

VII. APPENDICES

to

Self-Study of Graduate and Postdoctoral Education

Department of Microbiology & Immunology,
School of Medicine,
University of North Carolina, Chapel Hill

Submitted to:
The Graduate School,
University of North Carolina, Chapel Hill
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Robert B. Bourret, Ph.D.
Professor & Director of Graduate Studies

William E. Goldman, Ph.D.
Professor & Chair

Virginia L. Miller, Ph.D.
Professor & Postdoctoral Advisor
Assistant Dean of Graduate Education

Dixie L. Flannery
Student Services Manager

Brandy L. Dykhuizen
Executive Assistant to the Chair

Brittany L. Mortensen
Graduate Student Representative

Eric H. Weening, Ph.D.
Postdoctoral Scholar Representative

Section VII - Appendices

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Appendix A1 - Department Summary Page for Prospective BBSP Students

Department of Microbiology & Immunology

Department website address: <http://www.med.unc.edu/microimm/>

Director of Graduate Studies: **Bob Bourret** (bourret@med.unc.edu)

Graduate Student Coordinator: **Dixie Flannery** (dixie_flannery@med.unc.edu)

Program Overview

The UNC Department of Microbiology and Immunology is highly regarded in many disciplines, including prokaryotic and eukaryotic molecular and cellular biology, molecular genetics and bioinformatics, infectious disease and pathogenesis, bacteriology, virology, immunology and cancer biology. Our Department consists of ~80 faculty members, ~70 graduate students, ~60 postdoctoral scientists, ~50 research staff, and ~10 administrative staff, who together form a highly interactive, friendly, and collaborative community. Your education in the first year will be under the guidance of the BBSP. Upon subsequently joining our Department, we will provide you with an outstanding learning environment, an opportunity to conduct cutting-edge research, and most importantly, thoroughly prepare you for a successful career in science. Our Ph.D. program is designed to provide a foundation of fundamental knowledge in modern microbiology and immunology, foster critical scientific thinking, develop your written and oral communication skills, allow you to gain teaching experience, and give you opportunities to travel and showcase your work through posters or oral presentations at national meetings. Please come join us!!

Program of Study

The Microbiology & Immunology Ph.D. training program requires students to:

- *Complete* a Research Ethics course in year one through BBSP.
 - *Pass* six relevant courses, including two Departmental seminar/tutorial courses. Students typically complete four of the six classes during year one while in BBSP.
 - *Attend* weekly student and departmental seminars beginning in year two.
 - *Act* as a Teaching Assistant for two semesters in department-approved courses.
 - *Pass* the Doctoral Written Preliminary Examination (typically at the end of year two).
 - *Pass* the Doctoral Oral Preliminary Examination (typically at the start of year three).
 - *Form* a dissertation committee and meet annually to monitor research progress.
 - *Present* your research annually in the student seminar series after year two.
 - *Try to complete* at least two first author papers describing your original research.
 - *Write* a dissertation, present your research in a public seminar, and pass a final oral examination.
- Students typically complete their Ph.D. in year five or six.


Doctoral Preliminary Examinations

The UNC Graduate School leaves the format of the doctoral preliminary examinations to the discretion of individual departments. Our exam is designed to be a useful learning experience, which our faculty support through a substantial commitment of their time.

The **written preliminary exam** is a non-thesis research proposal in the format of an NIH grant application. Many students prepare by taking the Mcro795 writing class in the Fall semester of year two. Specific exam guidelines are discussed in detail when students meet as a group with the Prelim Exam Advisor during the Spring semester of year two. Students then generate two research topics of their choosing and outline each. A faculty committee assigns one of the topics as the basis for the research proposal. Students have five weeks during the summer after year two to complete the document. The exam is intended to be an assessment of each student's ability to formulate an original and independent experimental approach and adequately express his or her ideas in writing.

The **oral preliminary exam** is an oral defense of the written research proposal. Students take the oral preliminary exam within three months after passing the written exam. The oral exam is administered by a faculty committee and provides an opportunity for students to demonstrate their ability to discuss the fields of science related to their proposal, as well as their ability to analyze problems and design experiments.

Appendix A2 - Recruiting Poster/Handout for Prospective BBSP Students



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Department of Microbiology & Immunology Ph.D. Program

Revised 9/28/10

Our Department

A Passion For Education

The UNC Graduate School sets basic guidelines for the Ph.D. degree, but each department designs their own training program. Our faculty is passionate about graduate education, vigorously debates the best way to train scientists, and then commits their time to support the Ph.D. students. Here are two examples: (1) In the Micro795 writing class, each student receives 24 detailed critiques of their weekly writing assignments to facilitate improvement. (2) Our preliminary examination is designed to be a substantial and relevant learning experience. Each student interacts with at least four faculty members other than their research advisor during topic selection, three during the written exam, and five during the oral exam.

Areas Of Research Excellence

The Department of Microbiology & Immunology is organized into four research areas, although there is substantial overlap:

- IMMUNOLOGY**, including B cells, dendritic cells, macrophages, T cells, T regulatory cells, autoimmunity, tolerance, transplantation, innate immunity, inflammation, burn injury, cancer, host/pathogen interactions.
- MICROBIAL PATHOGENESIS**, including *Bordetella bronchiseptica*, *Bordetella pertussis*, *Burkholderia pseudomallei*, *Francisella tularensis*, *Haemophilus ducreyi*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Mycobacterium smegmatis*, *Mycobacterium tuberculosis*, *Neisseria gonorrhoeae*, *Plasmodium falciparum*, *Pneumocystis jirovecii*, *Pseudomonas aeruginosa*, *Pseudomonas syringae*, *Staphylococcus aureus*, *Trichomonas vaginalis*, *Vibrio cholerae*, *Yersinia enterocolitica*, and *Yersinia pestis*.
- MOLECULAR, STRUCTURAL, & COMPUTATIONAL BIOLOGY**, including DNA/protein interactions, bioinformatics, proteomics, systems biology, molecular mechanisms of allostery, host/pathogen interactions, and signal transduction.
- VIROLOGY**, including bacteriophage, corona virus, cytomegalovirus, dengue virus, Epstein-Barr virus, influenza virus, Kaposi's sarcoma herpes virus, lentiviruses, Norwalk virus, human immunodeficiency virus, human papilloma virus, respiratory syncytial virus, Ross River virus, and Venezuelan equine encephalitis virus.

Classroom Course Offerings

Lecture-based Courses

- Micro614 - Immunobiology- Fall
- Micro630 - Virology - Fall
- Micro635 - Microbial Pathogenesis I (bacteria & fungi) - Fall
- Micro640 - Microbial Pathogenesis II (viruses) - Spring

Scientific Literature Analysis

- Micro710 - Seminar/Tutorial in Microbial Pathogenesis - Spring
- Micro711 - Seminar/Tutorial in Virology - Fall
- Micro712 - Seminar/Tutorial in Immunology - Fall, Spring

Scientific Writing

- Micro795 - Research Concepts (writing & logic) - Fall

Department Website: www.med.unc.edu/microimm

Director of Graduate Studies: Bob Bourret, bbourret@med.unc.edu

Our Ph.D. Program

Degree Requirements

- Six classroom courses**, two of which must be literature-based to learn critical reading/analysis skills. The Micro795 writing/logic class is not required, but most Microbiology & Immunology students take it to prepare for the preliminary examinations.
- Micro701/702 seminar courses**. Every semester, students must attend at least two-thirds of our weekly departmental and student seminars to obtain broad exposure to modern microbiology and immunology research. Beginning in the third year, students speak annually in the student seminar series.
- Written preliminary examination**. We want to test your ideas, not those of our faculty. Therefore, during the spring of the second year, students develop two original research topics that cannot be the subject of investigation in their laboratories. However, to derive maximum benefit from the effort invested, at least one topic must be plausibly related to the interest area of their laboratory. During the first five weeks of summer, students write a 12 page NIH-style research proposal on one of their topics. Students are strongly encouraged to discuss their ideas with anyone, but cannot receive assistance with the actual writing of the proposal.
- Oral preliminary examination**. In the fall of the third year, students who have passed their written exam orally defend their research proposal.
- Teaching assistant**. Students serve two semesters as TA's in undergraduate nursing or dental microbiology classes.
- Thesis committee**. Provide a progress report and meet with thesis committee annually.
- Ph.D. dissertation**. Write dissertation, defend in a private committee meeting, and present results in a public seminar.

Degree Progression

- Year 1**. Take courses, do three laboratory rotations, and participate in BBSP first year groups and professional development activities, including research ethics training. Choose a research advisor and join the Department of Microbiology & Immunology.
- Year 2**. Perform thesis research, finish classroom courses (typically including Micro795 writing course), participate in Micro701/702 seminar course, act as TA, and take written preliminary examination.
- Year 3**. Perform thesis research, take oral preliminary examination, choose thesis committee and chair, obtain approval of thesis project, participate in Micro701/702 seminar course, act as TA, and give student seminar.
- Years 2-4**. Perform thesis research, meet with thesis committee at least once per year, speak in student seminar series annually, and participate in Micro701/702 seminar course.
- Final Year**. Our expectation is that students will complete sufficient original research for two first-author publications in quality journals. Write dissertation, defend orally, and present public seminar. Completion of Ph.D. degree typically takes five to six years.

Student Services Manager: Dixie Flannery, dflann@med.unc.edu

Our Research Community

People Are Our Most Important Resource

The Department of Microbiology & Immunology is composed of ~270 people, including:

- About 80 faculty members with primary (~45) or joint (~35) appointments.
- About 55 laboratories are available to graduate students.
- About 70 Ph.D. students.
- About 60 postdoctoral scientists in the research groups of primary faculty.
- About 50 research staff.
- About 10 administrative staff.

Building Collegiality & Collaboration

It is readily apparent that an atmosphere of collegiality and cooperation permeates the Department of Microbiology & Immunology. Examples abound of joint group meetings and publications between labs, single labs with multiple faculty members to contribute diverse expertise, graduate students with mentors from different labs, etc. Southern hospitality is alive and well - people go out of their way to help one another, starting with the example set by the departmental office staff.

Our student seminar series is a great way to keep track of what everyone is doing, and has a standing room only audience each week. About 15 graduate students who work in Microbiology & Immunology labs but are members of other Ph.D. programs (Biochemistry & Biophysics, Biomedical Engineering, Cell & Molecular Physiology, Computer Science, Genetics, Oral Biology, Toxicology) are given the opportunity to speak in the series so we can benefit from awareness of their research.

Other opportunities to interact with department members include a TGIF social hour hosted by a different lab each Friday and an annual symposium featuring the research of postdoctoral scientists in our department.

Research Talks

In addition to the departmental and student seminar series, there are other local opportunities to present and hear about research:

- Bacteriology Research In Progress - monthly.
- Virology Research In Progress - weekly.
- Triangle Immunology Interest Group - monthly.
- Triangle Microbial Interactions - monthly.
- Triangle Virology Association - once per semester.

Other Graduate Student Activities

- The Microbiology & Immunology students organize and host the Bassford Memorial Lecture each year.
- Two student representatives serve on the Graduate Studies Advisory Committee, which considers how to improve the Ph.D. training program and other pertinent issues.
- Students elect a departmental representative to the UNC Graduate & Professional Students Federation.

Department Website: www.med.unc.edu/microimm

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Appendix A3 - Microbiology Programs Ranked Higher Than UNC By The NRC

Microbiology programs with both 5th and 95th percentile rankings higher than UNC Chapel Hill in the National Research Council data-based assessment of research doctorate programs in the United States. Based on 2005-06 data.

Microbiology Program	S-Rankings	R-Rankings
Baylor University	X	~ ^a
Case Western Reserve University	X	~
Columbia University	X	X
Duke University	X	X
Emory University	X	X
Harvard University	X	X
New York University	X	X
Rutgers University		X
Stanford University	X	X
Tufts University	X	X
University of Alabama, Birmingham		X
University of California, Berkeley	X	X
University of California, Los Angeles		X
University of Illinois, Urbana-Champaign	X	X
University of Iowa		X
University of Michigan		X
University of Pennsylvania	X	X
University of Pittsburgh	X	X
University of Rochester		X
University of Texas, Austin		X
University of Michigan, Ann Arbor		X
University of Virginia	X	X
University of Washington, Seattle	X	X
University of Wisconsin, Madison	~	X
Washington University, St. Louis	X	X
Yale University	X	X

^aIndicates not clearly distinguishable from the UNC Department of Microbiology & Immunology (i.e. 5th and 95th percentile rankings are neither both better nor both worse than UNC). Other programs in this category include the University of Georgia and the University of Texas, Houston for the S-rankings; and the University of California, Davis and the University of Texas Southwestern Medical Center for the R rankings.

Appendix A4 - External Review Report, December 1999

Program Review:
University of North Carolina-Chapel Hill
Department of Microbiology and Immunology

Site Visit: December 5-7, 1999

External Review Team:

Henry R. Bose, Chair
Associate Director, Institute for Cellular and Molecular Biology
Professor, Molecular Genetics and Microbiology
University of Texas at Austin

Thomas Braciale
Director, Carter Immunology Center
Professor of Microbiology and Pathology
University of Virginia

Virginia Miller
Associate Professor of Molecular Microbiology and Pediatrics
Washington University, St. Louis

The Department

The Department of Microbiology and Immunology consists of 24 primary full-time faculty and 11 faculty who hold joint appointments with other academic units in the medical school. The focus of the department is molecular pathogenesis and includes faculty working on bacterial and viral pathogens and the immune system as it relates to invasion by pathogenic microbes. This central theme has allowed this department to focus its resources and has created a cohesive unit whose members interact extensively. This interactive environment provides an excellent setting to train graduate students. The reputation of this department in molecular pathogenesis is excellent and accordingly, the faculty is generally very well funded.

Currently, faculty searches are underway to recruit in Bacteriology, Informatics, and Virology. The addition of faculty in these areas will provide better balance between the three groups. A faculty member in Virology has not been recruited to the department in over a decade. Apparently, a search is being initiated to recruit two virologists. One of these positions should have its primary appointment in this department.

The University is in the process of developing an Infectious Disease Center which is going to have a major impact on the Department of Microbiology and Immunology since all but one of the existing faculty will likely become members of this center. This Center, which will provide an identity for those working on all aspects of infectious disease (epidemiologists, practicing physicians, and basic scientists), will provide an opportunity to attract additional outside funding and perhaps leverage for a new building. This Center will likely be a major asset to the department. There is, however, one major concern. The source of support for the entering class of graduate students is funds released from faculty salaries obtained from research grants. If a subset of the department faculty are relocated to the new Center and their contribution is not kept by the department, the entire graduate program and, ultimately, the Department will be seriously damaged. Faculty members already feel that too few students are accepted into the program due to this financial constraint. The administration must develop a plan to enable department faculty members who are not physically housed in the department to contribute to the financial support of the graduate students.

The Faculty

The faculty, in general, are excellent; publishing in well respected journals in their respective fields. There are also a number of faculty members whose work is outstanding. The faculty are very productive and successful in attracting outside funding. The morale of the faculty is exceptionally high. The faculty members are happy with their workload, quality of the students and the administrative style of the Chair. The mentoring of junior faculty is good, although informal. Junior faculty are reasonably well protected, to permit them to establish their research programs.

Since the source of funds to recruit graduate students is derived from released faculty salaries obtained by grants, it is imperative that the teaching loads of the faculty are not increased, which would make them less competitive for outside funding. Teaching responsibilities and access to departmental resources, including students is equitably distributed. The major problem which faculty, at all ranks, expressed is the inadequate number of graduate students admitted on an annual basis. Due to escalating tuition and graduate student stipends nation-wide, the number of student recruited annually by the department has decreased from twelve to approximately nine over the past five years. The faculty has the funding to support additional students after they have committed to a laboratory. This situation can only be rectified if additional resources become available to recruit additional students.

There are two concerns about the composition of the faculty. First, the vast majority of the faculty members are full Professors, with the majority of the faculty in their early fifties. Assistant Professors make up only a small fraction of the primary faculty appointments. Apparently this situation has developed because the faculty are very happy and very few leave to other universities. The faculty has decided to recruit only at the junior level and apparently two searches are underway. The addition of these junior faculty members will help to revitalize this department.

The most disturbing situation concerning the faculty composition is the extent of inbreeding. Several of both the primary, as well as jointly appointed faculty members, have trained either as pre- or postdoctoral fellows with the existing faculty. Of a total of 35 primary and jointly appointed faculty, 13 have, at some stage of their training, been associated with the department. Though these have been generally good appointments, ultimately this extensive level of inbreeding could have an adverse effect on the department.

Training Program

The training program is outstanding. The department receives approximately 150 applications annually for a class of approximately 10. The applicant pool is excellent, with the average GPA of 3.3 average, and an average combined GRE score (Verbal, Quantitative) of 1175. The department is successful in recruiting approximately one-third of the students to whom offers are made. The students who have enrolled in the program over the past five years have an average GPA of 3.5 and an average GRE score of approximately 1200. The average time to degree completion is approximately 5 1/2 years, and the attrition rate is 20%, which is comparable to other programs in Universities of similar stature.

The students are required to do three brief rotations prior to the selection of a research mentor. Unlike other programs, after the completion of each rotation, students are required to write a report that is evaluated by the rotation mentor and a second faculty reviewer. The students consider these reports a good experience. Confusion, however, exists as to what is expected of the students in these reports. Apparently, there is no uniform departmental policy or guidelines for the students.

Historically, the faculty has been very divided over the extent to which predoctoral students should take didactic courses. Some faculty believe that students should be required to take a number of organized courses, whereas others feel tutorial courses were sufficient to provide adequate depth and breadth for the students. A reasonable compromise has been reached; students are required to complete six academic courses but the student, together with the student's mentor, may elect to take only tutorial courses. The majority of the students, however, take some organized courses. The university offers interdisciplinarily taught core courses in molecular biology and cell biology. Many of the students elect to take a few of these courses, and feel they are very beneficial, rigorous, and well taught. The students are uniformly pleased with the flexibility provided them in the development of their own doctoral programs. Indeed, a number of students indicated that their primary reason for joining this program over others was this flexibility.

The students indicate that the department's faculty take teaching very seriously. They were particularly pleased with the team-taught molecular bacteriology course, which is very well organized and coordinated. The team-taught course in immunology was less favorably received. The students feel that this course is less cohesive and needs to be better coordinated. The tutorial courses, generally taught by one or two faculty members, are used to expose the students to advanced topics, and serve to supplement the basic courses. These courses also teach the students communication skills, since the students are called upon to present and evaluate pertinent papers. The students are very pleased with this teaching format.

The Preliminary Examination is given at the end of the students' second year. Their preliminary examination is administered in the form of a full-length NIH proposal, the topic of which is

selected from two brief research abstracts developed by the student. Ultimately, the student orally defends the proposal. Other Universities frequently use this preliminary examination format, since it evaluates whether the student is ready to plan and execute an independent research project. A unique aspect of this program's Preliminary Examination, however, is that the faculty evaluate the written proposal prior to the oral defense, and students are often called upon to extensively revise their written proposal prior to the oral exam's defense. The student's proposal is reviewed in the style of a National Institutes of Health study section, and students are provided with a written evaluation. The faculty put a major effort into this examination. In the past, communication between the faculty and students was inadequate. For example, students, and some faculty as well, were unclear about how much detail to provide for the preliminary abstracts. The communication between the students and the department has been substantially improved with the hiring of a new Graduate Coordinator. Communication could be improved if the students take the initiative to elect a student representative and if there were more faculty and student participation in department seminars and dissertation defenses. A program-wide retreat to foster interactions between the three focus groups would also be an excellent way to make the department a cohesive unit. Such a retreat should be open to the entire research community of the department and not be limited to faculty and students.

Appendix B1 - Department of Microbiology & Immunology Leaders of BBSP First Year Groups

Department of Microbiology & Immunology Members Fulfilling Leadership Roles in BBSP First Year Groups

2008-09

First year group leaders (2 of 8)

Barb Vilen (primary)
Rob Nicholas (joint)

Faculty co-mentors (6 of 25)

Miriam Braunstein (primary)
Aravinda de Silva (primary)
Tom Kawula (primary)
Ray Pickles (primary)
Christina Burch (joint)
Mark Heise (joint)

Student peer mentors

Not used in 2008-09

2009-10

First year group leaders (2 of 6)

Barb Vilen (primary)
Rob Nicholas (joint)

Faculty co-mentors (6 of 19)

Miriam Braunstein (primary)
Ed Collins (primary)
Blossom Damania (primary)
Aravinda de Silva (primary)
Tom Kawula (primary)
Ray Pickles (primary)
Mark Heise (joint)

Student peer mentors (5 of 31)

Bonnie Gunn
Erin McElvania-Tekippe
Andrea McKinnond
Cheryl Miller
Brittany Mortensen

2010-11

First year group leaders (3 of 6)

Barb Vilen (primary)
Rob Nicholas (joint)
John Rawls (joint)

Faculty co-mentors (4 of 18)

Miriam Braunstein (primary)
Steve Clarke (primary)
Ed Collins (primary)
Blossom Damania (primary)

Student peer mentors (4 of 23)

Bonnie Gunn
Ankunda Kariisa
Cheryl Miller
Sandi Wong

Appendix B2 - Microbiology & Immunology Ph.D. Timeline

RBB
8/12/10

Department of Microbiology & Immunology Timeline of Key Steps in Typical Progression to Ph.D. Degree

Before Joining Department (in either BBSP or M.D./Ph.D. program)

- Take classroom courses
- Lab rotations
- Choose research advisor and join department

First Year in Department (2nd year Ph.D. students, 1st year M.D./Ph.D.)

