RO1-AI063031-05
$209,287.00 per year (No cost ext. until 2/28/11)
7.5% effort

Principal Investigator, 05/01/2005-04/30/2010
Innate Immune Response Genes and P. Gingivalis
National Inst. of Health, 5-RO1-DE016326-05
$278,332.00 per year (No cost ext. until 4/30/11)
7.5 % effort

Project Leader, 08/01/2005-07/31/2010
Thomas Coffman
Innate Immune Genes and Transplant Rejection - Subcontract with Duke University
National Inst. of Health, 3-PO1-DK038108-17
$160,137.00 per year
10% effort

Project Leader, 08/01/2005-08/31/2010
Nelson Chao
Inflammation and Radiation-induced Lung Injury - Subcontract with Duke University
National Inst. of Health, 5-U19-AI067798-05
138,945.00-***HAS BEEN RENEWED UNTIL 2015 AT 190K/YR.***
10% effort

Co-PI, 06/01/2007-05/31/2012
Blossom Damania
Innate Immunity and KSHV
National Inst. of Health, 1-R01-DE018281-03
$230,014.00 per year
2% effort

Project Leader, 03/01/2008-02/28/2013
David Peden (Program Director)
Immunobiology of Acute Environmental Asthma: Project 1 - Novel Innate Immune Genes & Asthma
National Inst. of Health, 5-U19-AI1077437-02
$226,096.00 per year to J. Ting
10% effort

Core Leader, 03/01/2008-02/28/2013
David Peden (Program Director)
Immunobiology of Acute Environmental Asthma: Core A - Innate Immune Gene Profiling Core
National Inst. of Health, 5-U19-AI1077437-02
$113,489.00 per year to J. Ting
2% effort

Investigator, 09/012/2009–08/31/2011
David Peden (Program Director)
Immunobiology of Acute Environmental Asthma – ARRA Supplement
National Inst. of Health, 3-U19AI077437-02S2
$100,000.00 per year to J. Ting
0% effort

Principal Investigator, 04/01/2008-03/31/2013
Plexin-A1 Regulation by CIITA and Immunologic Function

National Inst. of Health, 2-R37-AI029564-16
$354,167.00 per year to J. Ting
15% effort

Principal Investigator, 04/01/2008-03/31/2013
Novel Immune Pathways in Multiple Sclerosis Pathogenesis and Therapy
Multiple Sclerosis Society, NMSS-CA-10530A-8
$150,000.00
3% effort

Project Leader, 03/01/2009-02/28/2014
P. Frederick Sparling, Director, J. Ting co-Director
SERCEB Southeast Regional Centers of Excellence for Biodefense and Emerging Infectious Diseases
National Inst. of Health, 2-U54 AI057157-07
$5,891,429.00 total direct per year, $190K per year direct to J. Ting
20% effort

Principal Investigator, 06/10/2009-06/09/2010
GSK Collaborative Agreement – *CONTRACT WILL BE EXTENDED FOR YEAR 2*
GlaxoSmithKline, No #
$200,000.00
1% effort

Principal Investigator, 07/01/2010-06/30/2011
The Inflammasome and Cancer Vaccines
Lineberger Comprehensive Cancer Center, University Cancer Research Fund, No #
$98,138.00
5% effort

Co-Investigator, 12/01/2007-11/30/2011
Sue Straley
YopM and Protective Innate Defenses Against Plague-Subcontract to U. of Kentucky
National Inst. of Health, 5R01-AI067869-04
$27,397.00
1% effort

PENDING GRANT LIKELY TO BE FUNDED:
Principal Investigador, 12/01/2010 to 11/30/2015
Colitis, colon cancer and the NLR family
NIH RO1 CA156330-01
$270,000 per year, Priority score: 23, percentile 8

Grant Review Service
NIAID, Advisory Council Member 2009-2014

Academia Sinica, Advisory board, 2010-2015
ARRA reviewer 2009
National Multiple Sclerosis Society center grant reviewer 2008-2013
Burroughs Wellcome, Preterm Pregnancy Advisory Committee 2007-2012
NIH; miscellaneous NIH study sections, *ad hoc* 2005-2007 annually; 2009 (2X); chair, 2005 (2 times)
NCI intramural site visit reviewer 2005

Honors/Awards
Sandler Program in Asthma Research Awardee 2005-2008
Alumni Distinguished Professor of Microbiology-Immunology, UNC-CH, 1997-2009
William Rand Kenan Professor of Microbiology and Immunology, UNC-CH, 2009 - present
National Multiple Sclerosis Society Hall of Fame, 2010
UNC-Chapel Hill Berryhill Lecture, 2010

UNC Leadership
Director, Center for Translational Immunology, 2008 – present
Director, Institute of Inflammatory Disease, 2008-present
Co-Director, SERCEB 2009 – present
Member, Steering Committee, SERCEB 2008-present

Committee Service

University of North Carolina, Chapel Hill
Member, Steering Committee, University Cancer Research Fund, 2008-present

Outside UNC
NIAID, Council Member 2009-2014
Burroughs Wellcome Preterm Pregnancy Advisory Committee 2007-2012

Professional Meetings/Societies

Meeting Organization
Keystone Conference, Primary organizer and chair (Banff, Canada, March 2009)
FASEB Summer Conference, Pathology and Molecular Mechanisms of CNS Repair, session chair (Phoenix, AZ, Aug. 2008)
Lineberger Comprehensive Cancer Center Symposium, chair/organizer (Chapel Hill, NC, April 2007)
American Association of Immunology, Major Symposium chair (Miami, Beach, FL, May 2007)
Society for Chinese Bioscientists in America, chair (San Francisco, CA, July 2006)
International Immunogenomics and Immunomics Conference, chair (Budapest, Hungary, Oct. 2006)
Southeastern Regional Center of Excellence for Biodefense Immunology Conference, organizer/chair (Galveston, TX, 2005)

Meeting participation

Invited Speaker at all of the following:
2010
Inflammasome and Inflammation Conference (Jan. 2010)
Gordon Research Conference (Venture, CA, March 2010)

American Society for Microbiology, Eastern Pennsylvania Branch, Keynote speaker (Philadelphia, PA, June 2010)
Keystone Symposium, Innate Immunity: Mechanisms Linking with Adaptive Immunity (Dublin, Ireland, June 2010)
Bacterial Secretory Pathways (Seattle, WA, July 2010)
International Immunology Congress (Kobe, Japan, Aug. 2010)
European Society of Dendritic Cells (Scotland, Sept. 2010)
Cambridge University, Symposium Forum (Cambridge, UK, Sept. 2010)
Society of Leukocyte Biology Conference (Vancouver, BC, Canada, Oct. 2010)
IRB Barcelona BioMed Conference (Barcelona, Spain, Oct. 2010)
American Association of Nephrology (Denver, CO., Nov. 2010)

2009
Sandler Foundation Annual Meeting (San Francisco, CA, May 2009)
American Thoracic Society (San Diego, CA, May 2009)
European Congress of Allergy and Clinical Immunology (Warsaw, Poland, June 2009)
FASEB Summer Conference (Snowmass, CA, June 2009)
Society of Leucocyte Biology/International Cytokine Society (Lisbon, Portugal, Oct. 2009)
NIH Inflammasome Conference (Bethesda, MD, November 2009)
American Society of Hematology (New Orleans, LA, Dec. 2009)
American Association of Immunology Major Symposium (Seattle, WA, May, 2009)
Keystone Symposium, Innate Immune sensors (Banff, Canada, March 2009)