- Finish classroom course requirements
- Act as TA for one semester

Fall - Begin attending at least 2/3 of department and student seminars each semester. Take Mcro795 proposal writing & logic class (recommended)

Spring - Topic selection for written preliminary exam

Summer - Written preliminary exam

Second Year in Department (3rd year Ph.D. students, 2nd year M.D./Ph.D.)

- Begin annual presentations in student seminar series
- Act as TA for one semester to complete teaching requirement

Fall - Oral preliminary exam. Choose thesis committee & chair by end of semester

Spring (by March 31) - Meet with committee to approve thesis project. At least one week prior to meeting, provide thesis committee with a written document of two pages or less describing hypotheses, Specific Aims, and a brief overview of research design, including which parts of research design have been completed.

≥ Third Year in Department (≥ 4th year Ph.D. students, ≥ 3rd year M.D./Ph.D.)

Meet at least annually with thesis committee. Provide committee with a progress report at least one week prior to each meeting. The report consists of a Specific Aims page followed by a description of progress to date organized by Aim. The report should include any changes in Aims, a summary of key results, plans for future experiments, and the status of any publications.

One goal is to conduct sufficient research for at least two first author publications in high-quality refereed journals, either published or submitted. When ready to graduate, submit thesis to committee at least two weeks prior to defense. Defend thesis in private meeting with committee. Give public seminar of thesis research two weeks after private defense

Students typically graduate in their fourth or fifth year in the department (5th or 6th year Ph.D. students, 4th or 5th year M.D./Ph.D. students).

Appendix B3 - Enrollment in Microbiology & Immunology Graduate Courses

Course	Enrollment in Academic Years				
	2005-06	2006-07	2007-08	2008-09	2009-10
MCRO614 (Fall)	1 UG ^a 26 G 27 Total	1 UG 30 G 31 Total	2 UG 24 G 26 Total	0 UG 33 G 33 Total	2 UG 22 G 24 Total
MCRO630 (Fall)	1 UG 6 G 7 Total	0 UG 5 G 5 Total	3 UG 11 G 14 Total	0 UG 9 G 9 Total	0 UG 18 G 18 Total
MCRO635 (Fall)	0 ^b G	5 G	0 G	9 G	15 G
MCRO640 (Spring)	10 G	0 G	12 G	15 G	17 G
MCRO710 (Fall 2005-06, Spring 2008-10)	5 G	1 G	4 G	5 G	15 G
MCRO711 (Fall)	9 G	0 G	0 G	12 G	6 G
MCRO712 (Fall)	0 G	6 G	5 G	4 G	10 G
MCRO712 (Spring)	10 G	5 G	11 G	12 G	12 G
MCRO795 (Fall)	9 G	13 G	10 G	15 G	23 G

^aUG, undergraduate; G, graduate.

^bClass not offered in years indicated by zero enrollment

Appendix B4 - Departmental Seminar Speakers, 2005-06 through 2009-10

Department of Microbiology & Immunology Seminar Speakers

Spring 2010

- May 11, 2010 **Ralph Isberg** Tufts University
“Multiple paths to a single end: What *Legionella pneumophila* learned from amoebae. . . and what it did not.”
- April 27, 2010 **David Sherman** Seattle Biomedical Research
Institute
“Waiting to exhale: *M. tuberculosis* latency and reactivation.”
- April 20, 2010 **John Cambier** National Jewish Medical Research
Center
“Viral infection, immune tolerance and autoimmunity; connections and disconnections.”
- April 15, 2010 **Heran Darwin** NYU Lagone Medical Center
“Pupylation” in *Mycobacterium tuberculosis*.
- April 6, 2010 **Thomas Zahrt** Medical College of Wisconsin
“Identification and characterization of genes differentially expressed during *Francisella tularensis* growth *in vitro* and *in vivo*.”
- April 1, 2010 **Richard Whitley** University of Alabama
“Herpes Simplex Virus: From encephalitis to gene therapy of glioblastoma.”
- March 30, 2010 **Stephen Miller** Northwestern University
Medical School
“An antigen-specific tolerance approach to the therapy of autoimmune disease and tissue transplantation - mechanisms and clinical prospects”
- March 23, 2010 **Bruce Levin** Emory University
“Sex and drugs: the population and evolutionary dynamics of recombination and antibiotic treatment in bacteria.”
- March 16, 2010 **Greg Smith** Northwestern University
Medical School
“Herpesvirus assembly, intracellular transport and neuroinvasion.”
- March 9, 2010 **Christopher Walker** The Ohio State University/
Nationwide Children’s Hospital
“Cellular immunity in chronic hepatitis C: Can a failed response be rescued?”
- March 2, 2010 **David Margolis** UNC Chapel Hill
“The mechanisms of persistent HIV infection.”
- February 23, 2010 **Daniel Portnoy** University of California, Berkeley
“How the innate immune system distinguishes pathogenic from non-pathogenic microbes.”

February 16, 2010 **Ralph Tripp** University of Georgia
 “Respiratory syncytial virus (RSV) regulation of the host response to infection.”

February 9, 2010 **Eric Skaar** Vanderbilt University
 “The battle for metal between *Staphylococcus aureus* and its host.”

February 2, 2010 **Mary Schweitzer** North Carolina State University
 “Dinosaurs under the microscope: a new look at old bones.”

January 26, 2010 **Paul Lieberman** The Wistar Institute
 “Mechanisms of genome maintenance: Lessons from gammaherpesvirus latency”

January 19, 2010 **Shou-Jiang Gao** University of Texas Health Science Center, San Antonio.
 “Regulation of KSHV latency and reactivation.”

January 12, 2010 **Arash Grakoui** Emory University
 “HCV and intrahepatic immunity.”

Fall 2009

December 8, 2009 **Joseph St. Geme III** Duke University Medical Center
 “Trimeric autotransporters and *Haemophilus* pathogenicity”

December 1, 2009 **Harry Mobley** University of Michigan
 “Bacterial metabolism and gene expression during infection should dictate vaccine development”

November 17, 2009 **Jeffrey Anderson** UNC Chapel Hill
 “Analysis of HIV-1 *env* protein diversity during acute and chronic infection: implications for vaccine design”

November 10, 2009 **Matthew Weitzman** The Salk Institute
 “Interactions between viruses and the cellular DNA damage machinery”

November 3, 2009 **Stefanie Sarantopoulos** UNC Chapel Hill
 “Altered B cell homeostasis and BAFF in human chronic graft versus host disease”

October 27, 2009 **Matthew Wolfgang** UNC Chapel Hill
 “Regulation of the *Pseudomonas aeruginosa* cyclic AMP-dependent virulence regulon”

October 13, 2009 **Gail Bishop** The University of Iowa
 “TRAFs and TLRs in lymphocyte activation and immunization”

October 6, 2009 **Christian Jobin** UNC Chapel Hill
 “Innate immune sensors in the intestine: To protect and serve

September 29, 2009 **Victor Garcia-Martinez** UNC Chapel Hill
 “The next decade: improved treatment, prevention of new infections and a cure for HIV/AIDS”

September 22, 2009 **Jack Griffith** UNC Chapel Hill
 “Telomere loops and circles: how to end it all”

September 15, 2009 **Ramesh Akkina** Colorado State University
“Modeling Dengue and HIV pathogenesis and therapies in novel humanized mice”

Spring 2009

April 30, 2009 **Lora Hooper** University of Texas Southwestern
Medical Center at Dallas
“Innate defense of the gut epithelial surface”

April 23, 2009 **Mark Denison** Vanderbilt University
“Emergence and evolution of coronaviruses.”

April 16, 2009 **Peggy Cotter** University of California,
Santa Barbara
“Activation and suppression of inflammation in the respiratory tract by *Bordetella* species.”

April 9, 2009 **Douglas Green** St. Jude Children’s Hospital
“TBA”

April 2, 2009 **Morgan Giddings** UNC Chapel Hill
“The first steps towards drug resistance in *Pseudomonas aeruginosa*”

March 26, 2009 **Lynn Enquist** Princeton University
“Invasion and spread of an alpha herpesvirus in the mammalian nervous system”

March 5, 2009 **Christopher Walker** The Research Institute at
Nationwide Children’s Hospital,
Ohio State University
“Multiple pathways to HCV persistence”

February 26, 2009 **Richard Moyer** University of Florida
“Animal models of poxvirus infection elucidate novel aspects of host-virus interactions.”

February 19, 2009 **Chandra Mohan** University of Texas Southwestern
Medical Center
“SLE 1, 2, 3....Genetic Dissection of SLE”

February 5, 2009 **Con Beckers** UNC Chapel Hill
“Motility and host cell invasion by the protozoan parasite *Toxoplasma gondii*”

January 29, 2009 **Thomas Tedder** Duke University Medical Center,
“Regulatory B cells in autoimmune disease.”

January 22, 2009 **Kenneth Kaye** Harvard School of Medicine, and
Brigham and Woman’s Hospital
“Persistence of a tumor virus, KSHV’s strategy for survival”

Fall 2008

- December 4, 2008 **Karla Kirkegaard** Stanford University School of Medicine
“New lessons from poliovirus: dominant drug targets and novel routes of viral spread”
- November 19, 2008 **Matthias von Herrath** La Jolla Institute for Allergy and Immunology
“Viral infections, Tregs and combination therapies in type 1 diabetes.”
- November 13, 2008 **Robert Lamb** Northwestern University & HHMI
“Understanding paramyxovirus mediated membrane fusion”
- November 6, 2008 **George O’Toole** Dartmouth Medical School
“Iron & biofilm formation on CF-airway cells”
- October 30, 2008 **Ned Ruby** University of Wisconsin, Madison
“Good food and conversation: molecular approaches to understanding the physiology of the squid-vibrio symbiosis.”
- October 9, 2008 **John Rawls** UNC Chapel Hill
“Host-microbe interactions in the zebrafish digestive tract.”
- October 2, 2008 **Volker Briken** University of Maryland
“Living on the edge: Inhibition of host cell apoptosis by *Mycobacterium tuberculosis*”
- September 25, 2008 **Partho Ghosh** University of California, San Diego
“The virulence and crossreactivity of group A *Streptococcus* M1 protein”

Spring 2008

- May 7, 2008 **Ruslan Medzhitov** Yale School of Medicine
“Innate host defense pathways”
- April 24, 2008 **Amy Grunden** North Carolina State University
“Use of extremophile reactive oxygen detoxification enzymes to control stress responses in eukaryotic systems”
- April 17, 2008 **Peter Cresswell** Yale University School of Medicine
“Antigen cross-presentation by MHC class I - how do external proteins get in?”
- April 10, 2008 **Tanya Dragic** Albert Einstein University
“The peculiar pathway of Hepatitis C Virus entry”
- April 3, 2008 **Nathaniel Landau** New York School of Medicine
“Mechanisms of host resistance to HIV and retroelements”
- March 27, 2008 **David Peden** UNC Chapel Hill
“Translational studies of innate and IgE mediated airway inflammation in asthma”
- March 20, 2008 **Soman Abraham** Duke University Medical Center
“Novel TLR4 mediated responses to urinary tract infections and its implications for therapy”

March 6, 2008	Diane Griffin	Johns Hopkins Bloomberg School of Public Health
"New insights into alphavirus encephalitis"		
February 28, 2008	Satya Dandekar	University of California, Davis
"Gutting of mucosal defenses in HIV pathogenesis"		
February 21, 2008	Xiaofeng Frank Yang	Indiana University School of Medicine
"Host adaptation of the Lyme disease spirochete"		
February 14, 2008	Christopher Karp	Cincinnati Children's Hospital Research Foundation
"Activation and counter-regulation in the innate immune system"		
February 7, 2008	Brian Baker	University of Notre Dame
"Molecular dynamics and conformational changes in T cell receptor recognition of ligand"		
January 31, 2008	Thomas Silhavy	Princeton University
"Outer membrane biogenesis in Gram-negative bacteria"		
January 24, 2008	Kim Lewis	Northeastern University
"Persister cells: The perfect defense against antibiotics."		
January 17, 2008	Charles Samuel	University of California, Santa Barbara
"Interferon action and double-stranded RNA"		

Fall 2007

December 13, 2007	Claire Chougnet	Cincinnati Children's Hospital Medical Center
"Regulatory T cells in HIV/AIDS"		
December 6, 2007	Frank Scholle	North Carolina State University
"Virus-host interactions in early stages of West Nile Virus infection"		
November 29, 2007	Victor Engelhard	University of Virginia Health System
"Understanding and improving the CD8 T cell response to melanoma"		
November 15, 2007	Mark Shlomchik	Yale University School of Medicine
"Activation and regulation of autoreactive B cells"		
November 8, 2007	Steven Ziegler	Benaroya Research Institute at Virginia Mason
"Foxp3 and regulatory T cells"		
October 25, 2007	Catharine Bosio	Rocky Mountain Laboratories, NIAID, NIH
"Modulation of human dendritic cells by <i>Francisella tularensis</i> Schu4"		
October 18, 2007	Andrew Chee-Yuen Chan	Genentech, Inc.
"Regulation of lymphocyte function"		

~~October 11, 2007 **George O'Toole** Dartmouth Medical School,~~
~~"Pseudomonas interactions with host cells"~~ Cancelled

September 27, 2007 **Mario Stevenson** University of Massachusetts
 Medical School

"Cellular factors in HIV-host cell interplay"

September 20, 2007 **James Demarest** GlaxoSmithKline

"Virologic response to HIV entry inhibitors"

September 13, 2007 **Myron Cohen** UNC Chapel Hill

"Prevention of transmission of HIV: Where epidemiology meets biology"

August 30, 2007 **Rolf Renne** University of Florida

"Kaposi's sarcoma-associated herpesvirus-encoded microRNAs and their
 potential role in viral biology and pathogenesis"

Spring 2007

May 3, 2007 **Clifford Harding** Case Western Reserve University

"Host responses to *Mycobacterium tuberculosis*: innate immune recognition and
 regulation of antigen presenting cells."

April 26, 2007 **Richard Ambinder** Johns Hopkins University
 School of Medicine

"Virus targeted radiotherapy."

April 19, 2007 **Serap Aksoy** Yale University School of Public
 Health

"Tsetse flies: A haven for microorganisms."

April 12, 2007 **Scott Weaver** University of Texas Medical Branch

"Host range changes and Venezuelan Encephalitis emergence."

March 29, 2007 **Kanta Subbarao** Respiratory Virus Section
 NIH/NIAID

"Vaccines against emerging respiratory viruses."

March 22, 2007 **David Lo** University of California, Riverside

"Discriminating tastes: Peyer's Patch M cells use a novel particle transcytosis
 mechanism."

March 15, 2007 **Nick Cianciotto** Northwestern University

"*Legionella pneumophila* Type II protein secretion reveals new kinds of virulence
 factors."

March 8, 2007 **Pei-Yong Shi** Wadsworth Center

"Flavivirus RNA cap methylation."

February 22, 2007 **George Weinstock** Baylor College of Medicine

"Breakthroughs in genomics from microbes to mammals."

~~February 15, 2007 **Peter Cresswell** Yale University School of Medicine~~
~~"Mechanisms of presentation and cross presentation by MHC Class I molecules."~~
 Cancelled

- February 8, 2007 **Andrew Camilli** Tufts University
 “*Vibrio cholerae* gene expression from pond to gut and back again.”
- January 25, 2007 **Robert Nicholas** UNC Chapel Hill
 “Mechanisms of chromosomally mediated antibiotic resistance in *Neisseria gonorrhoeae*.”
- January 11, 2007 **Scott Wong** Oregon Health Sciences University
 “Rhesus rhadinovirus: defining virus-host interactions leading to KSHV-like associated disease.”

Fall 2006

- November 30, 2006 **Etty (Tika) Benveniste** University of Alabama, Birmingham
 “Regulation of CD40 expression in macrophages/microglia: Inhibition by SOCS-1 and SOCS-3.”
- November 16, 2006 **Michael Laub** Massachusetts Institute of Technology
 “Regulating cell cycle progression and cellular asymmetry in bacteria”.
- November 9, 2006 **Salam Ibrahim** North Carolina A & T State University
 “Bifidobacteria: Efficacy and applications to food products”
- November 2, 2006 **Simon Frost** University of California, San Diego
 “TBA.”
- October 26, 2006 **Michael Hudson** UNC Charlotte
 “*Staphylococcus aureus*-induced bone disease: Do osteoblasts contribute to pathology?”
- October 24, 2006 **Philippe Sansonetti** Institut Pasteur
 “Rupture, invasion and inflammatory destruction of the intestinal epithelium by *Shigella*: the Yin and the Yang of innate immunity.”
- October 19, 2006 **David Markovitz** University of Michigan
 “Adventures with the exotic DEK protein.”
- October 12, 2006 **Philip Santangelo** Georgia Institute of Technology
 “A molecular imaging approach to the study of viral infections.”
- ~~September 28, 2006 **John Alderete** University of Texas Health Science Center, San Antonio~~
 “TBA” Cancelled
- September 21, 2006 **Max Cooper** University of Alabama, Birmingham
 HHMI
 “Evolution of adaptive immunity”
- September 7, 2006 **James Brown** North Carolina State University
 “Ribonuclease P: A relic of the RNA world?”

Spring 2006

- May 25, 2006 **Genhong Cheng** University of California, Los Angeles
"Innate immune gene programs in host defense against bacterial and viral infections"
- May 11, 2006 **Robert Yarchoan** Retroviral Disease Section, NCI/NIH
"KSHV - from bedside to bench to bedside"
- April 27, 2006 **Patricia Day** Laboratory of Cellular Oncology
NCI/NIH
"Early events in the papillomaviral lifecycle"
- April 20, 2006 **Sandra Weller** University of Connecticut
"How Herpes Simplex Virus commandeers the host cell chaperone and DNA"
- April 13, 2006 **Sankar Swaminathan** University of Florida
"TBA"
- ~~April 6, 2006 **Erle Robertson** University of Pennsylvania
"TBA" Cancelled~~
- ~~March 30, **David Markovitz** University of Michigan
"The DEK autoantigen is a secreted chemotactic factor" Cancelled~~
- March 23, 2006 **You-Wen He** Duke University Medical Center
"Regulation of T lymphocyte function by anti-apoptotic molecule"
- March 9, 2006 **Warren Strober** Mucosal Immunity Section,
NIAID/NIH
"The function of NOD2"
- March 2, 2006 **Zsuzsanna Fabry** University of Wisconsin, Madison
"The role of dendritic cells in immune responses in the CNS"
- February 23, 2006 **Derya Unutmaz** Vanderbilt University School of
Medicine
"Decoding the immunobiology of human T cells: lessons from HIV infection"
- February 16, 2006 **Inaki Sanz** University of Rochester
"Mechanisms of human B cell tolerance"
- January 26, 2006 **Vineet Kewal Ramani** Model Development Section,
NCI/NIH
"HIV infection: Charting the inner passage"
- January 19, 2006 **James Hoxie** University of Pennsylvania
"Pushing the HIV envelope for structure/function and vaccine studies"
- January 12, 2006 **Scott Plevy** University of Pittsburgh
"What doesn't kill you makes you stronger: Carbon monoxide, macrophages, and inflammatory bowel disease"

Fall 2005

- December 8, 2005 **Chris Upton** University of Victoria
"Software tools for viral bioinformatics"
- December 1, 2005 **Beverly Koller** UNC Chapel Hill
"Molecular targets for modulating lung inflammation and injury"
- November 17, 2005 **Martin Pavelka, Jr.** University of Rochester
"The role of N-glycolylmuramic acid in mycobacterial cell wall biology"
- November 10, 2005 **David Margolis** UNC Chapel Hill
"Regulation of latent HIV: separating the virus from its host"
- November 3, 2005 **Samuel Speck** Emory University
"Murine gamma-herpesvirus 68 infection of mice - building a lasting memory"
- October 27, 2005 **Wendy Havran** The Scripps Research Center
"Role of intraepithelial gd T cells in tissue repair"
- October 13, 2005 **Bibiana Bielekova** University of Cincinnati
"NK cells mediate immunomodulatory effect of Daclizumab (IL-2R-alpha targeting therapy) in Multiple Sclerosis"
- October 6, 2005 **Xinnian Dong** Duke University
"Induction mechanism of systematic acquired resistance"
- September 29, 2005 **Bruce Cairns** UNC Chapel Hill
"T cell immune response following burn injury"
- September 22, 2005 **Sue Priola** Rocky Mountain Laboratories,
NIH/NIAID
"Prion diseases and their mechanisms"
- September 15, 2005 **Cynthia Cornelissen** Virginia Commonwealth University,
"A molecular study of the gonococcal transferrin receptor"

PHILIP J. BASSFORD, JR.

MEMORIAL LECTURE

❧ JONATHAN YEWDELL ❧

Adventures in viral
immunology

2.30 PM

Tuesday, April 27

MBRB 2204

Reception to follow

ABOUT OUR SPEAKER

Jonathan W. Yewdell, M.D., Ph.D. is the Chief of the Cellular Biology section at the laboratory of Viral Diseases at the National Institute of Allergy and Infectious Diseases at the NIH. He grew up in Eastchester, NY where he attended public high school. He majored in biochemistry at Princeton University, where he was hooked on studying the immune rejection of adenovirus-transformed cells with Arnie Levine, as part of his senior thesis. This is where Dr. Yewdell developed an interest in immune recognition of virus-infected cells that would become the major focus of his Ph.D. dissertation and further career.