2008
Keystone Symposium, Innate Immunity in Plants, (Keystone, CO, Feb. 2008)
Keystone Symposium, Innate Immunity: Signaling Mechanisms (Keystone, CO, Feb. 2008)
NMSS Eastern Chapter (April 2008)
Sandler Program in Asthma Research (San Francisco, CA, May, 2008)
Wake Forest Symposium on Innate Immunity, Keynote speaker, (Winston Salem, NC, May, 2008)
FASEB Summer Conference, Biology of the Immune System, (Phoenix, AZ, June 2008)
8th Annual Buffalo Conference on Immunology, Keynote Speaker (Buffalo, NY, Sept. 2008)
International Cytokine Society and Interferon and Cytokine Research (Montreal, Canada, Oct. 2008)
FIMSA 2008 (Taipei, Taiwan, Oct. 2008)
City of Hope Symposium (Los Angeles, CA, Nov. 2008)
British Society of Immunology (Glasgow, Scotland, Nov. 2008)
Autumn Immunology Meeting (Chicago, IL, Nov. 2008)
Burroughs Wellcome Research Consortium (Dallas, TX, Dec. 2008)
American Association of Cancer Research (Miami, FL, Dec. 2008)

2007
Keystone Symposium, JAK/STAT (Colorado Springs, CO, Jan. 2007)
Transatlantic Airway Conference (Lucerne, Switzerland, Jan. 2007)
Asilomar Midwinter Conference (Asilomar, CA, Jan. 2007)
American Academy of Asthma and Allergy and Immunology (San Diego, CA, Feb. 2007)
Keystone Symposium, Macrophage Biology (Copper, Mtn., CO, April, 2007)
Sandler Program in Asthma Research (San Fransicso, CA, May, 2007)

American Thoracic Society (San Francisco, CA, May 2007)
Cantoblanco Workshop in Signaling and Metabolic Pathways in Cancer (Madrid, Spain, June 2007)
International Congress of Immunology (Rio de Janeiro, Brazil, Aug. 2007)
SERCEB Bacteriology, Immunology (Atlanta, GA, June and July 2007)
Annual SERCEB Conference (Nashville, TN, Oct. 2007)

2006
Crohn's and Colitis Foundation of America (St. Petersburg, FL, March 2006)
Society of Neurochemistry, Plenary speaker (April 2006)
FASEB summer conference in Neuroimmunology (Tucson, AZ, Aug. 2006)
Sandler Program in Asthma Research (San Francisco, CA, May 2006)
Federation of Clinical Immunological Society (FOCIS) (San Francisco, CA, June 2006)
Cold Spring Harbor Banbury Conference (Cold Spring Harbor, NY, Nov. 2006)
American College of Rheumatology (Washington, DC, Nov. 2006)

2005
Keystone Symposium: Prion and Inflammation (Snowbird, Resort, Utah, 2005)
University of Miami, Neuroscience Day, Keynote speaker (Miami, FL, 2005)
NIH Biodefense Consortium (Bethesda, MD, 2005)
Biodefense Conference (Galveston, TX, Oct. 2005)
The Fourth International Congress on Systemic Autoinflammatory Diseases - FMF and Beyond (Bethesda, MD, Nov. 2005)

Society membership

American Association of Immunologists, 2002-present

Society of Neuroscience

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Roland Tisch, Ph.D.

Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

1). Bryan, R.P., Asmar, M.M., Alderman, J.M., Alderman, E.A., Garland, A.L., Busby, W.H., Bodnar, W.M., Rusyn, I., Medoff, B.D., **Tisch, R.,** Swenberg, J.A., Zeisel, S.H., and Combs, T.P. 2010. Adiponectin lowers glucose production by increasing SOGA. Am. J. Path. *Manuscript accepted.*

2). Matthews, J.B., Staeva, T.P., Bernstein, P.L., Peakman, M., von Herrath, M.; the ITN-JDRF Type 1 Diabetes Combination Therapy Assessment Group. 2010. Developing combination immunotherapies for type 1 diabetes: recommendations from the ITN-JDRF Type 1 Diabetes Combination Therapy Assessment Group. Clin. Exp. Immunol. 160:176-184.

3). Burton, A.M., Baquet, Z., Eisenbarth, G.S., **Tisch, R.**, Smeyne, R., Workman, C.J., and Vignali, D.A.A. 2010. CNS destruction mediated by GAD-specific $CD4^+$ T cells. J. Immunol. 184:4863-4870.

4). Vincent, B.G., Young, E.F., Buntzman, A.S., Stevens, R., Kepler, T.B., **Tisch, R.**, Frelinger, J.A., and Hess, P.R. 2010. Toxin coupled MHC class I tetramers can specifically ablate autoreactive $CD8^+$ T cells and delay diabetes in NOD mice. J. Immunol. 184:4196-4204.

5). Li, L., He, Q., Garland, A., Yi, Z., Aybar, L.T., Kepler, T.B, Frelinger, J.A., Wang, B., and **Tisch, R.** 2009. b cell-specific $CD4^+$ T cell clonotypes in peripheral blood and the pancreatic islets are distinct. J. Immunol. 183:7585-7591.

6). Li, L., Yi, Z., Wang, B., and **Tisch, R.** 2009. Suppression of ongoing T cell-mediated autoimmunity by peptide-MHC class II dimer vaccination. J. Immunol. 183:4809-4816.

7). Young, E., Hess, P., Arnold, L.W., **Tisch, R.**, and Frelinger, J.A. 2009. Islet lymphocyte subsets in male and female NOD mice are qualitatively similar but quantitatively distinct. Autoimmunity 42:678-691.

8). Yi, Z., Li, L., Matsushima, G.K., Earp, H.S., Wang, B., and **Tisch, R.** 2009. A novel role for c-Src and STAT3 in apoptotic cell-mediated MerTK-dependent immunoregulation of dendritic cells. Blood 114:3191-3198.

9). Pang, S., Zhang, L., Wang, H., Yi, Z., Li, L., Gao, L., Zhao, J., **Tisch**, **R.,** Katz, J.D., and Wang, B. 2009. Beta cell-specific $CD8^+$ T cells encounter their cognate antigens in the islets of nonobese diabetic mice. Eur. J. Immunol. 39:2716-2724.

10). Li, C., Goudy, K., Hirsch, M., Asokan, A., Fan, Y., Alexander, J., Sun, J., Monahan, P., Seiber, D., Sidney, J., Sette, A., **Tisch, R.**, Frelinger, J., and Samulski, R. 2009. Cellular immune response to cryptic epitopes during therapeutic gene transfer. Proc. Natl. Acad. Sci. USA 106:10770-10774.

11). Li, C., Hirsch, M., DiPrimio, N., Asokan, A., Goudy, K., **Tisch, R.**, and Samulski, R.J. 2009. Cytotoxic T lymphocyte mediated elimination of target cells transduced with engineered AAV2 vector *in vivo*. J. Virol. 83:6817-6824.

12). Wallet, M.A., Flores, R.R., Wang, Y., Yi, Z., Kroger, C.J., Mathews, C.E., Earp, H.S., Matsushima, G., Wang, B., and **Tisch, R.** 2009. MerTK regulates thymic selection of autoreactive T cells. Proc. Natl. Acad. Sci. USA 106:4810-4815.

13). Gohlke, P.R., Williams, J.C., Vilen, B.J., Dillon, S.R., **Tisch**, **R**., and Matsushima, G.K. 2009. The receptor tyrosine kinase Mertk regulates dendritic cell production of BAFF. Autoimmunity 42:183-197.

14). Goudy, K.S., Wang, B., and **Tisch, R**. 2008. Gene gun-mediated DNA vaccination enhances antigen-specific immunotherapy at a late preclinical stage of type 1 diabetes in nonobese diabetic mice. Clin. Immunol. 129:49-57.

15). Yang, J., Bautz, D.J., Schmitz, J.L., Pressler, B.M., Chin, H., Hogan, S.L., **Tisch, R.**, Jennette, J.C., Falk, R.J., and Preston, G.A. 2008. Encounter with complementary proteinase 3 peptide ($cPR3^{138-169}$) triggers $CD4^+$ T cells from patients with PR3-ANCA vaculitis to proliferate and produce IFNg. Kidney Int. 74:1159-1169.

16). Li, L., Wang, B., Frelinger, J.A., and **Tisch, R.** 2008. T cell promiscuity in autoimmune diabetes. Diabetes 57:2099-2106.

17). Burton, A.R., Vincent, E., Lennon, G.P., Smeltzer, M., Li, C.S., Haskins, K., Hutton, J.J., **Tisch, R.M.**, Secarz, E.E., Santamaria, P., Workman, C.J., and Vignali, D.A.A. 2008. On the pathogenicity of autoantigen-specific T cell receptors. Diabetes 57:1321-1330.

18). Xiu, Y.$^+$, Wong, C.P.$^+$, Hamaguchi, Y., Wang, Y., Pop, S.M., **Tisch, R.M.***, and Tedder, T.F.* 2008. B cell depletion by anti-CD20 monoclonal antibody prevents diabetes in NOD mice despite isotype-specific differences in FcgR effector functions. J. Immunol. 180:2863-2875. $^+$shared first-authorship; *shared senior-authorship.

19). Wallet, M.A., Sen, P., Flores, R., Wang, Y., Yi, Z., Huang, Y., Mathews, C.E., Earp, H.S., Matsushima, G., Wang, B. and **Tisch, R.** 2008. MerTK is required for apoptotic cell-induced T cell tolerance. J. Exp. Med. 205:219-232.

20). Bouaziz, J.-D., Yanaba, K., Venturi, G.M., Wang, Y., **Tisch, R.M.,** Poe, J.C., and Tedder, T.F. 2007. Therapeutic B cell depletion impairs $CD4^+$ T cell activation during autoantigen challenge *in vivo*. Proc. Natl. Acad. Sci. USA 104:20878-20883.

21). Moran, T.P., Burgents, J.E., Long, B., Ferrer, I., Jaffee, E.M., **Tisch, R.M.,** Johnston, R.E., and Serody, J.S. 2007. Alphaviral vector-transduced dendritic cells are successful therapeutic

cancer vaccines against neu-overexpressing tumors in wild-type mice. Vaccine 25:6604-6612.

22). Pop, S.M., Wong, C.P., He, Q., Wang, Y., Wallet, M.A., Goudy, K.S., and **Tisch, R.** 2007. The type and frequency of immunoregulatory $CD4^+$ T cells govern the efficacy of antigen-specific immunotherapy in diabetic NOD mice. Diabetes 56:1395-1402.

23). Wong, C.P., Stevens, R., Long, B., Li, L., Wallet, M.A., Wang, Y., Goudy, K.S., Frelinger, J.A., and **Tisch, R.** 2007. Identical b cell-specific $CD8^+$ T cell clonotypes typically reside in PBL and the pancreatic islets. J. Immunol. 178:1388-1395.

24). Sen, P., Wallet, M.A., Yi, Z., Huang, Y., Henderson, M., Mathews, C.E., Earp, H.S., Matsushima, G., Baldwin, A.S. and **Tisch, R.M.** 2007. Apoptotic cells induce Mer tyrosine kinase-dependent blockade of NF-kB activation in dendritic cells. Blood 109:653-660.

25). Wang, H., Nicholas, M.W., Conway, K.L., Sen, P., Diz, R., **Tisch**, **R.M.,** and Clarke, S.H. 2006. EBV latent membrane protein 2A induces autoreactive B cell activation and TLR hypersensitivity. J. Immunol. 177:2793-2802.

26). Long, B., Wong, C.P., Wang, Y., and **Tisch, R**. 2006. Lymphopenia-driven $CD8^+$ T cells are resistant to antigen-induced tolerance in NOD.*scid* mice. Eur. J. Immunol. 36:2003-2012.

27). Wong, C.P., Li, L., Frelinger, J.A., and **Tisch, R**. 2006. Early autoimmune destruction of islet grafts is associated with a restricted repertoire of IGRP-specific $CD8^+$ T cells in diabetic nonobese diabetic mice. J. Immunol. 176:1637-1644.

28). Maile, R., Pop, S.M., **Tisch**, **R.,** Collins, E.J., Cairns, B.A., and Frelinger, J.A. 2006. Low-avidity $CD8^{lo}$ T cells induced by incomplete antigen stimulation *in vivo* regulate naïve higher-avidity $CD8^{hi}$ T cell responses to the same antigen. Eur. J. Immunol. 36:397-410.

29). Wallet, M.A., Sen, P., and **Tisch, R**. 2005. Immunoregulation of dendritic cells. Clin. Med. Res. 3: 166-175.

30). Pop, S.M., Wong, C.P., Culton, D.A., Clarke, S.H., and **Tisch, R**. 2005. Single cell analysis shows decreasing FoxP3 and TGFb1 co-expressing $CD4^+CD25^+$ regulatory T cells during autoimmune diabetes. J. Exp. Med. 201:1333-1346.

Reviews & commentaries

1). Kroger, C.J., Flores, R.R., Morillon, M., Wang, B., and **Tisch, R**. 2010. Dysregulation of thymic clonal deletion and the escape of autoreactive T precursors. Arch. Immunol. Ther. Exp. *Manuscript accepted.*

2). Johnson, M.C., Wang, B., and **Tisch, R**. 2010. Genetic vaccination for reestablishing T cell tolerance in Type 1 diabetes. Human Vaccines *Manuscript accepted.*

3). **Tisch, R.** 2010. Immunogenic versus tolerogenic dendritic cells: a matter of maturation. Int. Rev. Immunol. 29:111-118.

4). **Tisch, R.**, and Wang, B. 2009. The role of Plasmacytoid dendritic cells in Type 1 diabetes: Friend or Foe? Diabetes 58:12-13.

5). **Tisch, R.**, and Wang, B. 2008. Dysregulation of T cell peripheral tolerance in Type 1 diabetes. Adv. Immunol. 100:125-149.

6). Li, L., Yi, Z., **Tisch, R.***, and Wang, B. 2008. Immunotherapy for Type 1 Diabetes. Arch. Immunol. Ther. Exp. 56:227-236. *Corresponding author.

7). Wang, B., and **Tisch, R.** 2008. Parameters influencing antigen-specific immunotherapy for Type 1 diabetes. Immunol. Res. 42:246-258.

8). Wallet, M.A., and **Tisch, R**. 2006. Type 1 diabetes, inflammation and dendritic cells. Drug Discovery Today: Disease Mechanisms 3:373-379.

9). Goudy, K.S., and **Tisch, R**. 2005. Immunotherapy for the prevention and treatment of type 1 diabetes. Int. Rev. Immunol. 24:307-326.

Editorial Responsibilities

Editorial boards

5/2009-present	Journal of Immunology; Associate Editor
10/2005-present	International Reviews of Immunology; Associate Editor

Ad hoc reviewer for:

American Journal of Transplantation, Blood, Diabetes, Diabetologia, Environmental Health Perspectives, Gene Therapy, Immunity, International Immunology, Journal of Autoimmunity, Journal of Biological Chemistry, Journal of Endocrinology, Journal of Experimental Medicine, Journal of Immunology, Journal of Immunological Methods, Journal of Virology, Molecular Therapy, Nature Immunology, Nature Medicine, Physiological Genomics, Proceedings of the National Academy of Science, Trends in Molecular Medicine.