Dr. Yewdell obtained his Ph.D. in 1981 from the University of Pennsylvania, where he worked at the Wistar Institute with Walter Gerhard's team, the first group to generate anti-viral monoclonal antibodies. Dr. Yewdell performed antigenic mapping of influenza virus hemagglutinin with monoclonal antibodies, as well as generating and characterizing monoclonal antibodies to other viral proteins. In addition to completing his doctoral work, Dr Yewdell also obtained his MD in 1981.

Following a one-year post-doc at Imperial College, London with David Lane, Dr. Yewdell returned to the Wistar Institute as an Assistant professor in 1983. Collaborating with Jack Bennink, he studied conformational alterations in flu HA, HA biogenesis and the mechanisms of CTL recognition of the internal proteins of non-transforming viruses, as well as discovering that the cytoplasm is the portal to the MHC Class I processing pathway.

In 1987, Dr. Yewdell and Dr. Bennink were both recruited to the NIAID where they set up a joint lab. Over the years, their many discoveries encompass the methods by which viral proteins block antigen presentation, as well as the complex ways by which antigenic peptides are processed and presented by the cellular machinery. Further, the Yewdell-Bennink group has also discovered the amino-terminal trimming of peptides in the endoplasmic reticulum, the role of DRiPs in generating antigenic peptides, the contribution of the myriad factors that contribute to immunodominance, the dependence of cross-priming on proteasome substrates, the involvement of the ubiquitin-proteasome pathway in HIV morphogenesis and characterization of PB1-F2, the 1st influenza A virus gene product. Most recently they have also discovered stress induced-conditional decoding of Met and, returning to an old interest, developed a new model for hemagglutinin antigenic drift. In addition to making cutting edge discoveries, Dr. Yewdell is renowned for his series of two articles providing advice, guidance and sanity to countless graduate students, which appeared in Nature Reviews Molecular Cell Biology in 2008.

JONATHAN YEWDELL

M.D., PH.D



LABORATORY OF VIRAL DISEASES

National Institute of Allergy and Infectious Diseases

Bethesda, MD.

2010 Bassford Memorial Lecture

University of North Carolina at Chapel Hill

April 27 2010 2.30 PM MBRB 2404

PHILIP J. BASSFORD, Jr.

Phil Bassford's love of bacterial genetics and molecular biology was kindled during his graduate training at the University of Virginia in the laboratories of Carl Schnaitman and Bob Kadner. After receiving his Ph.D. in 1977, he spent two years as a postdoctoral fellow in the laboratory of Jonathan Beckwith at Harvard Medical School, carrying out elegant studies using genetic approaches to understand protein secretion in *Escherichia coli*. He came to UNC as an Assistant Professor in 1979, and was promoted to Associate Professor in 1984 and to full Professor in 1989.



Phil's research was focused in two broad areas. Using powerful genetic approaches, he revealed key insights into the complex process of bacterial secretion, thereby contributing to the development of this field. A second research topic, in collaboration with Lola Stamm, focused on studying the physiology and molecular biology of *Treponema pallidum*, the etiologic agent of syphilis. Phil was viewed as an authority on both of these subjects, and his work received institutional, national, and international recognition.

In addition to his research accomplishments, Phil was a committed and enthusiastic teacher and mentor. He attracted some of the very best graduate students to his lab. Eight doctoral and two Masters students completed their training under his mentorship. His lectures were famous for their organization and clarity, as well as for the breakneck pace at which they were delivered. In all of his teaching, Phil communicated his love for bacteriology, and bacterial genetics.

After Phil's death in 1991, the Department of Microbiology and Immunology established the Bassford Memorial Fund in his honor, with the goal to benefit and support graduate training. The Fund supports the annual Bassford Memorial Lecture, presented by distinguished scientists at the forefront of their fields, who is hosted by the graduate students of the department. The Bassford Memorial Lecture will continue being an annual event, to honor Phil's many contributions to scholarship and teaching.

Contributions to the Bassford Memorial Fund may be sent to:

Department of Microbiology & Immunology
University of North Carolina School of Medicine
CB# 7290, 804 Mary Ellen Jones Building
University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7290

Appendix B6 - Student Seminar Speakers, 2005-06 through 2009-10

Department of Microbiology & Immunology Student Seminars

Spring 2010

- Muaz Khalil (White/Johnston)** **May 13, 2010**
Effect of a VEE 26S Subgenomic promoter mutation on transgene expression and infected cell viability.
- CJ Neely (Cairns)** **May 13, 2010**
Immunological mechanisms that lead to increased susceptibility to infections following burn injury.
- Allison Totura (Baric)** **May 6, 2010**
SARS-CoV and the interferon response: Evasion and detection
- Meagan Bolles (Baric)** **May 6, 2010**
Broadening neutralizing antibody therapies to SARS-coronavirus
- Flor Evangelista (Liu)** **April 29, 2010**
Humoral autoimmunity in skin blistering disease: Fogo Selvagem
- Reid Roberts (Ting)** **April 29, 2010**
Bound to defend: NLRC5 and the inflammasome
- Brittany Mortensen (Kawula)** **April 22, 2010**
The effects of the transcriptional regulator IclR on *Francisella tularensis* pathogenesis.
- Vicky Sepulveda (Goldman; Washington University)** **April 22, 2010**
Elucidating the function and regulation of CBP, a major *Histoplasma capsulatum* virulence factor.
- Christopher Noel (Cotter)** **April 15, 2010**
The role of the FhaB prodomain in protein secretion
- Shauna Swanson (Nicholas)** **April 8, 2010**
The role of the *pilMNOPQ* operon in antibiotic resistance in *Neisseria gonorrhoeae*
- Meghan Feltcher (Braunstein)** **April 8, 2010**
Protein targeting to the mycobacterial accessory SecA2 export system
- Aadra Bhatt (Damania)** **April 1, 2010**
InAKTivation of the PI3K/AKT/mTOR pathway as a therapeutic for primary effusion lymphoma
- Sean Gregory (Damania)** **April 1, 2010**
KSHV: For whom the innate immune receptor Tolls
- Kimberly Coggan (Wolfgang)** **March 25, 2010**
Regulation of an essential Type IV pilus biogenesis locus in *Pseudomonas aeruginosa* via two independent mechanisms

Sarah Council (Wolfgang) (Oral Biology) **March 25, 2010**
From tongue to lung: Iron acquisition in cystic fibrosis by the oral bacterium *Prevotella melaninogenica*

Tracy Carlson (Goldman) (Washington University) **March 18, 2010**
The sticking point: Adherence and virulence in *Histoplasma capsulatum*

Jonathan Lenz (Goldman) (Curriculum in Genetics) **March 18, 2010**
Yersinia pestis autotransporters: From putative proteins to virulence factors

Bonnie Gunn (Heise) **March 11, 2010**
A bittersweet virus: The role of Ross River Virus glycans in complement activation

Alina Lotstein (Heise) **March 11, 2010**
TRIMing down Ross River Virus replication: Elucidating the role of TRIM34 in the context of viral infection

Amy Wollish (Heise) **March 4, 2010**
Viral and host determinants of Sindbis AR86 neurovirulence

Lisa Heimbach (Liu) **February 25, 2010**
The role of the hemidesmosomal protein BP180 in Bullous Pemphigoid and normal development

Elaine Bohorquez (Meshnick) **February 18, 2010**
Role of *pfmdr1* in *Plasmodium falciparum* multidrug resistance

Rachael Liesman (Pickles) **February 11, 2010**
Subversion of ciliated cell anoikis by RSV non-structural proteins

Monika Schneider (Ting) **February 4, 2010**
NLRC3 is a negative regulator of inflammation

Todd Kijek (Kawula) **January 28, 2010**
Pathogenic determinants of *Francisella tularensis*- a question of nutrition?

Mark Johnson (Tisch) **January 21, 2010**
Characterization of dendritic cells in the non-obese diabetic (NOD) mouse

Tabb Sullivan (Braunstein) **January 14, 2010**
SecA2 and intracellular survival and growth of *Mycobacterium tuberculosis*

Fall 2009

Kwun Wah Wen (Damania) **December 10, 2009**
Hsp90 & Hsp40 are required for the expression and anti-apoptotic function of KSHV K1

Robert Mango (Serody) **December 3, 2009**
Stimulation of CCR5 on pulmonary stromal cells promotes metastasis through Erythroid Differentiation Regulator 1

Jason Simmons (Heise) **November 19, 2009**
A determinant of Sindbis virus neurovirulence enables efficient blockade of STAT1 activation

Stuart Jeffries (Giddings) (Curriculum in Genetics) PIE - Predicting protein modifications from integrated MS data using Markov chain Monte Carlo	November 12, 2009
Jerry Jeffrey (Su) (Curriculum in Genetics) Receptor and co-receptor cross-talk modulated HIV infectivity: A new model for co-receptor aggregation	November 5, 2009
Shannon Jones (Vilen) (Curriculum in Toxicology) Regulation of immunoglobulin secretion during adaptive immunity	October 29, 2009
Yu Lei (Ting) (Oral Biology) The functions of the MitoXcomplex - an ancient tale of fight and survival	October 22, 2009
Alaina Garland (Tisch) Development of a cure for Type 1 diabetes	October 15, 2009
Kara Keedy (Margolis) Regulation of HIV-1 latency by histone deacetylases	October 8, 2009
Paul Price (Goldman) (Washington University) Early events in primary pneumonic plague: A bunch of TraSH	October 1, 2009
Kelly Roney (Ting) The role of Plexin-B2 in the immune system	September 24, 2009
Chris Brooke (Johnston) Evaluating the protective roles of T cells and complement during VEE infection	September 17, 2009
Virginia Hench (Su) Foxp3 and Siva: Potential partners in T cell regulation	September 10, 2009
Cathy Cruz (Heise) Modulation of the Type I IFN response by determinants within the Alphavirus NsP1 protein	September 3, 2009
Spring 2009	
Tracy Carlson (Goldman) (Washington University) Genes affecting <i>Histoplasma capsulatum</i> adherence to host cells	May 26, 2009
Amy Wollish (Heise) Investigating the roles of viral and host genetics in Sindbis Virus pathogenesis	May 19, 2009
Lisa Leighty (Liu) C5a-C5aR interaction activates p38MAPK and mediates disease progression in Bullous Pemphigoid	May 12, 2009
Elaine Bohórquez (Meshnick) Role of pfmdr1 in <i>Plasmodium falciparum</i> multidrug resistance	May 12, 2009
Rachael Liesman (Pickles) Respiratory Syncytial Virus infection of human airway epithelium	May 5, 2009
Monika Schneider (Ting) Characterizing the function of Nlrc3 in B cell immunity	April 28, 2009

- Todd Kijek (Kawula)** April 21, 2009
Pathogenic determinants in *Francisella tularensis*
- Mark Johnson (Tisch)** March 31, 2009
Characterization of dendritic cells in the non-obese diabetic (NOD) mouse model of auto-immune Type I diabetes
- Tabb Sullivan (Braunstein)** March 24, 2009
The importance of SecA2 in the intracellular survival and growth of *Mycobacterium tuberculosis*
- Shehzad Sheikh (Plevy)** March 10, 2009
Heme oxygenase-1 expression and function is protective against innate immune responses to the enteric microbiota
- Kwun Wah Wen (Damania)** March 3, 2009
Three's company: Interactions of KSHV K1 with Hsp90 & Hsp40
- Kelly Roney (Ting)** February 24, 2009
The role of Plexin-B2 in the immune system
- Joe Burgents (Serody)** February 24, 2009
Tumor induced immune suppression and its role in inhibiting vaccine efficacy
- Vijay Sivaraman (Su)** February 17, 2009
Mechanisms of HIV-1 mediated IFN induction and bystander apoptosis
- Robert Mango (Serody)** February 10, 2009
Erythroid differentiation regulator 1 promotes metastasis
- Jason Simmons (Heise)** February 3, 2009
Disruption of type I and type II interferon signaling by Venezuelan equine encephalitis virus.
- Alaina Garland (Tisch)** January 27, 2009
Immune therapies for the treatment of Type 1 diabetes
- Gretja Schnell (Swanstrom)** January 20, 2009
Compartmentalized HIV-1 originates from long-lived cells in subjects with HIV-1-associated dementia.
- Eda Holl (Ting)** January 13, 2009
Role of plexin D1 in B cell immunity
- Fall 2008**
- Kara Keedy (Margolis)** December 9, 2008
A limited group of class I histone deacetylases act to repress HIV-1 expression
- Erin McElvania Tekippe (Ting/Braunstein)** November 25, 2008
Recognition of *Mycobacterium tuberculosis* by the host inflammasome
- Virginia Hench (Su)** November 18, 2008
Foxp3 and SIVA: Potential partners in T cell regulation

- Meg Scull (Pickles)** **November 4, 2008**
Temperature restriction of avian influenza viruses: A role for the viral glycoproteins?
- Cathy Cruz (Heise)** **November 4, 2008**
Modulation of the host's Type I IFN response by determinants within the alphavirus nonstructural proteins
- Liesl Jeffers (Webster-Cyriaque)** **October 21, 2008**
BKV pathogenesis in salivary gland disease
- Beth Mole (Dangl)** **October 14, 2008**
Investigating the type III secretion system in the soft rot pathogen *Pectobacterium carotovorum*
- Che-Pei Pat Kung (Raab-Traub)** **October 7, 2008**
Epstein-Barr Virus Latent Membrane Protein 1 induces Epidermal Growth Factor Receptor through distinct NF- κ B pathway
- Jessica McCann (Braunstein)** **September 30, 2008**
A reporter transposon for identification of *Mycobacterium tuberculosis* exported proteins important for virulence
- Adriana Jones (Wolfgang)** **September 23, 2008**
Reciprocal regulation of acute and chronic virulence factors in *Pseudomonas aeruginosa*
- Wahala Wahala (de Silva)** **September 16, 2008**
Role of E-domain III specific antibodies in neutralization of dengue virus
- Christopher Brooke (Johnston)** **September 9, 2008**
Antibody-independent mechanisms of recovery from VEE-induced encephalomyelitis
- Spring 2008**
- Alaina Garland (Tisch)** **May 27, 2008**
Using adeno-associated virus gene therapy and islet transplantation for the treatment of Type 1 diabetes
- Erin McElvania Tekippe (Ting/Braunstein)** **May 20, 2008**
Cytosolic recognition of *Mycobacterium tuberculosis* by host inflammasome detection
- Jason Simmons (Heise)** **May 20, 2008**
Alphavirus disruption of Type I and II interferon signaling
- Robert Mango (Serody)** **May 13, 2008**
Erdr1: A stroma-derived cytokine associated with metastasis
- Joseph Burgents (Serody)** **May 13, 2008**
Evaluating the efficacy of Her-2/neu expressing virus replicon particles as a therapeutic breast cancer vaccine
- Eda Holl (Ting)** **May 6, 2008**
Plexin D1 controls germinal center formation

- Kwun Wah Wen (Damania)** May 6, 2008
Deletion of LANA from Rhesus Rhadinovirus (RRV) generates a highly lytic recombinant virus
- Kelly Roney (Ting)** April 29, 2008
The role of plexin B2 in the immune system
- Gretja Schnell (Swanstrom)** April 22, 2008
HIV-1 compartmentalization in the CSF during neuropathogenesis
- Kara Keedy (Margolis)** April 22, 2008
Multiple class I HDACs maintain HIV-1 transcriptional repression during latency
- Janelle Arthur (Ting)** April 15, 2008
Monarch-1 promotes contact hypersensitivity and dendritic cell trafficking
- Adriana Jones (Wolfgang)** April 8, 2008
Reciprocal regulation of acute and chronic virulence factors in *Pseudomonas aeruginosa*
- Sean McNally (Ting)** April 1, 2008
A20: A Bridge between oxidative stress response and inflammation
- James Fuller (Kawula)** March 25, 2008
Francisella locus required for intracellular persistence
- Wahala Wahala (de Silva)** March 18, 2008
Dengue Virus type 3: Understanding the mechanism of neutralization
- Nikki Wagner (Vilen)** March 11, 2008
In vivo regulation of autoreactive B cells by IL-6, CD40L and TNF α
- Chris Brooke (Johnston)** March 4, 2008
Antibody independent recovery and protection from VEE-induced encephalomyelitis
- Beth Mole (Dangl)** February 26, 2008
Investigating the type III secretion system in the brute force pathogen *Pectobacterium carotovorum*
- Che Pei Kung (Raab-Traub)** February 19, 2008
Epstein-Barr Virus LMP1 induces expression of EGFR through effects on Bcl-3 and STAT3
- Meg Hennessey (Pickles)** February 12, 2008
Influenza A virus interaction with sialic acids in human airway epithelium
- Cathy Cruz (Heise)** February 5, 2008
Modulation of the Type I IFN response by determinants within the alphavirus Nsp1 protein
- Tamara Nun (Damania)** January 29, 2008
Induction of IL-6 and JAK/STAT signaling by the viral K15 protein of Kaposi's sarcoma-associated herpesvirus
- Kari Hacker (de Silva)** January 22, 2008
Early Dengue virus interactions with human dendritic cells

Tim Sheahan (Baric) **January 15, 2008**
Models of SARS-CoV pathogenesis for the design of successful antiviral therapies

Virginia Hench (Su) **January 8, 2008**
Foxp3 and SIVA: Potential partners in immune regulation

Fall 2007

Cathy Siler (Raab-Traub) **December 11, 2007**
The role of LMP2A in epithelial cell signaling and differentiation

Kevin Goudy (Tisch) **December 4, 2007**
Endogenous IL-2 production governs the induction of FoxP3-expressing adaptive Tregs in the NOD mouse

Liz Russell (Swanstrom) **November 27, 2007**
Exploring the mechanisms of HIV mother-to-child transmission

Liesl Jeffers (Webster-Cyriaque) **November 20, 2007**
BK virus plays a role in salivary gland disease

Jessica McCann (Braunstein) **November 13, 2007**
Identifying exported *Mycobacterium tuberculosis* proteins important for virulence

So Young Eun (Ting) **October 30, 2007**
Plexin-A1 function on dendritic cells

Vijay Sivarman (Su) **October 23, 2007**
Determinants of HIV-1 envelope-mediated pathogenesis

Eric Donaldson (Baric) **October 16, 2007**
Mapping the molecular determinants of Norovirus GII.4 evolution

Reed Shabman (Heise) **October 9, 2007**
Analyzing the glycans on Ross River Virus

Robin Craven (Kawula) **October 2, 2007**
The interaction of *Francisella tularensis* with lung epithelial cells

Vivian Chen (Matsushima) **September 25, 2007**
The role of LAG-3 in CNS demyelination & remyelination

Zhengmao Ye (Ting) **September 18, 2007**
ATP binding by Monarch-1/NLRP12 is critical for its inhibitory function

Carlos Gonzalez (Damania) **September 11, 2007**
Identification of novel modulators of KSHV lytic viral replication

Nate Rigel (Braunstein) **September 4, 2007**
Characterization of the SecA2 specialized protein export system of mycobacteria

Kevin Ramkissoo (Giddings) **August 28, 2007**
Antibiotic resistance and bacterial heterogeneity: from protein to population

Spring 2007

- Che Pei Kung (Raab-Traub)** May 29, 2007
Epstein-Barr virus latent membrane protein 1-mediated regulation of Bcl-3
- Tamara Nun (Damania)** May 22, 2007
Development of a fluorescence-based screening assay for antiviral activity
- Chris Brooke (Johnston)** May 22, 2007
Dengue capsid protein interaction with the host cell
- Wahala Wahala (de Silva)** May 15, 2007
Dengue virus Serotype 3: Epidemiology and differential neutralization
- Kari Hacker (de Silva)** May 15, 2007
Dengue virus envelope protein glycosylation and viral interactions with DC-SIGN
- Janelle Arthur (Ting)** May 8, 2007
Monarch-1 is regulated by the chaperone Hsp90
- Sean McNally (Ting)** May 8, 2007
Elucidating the mechanism of the DJ-1/Nrf2 functional interaction
- Eric Donaldson (Baric)** May 1, 2007
Mapping the molecular determinants of norovirus genotype Gii.4 evolution over 20 years
- Tim Sheahan (Baric)** May 1, 2007
Go ahead and jump: Insights into zoonotic SARS- CoV host expansion
- Nikki Wagner (Vilen)** April 17, 2007
Regulation of autoreactive B cells in lupus-prone mice
- Kelly Roney (Ting)** April 17, 2007
The role of Plexin-B2 in the immune system
- Meg Hennessey (Pickles)** April 10, 2007
Modeling human and avian influenza A virus infection *in vitro*
- Cathy Cruz (Heise)** April 10, 2007
Alphavirus interactions with the host Type I interferon system
- So-Young Eun (Ting)** April 3, 2007
Plexin-A1: It's function on dendritic cells
- Kevin Goudy (Tisch)** April 3, 2007
Biolistic-mediated gene therapy for the prevention of Type 1 diabetes
- Ryan Heiniger (Wolfgang)** March 27, 2007
The role of PilY1 in *Pseudomonas aeruginosa* Type IV pili
- Beth Mole (Dangl)** March 27, 2007
The role of the type III secretion system in *Pectobacterium carotovorum* pathogenesis
- Liesl Jeffers (Webster-Cyriaque)** March 20, 2007
Characterizing viral infection in salivary gland pathologies