Grants/Contracts

Tisch (PI) 6/1/10-5/31/15

Age-dependent thymic events and the development of autoimmune T cells in NOD mice.
NIH 1R01AI083269-01 $366,423
Annual Total, $1,832,115 Project Total

20% Effort

Tisch (PI) 3/1/10-2/28/13
A novel approach to treat T1D: b cell antigen vaccination and CD4 blockade.
Juvenile Diabetes Research Foundation 1-2010-189
$165,000 Annual Total, $495,000 Project Total.
10% Effort

Tisch (PI) 5/10/09-3/31/13
Reversal of Type 1 diabetes in NOD mice.

NIH 1R01 DK081585-01A
$294,214 Annual Total, $1,176,856 Project Total.
15% Effort

Tisch (PI), 9/1/08-8/31/11
Beta cell-specific immunoregulation by peptide-MHC class II vaccination.
Juvenile Diabetes Research Foundation 1-2008-452
$165,000 Annual Total, $495,000 Project Total.
10% Effort

Tisch (PI), 3/1/08-2/29/11
Thymic regulation of the development of T cells mediating T1D and colitis.
Juvenile Diabetes Research Foundation 33-2008-412
$165,000 Annual Total, $495,000 Project Total.
10% Effort

Tisch (PI), 2/1/07-1/31/10
Studying the efficacy of anti-CD8 antibody therapy in diabetic NOD mice.
Juvenile Diabetes Research Foundation 1-2007-149
$165,000 Annual Total, $495,000 Project Total.
10% Effort

s% Effort

Grant Review Service

Member, Juvenile Diabetes Research Foundation, Medical Science Research Committee, 2009-present Member, NIH, Hypersensitivity, Autoimmune, and Immune-mediated Diseases, 2002-2006
Ad hoc, NIH, Hypersensitivity, Autoimmune, and Immune-mediated Diseases, 5/2010
Ad hoc, Welcome Trust U.K., 2/2010
Ad hoc, Diabetes Center, University of Alabama at Birmingham, AL, 2/2010
Ad hoc, NIAID Immune Regulation, 10/2009
Ad hoc, NIH ZRG1 IMM-D(95)S, 6/2009
Ad hoc, NIH ZRG1 IMM-J(02)M, 5/2009
Chair, Juvenile Diabetes Research Foundation, Autoimmunity and Mucosal Immunity Review, 6/2008
Chair, Juvenile Diabetes Research Foundation Autoimmune and Prevention Center Review, 9/2007
Ad hoc, Australian NHMRC/JDRF Special Program Projects, 4/2007
Ad hoc, NIH NIAID Council Meeting, 2/2007
Ad hoc, Welcome Trust, U.K., 1/2007
Ad hoc, Immune Tolerance Network, 4/2006
Ad hoc, NIH ZRG1 RES-C (02), 10/2005
Ad hoc, NIDDK, Type 1 Diabetes-Rapid Access to Intervention Development Program,
Chair, Juvenile Diabetes Research Foundation, Program Projects Review, 6/2005

Committee Service

University of North Carolina, Chapel Hill
Member, Flow Cytometry Advisory Committee, 1998-present
Primary Member, Institutional Animal Care and Use Committee (IACUC), 2004-present
Primary Member, IACUC Animal Concern Subcommittee, 2005-2009
Faculty Co-ordinator, BBSP Admissions Committee, 2009
Member, Post-Tenure Review Committee, 2008

Outside UNC
Member, Immunology Research Portfolio Advisory Committee, Juvenile Diabetes Research Foundation, 2007-present
Board Member, Diabetes Vaccine Development Center, Juvenile Diabetes Research Foundation/Australian NHMRC, 2001-present
Member, Immune Tolerance Network/Juvenile Diabetes Research Foundation Type 1 Diabetes Combination Therapy Assessment Group, 2009
Member, Type 1 diabetes-RAID, NIDDK, 2008-present
Member, External Evaluation Committee, NIDDK, 2008-present
Scientific Advisory Committee Member, Type 1 Diabetes Resource at Jackson Laboratories, 2008-present

Professional Meetings/Societies

Meeting participation
Speaker, Type 1 Diabetes, Garvan Institute, Sydney, Australia, 5/2010
Speaker, American Association of Immunology, Baltimore, MD, 5/2010
Speaker, 8th World Congress on Trauma, Shock, Inflammation and Sepsis, Munich, Germany, 3/2010
Speaker, 4th International Conference on Autoimmunity: Mechanisms and Novel Treatments, Crete, Greece, 10/2009
Speaker, Diabetes Endocrinology Research Center Symposium, University of Washington, Seattle, WA, 5/2009

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Barbara J. Vilen Ph.D.

Associate Professor

Primary Appointment: Department of Microbiology/Immunology

Publications

Primary Literature:

Clark, J, Wagner, NJ**, Vilen, BJ**, and Matsushima GK. Increased hematopoietic cells in the mertk-/- mouse peritoneal cavity: a result of augmented migration. *J. Immunol. In press.*

Gohlke, P.R., JC Williams, **BJ Vilen**, SR Dillon, R Tisch, GK Matsushima. (2009) The receptor tyrosine kinase MerTK regulates dendritic cell production of BAFF. *Autoimmunity 42:183-97*.

Kilmon MA, Wagner NJ, Garland A, Li L, Aviszus K, Wysoki L, and **Vilen BJ**. (2007) Macrophages prevent the differentiation of autoreactive B cells by secreting CD40 ligand and IL-6. *Blood 110:1595-1602.*

Gilbert MR, Carnathan DG, Cogswell PC, Baldwin AS, and **Vilen BJ.** (2007) Dendritic cells from lupus-prone mice are defective in repressing immunoglobulin secretion. *J. Immunol. 178:4803-4810.*

Kim J.-H., J.A. Rutan, **Vilen B.J**. (2007) The transmembrane tyrosine of mu-heavy chain is required for BCR destabilization and entry of antigen into clathrin-coated vesicles. *Int. Immunol 19:1403-12*.

Culton DA, O'Conner BP, Conway KL, Rutan JA, **Vilen BJ**, and Clarke SH (2006) Early Pre-plasma cells define a tolerance checkpoint for autoreactive B cells. *J. Immunol 176:790-802*.

Kilmon MA, Rutan JA, Clarke SH, and **Vilen BJ** (2005) Low-affinity, Smith antigen-specific B cells are tolerized by dendritic cells and macrophages. *J. Immunol-Cutting Edge 175:37-41.*

Kim JH, Cramer L, Mueller H, Wilson B, and **Vilen BJ** (2005) Independent trafficking of Ig-alpha/Ig-beta and mu-heavy chain is facilitated by dissociation of the B cell antigen receptor complex. *J. Immunol. 175:147-154.*

Reviews:

Vilen BJ, Rutan JA. The regulation of autoreactive B cells during innate immune responses. *Immunol Res. 2008;4:295-309*.

Cambier, JC, SB Gauld, KT Merrell and **BJ Vilen.** (2007) Understanding B-cell anergy: from mouse models to naturally occurring anergic B cells. *Nature Reviews Immunology 7:633-643*.