Elizabeth Russell (Swanstrom) Envelope genetics in HIV mother-to-child transmission	March 20, 2007
Virginia Hench (Su) Stromal cell expression of Foxp3 and thymopoiesis	March 13, 2007
Jessica McCann (Braunstein) Identifying exported proteins in <i>Mycobacterium tuberculosis</i>	March 13, 2007
James Fuller (Kawula) <i>Francisella</i> locus upregulated after cell invasion is necessary for intracellular survival	March 6, 2007
Robin Craven (Kawula) The interaction of <i>Francisella tularensis</i> with lung epithelial cells	March 6, 2007
Cathy Siler (Raab-Traub) The role of LMP2A in beta catenin signaling and differentiation in epithelial cells	February 13, 2007
Katie Tyson (de Silva) Anti-complement proteins in <i>Ixodes scapularis</i> saliva	February 6, 2007
Reed Shabman (Heise) Differential type I IFN induction by mosquito and mammalian-cell-derived Ross River Virus	January 23, 2007
Zhengmao Ye (Ting) ATP-binding to the CATERPILLER protein Monarch-1, is required for its inhibitory function	January 16, 2007
Fall 2006	
Kevin Ramkissoo (Giddings) Investigating ribosomal heterogeneity in <i>E. coli</i>	December 12, 2006
Milloni Patel (Swanstrom) Structural differences in HIV-1 envelope: Implications for coreceptor usage	December 5, 2006
Bernardo Mainou (Raab-Traub) Blazing Saddles: Analyzing LMP1 through the Western	November 28, 2006
Anna LoBue Norovirus immunity: Parallels between human and murine models	November 21, 2006
Vivian Chen (Matsushima) The role of IL-1 in CNS remyelination following cuprizone intoxication	November 14, 2006
Joshua Hall (Kawula) <i>Francisella tularensis</i> : Pathogenesis in the lung	November 7, 2006
Carlos Gonzalez (Damania) Functional conservation between KSHV and RRV RTAs	October 31, 2006
Nathan Rigel (Braunstein) Genetic analysis of the SecA2 secretion pathway of mycobacteria	October 24, 2006
Kara Conway (Clarke) Anti-Sm B cells: Mechanisms of activation in autoimmunity	October 17, 2006

Derek Holmes (Su) FoxP3 regulation of HIV replication and T cell activation	October 10, 2006
Sherry Kurtz (Braunstein) <i>M. tuberculosis</i> SecA2 promotes growth in macrophages and inhibition of the host immune response	October 3, 2006
Anne Purfield (Meshnick) Identifying the mechanism of action of DB75, a novel antimalarial compound	September 26, 2006
Christine Tomlinson (Damania) The K1 protein of KSHV: coupling signaling to endocytosis	September 19, 2006
Jennifer Rutan (Vilen) IL-6 represses autoreactive B cells by an Erk-dependent mechanism	September 12, 2006
Diane Carnathan (Vilen) Nuclear self-antigen on the surface of dendritic cells and macrophages	September 5, 2006
Spring 2006	
Tim Sheahan (Baric) Zoonotic SARS pathogenesis and applications in vaccine design	May 23, 2006
Eric Donaldson (Baric) Investigating the role of non-structural proteins 7-10 in coronavirus replication	May 23, 2006
Vijay Sivaraman (Su) Pinpointing pathogenic regions of the HIV-1 envelope	May 16, 2006
Virginia Hench (Su) The role of Her2/neu and Foxp3 in thymic epithelial cells	May 16, 2006
Kevin Ramkissoo (Giddings) High-throughput comparative proteomic analysis of adaptive evolution in bacteria	May 9, 2006
Elizabeth Russell (Swanstrom) HIV envelope diversity with timing of mother-to-child transmission	May 9, 2006
Liesl Jeffers (Webster-Cyriaque) Understanding the role of BK Virus in HIV-associated salivary gland disease	May 2, 2006
Jillian Bristol (Kenney) BZLF1 regulates the TNF-alpha receptor promoter through its effects on C/EBP alpha and C/EBP beta	May 2, 2006
Joshua Hall (Kawula) <i>Francisella tularensis</i> pathogenesis: Life in the lung	April 25, 2006
James Fuller (Kawula) Characterization of an attenuated <i>Francisella tularensis</i> transposon mutant strain	April 25, 2006
Kevin Goudy (Tisch) Biolistic mediated immunotherapy for the treatment of Type 1 diabetes	April 18, 2006
So-Young Eun (Ting) Plexin-A1 on dendritic cells regulates DC-T cell interaction	April 18, 2006

Katharine Kempke (de Silva) Anti-complement proteins in <i>Ixodes scapularis</i> saliva	April 11, 2006
Kari Hacker (de Silva) Dengue Virus envelope protein glycosylation and viral interactions with human DC-SIGN	April 11, 2006
Nate Rigel (Braunstein) Genetic analysis of the SecA2 secretion pathway of mycobacteria	April 4, 2006
Jessica McCann (Braunstein) Identifying substrates of the twin arginine translocation pathway in <i>Mycobacterium tuberculosis</i>	April 4, 2006
Carlos Gonzalez (Damania) Identification and characterization of the KSHV Orf49 protein	March 28, 2006
Tamara Nun (Damania) Development of a fluorescence-based screening assay to identify novel anti-viral agents	March 28, 2006
Reed Shabman (Heise) Mosquito cell-derived alphavirus evasion of type I interferons	March 14, 2006
Anna LoBue (Baric) Norovirus vaccination regimens: yesterday, today, and tomorrow	March 14, 2006
Bernardo Mainou (Raab-Traub) Straining for differences: Biologic and molecular properties of the LMP1 strain variants	March 7, 2006
Cathy Siler (Raab-Traub) Rhesus Lymphocryptovirus LMP2A activates beta-catenin signaling and inhibits differentiation in epithelial cells	March 7, 2006
Kara Conway (Clarke) Early pre-plasma cells: A new B cell tolerance checkpoint	February 28, 2006
Matilda Nicholas (Clarke) CD19 dysregulation in human SLE	February 28, 2006
Mileka Gilbert (Vilen) Dendritic cells from lupus-prone mice are defective in repressing immunoglobulin secretion	February 21, 2006
Paul Gohlke (Matsushima) A role for MerTK in regulating B Lymphocyte Stimulator (BLyS) production by dendritic cells	February 21, 2006
Milloni Patel (Swanstrom) Structural features of the V3 region of HIV-1 Env: Three classes of anti-V3 antibody	February 14, 2006
Derek Holmes (Su) FoxP3 modulation of HIV gene expression: PROMOTING true love	February 14, 2006

Zhengmao Ye (Ting) February 7, 2006
Biochemical characterization of the nucleotide binding domain of a CATERPILLER protein, Monarch-1/PYPAP-7

Vivian Chen (Matsushima) February 7, 2006
Interleukin1 in central nervous system remyelination in the cuprizone model

Li Li (Tisch) January 31, 2006
Characterization of promiscuous β cell-specific T cells in autoimmune diabetes

Anne Purfield (Meshnick) January 24, 2006
Toxoplasma gondii as a model for *Plasmodium falciparum* drug toxicity studies

Fall 2005

Damon Deming (Baric) December 13, 2005
Genetic approaches to the study of coronavirus replication and pathogenesis

Ramiro Diz (Clarke) December 6, 2005
Regulation of anti-Sm B cells

Mehul Suthar (Heise) November 29, 2005
Characterization of the Sindbis Virus AR86: A role for the nonstructural proteins in modulating the Type I interferon response

Jin Kim (Vilen) November 22, 2005
Role of BCR dissociation in antigen processing

Joseph Thompson (Johnston) November 15, 2005
VEE replicon particles: Mucosal vaccine vectors and biological adjuvants

Cassandra Lambeth (de Silva) November 8, 2005
Interactions between clinical DENV3 isolates and human dendritic cells

Christy Tomlinson (Damania) November 1, 2005
The K1 protein of KSHV: Coupling signaling to endocytosis

Casey Clements (Ting) October 25, 2005
Cellular response to oxidative stress requires DJ-1: insights into cancer and Parkinson's Disease

Jennifer Rutan (Vilen) October 18, 2005
IL-6 regulates antigen-experienced B cells.

Will McRoy (Baric) October 11, 2005
Spike gene determinants of Mouse Hepatitis Virus host range

Heather Seitz (Matsushima) October 4, 2005
A role for Mer/Axl/Tyro3 family receptor tyrosine kinases in clearance of apoptotic cells

Jennifer Konopka (Johnston) September 27, 2005
Early host responses contributing to the pathogenesis of wildtype and interferon-sensitive Venezuelan Equine Encephalitis virus

Justin McDonough (Braunstein) September 20, 2005
Characterization of the Twin-arginine translocation (Tat) pathway in mycobacteria

Stephanie Montgomery (Johnston)

September 13, 2005

Investigation of Venezuelan equine encephalitis virus (VEE) nonstructural protein 2 (nsP2) interactions within the host cell

Appendix B7 - Enrollment in Courses with Microbiology & Immunology Teaching Assistants

Course	Enrollment in Academic Years				
	2005-06	2006-07	2007-08	2008-09	2009-10
MCRO251 (Fall)	166 UG ^a 33 G 199 Total	166 UG 26 G 192 Total	168 UG 28 G 196 Total	169 UG 21 G 190 Total	168 UG 20 G 188 Total
MCRO255 (Spring)	173 UG 27 G 200 Total	173 UG 20 G 193 Total	168 UG 19 G 187 Total	144 UG 12 G 156 Total	164 UG 25 G 189 Total
MCRO515 (Spring)	81 D	80 D 1 G	80 D	80 D	80 D

^aUG, undergraduate; G, graduate; D, dental.

**GUIDELINES FOR THE MICROBIOLOGY & IMMUNOLOGY DEPARTMENT
2010 WRITTEN PRELIMINARY EXAM**

The written preliminary exam (also known as the doctoral written examination) consists of a research proposal, written in a format similar to a NIH grant proposal. The proposal is written during a five week period that begins shortly after the end of the Spring semester each year. Within three months after passing the written portion of the exam, students take the oral preliminary exam. The oral exam centers on the same topic as the written proposal, although questions may also concern related areas and disciplines.

Note that changes in topic selection, length of exam period, and length of written proposal were approved by the department faculty in June 2009 and will be in effect for the 2010 exam.

1. Prelim Exam Advisor. If you have questions or concerns about any aspect of the preliminary exam process, please contact the Prelim Exam Advisor (Bob Bourret, bouret@med.unc.edu, 966-2679)

2. Topic selection. You should develop two potential topics for the prelim exam.

Committee. For each potential topic, you are responsible for finding faculty members who agree to be the primary and secondary reviewers for the proposal if that topic is chosen. The same faculty member can be a reviewer for more than one topic. It is permissible to recruit a reviewer from another department. Be sure to provide the Prelim Exam Advisor with the name and email address of any non-departmental reviewers, to ensure they receive information about the examination that is otherwise distributed by the departmental faculty listserv. **The potential primary reviewer for each topic must be a member of the Microbiology and Immunology Department. Ideally, he or she should be able to attend the Prelim Study Section meeting in mid-July.** Faculty reviewers must be an Assistant, Associate, or full Professor (i.e. Instructors, Lecturers, etc. are not eligible). The spouse or significant other of your research advisor cannot be on your committee.

Permissible topics. You may not choose a project that is currently being done in the laboratory where you are carrying out your dissertation research, or that is the subject of an existing or planned grant application written by your advisor or anyone in your lab. However, at least one topic must be something your lab might plausibly work on in the future, i.e. in the same general area as the actual or planned research of your lab. The reason for this constraint is to gain a deeper understanding of background material relevant to the research in your lab. The second topic can also be within the general field of your lab or something completely different. You are strongly urged to consult with your advisor and with other members of the faculty during the process of developing potential topics. If you are unsure whether a potential topic is too close or

too far from the research being done in your own lab, consult with the Prelim Exam Advisor.

Topic description. At least two weeks before the scheduled start of the exam (or by the specific deadline that is announced each year; in 2010, the deadline will be **Monday, April 26**), you should have a topic selection meeting with a committee consisting of all of the potential primary and secondary reviewers and your research mentor. **In preparation for this meeting, write a brief (1-2 page) description of each of the two potential topics and distribute them to all committee members at least two days before the meeting.** For each topic, this document should include a title for the project, a paragraph or two of critical information about background and significance, a listing of the questions that the proposal will address, and an indication of the general experimental approaches that will be used. It's not necessary to have every detail worked out for both topics before this meeting. It is necessary, however, to have a good idea of the likely Specific Aims and of the type of experiments that you would propose for each Aim.

Note that because parts of the topic description document may end up in your final proposal, the prohibition described in item #4 below against receiving any help with writing applies to this document as well as the final proposal. Your committee can see and comment on the final version of your topic description documents only. Therefore, do not show or email drafts of parts or all of your topic selection document to your reviewers.

Topic verification by mentor. Mentors are not always aware of the details of the student's proposed prelim topics. Conversely, students are not always aware of all future anticipated research activities in their lab. **To verify that the proposed topics are permissible, the documents describing a student's two proposed prelim topics must each contain the following statement to be signed and dated by the student's mentor prior to distribution to topic selection committee members.** If the student's mentor is not physically available to sign the documents, then an equivalent email message sent directly from the mentor to the primary reviewer is an acceptable substitute:

"Prelim topics are subject to two constraints. Please verify that this proposed prelim topic is permissible by reading the project description provided by your student and then signing the following statement:

- The topic of this research proposal is NOT currently being explored in my laboratory nor is this topic the subject of an existing or planned grant application written by myself or anyone in my lab.*
- This topic IS/IS NOT (circle one) something my lab might plausibly work on in the future, i.e. in the same general area as the actual or planned research of my lab.*

The "IS" option must be chosen for at least one of a student's two topics. The purpose of this constraint is for the student to benefit from a deeper understanding of background material that is reasonably relevant to research in their lab.

Mentor Signature _____ Date _____ "

The topic verification statement is for the benefit of the topic selection committee only and does not have to be submitted to the Prelim Exam Advisor or the Student Services Manager.

Topic selection meeting. All reviewers must be present at your topic selection meeting. Your research advisor is welcome to attend but may not speak, and his or her presence is not required. At the topic selection meeting, you should be prepared to give a short (10-15 minutes) presentation about each of the topics. The committee members will ask questions to help them understand the plans for each topic. The final choice of a topic resides with the committee. The exact topic approved for each student, plus the names of the primary and secondary reviewers, will be submitted to the Student Services Manager (Dixie Flannery) by the primary reviewer immediately after the meeting. On the first day of the exam period, you will be told which topic has been assigned to you.

A potential outcome of a topic selection meeting is that one or both of your topics may not be approved as suitable. If so, the topic selection committee will advise you on steps to take to develop a suitable topic. Note that the five week exam period will begin whether or not you have two approved topics, but you cannot start your exam until your topics are approved. It is therefore prudent to have your first topic selection committee meeting well before the April 26 deadline, in case you need more time to work on your topics.

3. Exam period. The prelim will start after Spring semester final exams and is due in the Student Services Manager's (Dixie Flannery's) office on a specified date five weeks later. Late proposals will **NOT** be accepted. **In 2010, the prelim will begin when topics are distributed by e-mail at 8:00 am on Monday, May 10. Completed exams must be submitted by 12:00 noon on Monday, June 14.**

4. Obtaining advice and information from others. You must work independently in preparing the proposal. However, you are allowed (and strongly encouraged) to seek advice from colleagues and experts, either at UNC or elsewhere, concerning specific techniques or experimental approaches, or the feasibility of your scientific ideas. **You should inform each potential consultant that a question relates to the prelim exam. However, you may not receive review or correction of the written proposal by anyone. This rule includes everything: the scientific content of the proposal as well as the grammar and writing style. Once you have written down your ideas, you may not have anyone read the document and give you advice based on that reading. This prohibition applies to your faculty reviewers, as well as to anyone else. If you violate this rule, you will receive a grade of Fail for the exam.**

5. Avoid plagiarism. The proposal must be written in your own words; use of sentences (even with a word or two changed) or ideas from another's work, without attribution, is unacceptable. If it is necessary to use someone else's words, they must be indicated as such by quotation marks, with the appropriate source cited.

Violations of acceptable citation practices will be pursued through the Honor System of the University.

6. Format rules. The proposal is to be written in the following format. The length of the proposal is not to exceed 12 pages of text (single-spaced, at least one-half inch margins on all sides), excluding the abstract and references. Tables and figures are included within the 12 page limit; be sure to make them large enough to be legible. Use Arial font, 11 point or larger, for the text and for figure legends. A symbol font may be used for Greek letter or other special characters. Pages should be numbered. Include your name in a header on each page. The proposal should include the following sections:

Abstract. A concise description of the content of the proposal, including long term objectives, Specific Aims, experimental design, and methods for attaining the goals. One-half of one page is the recommended length. The abstract does not count against the overall 12 page limit. **The abstract should serve as a free-standing description of the entire proposal, not as an introduction to it.** Thus, after a few sentences in which you describe the topic and key information that provides the basis for your hypothesis, you should give the overall hypothesis. The hypothesis should be followed by a sentence or two about each of the Aims, describing the Aim and the general experimental approach that you will use to pursue each Aim.

Specific Aims. What are you going to do? This section usually opens with an introduction to the topic and its significance, and then defines the broad, long-term objectives of the project and states the major hypothesis that you have formulated. Then, list the Specific Aims, which may be presented as goals to be reached or as questions to be answered. One page is recommended. This section will inevitably repeat some of the contents of the Abstract, which is OK. For those of you who have taken Mcro795, starting with the Specific Aims page template used in class is a good way to help organize your thoughts and the description of your project.

Significance. Explain the importance of the topic addressed by your proposed project. Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice. Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed Specific Aims are achieved. (Paraphrased from NIH instructions.)

The new proposal format does not contain a "Background" section, so it is up to the author to decide where to best provide the information necessary for the reader to understand the proposal. Some will undoubtedly go in the Significance section. Other background information will go in the Innovation and Approach sections. Wherever you put background information, be sure to **critically** evaluate existing knowledge and evaluate the conclusions that have been made in previous studies.

Innovation. If applicable, explain how your proposal challenges and seeks to shift current research or clinical practice paradigms. Describe any novel theoretical concepts, approaches, methodologies, instrumentation, or interventions to be developed or used, and any advantages over existing strategies. Explain any

improvements or new applications of existing theoretical concepts, approaches, methodologies, instrumentation, or interventions. (Paraphrased from NIH instructions.)

Approach. Describe the overall research strategy and the procedures you will use to accomplish the Specific Aims of the project. Include the means by which you will collect, analyze, and interpret data. Describe any new methodology and its advantage over existing methodologies. **Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the Aims.** For each set of experiments, include a consideration of possible outcomes and how you will interpret those different possibilities. Indicate how you will establish priorities. Point out particular hazards (beyond routine laboratory activities) associated with the planned research and the appropriate precautions to be taken, including institutional approval. **The scope of the investigation should be appropriate for a three-year project for one investigator and one technician (total of six person-years of work).** The Approach section should constitute most of the proposal (at least eight pages).

Bibliography and References Cited. Provide complete references, **including all authors and titles.** If you get information from Web sites, include the URL in this section. Use of bibliographic software such as EndNote is strongly encouraged. Also, if you refer to DNA sequences or protein structures, you should include the GenBank accession numbers or the PDB file numbers respectively in the text. The reference list does not count against the 12 page limit.

7. Examples of successful proposals. Sorry, this is the first year of a new exam format, so there are no examples of successful proposals to use as a guide. You're setting the bar - we will ask permission to distribute some of your proposals as examples to next year's class.

8. Avoid computer problems. Be sure to make a backup copy of all your relevant files (text, figures, references, etc.) on a separate memory device at least once a day. Loss or damage to your files for any reason (hardware or software problems, virus, theft) will not be accepted as a reason to extend the deadline for exam completion. Get in the habit of making backups while you are developing topics; don't wait for the exam itself.

9. The due date for the completed exam is 12:00 noon on Monday, June 14, 2010. This is a firm deadline; late proposals will NOT be accepted and you will receive a grade of Fail for the exam. **If there is some reason why you cannot make the deadline, contact the Prelim Exam Advisor as soon as you know there is a problem.** Turn in **five paper copies and a .pdf computer file of the complete exam** to Dixie Flannery by 12:00 noon on the due date. The .pdf file may be submitted by e-mail or on a CD.

THE PRELIM TOPIC SELECTION MEETING: How should you prepare? What happens at the meeting?

1. **Choose your reviewers.** Remember that your primary reviewer must be a faculty member of the Microbiology and Immunology Department; he or she may be a joint member, but must have an appointment in our department. It's also advantageous if at least one of your reviewers is a department member who has experience reviewing prelim exams. Your second reviewer may be someone from outside the department.

2. **Pick a time & place.** Remember that you must hold a topic selection meeting before Monday April 26, 2010 (preferably much sooner). Organize a time and reserve a room for your meeting. Allow about 1.5 hours, although the meeting probably won't last that long. The cast of characters will be the potential reviewers for both topics (usually four people, possibly fewer if one or both of your reviewers agree to serve double duty) and your advisor. Note that many faculty members serve on multiple topic selection committees, and hence their schedules tend to get full as the deadline nears. Although it is desirable to have your research advisor attend, this is not required if scheduling is difficult.