Patents:

U.S. Patent Application: *Compositions and Methods for Repressing B cell Autoantibody Secretion and for Treating Autoimmune Disease*. PCT/US2004/030325; **Filed: 3/2006**. **Under revision: 5/10**

Editorial Responsibilities

Editorial boards

Associate Editor, Journal of Immunology (5/09 to present)

Ad hoc reviewer for:

Proceeding of the National Academy of Science, Journal of Biological Chemistry, Journal of Leukocyte Biology

Grants/Contracts

Vilen, Principal Investigator 04/01/08 – 03/31/12
The Role of Dendritic Cells and Macrophages in Systemic Lupus Erythematosus
National Inst. of Health, 5 R01 AI070984-02
Total Direct Costs:
Percent Effort:

Vilen, Principal Investigator 07/01/08 – 06/30/11
The Regulation of DC/MF-mediated Tolerance in Tolerance and Autoimmunity
Arthritis Foundation
Total Direct Costs: $200,000
Percent Effort:

Vilen, Principal Investigator 04/15/2010 – 7/14/2011
Human B Cell Tolerance and its Dysregulation in Systemic Lupus Erythematosus
NCTracs
Total Direct Costs: $50,000
Percent Effort:

Vilen, Principal Investigator/Sponsor (Minority Supplement-ARRA)
The Role of Dendritic Cells and Macrophages in Systemic Lupus Erythematosus
National Inst. of Health, 5 R01 AI070984-02S1
Total Direct Costs:
Percent Effort: 100% effort for Shannon Jones, 0% effort for Barbara Vilen

Miller, Principal Investigator 07-01-2009 to 1-31-2011
HHMI Med-to-Grad Training Grant
Total Direct Costs: 15,000
Percent Effort: 35% effort Amanda Wisz, 0% effort Barbara Vilen

Vilen, Co-Investigator 07/15/08 – 08/31/12
Principal Investgator, Steve Clarke
Anti-Sm B Cell Regulation
National Institute of Health, 9 R01 AI056962-11A1
Total Direct Costs to Vilen:
% effort/Vilen: 5%

Grant Review Service

Ad hoc Transplantation, Tolerance and Tumor Immunology (TTT) study section 10/09
Ad hoc Transplantation, Tolerance and Tumor Immunology (TTT) study section 02/10
Ad hoc Transplantation, Tolerance and Tumor Immunology (TTT) study section 06/10
Ad hoc Hypersensitivity, Autoimmune and Immune-mediated Diseases (HAI) Special Emphasis Panel 06/08
Ad hoc Hypersensitivity, Autoimmune, and Immune-mediated Diseases (HAI) study section 11/05
Ad hoc Lupus Research Institute 07/10
Ad hoc Lupus Research Institute 07/07

Honors/Awards

J.V. Satterfield Research Award-Arthritis Foundation (2008)

Committee Service

University of North Carolina, Chapel Hill

2010	Royster Panelist
2008 to present	BBSP Group Leader
2006	Panelist, Carolina Innovations Seminar, UNC Office of Technology Development
2005 to present	Member, Graduate Education Advancement Board Impact Awards Review Committee
2005 to present	Member, Lineberger Comprehensive Cancer Center Tissue Culture Facility Advisory Committee
2003-2006	Member, IBMS Admissions Committee-Microbiology/Immunology Representative
2003 to 2007	Member, Department of Microbiology/Immunology Graduate Training Program Admissions Committee
2003 to 2007	Member, Interdisciplinary Biomedical Sciences (IBMS) Graduate Training Program Admissions Committee
2003 to present	UNC School of Medicine MD/Ph.D. Program Recruiting

Outside UNC

Meeting organization

Session Chair, Inflammation Research Association, Baltimore, MD-- 2010
Abstract Review Committee, American College of Rheumatology— 2007

Meeting participation

2010 AAI (travel award for mentor and minority student speaker)
2009 FASEB Summer Conference, Saxtons River, VT (speaker)
2008 Merinoff International Symposium New Paltz, NY (speaker)
2006 Keystone Symposia, Steamboat Springs, CO (speaker)
2005 FASEB Summer Research Conference, Tuscon, AZ (speaker)
2005 Keystone Symposia, Steamboat Springs, CO (speaker)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Yisong Wan, Ph.D.

Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Yasmina Laouar, Terrence Town, David Jeng1, Elise Tran, **Yisong Wan**, Vijay K Kuchroo and Richard A Flavell, "TGF-β signaling in dendritic cells is a prerequisite for the control of autoimmune encephalomyelitis." ***Proc Natl Acad Sci U S A.*** 2008 Aug 5;105(31):10865-70. Epub 2008 Jul 31.

Ming O. Li, **Yisong Y. Wan** and Richard A. Flavell, "T Cell-Produced Transforming Growth Factor-β1 Controls T Cell Tolerance, and Regulates Th1 and Th17 Cell Differentiation." ***Immunity***. 2007 May;26(5):579-91. Epub 2007 May 3.

Yisong Y. Wan and Richard A. Flavell, "Regulatory T-cell functions are subverted and converted owing to attenuated Foxp3 expression." ***Nature***. 2007 Feb 15;445(7129):766-70. Epub 2007 Jan 14.

Masahito Kamanaka, Sean T. Kim, **Yisong Y. Wan**, Fayyaz S. Sutterwala, Maria Lara-Tejero, Jorge E. Galán, Ed Harhaj and Richard A. Flavell, "Expression of Interleukin-10 in Intestinal Lymphocytes Detected by an Interleukin-10 Reporter Knockin *tiger* Mouse." ***Immunity***. 2006 Dec;25(6):941-52. Epub 2006 Nov 30.

Yisong Y. Wan, Hongbo Chi, Min Xie, Michael D. Schneider and Richard A. Flavell, "The kinase TAK1 integrates antigen and cytokine receptor signaling for T cell development, survival and function." ***Nature Immunology*** 2006 Aug;7(8):851-8. Epub 2006 Jun 25.

Yisong Y. Wan, and Richard A. Flavell, "Identifying Foxp3 Expressing Suppressor T Cells with a Bi-cistronic Reporter" ***Proc Natl Acad Sci U S A***. 2005 Apr 5;102(14):5126-31.

Reviews & commentaries

Yisong Y. Wan, "Regulatory T cells - Immune suppression and beyond" ***Cell Mol Immunol.*** 2010 May;7(3):204-10.

Yisong Y. Wan, "Multi-tasking of helper-T-cells" ***Immunology***, 130, 166–171, 2010

Yisong Y. Wan* and Richard A. Flavell*, "How Diverse—CD4 Effector T Cells and their Functions" ***Journal of Molecular Cell Biology*** Advance Access published on May 28, 2009.
*co-correspondence

Anant Jani, Tian Chi* and **Yisong Y. Wan*** "Chromatin remodeling complex in Treg function" ***International Immunopharmacology*** (2009). *co-correspondence

Yisong Y. Wan & Richard A. Flavell. "TGF-beta and Regulatory T Cell in Immunity and Autoimmunity" ***J Clin Immunol.*** 2008 DOI 10.1007/s10875-008-9251-y

Yisong Y. Wan and Richard A. Flavell, ""Yin–Yang" functions of transforming growth factor-b and T regulatory cells in immune regulation" ***Immunol Rev.*** 2007 Dec;220(1):199-213.

Stephen H. Wrzesinski, **Yisong Y. Wan** and Richard A. Flavell, "Transforming Growth Factor-b and the Immune Response: Implications for Anticancer Therapy" ***Clin Cancer Res.*** 2007 Sep 15;13(18):5262-70.

Yisong Y. Wan and Richard Flavell, "Regulatory T cells, TGF-β and immune suppression" ***Proceedings of the American Thoracic Society*** 2007 Jul;4(3):271-6.

Yisong Y. Wan and Richard A. Flavell, "TGF-beta and regulatory T cells" ***Regulatory T Cells.*** Book chapter (Chapter 5) Springer Publisher 2007.

Yisong Y. Wan and Richard A. Flavell, "The roles for cytokines in the generation and maintenance of regulatory T cells" ***Immunological Reviews*** 2006 Vol. 212: 114–130.

Ming O. Li, **Yisong Y. Wan**, Shomyseh Sanjabi, Anna-Karin L. Robertson, and Richard A. Flavell, "Transforming Growth Factor-beta Regulation of Immune Responses" ***Annu Rev Immunol.*** 2006;24:99-146.

Martin A. Kriegel, Ming O. Li, Shomyseh Sanjabi, **Yisong Y. Wan**, and Richard A. Flavell, "Transforming growth factor-beta: recent advances on its role in immune tolerance." ***Curr Rheumatol Rep***. 2006 Apr;8(2):138-44.

Editorial Responsibilities

Ad hoc reviewer for:

Immunology, Proceedings of the National Academy of Sciences, The Journal of Rheumatology, Transplant Immunology

Grants/Contracts

Yisong Wan**,** start 05/01/2008 - end 04/30/2011
"Roles for TAK1 in T cell development, function and tumorigenesis "
NIH/NIAID, R00AI072956
Total direct costs $419,818
80% effort

Honors/Awards

2003-2006: Cancer Research Institute (CRI) Postdoctoral Fellowship

2008-2011: NIH K99/R00 career development award

Committee Service

University of North Carolina, Chapel Hill

2009-2010: BBSP admission committee (member)

2008-present: Flow-cytometry committee (member)

Outside UNC

2009-2010: Member of reviewing committee of Division of Biochemistry and Biophysics, Department of Life Sciences, National Nature Science Foundation of China (NSFC).

Professional Meetings/Societies

Meeting participation

Cold Spring Harbor Laboratory Meeting: GENE EXPRESSION & SIGNALING IN THE IMMUNE SYSTEM; CSHL, NY, USA (selected oral presentation), 04/2010

First International Biomedical Research Conference, Tianjin, China (invited oral presentation), 05/2009

International Conference on Regulatory T cells and Clinical Application in Human Diseases, Beijing, China (invited oral presentation), 10/2008

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Laura J. White, Ph.D.

Research Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Brooke C.B., Deming, D.J., Whitmore, A. C., **White, L. J**., and Johnston, R.E. 2010 T cells facilitate recovery from Venezuelan equine encephalitis virus-induced encephalomyelitis in the absence of antibody. Journal of Virology, 84(9):4556-68.

Simmons, J.D., **White, L.J**., Morrison, T.E., Montgomery, S.A., Whitmore, A.C., Johnston, R.E. and Heise, M.T. 2009. Venezuelan equine encephalitis virus disrupts STAT1 signaling by distinct mechanism independent of host shotoff. Journal of Virology. 83:10571-10581.

Hacker, K.E., **White, L.J**., de Silva, A.M. 2009. N-linked glycans on dengue virus grown in mammalian and insect cells. Journal of General Virology. 90(Pt 9):2097-106. June 3 2009.

Heise, M.T., A. Whitmore, J. Thompson, M Parsons, A.A. Grobbelaar, A. Kemp, J.T. Paweska, K. Madric, L.J. **White**, R. Swanepoel, and F.J. Burt. 2009. An alphavirus replicon derived candidate vaccine for Rift Valley fever virus. Epidemiology and Infection. 27:1-10.

Konopka JL, Penalva LO, Thompson JM, **White LJ**, Beard CW, Keene JD, Johnston RE. 2007. A two-phase innate host response to alphavirus infection identified by mRNP-tagging in vivo. PLoS Pathogens. Dec;3(12):e199.

White, L. J., Parsons, M. P. Whithmore, A. C. Williams, B. M. de Silva, A. and Johnston, R. E. 2007. An immunogenic and protective alphavirus replicon particle-based dengue vaccine overcomes maternal antibody interference in weanling mice. Journal of Virology. 81 (19):10329-39.

Sariol, C, Munoz-Jordan JL, Abel K, Rosado LC, Pantoja P, Giavedoni L, Rodriguez IV, **White LJ,** Martinez M, Arana T, Kraiselburd EN. 2007. Transcriptional activation of interfereon stimulated genes but not of cytokine genes after primary infection of rhesus macaques with dengue virus type 1. Clinical Vaccine Immunology.14(6):756-766.

Shabman, R.S., Morrison, T.E., Moore, C., **White, L.**, Suthar, M.S., Hueston, L., Rulli, N., Lidbury, B., Ting, J.P., Mahalingam, S., Heise, M.T. 2007. Differential Induction of Type I IFN Responses in Myeloid Dendritic Cells by Mosquito and Mammalian-cell-derived Alphaviruses. Journal of Virology. 81(1):237-47.

Lambeth C. R., **White, L. J.,** Johnston, R. E., and de Silva, A. M. 2005. A flowcytometry based assay for titrating dengue virus. J. Clinical Microbiology. Journal of Clinical Microbiology. 43(7):3267-3272.

Grants/Contracts

Principal Investigator, start 05/01/2008 – end 04/30/2013
"A tetravalent dengue vaccine based on alphavirus replicons"
National Institute of Allergy and Infectious Diseases/National Institute of Health
Grant number 1UO1AI078060-01
Total direct costs $ 3,790,701
% effort: 90%

Committee Service

Professional Meetings/Societies

Meeting organization

Member of the International Scientific Program Committee, for the Second Pan-American Regional Dengue Research Network Meeting, Cancun, Mexico, 17-19 November 2010.

Meeting participation

American Society for Tropical Medicine and Hygiene Annual Meeting, Washington DC, 18-22 November, Attendee.

American Society for Virology Annual Meeting, Vancouver, BC July 11-15 2009, Attendee.

Pediatric Dengue Vaccine Initiative, 6th Research Network Meeting, Pacific Grove, CA, 4-7 June, 2009, Attendee.

American Society for Tropical Medicine and Hygiene Annual Meeting, New Orleans, LA. 7-11 December 2008, Attendee.

First Pan-American Dengue Research Network Meeting, Recife, Brazil, 22-25 July, 2008, Poster.

Pediatric Dengue Vaccine Initiative, 5th Research Network Meeting, Fairmont Tremblant, Quebec, Canada, 5-8 June, 2008, Speaker.

American Society for Tropical Medicine and Hygiene Annual Meeting, Philadelphia, PA. 4-8 November 2007, Poster.

Fourth Annual NIAID RCE Research Meeting, St. Louis, MO. 15-17 April 2007, Poster.

American Society for Tropical Medicine and Hygiene Annual Meeting, Washington DC. 11-15 December 2005, Poster.

American Society for Virology Annual Meeting, University Park, PA. 18-22 June 2005, Speaker.

Society membership

American Society for Virology, 2005 to present

American Society for Tropical Medicine and Hygiene, 2005 to present

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Jason K. Whitmire, Ph.D.

Assistant Professor

Primary Appointment: Department of Genetics

Joint Appointment: Department of Microbiology & Immunology

Publications

Primary literature

1. Botten, J., Whitton, J.L., Barrowman, P., Sidney, J., **Whitmire, J.K.**, Alexander, J., Kotturi, M.F., Sette, A., & Buchmeier, M.J. (In press) A Multivalent Vaccination Strategy for the Prevention of Old World Arenavirus Infection in Humans. *The Journal of Virology*.

2. Kemball, C.C., Harkins, S., **Whitmire, J.K.**, Flynn, C.T., Feuer, R., & Whitton, J.L. (2009) Coxsackievirus B3 Inhibits Antigen Presentation *In Vivo*, Exerting a Profound and Selective Effect on the MHC Class I Pathway. *The Public Library of Science-Pathogens*. **5**(10): e1000618. doi:10.1371/journal.ppat.1000618.