3. **Inform the Prelim Exam Advisor & Student Services Manager of your plans.** As soon as you have scheduled your topic selection meeting, send Bob and Dixie an email message with the following information:

- a. The title of each of proposed topic
- b. The names of the proposed primary and secondary reviewers for each topic
- c. The date and time of your scheduled topic selection meeting.

4. **Prepare a handout for each topic.** You should prepare a 1-2 page handout about each of your two topics. This document should be similar to a Specific Aims page of a proposal: start with a paragraph describing the essential background information, then state the overall question that you wish to address, followed by a listing of the probable Specific Aims that you would pursue. After each of the Specific Aims, include a sentence or two that indicates the general experimental approach that you have in mind. You could just write a Specific Aims page for each topic using the Mcro795 template, although this is not required. Don't forget to provide a title for each project. Note that you cannot receive any help in the actual writing of your documents.

You don't need to have every detail of every experiment planned out. Your meeting handout does not lock you into doing those exact experiments; once you start to work on your assigned topic, you will undoubtedly have new ideas that will modify your research plan. The document does help the topic selection committee to assess whether each topic is a reasonable one that can form the basis of a successful (i.e. passing) prelim proposal.

5. Verify that your topics are permissible. Include the following statement at the end of each handout. Give the handouts to your research advisor to read and sign before copying and distribution to your committee.

"Prelim topics are subject to two constraints. Please verify that this proposed prelim topic is permissible by reading the project description provided by your student and then signing the following statement:

- *The topic of this research proposal is NOT currently being explored in my laboratory nor is this topic the subject of an existing or planned grant application written by myself or anyone in my lab.*
- *This topic IS/IS NOT (circle one) something my lab might plausibly work on in the future, i.e. in the same general area as the actual or planned research of my lab.*

The "IS" option must be chosen for at least one of a student's two topics. The purpose of this constraint is for the student to benefit from a deeper understanding of background material that is reasonably relevant to research in their lab.

Mentor Signature _____ Date _____"

6. Distribute your handouts. After obtaining your research advisor's signature, you should distribute your topic documents to your potential reviewers at least two days (preferably more - see end of document) before your meeting. Give both documents to both sets of reviewers and to your advisor.

7. Oral presentation. At the meeting, you should be prepared to give a short (approximately 10 minutes) presentation about each of your topics. **Don't prepare a PowerPoint presentation!** Instead, be ready to use the board to help you explain what you're thinking. If there are one or two complex diagrams that would be helpful for your committee members to see, make handouts of them for each committee member. As you give your presentation, be prepared for interruptions and questions at frequent intervals. Your research advisor will not speak and will not help you answer questions. Your presentation should follow the same basic outline as the document you distributed: essential background, overall question/hypothesis, Specific Aims, general experimental approaches. It is OK to say, "I don't know" in response to a question; nobody expects you to be an expert on your topics at this point in the process. Do not bring food to the meeting; this is not a social occasion.

The reviewers will probably also ask you which of the two topics you'd prefer to do. They will take your preference into consideration when making their decision, although there is no guarantee that they will assign you the topic that you prefer.

8. Private committee deliberations. After they have asked all of their questions, the reviewers will ask you to leave the room; at this point, your role in the meeting is probably over and you can go back to lab. The committee members will then have a discussion about your proposed topics. Two decisions must be made: (a) Are both topics satisfactory? (b) If so, which topic would be better as your prelim topic? Sometimes, the committee will decide against assigning a topic because they think it is

too “messy;” i.e. that it would be hard to write a logical, clear-cut series of experiments about it. In other cases, a topic will be not be chosen if they think it is just too difficult. They will be looking for the topic that will give you a chance to show the breadth of your knowledge, but that is also a reasonable one about which you can write a strong proposal. The committee may solicit input from your advisor about your perceived strengths and weaknesses at this point in your career and how the experience of thinking about a particular topic might benefit your professional training. Once the committee selects a topic, the primary reviewer for the topic tells Dixie what your assigned topic is, and who the reviewers will be. You will not know what your topic is until Dixie sends you an email message at the start of the writing period.

If the committee decides that one or more of your topics are not suitable, then they will call you back to the meeting room for a further discussion about what you should do next. **You can help avoid this undesirable outcome by talking with your potential reviewers regularly as you develop your topics, asking if the reviewers think the topic is sufficiently well developed to hold the selection meeting, and by giving the committee your handout well in advance of the meeting, so they have time to read your "Specific Aims page" and inform you of potential problems before the meeting.** Note that email correspondence is not a satisfactory substitute for a face-to-face conversation.

Tips for Successful Written Preliminary Exam Proposals

1. **Use what you learned in Mcro795.** Most of you have taken a semester long class in writing grant proposals. Don't ignore what you have learned from that experience. Start in the topic selection process by writing a Specific Aims page using the template from class. If you can't write a satisfactory Specific Aims page, then you probably have not chosen a suitable topic for your proposal. It is best to find this out before you start the exam. For the full proposal, use the Mcro795 templates at least as a starting point to be sure you have everything you need down on paper. If you find a better way to organize or communicate your ideas, then you can rearrange things with the confidence that all the important parts are present. For those of you who did not take Mcro795, the class and the templates are certainly not required to pass the exam, but the advice is the same - try writing a Specific Aims page to test whether or not your topic is a good one to write about.
2. **Don't be a stranger.** Students who disappear during the exam period tend to do poorly. Get out and talk to people in the department about your ideas. Talk to your faculty reviewers at least a couple of times during the exam period. Send email messages to the leading researchers in the field of your topic and ask them for the latest unpublished news. They will be pleased that you asked, and probably would like to receive a copy of your final proposal.
3. **Good Specific Aims.** Typically, a good Specific Aim would be to test a hypothesis or answer a question about how the world works. "We will make an antibody to protein X" is not a Specific Aim. Because the Specific Aims are central to the entire proposal, it is to your advantage to be satisfied with the wording of your Aims before the topic selection meeting. If there is a problem with your Aims, the topic selection committee will then be able to tell you before you start your exam.
4. **Independent Specific Aims.** Never make one Specific Aim dependent on a particular outcome for an Aim that comes before it. Here's a hypothetical example:

Aim 1. Determine if protein X on the surface of a bacterium is the adhesin for adherence to host cells.

Aim 2. Identify the receptor for binding of protein X on the eukaryotic host cell.

In this case, Aim 2 can be pursued only if the answer to Aim 1 is that Protein X is indeed the adhesin. If Protein X is not the adhesin, then there is nothing to study in Aim 2. You can sometimes get around the problem of dependent Aims by rephrasing the goal or the question that is being addressed. In this example, an acceptable Aim 2 could be:

Aim 2. Identify the receptor for binding of the bacterium to host cells.

This question could be addressed experimentally, even if it turns out that Protein X is not the adhesin.

5. **Logical consistency between Aims and experiments.** One of the most common (and potentially lethal) weaknesses in prelim proposals is that the experiments described in a proposal don't relate directly to the question that is supposedly being asked. You may describe a perfectly fine series of experiments, but you will be criticized if the experiments won't reach the goal stated in your Specific Aim. After you've written the experimental plan for each Specific Aim, read through your plan to make sure that the experiments will answer the stated question. Remember the "To... we will..." formulation from Mcro795 to check for logical consistency. If you can't think of technically feasible experiments to achieve your Specific Aim, then you can always revise the Aim to match your experimental plan.
6. **Don't give the appearance of being "wedded to your hypothesis".** Be sure to consider the possibility that your hypothesis is wrong and the world doesn't work the way you think it does. Avoid saying you will prove or establish your hypothesis to be true; what you really want to do is test whether or not your hypothesis is true.
7. **Suitable background information.** Just as you are expected to think critically about your own experiments and how they could lead you astray, your review of relevant knowns should **critically evaluate** which information has been firmly established and what is open to alternative interpretation.
8. **Explain "why".** Never leave anything to the imagination of your reviewer!! One of the most common problems in grant proposals submitted to NIH, as well as in prelim grant proposals, is that the rationale or overall strategy for a project is not adequately explained. Another frequent omission is that the author doesn't explain **WHY** the project is worth doing, and how the information that will come from the proposed experiments will contribute to our understanding of something important. It may seem self-evident to you why the area you've chosen is worthy of investigation, but there's a good chance that it won't be clear to your reader unless you state it explicitly. Also, for individual Aims or experiments within an Aim, be sure to explain why you think each is important to do and what you will learn. In a grant proposal, explaining why you plan to do something is at least as important as explaining what you plan to do or how you plan to do it. Important explanations or justifications for the overall project or for each specific part of it should not be buried in the middle of densely written paragraphs; such organization almost guarantees that a reviewer will miss at least some explanations. Explain the "why" part near the beginning of each passage.
9. **Careful experimental design & alternative approaches.** For each of your important experiments, spend some time thinking about what could go wrong with your plan. How might the experiment fail? Remember Marshall's two questions from Mcro795: "If I get the expected results how could I get them even if the hypothesis is NOT true? If I DON'T get the expected results how could that happen and the hypothesis still be true?" Tinker with your methods and controls to address

any problems revealed by Marshall's questions. If you think the primary strategy is really good and likely to work, then alternative methods don't have to be presented in much detail. If the primary strategy is risky, however, it becomes more important to show the reviewer that you have thought about how to accomplish your goal if your really clever idea doesn't work out. It is OK to include some risky approaches, if you indicate that you are aware of the potential problems and have some alternatives in mind. If there are some unavoidable potential pitfalls in your experiments, it is much better for you to point out the problems than for you to say nothing and hope the reviewer doesn't notice. The best way to defuse criticism from your reviewer is to make the criticism yourself when necessary.

10. **Be realistic about experimental constraints and safety issues.** One of the fun things about the prelim exam is that you don't have to worry about how difficult or expensive it might be to do a particular project. As long as it makes scientific sense and you show that you're aware of the issues, you can do anything you want! However, you must be realistic in dealing with animals, humans, BSL4 containment, highly toxic chemicals, etc. Be sure to think through what would actually be required to do the work in such circumstances and how your experimental design might be impacted. For example, the typical way to knock out genes when making a mutant is to introduce an antibiotic resistance marker, but you would never be allowed to do this with a BSL4 bacterium. Therefore, your experimental plan would have to include realistic strategies for making desired mutants without using antibiotic resistance markers. How will you safely handle dangerous materials? Animal and human experiments require acknowledgement that you will obtain permission from the appropriate institutional review boards and follow standard guidelines.
11. **Interpretation of results & statistics.** An important part of the presentation of each series of experiments is to tell what results you might expect, how you would interpret the different possible outcomes, and how those outcomes will influence what you do next. If you will generate some kind of quantitative data (e.g. number of vaccinated vs. unvaccinated mice that die from a viral infection), include a brief description of the type of statistical analysis you will use to analyze the data, and indicate how much difference you would have to observe between the two groups to make a statistically significant conclusion (e.g. that the vaccine provided protection).
12. **Use customized subheadings to guide the reader.** As you saw in Mcro795, subheadings are an effective communications strategy. Take advantage of this technique to guide the reader.
13. **Recognize the challenges of writing alone.** The preliminary exam is a highly unusual writing task because nobody else can read or edit your proposal. After a while, you will get to the point where you can't really see the flaws in the proposal, because you are so immersed in it. Try to allow time for the proposal to "cool off" for a while before you do your final edit and turn in the exam. Plan your time to get a complete draft within the first three weeks, then go to the beach for a few days without the proposal. When you look at the proposal again, you will be able to see errors and flaws that were previously invisible to you.

14. **Proof read!** Proof read! Proof read! This is **REALLY** important; lots of typographical and grammatical errors, incomplete sentences, etc. in a proposal annoy reviewers faster than anything else because sloppy errors suggest that you don't care about your work. If you don't care, why should your reviewer? Once a reviewer gets irritated, he or she is much more likely to make a big deal about any deficiencies in your proposal. Proof reading is an easy thing to do that makes a big difference in how your proposal will be received.
15. **Avoid dangerous words.** Recall the dangerous word list from Mcro795. Avoid ambiguous words such as "these", "those", "this", "its", etc. Say explicitly what you mean and don't worry about being repetitive in the process. Clarity is critical. Choose your words carefully - don't use absolutes such as "all", "never", "identical", etc. unless you really mean it. Know the difference between "which" and "that".
16. **Create a page layout that is easy to read.** You want to make it easy and enjoyable for the reviewer to read your proposal. Nothing horrifies a reviewer so much (or puts him/her to sleep so quickly) as page after page of solid text, with long paragraphs to wade through. Possible solutions include:
- Use spacing between paragraphs or sections to set them off from each other. Don't push the page limits! It's better to edit down your beautiful prose rather than eliminate space between sections and paragraphs. Minimum font and margin sizes are defined in the formatting rules. Although the page limits are shorter than in the past, there is plenty of room to communicate your ideas.
 - Use section headings to break up the text.
 - Break things up with figures or tables.
 - Judicious use of bold, italic, or underline fonts to draw attention to particularly important sentences.
17. **Active voice.** Active voice is more effective and usually requires fewer words than passive voice. For example, write "Protein X is the adhesin..." rather than "It was determined that Protein X is the adhesin..." There used to be an unwritten rule that it was not acceptable to say "I" or "we" in scientific writing, but this convention has changed. Instead of writing: "The identity of the adhesin will be determined," it is fine to write: "We will determine the identity of the adhesin."
18. **Color figures.** It is fine to use color in your figures if you think color aids communication of your ideas. However, remember that your proposal will be submitted on paper, not electronically. Be sure that all five of the paper copies to be turned in have color versions of the relevant pictures; don't print one copy in color and then make black and white photocopies for the rest. This sounds obvious, but people sometimes forget in the last-minute frenzy as the deadline approaches!
19. **Bibliographic software.** Be sure to use some sort of bibliographic software such as Endnote to manage your references. Trying to manage this task without software can take a horrifying amount of time (days). If you don't already have the software and know how to use it in conjunction with your word processing program, then

obtain the software now and practice with it before the exam period starts. You will not want to waste valuable time learning to use the software during the exam.

Department of Microbiology & Immunology "Fast Track" Retake Procedure for Failed Written Preliminary Examinations

Rationale. Students fail the written preliminary exam for a variety of reasons. In some cases, remediation before attempting the exam again is clearly helpful. In other cases (e.g. if the primary reason for failure appears to be underestimating the size of the task and/or poor time management), little remediation is necessary. In such cases, some students and faculty regard delaying the second examination until the following year as harmful to overall progress toward the Ph.D. degree. Providing the option of an early retake to a subset of students could be helpful.

Policy. Students who fail their written preliminary exam may be given the option of taking the exam their second time without waiting until the following year. The decision of whether to offer the option of an accelerated second written exam will be made by the Prelim Exam Advisor on a case-by-case basis following consultation with the student, their mentor, and reviewers of the failed written exam. A primary consideration in making the decision will be an assessment of whether a student would likely be helped or harmed by the accelerated timeline. A student who is offered the accelerated second exam may decline the option and instead take the exam the following year. If the accelerated timeline is accepted, then the second exam will be governed by the following procedures: (1) The second exam will follow all prelim exam guidelines normally in effect other than timing and the topic selection procedure. (2) To the extent possible, all students retaking the exam in a given year will use a similar timeline for topic approval, writing, grading, and subsequent oral exam. The Prelim Exam Advisor will specify all relevant dates. (3) A student's proposal topic for the second exam must be closely similar to that used in the failed first exam. (4) Three months after agreeing to an accelerated second examination, the student will meet jointly with their two faculty reviewers to agree on modifications, if any, to the scope, emphasis, Specific Aims, etc. of the proposal topic. Before the topic approval meeting, the student will provide the reviewers with a written document to serve as the basis for discussion. (5) The time period for writing the proposal will start as soon as the faculty reviewers approve any topic revisions. (6) If the written exam is passed, then the oral exam will be taken within three months of the decision regarding the written exam.

Anticipated timeline. If the fail decision is made in mid-July, then retake offers could be made around August 1. The five week exam could start about November 1 (following the three month delay mandated by the Graduate School) and span Thanksgiving but be done in early December. Hopefully, a Pass/Fail decision could be made before Christmas and the oral exam could be completed by March.

GUIDELINES FOR THE MICROBIOLOGY & IMMUNOLOGY DEPARTMENT 2010 ORAL PRELIMINARY EXAM

The oral preliminary exam (also known as the doctoral oral examination) centers on the topic of the written prelim, and provides an opportunity for you to demonstrate your ability to discuss the fields of science related to your proposal, as well as your ability to analyze problems and design experiments. To prepare for the oral exam, you should meet with each of the reviewers of your written proposal and discuss their critiques of the proposal. Be sure to talk to every faculty member assigned to read your proposal, even those who did not provide written critiques. Also, go through your proposal and be sure that you have a response to each of the criticisms or suggestions that were raised in the critiques; it is highly likely that you will be asked about those issues in the oral exam.

1. Prelim Exam Advisor. If you have questions or concerns about any aspect of the preliminary exam process, please contact the Prelim Exam Advisor (Bob Bourret, bourret@med.unc.edu, 966-2679)

2. Timing. You should take the oral exam **no later than three months** after receiving notification of passing the written exam, i.e. by mid-October. (The Graduate School requires that a "short interval" separate the written and oral exams). In general, it is better to schedule the oral exam as soon as possible after passing the written exam, so the topic and your ideas about it are fresh in your mind.

3. Oral exam committee. The committee for the oral prelim exam is composed of the following members:

- The primary and secondary reviewers of the written exam.
 - Two faculty members chosen by the primary reviewer, after discussion with you.
 - A "common" faculty member, who serves on several oral exam committees, to ensure that there is uniformity in the treatment of the students during the exam.
- The faculty members fulfilling this function are chosen by the Prelim Exam Advisor.

Four of the five members of the committee must be members of the faculty of the Microbiology and Immunology Department. Your advisor is encouraged to be present at the exam but does not participate in the questioning and is not allowed to offer comments or answers during the exam.

4. Arranging the oral exam. **At least one month before** you want to take your oral exam, you should do the following:

- a. Meet with your primary reviewer, to let him or her know you want to schedule the exam.
- b. Talk with your primary reviewer about the composition of the oral exam committee. Which two additional faculty members do you want to have on the

committee? It is a good idea to include faculty who are likely to serve on your dissertation committee; that way, they will become more knowledgeable about you and your interests at this early stage of your training. Note that you must form your thesis committee and choose a thesis committee chair by the end of fall semester classes (December 8, 2010).

- c. Check in with your secondary reviewer, to let him or her know that the oral exam is approaching.
- d. Talk with each of the people you and your primary reviewer selected. Ask if they are willing to serve on your orals committee. If they agree to do it, give them copies of your written proposal and of all critiques that you received.
- e. Contact the Prelim Exam Advisor to find out who your common reviewer will be.
- f. Find a date and time for the exam that is acceptable to the five members of your committee and to your advisor. Arrange a room in which to hold the exam, and reserve the room for 2.5 - 3 hours. Notify everyone on the committee, and your advisor, of the time and place for your exam.
- g. Tell the Student Services Manager (Dixie Flannery) when and where the exam will be held.

5. Exam format. You will be asked to make a presentation to the committee about your proposal. **Do not prepare a PowerPoint presentation**; instead, be ready to use the board in a “chalk talk” format. This presentation serves primarily as a stimulus for questions from the committee, rather than being a typical talk or seminar. The presentation should include a brief summary of the relevant background, then a statement of the overall question you addressed in your proposal and the hypotheses that you tested. You should then go through each of your Specific Aims, summarizing the goals and the experiments that you proposed. Expect to be interrupted with questions from the committee members, throughout your presentation. In fact, it’s quite possible that you won’t get through all of your Aims in the course of the exam, depending on how many questions the committee asks. The oral questioning typically lasts 1.5 - 2 hours.

Note: Do not bring food or drinks for your committee members. This is an exam, not a social event.

6. Role of your advisor. Your advisor may be present at the oral exam, but will not participate in the questioning and will not be allowed to answer any questions or to clarify anything that you have said. The purpose of your advisor’s attendance is so he or she can observe your strengths and weaknesses and will know more about how to help you in your development as a scientist. Your advisor will not be part of the decision the committee makes on whether or not you pass the oral exam.

7. Scope of the oral exam. The oral exam will focus primarily on your written prelim and related topics, although it is permissible for the committee to ask questions about any area of microbiology or immunology. With regard to your proposal, you should particularly be prepared to:

- Respond to any matters raised by readers of the written exam (whether or not included in written critiques).
- Describe the general features of any experimental methods that you proposed to employ (e.g. how the method works conceptually, what the method can or cannot tell you, key components, etc.)
- Suggest experiments to test hypotheses or answer questions raised by the committee.
- Summarize the key findings of any recent publications relevant to your topic and the implications for your proposed research.

8. Grades and possible remediation. The committee will determine if you Pass or Fail the oral exam at the end of the period of questioning. You will be asked to leave the room and following a discussion by the committee you will be notified immediately of the outcome. After the exam, the primary reviewer should notify the Student Services Manager (Dixie Flannery) of your grade.

The oral exam committee has the authority to require you to do something to remedy a particular area of weakness, if they detect one. For example, such a remedy might include taking a course, reading a defined list of books and references, or writing the answers to a series of specific questions. If the committee decides that you have failed the exam, they could specify that you may not retake the exam until after you have accomplished the assigned tasks to remedy the area of weakness. Even if the committee decides that your overall performance warrants a grade of Pass, they can require you to review a specified set of topics and to satisfy them that you have dealt with the deficiency.

If the committee requires you to remedy a deficiency, they should tell you about it at the end of the exam. The committee chair should then write you a letter in which the remediation requirements are clearly specified. Copies of this letter should be sent to the Director of Graduate Studies/Prelim Exam Advisor (Bob Bourret) and to the Student Services Manager (Dixie Flannery) for your file.

If you Fail the oral exam, you will have a second opportunity to take it, after waiting at least three months (delay specified by Graduate School rules).

Tips For A Successful Oral Preliminary Exam

I. Preparation Before The Oral Exam

1. **Do it now.** Take your oral exam as soon as possible, while the information you learned for your written exam is still pretty fresh in your mind. The deadline is three months after passing the written exam, but the longer you wait; the longer it will take you to prepare for the oral exam.
2. **Find out what your committee thinks about your proposal.** Talk to each person who read your proposal (a minimum of three faculty members, in some cases more). Be sure to ask them for their detailed opinions about your proposal, particularly if they did not provide written comments. Also, even those reviewers who wrote a critique probably have additional comments that they did not include.
3. **Find out what your committee expects at the exam.** Ask each of your committee members what they think is important for you to review, and what type of questions they generally ask.
4. **Prepare responses to the criticisms posed by your reviewers.** The best way to prepare is to review your proposal and the critiques that you received. Make sure that you have an answer for every question or comment that was raised in the critiques, or that your reviewers mentioned when you met with them. This is particularly important because you know what the questions are in advance and have time to prepare your answers. If you do not have good answers under such circumstances, it looks very bad.
5. **Think about the big picture.** It is NOT NECESSARY for you to cram for this exam or try to memorize every factoid about your topic. This is not an examination of how many details you know, but rather of how clearly you can think about your topic and the experiments you proposed.
6. **Understand your experimental methods.** Make sure you understand the basis for each of the techniques that you proposed to use. How does the method work? What are the key components of the method? What can the method tell you? What are the limits of the method? Determining whether the student actually understands what they wrote about is often a big part of the oral exam.
7. **Think about data interpretation.** If you haven't already done so (and you should have), think about how you would interpret different unexpected outcomes to your proposed experiments, especially if your reviewers noted that you tended to assume the experiments will come out the way you expect.
8. **Double-check the recent literature.** Look to see if anything has been published recently about your research topic. If so, be prepared to summarize the key findings and describe the implications for your planned research. You will likely be uncomfortable if you are unaware of a recent paper that completely changes

things (e.g. challenges key assumptions, does your proposed experiments) but a committee member knows about it.

9. **Preparation time.** You have already invested most of the time and effort needed to prepare for the oral exam through the topic selection and writing process. In addition, everything that you have done since you began graduate school is preparation for the oral exam. In contrast to the written exam, you won't need to take much if any time off from lab work to prepare for the oral exam.
10. **What about a mock exam?** Some students do a practice exam with their lab. This is allowed, but it is not necessary, it is not clear that it is helpful, and it might be harmful. The problem is whether or not the practice questions (often generated by other students) reflect actual exam questions. If you get practice questions of the wrong sort, then you might waste a lot of time worrying unnecessarily and preparing in the wrong way. If you do have a mock exam, be sure your advisor is involved, because they have likely been on oral exam committees and are most familiar with the types of questions asked.
11. **Get some sleep.** The best last minute preparation that you can do is get a good night's sleep so you are fresh and alert for the exam.

II. At The Oral Exam

1. **Who's in charge?** Your primary reviewer will lead the meeting.
2. **A vow of silence.** Your advisor is encouraged to attend the oral exam, but cannot participate in asking or answering questions, or making any comments.
3. **No food.** Do not bring food or drinks for your committee members. This is an exam, not a party.
4. **Before the exam starts.** Sometimes you will be asked to step out of the room for a minute after everyone is assembled but before the exam begins. Don't freak out and don't go far. The faculty are usually just refreshing their memories about who you are and how you did on the written prelim.
5. **The exam begins.** You will usually be asked to begin the exam by telling the committee about your topic and your proposal. You should check with your primary reviewer ahead of time to find out if that is how he or she plans to start the meeting. Your presentation serves primarily as a stimulus for questions from the committee, rather than being a typical talk or seminar. The presentation should include a brief summary of the relevant background, then a statement of the overall question you addressed in your proposal and the hypotheses that you tested. You should then go through each of your Specific Aims, summarizing the goals and the experiments that you proposed. The committee will typically give you a few minutes of talking to get comfortable. After that, expect to be interrupted with questions from the committee members throughout your presentation. In fact, it is quite possible that you won't get through all of your Aims, depending on how many questions the committee asks. The oral questioning typically lasts 1.5 - 2 hours.

6. **No PowerPoint slides.** Use the whiteboard/chalkboard instead. You are not giving a formal talk to the group, and the committee will want to feel able to interrupt and ask questions in a way that is difficult if you are giving a formal presentation with visual aids. The faculty may want you to talk in more detail about some aspect, or say that you do not need to explain a particular thing to them. You need to be more adaptable than is possible when using slides.
7. **Notes.** You may prepare notes to remind you about the things you want to say, especially for your opening comments. Once you get going, you will probably find that it is easier to think of what you want to say and notes won't be necessary. At the beginning, when you are more nervous, it can be useful to have notes.
8. **A key picture.** If there is one figure that summarizes a central aspect of your proposal and that you will use multiple times, it is OK for you to bring it as a handout for the committee members. Alternatively, some students show up early and draw such a key figure on the board, where everyone can see the same picture and you can draw on it as the exam progresses. In general, be ready to use the board to diagram the things you want to talk about.
9. **What to bring.** You should bring the proposal itself, and any notes you've prepared for your presentation. Some students bring an armful of papers about the topic of the proposal, but these are rarely used.
10. **What if you don't know the answer?** It is virtually guaranteed that you will get some questions you cannot answer. After all, you are facing five faculty members. Remember this situation is expected. Do not freak out, and do not try to fake your way through an answer if you don't know it. It is better to say "I don't know" than to try to fake it. If committee members realize from incorrect answers that you don't really understand one topic, they tend to be concerned that you don't understand other topics, and they will ask more and more questions to explore that lack of understanding. Nobody expects you to know everything, and nobody will worry about a few "I don't know" answers. However, you do not want to go to the extreme of inadvertently implying that you don't know anything. A good strategy is to say "I don't know about X, but here's something I do know about Y, which is a similar phenomenon." Essentially you want to communicate the parts that you do know and define as narrowly as possible what you don't know.
11. **Thinking on your feet.** The committee is often interested in finding out how well you can think once they have established the boundary between what you know and what you don't know. They will often offer hints to try to guide you to the answer. The committee will also often ask you to design an experiment to test a particular hypothesis or distinguish between different possibilities that come up during the discussion. There is nothing specific you can do to prepare for these types of questions - it is simply part of your training as a scientist. Simply be aware that such situations will likely arise during the oral exam and try to keep your cool and not get flustered when it happens.

12. **Stand up!** Everyone will be seated at the outset of the exam. However, you will do better and will influence the event more if you stand up and use the board right from the beginning. Standing puts you in the psychological position of informing the committee, rather than being grilled by them, and is one way to even up the 5:1 odds. Note that in order to stand up for two hours, you should wear comfortable shoes.
13. **Be positive.** This is definitely an exam in which your attitude and overall composure have a big effect on the outcome. If you come across as being confident (but not cocky) and upbeat, the committee will tend to ask fewer questions and to give you the benefit of the doubt. If you seem insecure and tentative, they will worry that you do not really understand what you are saying and will tend to question you more deeply. If you are eager and enthusiastic to discuss your scientific ideas, the meeting can seem much more like an interesting conversation than an exam and the time will pass by quickly.
14. **The end.** When the committee members have asked all of their questions, you will be asked to step out of the room. Again, don't go far and don't freak out if the committee talks for a while. Sometimes, the committee members will want to discuss the strengths and weaknesses that they perceived. Such discussions are mostly for the benefit of your advisor, who will be able to pass those insights along to you and also help you to deal with any weaknesses. Occasionally, the committee gets interested in talking about some aspect of the science that emerged during the questioning. Therefore, it does not necessarily mean that there is a problem if you have to wait a while before the committee calls you back.

**Department of Microbiology & Immunology
Ph.D. Thesis Committees**

Thesis Committee Composition

UNC Graduate School Policies

- Minimum of five members
- Majority must be from degree granting department
- Research advisor must be from degree granting department unless approved by Graduate School

Department of Microbiology & Immunology Policies

- At least three members of the committee other than the research advisor must have faculty appointments in our department. This means the committee will have four departmental faculty members except in the rare cases of students earning a Microbiology & Immunology degree in non-departmental labs.
- Research track faculty can serve on thesis committees
- If a joint student has co-mentors from different labs, then only three more committee members are needed.
- If two faculty members from the same lab (e.g. a tenure track and a research track) are on the committee, then four additional members are required to ensure diversity of opinion.
- In rare instances, and with approval of the Director of Graduate Studies, the research advisor can be outside our department.

Thesis Committee Chair

UNC Graduate School Policies

- Thesis committee chair and research advisor can be the same or different people.
- Thesis committee chair must be from degree granting department unless approved by Graduate School

Department of Microbiology & Immunology Policies

- Thesis committee chair must be a department faculty member
- Research track faculty can chair thesis committee
- Thesis committee chair must be a different person than the research advisor
- Thesis committee chair cannot be the spouse or "significant other" of the research advisor; however such individuals are allowed to serve on the thesis committee.
- The student will choose the thesis committee chair in consultation with the research advisor. In order to enhance the independence of the chair, it is suggested that the chair not be a close collaborator of the research advisor.

Duties of Thesis Committee Chair

UNC Graduate School Policies

- Chair oversees committee meetings and associated documentation

Department of Microbiology & Immunology Policies

- Chair leads all thesis committee meetings, including final defense
- Chair opens each thesis committee meeting by separately asking the student and the research advisor, in each other's absence, to briefly describe for the committee (i) their perception of the student's progress toward their degree, and (ii) any problems or challenges that may benefit from the advice or intervention of the committee.
- Chair signs departmental form indicating thesis committee meeting was held
- Chair signs final approval of thesis defense, after public seminar is completed
- Chair acts as an impartial mediator in any disputes that may arise between the research advisor and the student related to the student's research or thesis.

**Frequently Asked Questions about the Comprehensive Exam for Students
Pursuing a Master's degree in Microbiology and Immunology**

The Microbiology and Immunology Department offers a Master's degree program for two groups of students:

- 1) The Special Master's Program is for research technicians in the department who pursue a M.S. degree as a part-time student while continuing to work as a full-time employee.
- 2) Students who originally entered the Ph.D. program and who have decided that they do not wish to complete the requirements for a Ph.D. may choose to enter the Master's track and complete the requirements for a M.S. degree.

Departmental Master's Degree requirements are the same for the two groups of students. One of the requirements is that students must take and pass a comprehensive examination that focuses primarily on the student's specialized area of interest.

When should students take this exam?

Students usually take the exam after completing all or almost all of their coursework. In most cases, students take the exam after about two years in the program. The student may choose the specific dates when he or she wants to take the exam, in consultation with the advisor.

What is the scope of the exam?

The exam questions are drawn from areas covered by the course work the student has taken and from his or her area of research. Students may choose whether they prefer to take an open book exam or a closed book exam; no student has ever chosen a closed book exam.

Who writes the questions? What type of questions and how many?

The members of the student's committee write the questions for the exam. The student's research advisor is responsible for soliciting questions from the members of the thesis committee and for assembling the exam. Questions should be designed to take two to three hours to answer; the entire exam period is usually **48 hours**.

The exam questions should probe the student's understanding of experimental design, the interpretation of the literature and of important concepts in his or her field of research, and should not just involve recall of facts. If a question involves analysis of one or more research papers, then the student should be given copies of the papers to read in advance, either as hard copies or computer files.

Generally, each committee member writes at least two questions, at least one of which the student must answer. In assembling the exam, the advisor has considerable flexibility. For example, the number of questions the student must answer may vary, depending on the advisor's assessment of the level of difficulty of the questions. If four committee members each submit two "big" questions with multiple parts that will each probably take several hours to answer, then it would be reasonable to require that the student answer just four questions, one from each committee member. If some or all of the questions are smaller in scope, then the student might be instructed to answer five of the eight questions, including at least one from each committee member.

By giving students 48 hours for an exam consisting of four or five questions, the goal is to provide sufficient time to comfortably complete the exam. If the advisor thinks that 48 hours is not enough time for the student to complete the particular exam that has been assembled for him or her, the advisor may extend the time limit. For example, a student might typically start the exam at 9 a.m. on day one, and turn it in by 9 a.m. on day three. However, if the questions are exceptionally long or complex, the advisor might extend to deadline until 5 p.m. on day three.

Who actually administers the exam?

The advisor gives the student the exam questions at the agreed-upon time and collects the completed exam. The student can go wherever he or she wants to work on the exam. If for some reason the advisor cannot administer the exam (unexpected out-of-town trip, etc.), he or she can arrange for Dixie or another faculty member to do it.

What is the format for the answers?

If at all possible, the answers should not be hand-written. Ideally, the student will turn in the answers electronically, with a separate computer file (with an easily interpretable filename) for each question; this will facilitate distribution of the answers to committee members for grading.

Who grades the exam?

Each committee member should grade the answer(s) to his or her question(s), using a scale of H, P+, P, P-, L, or F. If everyone is satisfied with the answers to their questions, then there is no need for the committee to meet to discuss the exam. If there is any concern about one or more answers, then everyone on the committee should look at the entire exam and subsequently meet to determine the outcome.

In the past, there have been a few times when a student generally did well on the exam, but did a poor job with one or two questions. In those cases, the committee has decided to have the student re-do the deficient answers until the committee was satisfied, and only then report that the student has passed the exam. However, depending on the quality of the student's answers and the number of questions that were not answered satisfactorily, the committee may decide upon a grade of Fail.

A student who fails the exam can make a second attempt to pass it, after waiting at least three months (Graduate School rules). If the first exam revealed a particular area of weakness, the student might be advised to take a course or do directed reading on

the topic before taking the exam a second time. In such a case, when the student wants to try a second time, the advisor will assemble a new exam, soliciting questions from the committee members as before.

How is the outcome reported?

The student's advisor is responsible for telling the student of the committee's decision and should also tell Dixie whether or not the student has passed the exam. Dixie will prepare the appropriate form for reporting the outcome to the Graduate School.

If anyone (student, advisor, committee member) has questions about any part of the preliminary examination process for M.S. students, they should contact Bob Bourret, Director of Graduate Studies (6-2679; bourret@med.unc.edu) or Miriam Braunstein, M.S. Student Advisor (6-5051; braunste@med.unc.edu).

GUIDE TO MASTER'S DEGREE
Department of Microbiology and Immunology

The Microbiology and Immunology Department offers a Master's degree program for two groups of students:

1. The Special Master's Program is for research technicians in the department who pursue a M.S. degree as a part-time student while continuing to work as a full-time employee.
2. Students who originally entered the Ph.D. program and who have decided that they do not wish to complete the requirements for a Ph.D. may choose to enter the Master's track and complete the requirements for a M.S. degree.

Departmental Master's Degree requirements are the same for the two groups of students. The Graduate School requirements and the specific departmental requirements for the M.S. degree are described below.

A. Graduate School Requirements for a M.S. degree:

1. At least 30 semester hours of graduate credit, with at least 24 hours in graduate courses, and at least 3 hours (but no more than 6 hours) of Master's Thesis. 6 hours of credit can be transferred from the Extension Division, in partial satisfaction of the 30 hour requirement.
2. Two semesters of residence credit, which can be accumulated in part-time study.

9 hours = 1 semester of residence credit; 6-8 hours give 1/2 semester of residence credit; 3-5 hours give 1/4 semester of residence credit. Thus, if a part-time student took 3 credits of coursework every semester, it would take 8 semesters to accumulate the two semesters of residence credit (8 semesters x 1/4 residence credits per semester = 2 residence credits). In order to complete the program in the target time of three years or less, it will be necessary for a part-time student to register for at least 6 credits for at least 2 semesters. Full-time students will have satisfied this requirement at the end of the first year of graduate study.

3. Written or oral comprehensive exam.
4. There is a five-year time limit for completion of all degree requirements.

B. Specific Departmental Requirements for the M.S. Degree:

The requirements for a Department of Microbiology & Immunology M.S. degree closely follow all requirements for a Ph.D. degree, with the following exceptions:

- There is no Teaching Assistant requirement.
- The preliminary examination format is substantially different.
- The scope (but not the quality) of thesis research expected is less for the M.S. than for the Ph.D.

In general, any changes in requirements, procedures, expectations, etc. made for Ph.D. students will also apply to M.S. students.

1. **Courses.** A minimum of six graduate level courses, at least two of which must be seminar/tutorials. At least one of the seminar/tutorials must be MCRO710, MCRO711, or MCRO712. To qualify for seminar/tutorial credit, another course must be 700 series or higher, based on discussion of the primary literature, and approved by the Graduate Student Advisor. MCRO901 (Research in Microbiology) does not qualify as one of the six courses for fulfilling this requirement.
2. **Seminars.** Students will take MCRO701 or MCRO702 each semester. To pass, the student must attend at least two-thirds of the weekly departmental and student seminars. Students are expected to give an annual student seminar, starting in their second year in the program.
3. **Written preliminary examination.** A two-day written exam with essay-type questions; the student may choose beforehand whether the exam will be closed-open-book, and the questions are designed accordingly. The exam is taken when the student has completed all or most of the planned course work, at a specific time chosen by the student, with approval from the research advisor. The questions are drawn from areas covered by the course work the student has taken and from his or her area of research. The student's advisor will be responsible for soliciting questions from the members of the thesis committee and for assembling the exam (detailed instructions for the comprehensive exam are contained in the document entitled "Frequently Asked Questions about the Comprehensive Exam for Students Pursuing a Master's degree in Microbiology and Immunology", available from Dixie Flannery or Bob Bourret). Generally, each committee member writes two questions designed to be answered in approximately 2-3 hours of thinking and writing, and the student must answer at least one of the two questions from each committee member. An exam for a student with a four-member committee will usually contain eight questions; the student will be required to answer four, or possibly five, of the questions. Committee members grade the answers to the questions that they wrote, using a scale of H, P+, P, P-, L, or F. A student who does not pass the written preliminary exam may take it a second time, after waiting at least three months. If the student does not pass the exam on the second attempt, the student will not be eligible to continue in the program.
4. **Thesis committee & chair.** As soon as possible after entering the Master's degree program, the student should choose a thesis committee of four faculty members (including the research advisor). At least three committee members must have faculty appointments in our department. A committee chair, different than the research advisor, should also be chosen. For students in the Special Master's program for departmental employees, it is useful to have an initial

meeting with the committee during the first or second semester in the program. Students who were originally planning to pursue a Ph.D. degree but who have decided upon the Master's degree track should meet with the thesis committee shortly after making the decision to complete the requirements for a M.S. degree.

5. **Thesis project approval.** Once the student has defined a thesis research project, he or she writes a brief thesis proposal and then meets with the committee to discuss and defend the planned research. At least one week prior to meeting, provide the thesis committee with a written document of two pages or less describing hypotheses, Specific Aims, and a brief overview of research design, including which parts of research design have been completed. For part-time students in the Special Master's program, this thesis project approval meeting should occur no later than during the third semester in the program. For students who have switched from the Ph.D. program to the M.S. program, it is desirable to have the thesis project approval meeting as soon as possible after forming the thesis committee.
6. **Thesis committee meetings.** Meet at least annually with the thesis committee. Provide the committee with a progress report at least one week prior to each meeting. The report consists of a Specific Aims page followed by a description of progress to date organized by Aim. The report should include any changes in Aims, a summary of key results, plans for future experiments, and the status of any publications.
7. **Thesis research.** The main difference between a Master's thesis project and a doctoral dissertation project is one of scope; the research should be of similar quality and significance in both cases. The goal for the scope of the M.S. thesis project is that it should comprise a body of research that is appropriate for publication as an article in a refereed journal with the student as the first author.
8. **Thesis.** A presentation, written by the student, of the results of the independent research project. It should be a description of a piece of publication-quality research. The goal is for the results of this project to be submitted for publication as all or a major part of a manuscript, with the student as the first author. The thesis will usually consist of multiple chapters: 1) A general introduction to the project, review of the relevant literature, and discussion of the significance of the work; this chapter will include literature citations. 2) One or more chapters presenting the results of the student's research. Each chapter may be written in the format of a research paper, with Introduction, Materials and Methods, Results, Discussion, and Literature Cited sections. 3) A short overall Discussion, in which the student considers the work as a whole and discusses such topics as future directions or unanswered questions, is optional, depending on the wishes of the student's advisor and thesis committee. An alternative format for the thesis is to organize it into a traditional format, with chapters consisting of Introduction, Materials and Methods, Results, Discussion, and Conclusions. The student and advisor choose the format for the thesis together.