3. **Whitmire, J.K.** ♣, Eam, B., & Whitton, J.L. (2009) Mice deficient in stem cell antigen-1 (Sca1, Ly-6A/E) develop normal primary and memory CD4+ and CD8+ T-cell responses to virus infection. *The European Journal of Immunol*. **39**: 1494-1504.

4. **Whitmire, J.K.** ♣, Asano, M.S., Kaech, S.M., Sarkar, S., Hannum, L.G., Shlomchik, M.J., & Ahmed, R. (2009) Requirement of B cells for generating CD4+ T cell memory. *The Journal of Immunology*. **182**: 1868-1876.

5. **Whitmire, J.K.**, Eam, B., & Whitton, J.L. (2008) Tentative T cells: memory cells are quick to respond, but slow to divide. *The Public Library of Science-Pathogens*. **4**: e1000041.

6. **Whitmire, J.K.,** Benning, N., Eam, B., & Whitton, J.L. (2008) Increasing the CD4+ T cell precursor frequency leads to competition for IFNg, thereby degrading memory cell quantity and quality. *The Journal of Immunology*. **180**: 6777-6785.

7. Iannacone, M., Sitia, G., Isogawa, M., **Whitmire, J.K.**, Marchese, P., Chisari, F.V., Ruggeri, Z.M., & Guidotti, L.G. (2008) Platelets prevent IFN-alpha/beta-induced lethal hemorrhage promoting CTL-dependent clearance of lymphocytic choriomeningitis virus. *The Proceedings of the National Academy of Sciences* **105**: 629-634.

8. Frausto, R.F., Crocker, S.J., Eam, B., **Whitmire, J.K.**, & Whitton, J.L. (2007) Myelin oligodendrocyte glycoprotein peptide-induced experimental allergic encephalomyelitis and T cell responses are unaffected by immunoproteasome deficiency. *The Journal of Neuroimmunology*. **192**: 124-133.

9. Crocker, S.J., Frausto, R.F., **Whitmire, J.K.**, Benning, N., & Whitton, J.L. (2007) Amelioration of coxsackievirus B3-mediated myocarditis by inhibition of TIMP-1. *The American Journal of Pathology*. **171**: 1762-1773.

10. Zhang, B., Maris, C.H., Foell, J., **Whitmire, J.**, Niu, L., Song, J., Kwon, B.S., Vella, A.T., Ahmed, R., Jacob, J., & Mittler, R.S. (2007) CD137 T cell costimulation-induced immune

suppression or enhanced immune function during acute viral infection: timing is everything. *The Journal of Clinical Investigation*. **117**: 3029-3041.

11. **Whitmire, J.K**., Eam, B., Benning, N., & Whitton, J.L. (2007) Direct interferon-γ signaling dramatically enhances CD4+ and CD8+ T cell memory. *The Journal of Immunology*. **179**: 1190-1197.
12. Botten, J., Whitton, J.L., Barrowman, P., Sidney, J., **Whitmire J.K.**, Alexander, J., Ting, J., Bui, H.-H., Sette, A., & Buchmeier, M.J. (2007) HLA-A2-restricted protection against lethal lymphocytic choriomeningitis. *The Journal of Virology*. **81**: 2307-2317.
13. Foster, B., Prussin, C., Liu, F., **Whitmire, J.K.**, & Whitton, J.L. (2007) Detection of intracellular cytokines by flow cytometry. *Current Protocols in Immunology*. John Wiley & Sons, Inc. **Chapter 6.24.1**.
14. Crocker, S. J., **Whitmire, J.K.**, Frausto, R.F., Chertboonmuang, P., Soloway, P.D., Whitton, J.L., & Campbell, I.L. (2006) Persistent macrophage/microglial activation and myelin disruption following experimental autoimmune encephalomyelitis in TIMP-1 deficient mice. *American Journal of Pathology*. **169**: 2104-2116.
15. **Whitmire, J.K**., Benning, N., & Whitton, J.L. (2006) Precursor frequency, nonlinear proliferation, and functional maturation of virus-specific CD4+ T cells. *The Journal of Immunology*. **176**: 3028-3036.
16. **Whitmire, J.K.**, Benning, N., & Whitton, J.L. (2005) Cutting Edge: Early IFN-γ signaling directly enhances primary antiviral CD4+ T cell responses. *The Journal of Immunology*. **175**: 5624-5628.
17. **Whitmire, J.K**., Tan, J.T., & Whitton, J.L. (2005) Interferon-γ acts directly on CD8+ T cells to increase their abundance during virus infection. *The Journal of Experimental Medicine*. **201**: 1053-1059.
18. Kitchen, S.G., **Whitmire, J.K.**, Jones, N.R., Galic, Z., Kitchen, C.M.R., Ahmed, R., & Zack, J.A. (2005) The CD4 molecule on CD8+ T lymphocytes directly enhances the immune response to viral and cellular antigens. *Procedings of the National Academy of Sciences*. **102**: 3794-3799.

Editorial Responsibilities

Ad hoc reviewer for:

Blood, Clinical Vaccine Immunology, The Journal of Immunology, The Journal of Leukocyte Biology, The Journal of Virology, The Public Library of Science-One, The Public Library of Science-Pathogens, The Proceedings of the National Academy of Sciences, Virology.

Grants/Contracts

Principal Investigator**,** start 07/01/2008 - end 06/30/2013
" Analyses of the effects of pro-inflammatory cytokines on CD4+ T cell responses"
NIH (NIAID), grant number AI074862
Total direct costs: $200,000
% effort: 100%

UNC Leadership

Member of the Carolina Vaccine Institute.

Professional Meetings/Societies

Society membership

The American Society of Immunologists (2008- current)

The American Society for Microbiology (2010- current)

Department of Microbiology & Immunology
Abbreviated Curriculum Vitae

Matthew C. Wolfgang, Ph.D.

Assistant Professor

Primary Appointment: Department of Microbiology and Immunology

Publications

Primary literature

Fuchs, E.L., Brutinel, E.D., Jones, A.K., Fulcher, N.B., Urbanowski, M.L., Yahr, T.L. & Wolfgang, M.C. (2010) The *Pseudomonas aeruginosa* Vfr regulator controls global virulence factor expression through cAMP-dependent and -independent mechanisms. *Journal of Bacteriology* **192(14),** 3553-3564.

Heiniger, R.W., Winther-Larsen, H.C., Pickles, R.J., Koomey, M. & Wolfgang, M.C. (2010) Infection of human mucosal tissue by *Pseudomonas aeruginosa* requires sequential and mutually dependent virulence factors and a novel pilus-associated adhesin. *Cellular Microbiology* **12(8),** 1158-1173.

Fuchs, E.L., Brutinel, E.D., Klem, E.R., Fehr, A.R., Yahr, T.L. & Wolfgang, M.C. (2010) *In vitro* and *in vivo* characterization of the *Pseudomonas aeruginosa* cAMP phosphodiesterase CpdA required for cAMP homeostasis and virulence factor regulation. *Journal of Bacteriology* **192(11)**, 2779-2790.

Fulcher, N.B., Holliday, P.M., Klem, E., Cann, M.J. & Wolfgang, M.C. (2010) The *Pseudomonas aeruginosa* Chp chemosensory system regulates intracellular cAMP levels by modulating adenylate cyclase activity. *Molecular Microbiology* **76(4)**, 889-904.

Orans, J., Johnson, M.D.L., Coggan, K.A., Sperlazza, J.R., Heiniger, R.W., Wolfgang, M.C. & Redinbo, M.R. (2010) Crystal structure analysis reveals Pseudomonas PilY1 as an essential calcium-dependent regulator of bacterial surface motility. *Proceedings of the National Academy of Sciences USA* **107(11)**, 1065-1070.