9. **Distribution of thesis.** The student's research advisor must be satisfied with the thesis before it can be distributed to the other members of the thesis committee. Committee members must receive the thesis at least one week before the scheduled date for the defense. If a student cannot meet this deadline, the defense will be rescheduled for a time at least one week after the date that the thesis is distributed to committee members.
10. **Private defense.** The student will orally defend their thesis in front of their thesis committee. The student does not make a formal presentation of his or her work at this time, but rather answers questions from the committee.
11. **Public seminar.** At least two weeks after passing the private defense, the student will present their research to the department in a public seminar. The seminar is a degree requirement.

A standard progression through the M.S. program would be expected to take approximately two to three-and-a-half years, depending on whether the student is pursuing studies on a full-time or part-time basis and on the progress of the thesis research project.

For further information about Master's degree requirements, or if you have questions, contact Bob Bourret (726 MEJB; 6-2679; bourret@med.unc.edu) or Miriam Braunstein, M.S. Student Advisor (6-5051; braunste@med.unc.edu)..

GUIDE TO SPECIAL MASTER'S PROGRAM
for
Department of Microbiology & Immunology Employees
University of North Carolina at Chapel Hill

The Special Master's Program for employees in the Department of Microbiology and Immunology enables laboratory employees to pursue a Master's degree on a part-time basis while working full-time in the Department. The faculty member in whose laboratory the employee works will normally be his or her research advisor, and must agree to the employee's participation in the program. The Special Master's program is designed to help research technicians increase their level of participation in and contribution to the scientific activities of their current laboratories. The M.S. degree also provides an important credential for employees who wish to become competitive for higher level technical positions or to move into new career directions.

The M.S. degree earned by students in the Special Master's program is a terminal degree, and it is important for prospective students in the program to understand that participation in this program is not an entrée into the Ph.D. program of the Department.

Successful completion of the M.S. degree in this program requires a considerable commitment of time and energy over the forty hours per week expected of a laboratory technician. Time spent in class, attending seminars, and studying for and taking examinations is over and above the forty hours per week that is owed to the advisor/employer as a technician. When a student starts working on the thesis project, a portion of the research may be done during the regular work week if the advisor/employer agrees to that arrangement. However, whenever a student is registered for "Research in Microbiology (MCRO 901)," the student is expected to spend additional time in the lab working on the thesis project, beyond the regular work week. Even when a student is not officially registered for MCRO 901, it may often be necessary to spend additional time in the laboratory working on the thesis research project; students should be prepared to spend this additional time.

While much of the required coursework can be taken under the tuition waiver program for full-time employees of the University, it is not possible to complete the M.S. degree in a timely manner without paying any tuition. During semesters when a student takes two courses or takes a formal course plus research credits, the student will receive a tuition waiver for one of the courses and will have to pay tuition for the other one. Most students end up paying tuition for two courses, at the in-state tuition level, in order to complete their degree requirements.

Most students take around three years to complete the requirements for the M.S. degree under the auspices of this program. While it is technically possible to complete

the degree in as little as four semesters of part-time study, such a timetable requires an extraordinary commitment of time and effort to the program.

A. Graduate School Requirements for a M.S. degree:

1. At least 30 semester hours of graduate credit, with at least 24 hours in graduate courses, and at least 3 hours (but no more than 6 hours) of Master's Thesis. 6 hours of credit can be transferred from the Extension Division, in partial satisfaction of the 30 hour requirement.

2. Two semesters of residence credit, which can be accumulated in part-time study.

9 hours = 1 semester of residence credit; 6-8 hours give 1/2 semester of residence credit; 3-5 hours give 1/4 semester of residence credit. Thus, if a part-time student took 3 credits of coursework every semester, it would take 8 semesters to accumulate the two semesters of residence credit (8 semesters x 1/4 residence credits per semester = 2 residence credits). In order to complete the program in the target time of three years or less, it will be necessary for a part-time student to register for at least 6 credits for at least 2 semesters. Full-time students will have satisfied this requirement at the end of the first year of graduate study.

3. Written or oral comprehensive exam.

4. There is a five-year time limit for completion of all degree requirements.

B. Applying to the Special Master's Program:

1. To be eligible to apply to the program:

- a. A technician must have at least one year of full-time laboratory employment with a faculty member of the department. Technicians working for faculty who do not have an appointment in Microbiology and Immunology (either primary or joint) are not eligible for this program, because the technician's employer also serves as the research advisor and the department requires that research advisors of departmental graduate students must be members of the department.

- b. He or she must also have completed at least one graduate course offered by this Department or approved by the Graduate Advisor for the program (currently Miriam Braunstein), receiving a grade of H or P.

- c. The technician's employer must agree to his or her participation in the program and agree to serve in the capacity of research advisor.

2. To apply, submit a standard paper application for admission to the Graduate School; at present, it is not possible to use the online application system for this program. On the upper left corner of the first page of the application, write the words "SPECIAL MASTER'S".

3. Required elements of the application include:

- a. GRE scores (a Subject test such as Biology or Biochemistry is not required)
 - b. Transcripts from UNC Chapel Hill and undergraduate institution(s)
 - c. A written statement of purpose that describes the applicant's research experience and interests, and the reason why he or she is interested in the program.
 - d. Three letters of recommendation, one of which must be from the applicant's current employer, who will act as the student's research advisor for the M.S. program.
4. Applications will be evaluated by a M.S. admissions/advisory committee consisting of three faculty members.
5. Students may apply to begin the program in either the Fall or Spring Semester.
6. Application deadlines: May 15 for admission starting in the Fall semester
September 15 for admission starting in the Spring semester

C. Specific Departmental Requirements for the M.S. Degree:

The requirements for a Department of Microbiology & Immunology M.S. degree closely follow all requirements for a Ph.D. degree, with the following exceptions:

- There is no Teaching Assistant requirement.
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In general, any changes in requirements, procedures, expectations, etc. made for Ph.D. students will also apply to M.S. students.

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3. **Written preliminary examination.** A two-day written exam with essay-type questions; the student may choose beforehand whether the exam will be closed-open-book, and the questions are designed accordingly. The exam is taken when

the student has completed all or most of the planned course work, at a specific time chosen by the student, with approval from the research advisor. The questions are drawn from areas covered by the course work the student has taken and from his or her area of research. The student's advisor will be responsible for soliciting questions from the members of the thesis committee and for assembling the exam (detailed instructions for the comprehensive exam are contained in the document entitled "Frequently Asked Questions about the Comprehensive Exam for Students Pursuing a Master's degree in Microbiology and Immunology", available from Dixie Flannery or Bob Bourret). Generally, each committee member writes two questions designed to be answered in approximately 2-3 hours of thinking and writing, and the student must answer at least one of the two questions from each committee member. An exam for a student with a four-member committee will usually contain eight questions; the student will be required to answer four, or possibly five, of the questions. Committee members grade the answers to the questions that they wrote, using a scale of H, P+, P, P-, L, or F. A student who does not pass the written preliminary exam may take it a second time, after waiting at least three months. If the student does not pass the exam on the second attempt, the student will not be eligible to continue in the program.

4. **Thesis committee & chair.** As soon as possible after entering the Master's degree program, the student should choose a thesis committee of four faculty members (including the research advisor). At least three committee members must have faculty appointments in our department. A committee chair, different than the research advisor, should also be chosen. For students in the Special Master's program for departmental employees, it is useful to have an initial meeting with the committee during the first or second semester in the program.
5. **Thesis project approval.** Once the student has defined a thesis research project, he or she writes a brief thesis proposal and then meets with the committee to discuss and defend the planned research. At least one week prior to meeting, provide the thesis committee with a written document of two pages or less describing hypotheses, Specific Aims, and a brief overview of research design, including which parts of research design have been completed. For part-time students in the Special Master's program, this thesis project approval meeting should occur no later than during the third semester in the program.
6. **Thesis committee meetings.** Meet at least annually with the thesis committee. Provide the committee with a progress report at least one week prior to each meeting. The report consists of a Specific Aims page followed by a description of progress to date organized by Aim. The report should include any changes in Aims, a summary of key results, plans for future experiments, and the status of any publications.
7. **Thesis research.** The main difference between a Master's thesis project and a doctoral dissertation project is one of scope; the research should be of similar quality and significance in both cases. The goal for the scope of the M.S. thesis

project is that it should comprise a body of research that is appropriate for publication as an article in a refereed journal with the student as the first author.

The thesis research must involve an independent project appropriate for a graduate student, rather than just functioning as a technical assistant. The regular working hours that can be devoted to the project, and the relationship of the project to the student/employee's other work, must be approved by the advisor. The student may include in the thesis results that were obtained during regular working hours, as long as the advisor and thesis committee are satisfied that the student pursued the project in the manner expected of a graduate student. However, the thesis should not include work that was done before the student entered the Master's program. When a student is registered for MCRO901 (Research in Microbiology), the student should spend time in the lab working on the project, over and above the 40 hours/week of full-time employment. A good rule of thumb is that for 3 credits of MCRO901, the student should spend at least 10 additional hours a week in laboratory research or reading relevant to the project.

8. **Thesis.** A presentation, written by the student, of the results of the independent research project. It should be a description of a piece of publication-quality research. The goal is for the results of this project to be submitted for publication as all or a major part of a manuscript, with the student as the first author. The thesis will usually consist of multiple chapters: 1) A general introduction to the project, review of the relevant literature, and discussion of the significance of the work; this chapter will include literature citations. 2) One or more chapters presenting the results of the student's research. Each chapter may be written in the format of a research paper, with Introduction, Materials and Methods, Results, Discussion, and Literature Cited sections. 3) A short overall Discussion, in which the student considers the work as a whole and discusses such topics as future directions or unanswered questions, is optional, depending on the wishes of the student's advisor and thesis committee. An alternative format for the thesis is to organize it into a traditional format, with chapters consisting of Introduction, Materials and Methods, Results, Discussion, and Conclusions. The student and advisor choose the format for the thesis together.
9. **Distribution of thesis.** The student's research advisor must be satisfied with the thesis before it can be distributed to the other members of the thesis committee. Committee members must receive the thesis at least one week before the scheduled date for the defense. If a student cannot meet this deadline, the defense will be rescheduled for a time at least one week after the date that the thesis is distributed to committee members.
10. **Private defense.** The student will orally defend their thesis in front of their thesis committee. The student does not make a formal presentation of his or her work at this time, but rather answers questions from the committee.

11. **Public seminar.** At least two weeks after passing the private defense, the student will present their research to the department in a public seminar. The seminar is a degree requirement.

A standard progression through the program would be expected to take approximately three years. The student will take one or two courses (or one course plus research credit) each semester, and probably take the comprehensive exam after two years. The third year would involve completing the research project, and writing and defending the thesis.

For further information about the program, or if you have questions, contact Bob Bourret (726 MEJB; 6-2679; bourret@med.unc.edu) or Miriam Braunstein, M.S. Student Advisor (6-5051; braunste@med.unc.edu).



M&I
Microbiology
and Immunology

About the Department

Today Microbiology and Immunology is a dynamic and exciting collection of disciplines. UNC Microbiology and Immunology conducts research and provides training in forefront areas of prokaryotic and eukaryotic molecular and cellular biology, molecular genetics, pathogenesis, bacteriology, virology and immunology, as well as in broad multi-disciplinary areas such as host-pathogen interactions, macromolecular structure, the nature of protein/protein and protein/nucleic acid interactions, and mechanisms that control gene expression.

M & I
Postdoc
Association



UNIVERSITY of
NORTH CAROLINA
at CHAPEL HILL

Postdoc Association

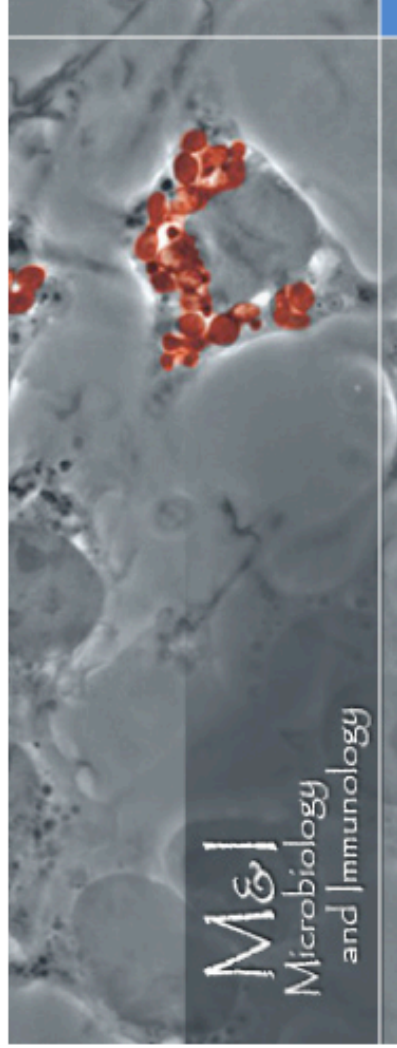


Microbiology & Immunology

116 Manning Drive
CB#7290
Chapel Hill, NC 27599
<http://www.med.unc.edu/microimm>

Get Involved:

- ◆ Attend Monthly Meetings
- ◆ Participate in our annual Research Symposium
- ◆ Nominate speakers for our annual sponsored seminar
- ◆ Meet other Postdoctoral researchers in the department



M&I Postdoc Association

The mission of the M&I Postdoc Association is to offer opportunities for networking, career development, and interaction between postdoctoral research fellows.

Our monthly meetings serve as a foundation for M&I postdocs to interact and share their experiences. Meeting topics range from seminar speaker nomination, to career development discussions.

We sponsor an annual postdoctoral research symposium. This opportunity allows M&I postdoctoral researchers to present their work to the department and gain public speaking experience.

Each year the M&I Postdoc Association hosts a departmental seminar speaker. The association chooses and invites their speaker of choice, as well as develops their schedule and serves as hosts.

For more information and to be included on our mailing list contact Corinne Williams (corinne_williams@med.unc.edu).



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

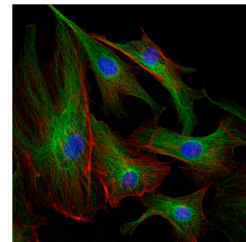
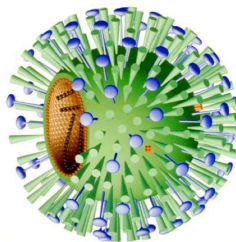
M & I

Postdoc Research Symposium

organized by

Microbiology and Immunology

Postdoc Association



Wednesday, November 18th, 2009

10am - 3:30pm

Bioinformatics 1131

Morning program

Time	Event / Speaker / Talk
09:45-10:00	Coffee & Bagels (kindly provided by Fisher Scientific)
10:00-10:10	Welcome address by Chair of Postdoc Association
10:10-10:25	Zuoan Yi (Tisch Lab) The role of IFN-gamma in T cell-mediated beta cell death in type 1 diabetes
10:25-10:40	Yonggang Sha (Silva Lab) IL-1 β function on human Th17 cell differentiation
10:40-10:55	Lisa Gralinski (Baric Lab) Understanding SARS-CoV Pathogenesis: Genome Wide Identification of Susceptibility Loci Using the Collaborative Cross
10:55-11:10	Marty Ferris (Heise Lab) New insights into Influenza A virus pathogenesis using the Collaborative Cross
11:10-11:25	Coy Allen (Ting Lab) NLRX1 is a regulator of the innate immune response to Influenza A virus infection
11:25-11:40	Corinne Williams (Goldman Lab) Intracellular survival of a dimorphic fungus
11:40-12:20	Lunch

**Sponsor of morning & afternoon refreshments
(Coffee, bagels & cookies)**



Afternoon program

Time	Event / Speaker / Talk
12:20-12:35	Julia Schmitz (Sartor Lab) Chronic Small Intestinal Inflammation in IL-10 ^{-/-} Mice mono-associated with a translocating <i>E. coli</i> strain isolated from a mouse with experimental enteritis
12:35-12:50	Denis Gris (Ting Lab) Inflammasome in multiple sclerosis
12:50-01:05	Sang-Ryul Lee (Vilen Lab) Dysregulation of anti-Sm B cells in lupus-prone mice
01:05-01:20	Sunah Kang (Vilen Lab) The Role of Surface Bound Immune Complexes in Autoimmunity
01:20-01:35	Jainab Khatun (Giddings Lab) Identifying Protein-Coding DNA Sequences of Human Genome by Proteo-Genomic Mapping
01:35-02:00	Break: Coffee & Cookies (kindly provided by Fisher Scientific)

Sponsors of best postdoctoral presentation awards:



Afternoon program continued

Time	Event / Speaker / Talk
02:00-02:15	Qian Xu (Cotter Lab) Examining the receptors of FHA
02:15-02:30	Dilan Weerakoon (Braunstein Lab) Identification of <i>in vivo</i> exported proteins of <i>Mycobacterium tuberculosis</i> , <i>bla</i> , <i>bla</i> , <i>bla</i>
02:30-02:45	James Fuller (Richardson Lab) <i>Staphylococcus aureus</i> : Nitric oxide, Glycolysis, & Virulence
02:45-03:00	Chelsea Lane (Miller Lab) Contribution of the YapG Autotransporter to Plague Pathogenesis
03:00-03:15	Roger Pechous (Goldman Lab) Evaluating the Progression of Pneumonic Plague
03:20	Awards for the best talks (the two best postdoc talk awards are sponsored by VWR & Eton Biosciences Inc.)

Thanks go to:

Organizing committee of the postdoctoral association

Janelle Arthur, James Fuller, Joshua Hall, Chelsea Lane, Markus Obrist, Roger Pechous, Eric Weening, Corinne Williams

Department of Microbiology & Immunology

Local sponsors

Top of the Hill, Brixx, 411 West, Whole Foods, Carolina Brewery

Appendix C1 - Undergraduate Majors of Current Microbiology & Immunology Students

Biochemistry (3)
Biochemistry and Biology (2)
Biological Sciences (4)
Biomedical Science (1)
Biology (28)
Biotechnology (2)
Cell and Developmental Biology (2)
Cellular and Molecular Biology (2)
Chemistry (2)
English (1)
Genetics (1)
Genetic Engineering (1)
Liberal Arts (1)
Marine Biology (1)
Medical Biology (1)
Microbiology (3)
Microbiology, Immunology and Molecular Genetics (1)
Molecular Biology (4)
Molecular and Cell Biology (3)
Political Science (1)
Psychology (1)
Physics (1)
Physiology (1)

Appendix C2 - Undergraduate Institutions of Current Microbiology & Immunology Students

Augustana College, IL (1)
Beijing University, CHINA (1)
Bucknell University, PA (2)
Butler University, IN (1)
California State University, Channel Islands, CA (1)
Case Western Reserve University, OH (1)
Cedar Crest College, PA (1)
College of Charleston, SC (1)
Cornell University, NY (1)
Denison University, OH (1)
Elizabethtown College, PA (1)
Fayetteville State University, NC (1)
Gustavus Adolphus College, MN (1)
Hampshire College, MA (1)
Illinois Wesleyan University, IL (1)
Kansas State University, KS (1)
Lehigh University, PA (1)
McGill University, CANADA (1)
Michigan State University, MI (1)
Mount St. Mary's University, MD (1)
North Carolina State University, NC (2)
Northwestern University, IL (1)
Pennsylvania State University, PA (3)
Rochester Institute of Technology, NY (1)
Salisbury University, MD (1)
San Francisco State University, CA (1)
St. John's College, MD (1)
State University of New York, Buffalo, NY (1)
Swarthmore College, PA (1)
Sweet Briar College, VA (1)
Texas A&M University, TX (2)
Towson University, MD (1)
Universidad del Valle de Guatemala, GUATEMALA (1)
Universidad Nacional de Trujillo, PERU (1)
University of California, Berkeley CA (1)
University of California, Davis CA (1)
University of California, Los Angeles CA (2)
University of California, San Diego CA (1)
University of California, Santa Barbara CA (1)
University of Florida, FL (2)
University of Maryland, Baltimore, MD (3)
University of Miami, FL (1)
University of Michigan, Ann Arbor, MI (2)
University of Missouri, Columbia, MO (1)

University of New England, ME (1)
University of North Carolina, Chapel Hill, NC (1)
University of North Carolina, Greensboro, NC (1)
University of North Carolina, Pembroke, NC (1)
University of South Dakota, SD (1)
University of Utah, UT (1)
University of Virginia, VA (1)
University of Washington, Seattle, WA (1)
Ursinus College, PA (1)
Vanderbilt University, TN (1)
Virginia Polytechnic Institute & State University, VA (2)
Washington University, St. Louis, MO (1)