Martino, M.E., Olsen, J.C., Fulcher, N.B., Wolfgang, M.C., O'Neal, W.K. & Ribeiro, C.M. (2009) Airway epithelial inflammation-induced endoplasmic reticulum Ca^{2+} store expansion is mediated by X-box binding protein-1. *Journal of Biological Chemistry* **284(22)**, 14904-14913.

Cody, W.L., Pritchett, C.L., Jones, A.K., Carterson, A.J., Jackson, D., Frisk, A., Wolfgang, M.C. & Schurr, M.J. (2009) *Pseudomonas aeruginosa* AlgR controls cyanide production in an AlgZ-dependent manner. *Journal of Bacteriology* **191(9)**, 2993-3002.

Tunney, M.M., Field, T.R., Moriarty, T.F., Patrick, S., Doering, G., Muhlebach, M.S., Wolfgang, M.C., Boucher, R., Gilpin, D.F., McDowell, A. & Elborn, J.S. (2008) Detection of anaerobic

bacteria in high numbers in sputum from patients with cystic fibrosis. *American Journal of Respiratory Critical Care Medicine* **177(9)**, 995-1001.

Naessan, C.L., Egge-Jacobsen, W., Heiniger, R.W., Wolfgang, M.C., Aas, F.E., Rohr, A., Winther-Larsen, H.C. & Koomey, M. (2008) Genetic and functional analyses of PptA, a phospho-form transferase targeting type IV pili in *Neisseria gonorrhoeae*. *Journal of Bacteriology* **190(1)**, 387-400.

Winther-Larsen, H.C., Wolfgang, M.C., van Putten, J.P., Roos, N., Aas, F.E., Egge-Jacobsen, W.M., Maier, B. & Koomey, M. (2007) *Pseudomonas aeruginosa* Type IV pilus expression in *Neisseria gonorrhoeae*: effects of pilin subunit composition on function and organelle dynamics. *Journal of Bacteriology* **189(18)**, 6676-6685.

Aas, F.E., Winther-Larsen, H.C., Wolfgang, M., Frye, S., Lovold, C., Roos, N., van Putten, J.P. & Koomey, M. (2007) Substitutions in the N-terminal alpha helical spine of *Neisseria gonorrhoeae* pilin affects Type IV pilus assembly, dynamics and associated functions. *Molecular Microbiology* **63(1)**, 69-85.

Soong, G., Muir, A., Gomez, M.I., Waks, J., Reddy, B., Planet, P., Singh, P.K., Kanetko, Y., Wolfgang, M.C., Hsiao, Y.S., Tong, L. & Prince, A. (2006) Bacterial neuraminidase facilitates mucosal infection by participating in biofilm production. *Journal of Clinical Investigation* **116(8)**, 2297-2305.

Kulasekara, B.R., Kulasekara, H.D., Wolfgang, M.C., Stevens, L., Frank, D.W. & Lory, S. (2006) Acquisition and evolution of the *exoU* locus in *Pseudomonas aeruginosa*. *Journal of Bacteriology* **188(11)**, 4037-4050.

Tart, A.H., Wolfgang, M.C. & Wozniak, D.J. (2005) The alternative sigma factor AlgT represses *Pseudomonas aeruginosa* flagellum biosynthesis by inhibiting expression of *fleQ*. *Journal of Bacteriology* **187(23)**, 7955-7962.

Ichikawa, J.K., English, S.B., Wolfgang, M.C., Jackson, R., Butte, A.J. & Lory, S. (2005) Genome-wide analysis of host responses to the *Pseudomonas aeruginosa* Type III secretion system yields synergistic effects. *Cellular Microbiology* **7(11)**, 1635-1646.

Reviews & commentaries

Yahr, T.L. & Wolfgang, M.C. (2006) Transcriptional regulation of the *Pseudomonas aeruginosa* type III secretion system. *Molecular Microbiology* **62(3)**, 631-640.

Editorial Responsibilities

Ad hoc reviewer for:

American Journal of Respiratory Cell and Molecular Biology, Cell Host and Microbe, Expert Review in Anti-Infective Therapy, FEMS Microbiology Letters, Infection and Immunity, Journal

of Bacteriology, Molecular Microbiology, Proceedings of the National Academy of Sciences, PLoS ONE, PLoS Pathogens

Grants/Contracts

Principal Investigator, 09/22/2008 - 08/31/2012
Cyclic AMP Signaling in *Pseudomonas aeruginosa* Virulence.
NIH/NIAID, 5 R01 AI 069116-02
$900,000
50%

Core Leader, 09/15/2006 – 07/31/2011
PI: Richard Boucher
SCCOR in Host Factors in Chronic Lung Disease, Core D: Diagnostic Molecular Microbiology Core
NIH/NHLBI, 5 P50 HL 084934-04
$770,906
15%

Co-Investigator, 01/01/2010 – 12/31/2014
PI: Richard Boucher
The Role of Anaerobic Bacterial Infection in Cystic Fibrosis
NIH/NHLBI, R01 HL 092964-01A1
$600,000
20%

Co-Investigator, 05/01/2009 – 02/28/2014
PI: Temitope Keku
Intestinal Microbiota, Diet and Risk of Colorectal Adenomas
NIH/NCI, 5 R01 CA 136887-02
5%

Co-Investigator, 09/15/2006 – 07/31/2011
PI: Richard Boucher
SCCOR in Host Factors in Chronic Lung Disease, Project V: Mucus Dehydration and Evolution of COPD Lung Disease
NIH/NHLBI, 5 P50 HL 084934-04
2.5%

Co-Investigator, 09/15/2006 – 07/31/2011
PI: Richard Boucher
SCCOR in Host Factors in Chronic Lung Disease, Project VI: Mucus Dehydration and Evolution of CF Lung Disease
NIH/NHLBI, 5 P50 HL 084934-04
2.5%

Grant Review Service

Ad hoc member, Deutsche Forschungsgemeinschaft (German Research Foundation) Priority Program "Host-adapted Metabolism of Bacterial Pathogens", 2008

Cystic Fibrosis Foundation, Research and Research Training Committee, 2007

Auburn University, Biogrant Program, 2006

Cystic Fibrosis Foundation, Scored-But-Unfunded Grant Program, 2004 - present

Committee Service

University of North Carolina, Chapel Hill

Biomedical and Biological Sciences Program Admissions, 2008

Member, UNC Microbiome Core Facility Executive Committee, 2008 - present

Faculty Advisor, UNC Microbiome Core Facility, 2008 - present

Member, Bacteria in Health and Disease Initiative Steering Committee, 2006 - 2008

Professional Meetings/Societies

Meeting organization

Co-organizer, Triangle Microbial Interactions Meeting (Meets quarterly), 09/2009 - present

Session chair, North American Cystic Fibrosis Conference, Anaheim California, 10/2007

Meeting participation

Speaker, UNC Microbiome Research Symposium: Host-Associated Microbial Communities in Health and Disease, Chapel Hill North Carolina, 06/2010

Speaker, Microbial Pathogenesis & Host Response, Cold Spring Harbor Laboratories, New York, 09/2009.

Speaker, FASEB Summer Research Conferences, Microbial Pathogenesis: Mechanisms of Infectious Disease, Snowmass, Colorado, 07/2009.

Attendee, Mid-Atlantic Microbial Pathogenesis Meeting, Wintergreen, Virginia, 02/2009

Speaker, 31st European CF Conference, Prague, Czech Republic, 06/2008.

Attendee, Mid-Atlantic Microbial Pathogenesis Meeting, Wintergreen, Virginia, 02/2007

Society membership

American Society for Microbiology