Appendix C3 - Ph.D. Degrees Awarded, 2005-06 through 2009-10

Department of Microbiology & Immunology Ph.D. Defense Seminars

2009-10: 18 Degrees Earned

- Eduarta Holl (Ting)** June 30, 2010
The role of Plexin-D1 in the adaptive immune system: implications for humoral immunity
- Catherine Cruz (Heise)** June 9, 2010
An Alphavirus nsP1 determinant modulates Type I Interferon induction
- Erin McElvania Tekippe (Ting & Braunstein)** June 1, 2010
Recognition of *Mycobacterium tuberculosis* by the host inflammasome
- Richard Sean McNally (Ting)** May 27, 2010
DJ-1 regulates cell survival through the direct binding of Cezanne, a negative regulator of NF- κ B
- Kwun Wah Wen (Damania)** May 19, 2010
Characterization of the K1 protein of Kaposi sarcoma-associated herpesvirus and development of a novel vaccine for protection against rhadinovirus infection
- Beth Mole (Dangl)** April 29, 2010
Exploring the virulence strategy of the soft-rot plant pathogen *Pectobacterium carotovorum*
- Jason Simmons (Heise)** April 26, 2010
Inhibition of type I and type II interferon signaling by alphavirus nonstructural proteins
- Christopher Brooke (Johnston)** April 20, 2010
Evaluating the protective roles of complement activation and T cells during Venezuelan equine encephalitis virus infection
- Gretja Schnell (Swanstrom)** March 26, 2010
HIV-1 Subtype B Determinants of Neuropathogenesis: Viral Characteristics Associated with Dementia
- Joseph Burgents (Serody)** March 19, 2010
Tumor-induced immune suppression of therapeutic cancer vaccines
- Shehzad Sheikh (Plevy)** February 22, 2010
Defects in macrophage specific homeostatic pathways in inflammatory bowel disease
- Kevin Ramkissoo (Giddings)** November 24, 2009
Integrated top-down and bottom-up mass spectrometry characterization of *Escherichia coli* ribosomal protein heterogeneity - Identification of protein isoforms and post-translational modifications
- Che-Pei Kung (Raab-Traub)** August 21, 2009
The Epstein-Barr Virus Latent Membrane Protein 1 regulates gene expression by engaging multiple signaling pathways

Vijay Sivaraman (Su) Mechanisms of HIV-1 mediated CD4+ T Cell depletion in lymphoid tissue	August 21, 2009
Liesl Jeffers (Webster-Cyriaque) Salivary gland diseases: A role for BK Virus	August 20, 2009
Wahala Wahala (de Silva) Mechanisms of dengue virus neutralization by antibody	August 14, 2009
Jessica McCann (Braunstein) Development and use of genetic reporters to identify <i>Mycobacterium tuberculosis</i> exported proteins important for virulence	August 3, 2009
Margaret Scull (Pickles) Influenza A virus interactions with the human airway epithelium	July 2, 2009
2008-09: 12 Degrees Earned	
Kari Hacker (de Silva) Characterization of dengue virus interactions with host cells	June 22, 2009
Elizabeth Russell (Swanstrom) HIV-1 subtype C mother-to-child transmission: Genetic and immunologic correlates	March 30, 2009
Janelle Arthur (Ting) NLRP12 regulates immunity by controlling cell migration	March 25, 2009
Carlos Gonzalez (Damania) Viral modulators of KSHV lytic replication	March 19, 2009
So-Young Eun (Ting) The function of a novel guidance molecule, Plexin-A1, on immune dendritic cells	December 9, 2008
James Fuller (Kawula) Characterization of the <i>Francisella</i> virulence factor RipA	November 20, 2008
Nathan Rigel (Braunstein) Characterization of the SecA2 protein export pathway of mycobacteria	November 17, 2008
Kevin Goudy (Tisch) Characterization and immunomodulation of regulatory T cells in Type 1 diabetes	November 12, 2008
Catherine Siler (Raab-Traub) The role of LCV and EBV Latent Membrane Protein 2A in epithelial cells	August 20, 2008
Jennifer Rutan (Vilen) Regulation of autoreactive B cells during innate immune responses	August 11, 2008
Tamara Nun (Damania) Characterization of the latent K15 protein of Kaposi's sarcoma-associated herpesvirus and identification of compounds that disrupt viral latency	August 11, 2008
Vivian Chen (Matsushima) Immune mediators of central nervous system demyelination and remyelination	July 10, 2008

2007-08: 15 Degrees Earned

Robin Craven (Kawula) The interaction of <i>Francisella tularensis</i> with lung epithelial cells	June 6, 2008
Reed Shabman (Heise) Alphavirus evasion of Type I interferons	June 2, 2008
Joshua Hall (Kawula) <i>Francisella tularensis</i> interactions with the lung	May 30, 2008
Timothy Sheahan (Baric) SARS coronavirus pathogenesis and therapeutic design	April 2, 2008
Derek Holmes (Su) FoxP3 modulation of HIV-1 Replication and T cell activation	March 31, 2008
Eric Donaldson (Baric) Computational and molecular biology approaches to viral replication and pathogenesis	March 24, 2008
Katharine Tyson (de Silva) A family of tick (<i>Ixodes scapularis</i>) salivary proteins that inhibit complement	March 20, 2008
Anna LoBue (Baric) Norovirus immunobiology and vaccine design	February 7, 2008
Milloni Patel (Swanstrom) HIV-1 Env sequence and structure contribute to both coreceptor tropism and susceptibility to antibody neutralization	November 16, 2007
Zhengmao Ye (Ting) Modulation of innate immunity by nucleotide binding: Biochemical and functional characterization of a CATERPILLER/NLR protein, Monarch-1/NARP12	November 8, 2007
Anne Purfield (Meshnick) A mechanism of resistance and mode of action for drugs against <i>Plasmodium falciparum</i>	September 11, 2007
Kara Conway (Clarke) Mechanisms of anti-Sm B cell activation in autoimmune <i>Fas</i> -deficient mice	August 14, 2007
Li Li (Tisch) Characterization and modulation of autoreactive Cd4+ T cells in Type 1 diabetes	August 6, 2007
Justin McDonough (Braunstein) Characterization of the twin-arginine translocation pathway in <i>Mycobacteria</i>	August 2, 2007
Paul Gohlke (Matsushima) The role of MerTK and BAFF in dendritic cell-B cell interactions	July 13, 2007

2006-07: 16 Degrees Earned

Christine Tomlinson (Damania) The first open-reading frames of Kaposi's Sarcoma-associated Herpesvirus and Rhesus Monkey Rhadinovirus and their contributions to the viral life-cycle	June 28, 2007
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Cassandra Lambeth (de Silva) Interactions between Dengue type 3 viruses and human dendritic cells	June 27, 2007
Casey Clements (Ting) Functional characterization of DJ-1: An oxidative response protein	May 24, 2007
Mileka Gilbert (Vilen) Dendritic cell and macrophage-mediated tolerance in Lupus-prone mice	May 16, 2007
Matilda Nicholas (Clarke) A unique memory B cell subset correlates with adverse outcomes in human SLE	April 13, 2007
Ramiro Diz (Clarke) Intrinsic mechanisms of regulation of anti-Sm B cell anergy	April 12, 2007
Stephanie Montgomery (Johnston) Venezuelan Equine Encephalitis virus Nonstructural Protein 2 in the host cell	April 11, 2007
Joseph Thompson (Johnston) Venezuelan Equine Encephalitis virus replicon particles: Mucosal vaccine vectors and biological adjuvants	April 10, 2007
Rob Fulcher (Kawula) Effectors of <i>Haemophilus ducreyi</i> pathogenesis	March 30, 2007
Bernardo Mainou (Raab-Traub) Biologic and molecular properties of LMP1: CTARs, strains and beyond	March 30, 2007
Jennifer Konopka (Johnston) Characterization of the innate host response to Venezuelan Equine Encephalitis virus, from the first infected cells to system-wide modulation <i>in vivo</i>	March 15, 2007
Mehul Suthar (Heise) Molecular pathogenesis of the Sindbis-group virus strain AR86	February 27, 2007
Damon Deming (Baric) Genetic approaches to the study of coronavirus replication and pathogenesis	December 18, 2006
Heather Seitz (Matsushima) The role of Axl/Mertk/Tyro3 receptor tyrosine kinases in the clearance of apoptotic cells	November 16, 2006
Timothy Moran (Johnston/Serody) Characterization of dendritic cells transduced with Venezuelan Equine Encephalitis virus replicon particles as therapeutic cancer vaccines	August 7, 2006
Mark Wallet (Tisch) MerTK mediates immune homeostasis: Effects upon dendritic cell function and Type 1 diabetes	July 6, 2006
2005-06: 4 Degrees Earned	
Willie McRoy (Baric) Determinants of Mouse Hepatitis Virus host range expansion	June 30, 2006

Jin Hyang Kim (Vilen)

April 7, 2006

The role of BCR destabilization in antigen processing

Brian Bowser (Damania)

March 14, 2006

Examination of the KSHV OrfK1 promoter and the regulation of K1 expression

Michael Montague (Hutchison)

August 4, 2005

Functional phylogeny of protein families

THE ANNUAL G. PHILIP MANIRE GRADUATE STUDENT EXCELLENCE IN RESEARCH AWARD

The Department of Microbiology and Immunology is pleased to call for nominations for the 2010 G. Philip Manire Award, which was established in 2004. Dr. Manire was an active member of the UNC Faculty from 1950 until his retirement in 1989. During his illustrious career at UNC-CH, he served as Assistant Vice Chancellor of Health Sciences (1965-66), Chair of the Department of Microbiology and Immunology (1966-79), and Vice Chancellor and Dean of the Graduate School (1979-86). This award is given in his honor, recognizing his dedication to the University of North Carolina and to the Department of Microbiology and Immunology, as well as his love of graduate education and research.

The Department will give a monetary award of \$1,000 to an outstanding graduate student who is judged to have carried out the most significant and impressive research project during his or her career at UNC.

Nominations

Any Microbiology and Immunology faculty member may nominate any current Microbiology and Immunology graduate student in his or her final year of study. The nomination package should contain:

- A current curriculum vita
- Three letters of recommendation, including one letter from the student's mentor and two letters from other faculty members. These letters should not consist mostly of descriptions of the details of the research. Instead, the letters should focus on the specific contributions that the nominated student has made to the project and the role of the student in initiating and/or developing new lines of investigation in the laboratory. The letter from the student's mentor should also place the student's research in the context of the larger field and should describe the student's role in any publications on which he or she is an author.
- Four copies of any publications or preprints on which the nominee is an author.
- A description of the student's research accomplishments, written by the student and not to exceed three pages in length.

Nominations must be received by Monday, May 3, 2010.

Review

A committee consisting of senior faculty appointed by the Chair will review the nominations. Selection of the Manire Award recipient will be based on the quality and significance of the student's research, his or her productivity, the comments of the references, and the quality of the research description written by the student. The recipient will be sent an award letter and the check and an announcement of the winner will be sent out to the department.

Appendix C5 - M.S. Degrees Awarded, 2005-06 through 2009-10

Department of Microbiology & Immunology M.S. Defense Seminars

2009-10: 1 Degree Earned

Adriana Jones (Wolfgang)

April 16, 2010

The cAMP-dependent transcription factor Vfr and acute virulence factor regulation in *Pseudomonas aeruginosa*

2008-09: 2 Degrees Earned

Ryan Heiniger (Wolfgang)

April 22, 2009

The *Pseudomonas aeruginosa* Type IV pilus-associated protein PilY1 is required for stable fiber formation and host attachment

Nikki Wagner (Vilen)

November 14, 2008

In vivo regulation of autoreactive B cells by IL-6, CD40L and TNF alpha

2007-08: 2 Degrees Earned

Drue Webb (White)

February 6, 2008

Development of improved Dengue 2 antigen configurations for a Venezuelan Equine Encephalitis Virus replicon particle-launched Dengue vaccine

Sherry Kurtz (Braunstein)

July 25, 2007

SecA2 of *Mycobacterium tuberculosis* contributes to intracellular survival, immune modulation, and surface properties of the bacillus

2006-07: 1 Degree Earned

Diane Carnathan (Vilen)

June 6, 2007

Dendritic cell regulation of B cells

2005-06: 2 Degrees Earned

Leanna Nosbisch (de Silva)

June 7, 2006

Antigenic variation at the *vlsE* locus of the Lyme Disease spirochete, *Borrelia burgdorferi*

Laurie Gray (Shugars)

August 25, 2005

Characterization of a perinatal transmission pair utilizing an *ex vivo* tonsil model

Appendix C6 - Postdoctoral Destinations of Ph.D. Recipients, 2005-06 through 2009-10

Mentor	Institution	
<i>Other academic institutions (23)</i>		
Christopher Basler	Department of Microbiology Mt. Sinai School of Medicine	
Christophe Benoist	Department of Pathology Harvard Medical School	
Michael Croft	La Jolla Institute of Allergy & Immunology	
Terry Dermody	Department of Microbiology & Immunology Vanderbilt University	2 students
Max Essex	Department of Immunology & Infectious Diseases Harvard University	
Michael Gale	Department of Immunology University of Washington, Seattle	2 students
Maureen Goodenow	Department of Pathology, Immunology, & Laboratory Medicine University of Florida	
Harry Greenberg	Department of Microbiology and Immunology Stanford University	
Akiko Iwasaki	Department of Immunobiology Yale University School of Medicine	
Joshy Jacob	Department of Microbiology & Immunology Emory University	
Doug Lyles	Department of Biochemistry Wake Forest University	
Craig Meyers	Department of Microbiology & Immunology Pennsylvania State University	
Maureen Murphy	Program in Developmental Therapeutics, Fox Chase Cancer Center	
Daniel Podolsky	Department of Medicine Harvard Medical School	
Joseph St. Geme	Department of Molecular Genetics & Microbiology Duke University	
Charles Rice	Laboratory of Virology and Infectious Disease The Rockefeller University	2 students
Craig Roy	Section of Microbial Pathogenesis Yale School of Medicine	
Tom Silhavy	Department of Molecular Biology Princeton University	
Gregory Storch	Department of Pediatrics Washington University	
Unknown	San Raffaele Telethon Institute for Gene Therapy, Milan, Italy	

Mentor	Institution
<i>UNC Chapel Hill, different lab (7)</i>	
Victor Garcia-Martinez	Department of Medicine
Bill Goldman	Department of Microbiology & Immunology
Christian Jobin	Department of Medicine
Virginia Miller	Department of Genetics
Tony Richardson	Department of Microbiology & Immunology
Scott Singleton	School of Pharmacy
Roland Tisch	Department of Microbiology & Immunology
<i>UNC Chapel Hill, same lab (4)</i>	
Ralph Baric	Department of Epidemiology
Aravinda de Silva	Department of Microbiology & Immunology
Jenny Ting	Department of Microbiology & Immunology
Jennifer Webster-Cyriaque	Department of Dental Ecology
<i>Government (NIH) (3)</i>	
Donald Cook	Laboratory of Respiratory Biology, NIEHS, NIH
Jeffrey Green	Laboratory of Cell Biology & Genetics, NCI, NIH
Jon Yewdell	Laboratory of Viral Diseases, NIAID, NIH
<i>Industry (1)</i>	
Andy Chen	Immunology Genentech
<i>Research institute (1)</i>	
Unknown	Center for Advanced Drug Research Stanford Research Institute International

Appendix C7 - Non-Postdoctoral Occupations of Ph.D. Recipients, 2005-06 through 2009-10

Medical Training

Medical school (10)

Medical student	School of Medicine UNC Chapel Hill
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Medical training (2)

GI Fellow	Department of Medicine UNC Chapel Hill
Clinical Fellow	Laboratory & Genomic Medicine Washington University, St. Louis

Veterinary training (2)

Veterinary student	College of Veterinary Medicine North Carolina State University	2 students
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Permanent

Industry (7)

Scientific Director	Fallon Medica
Managing Editor	American Journal Experts
Research Scientist	Scynexis
Medical Liason	Cetaphil-Galderma
Research Scientist	Roche Laboratories
Senior Research Scientist	Glaxo Smith Kline
Senior Scientist	Becton Dickinson

Government (2)

Assistant Regulatory Review Officer	Food & Drug Administration
Microbiologist	Food & Drug Administration

Higher education (2)

Assistant Professor	Johnson County Community College Overland Park, KS
Assistant Professor	Mt. Marty College Yankton, SD

Research institute (1)

Staff Scientist	J. Craig Venter Institute
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Appendix C8 - NIH Postdoctoral Fellowships Earned By Recent Graduates

Jennifer Konopka with Terry Dermody, Vanderbilt University

F32AI081486 "Mechanisms of reovirus neural tropism and spread"

Bernardo Mainou, with Terry Dermody, Vanderbilt University

F32AI080108 "Role of beta1 integrin in mammalian reovirus infection"

Justin McDonough, with Craig Roy, Yale University

F32AI082927 "A systems biology approach for investigating *Coxiella burnetii* infection"

Nate Rigel, with Tom Silhavy, Princeton University

F32GM093768 "Assembly of outer membrane proteins in *Escherichia coli*"

Margaret Scull, with Charles Rice, Rockefeller University

F32AI091207 "Characterization and consequences of HCV interaction with host lipoproteins"

Reed Shabman, with Christopher Basler, Mount Sinai School of Medicine

F32AI084453 "Ebola virus VP24 alters hnRNP C nuclear import: implications for replication"

Tim Sheahan, with Charles Rice, Rockefeller University

F32AI084448 "Hepatitis C virus host interactions in micropatterned hepatocyte co-cultures"

Mehul Suthar, with Michael Gale, University of Washington

F32AI081490 "Defining the host antiviral response to West Nile virus"

Appendix C9 - Ph.D. Fields of Current Microbiology & Immunology Postdoctoral Scholars

Asthma and Inflammation (1)
Bacterial Pathogenesis (1)
Bacterial Physiology (1)
Biochemistry (8)
Biochemistry Epigenetics (1)
Biochemistry and Molecular Biology (2)
Biochemistry and Structural Biology (1)
Biomedical Engineering (1)
Developing Computation Methods for Transcriptome and Genome Analysis (1)
EAE and Cuprizone Models and Neuroinflammation (1)
Genetics (1)
Genetics and Molecular Biology (1)
HIV Immunology (1)
Immunology (7)
Medical Sciences (1)
MHC Genetics (1)
Microbial Genetics (1)
Microbiology (6)
Microbiology and Immunology (3)
Microbiology and Molecular Genetics (1)
Molecular and Cellular Pathology (1)
Molecular, Cellular and Developmental Biology (1)
Molecular Genetics and Genetic Engineering (1)
Molecular Genetics and Microbiology (1)
Neuroimmunology (1)
Neuroinflammation and CIAS (1)
Persistent Viral Infection and Gene Therapy (1)
Pharmacology (1)
Prion Biology (1)
T Cell Activation (1)
Theory of Programming High-Performance Computations (1)
TLR and T Cell Responses (1)
Toxicology (1)
Virology (5)

Appendix C10 - Graduate Institutions of Current Microbiology & Immunology Postdoctoral Scholars

Albany Medical College, NY (1)
Baylor College of Medicine, TX (1)
Duke University, NC (5)
Harvard University, MA (1)
Indiana University, IN (1)
Mayo Graduate School, MN (1)
Medical College of Wisconsin, WI (1)
North Carolina State University, NC (2)
Ohio State University, OH (1)
Pennsylvania State University, PA (3)
Temple University, PA (1)
Texas A&M University, TX (1)
University of California, Santa Barbara, CA (1)
University of Maryland, Baltimore, MD (1)
University of Miami, FL (1)
University of Michigan, MI (1)
University of Mississippi, MS (1)
University of North Carolina, Chapel Hill, NC (11)
University of Pennsylvania, PA (1)
University of Pittsburgh, PA (1)
University of Rochester, NY (2)
University of South Carolina, SC (1)
University of Texas, Galveston, TX (1)
Virginia Polytechnic Institute & State University, VA (1)
Wake Forest University, NC (3)

Cambridge University, United Kingdom (1)
CEEa University of Western Ontario, Canada (1)
Hebrew University, Jerusalem, Israel (1)
Jinan University, China (1)
Life Science School, Sun Yat-Sen University, China (1)
Ludwig Institute for Cancer Research, Sao Paulo, Brazil (1)
Mahidol University, Bangkok, Thailand (1)
Nanjing Agricultural University, China (1)
Russian Academy of Science Computing, Russia (1)
Swiss Institute of Technology, Switzerland (1)
Tokyo University, Japan (1)
University of Manitoba, Canada (1)
Virology Institute, China (1)
Wuhan University, China (1)

Appendix C11 - Job Placement of Postdoctoral Scholars, 2005-06 through 2009-10

Faculty Positions (17)

UNC Chapel Hill

Assistant Professor
Department of Hematology
Department of Infectious Disease
Lineberger Comprehensive Cancer Center (2)
Research Assistant Professor
Department of Dermatology
Research Associate Professor
UNC (not specified)

Other Institutions

Assistant Professor
Colorado State University
Institute of Microbial Technology, India
Oregon State University
Rosalind Franklin Medical School
University of Miami, Miami, FL
Xavier University, New Orleans, LA
Department of Biology, Georgia State University
Professor
Immunology, Institute of Biophysics, Chinese Academy of Sciences
Sarah Lawrence College, Bronxville, NY
Research Assistant Professor
Duke University
Research Associate Professor
Immunology, Duke University

Non-Faculty Academic Positions (7)

Associate Director of Minority Affairs, Office of Graduate Education, UNC Chapel Hill
Infectious Disease Residency, Internal Medicine, Duke University Medical Center
Research Associate
Cystic Fibrosis Center, UNC Chapel Hill
Department of Biomolecular Chemistry, University of Wisconsin, Madison
Department of Microbiology, University of Iowa
M.D. Anderson Cancer Center
Research Specialist, Lineberger Comprehensive Cancer Center, UNC Chapel Hill

Postdoctoral Positions (9)

Karolinska Institute, Stockholm Sweden
UNC Chapel Hill (4)
UNC Charlotte
Wake Forest University
Vanderbilt University
Postdoc (no information)

Industry (11)

Chief Technology Officer and Co-founder of Emergent, Inc.
Clinical Trials Coordinator, PPD, Inc., Research Triangle Park, NC
Head of Immunology at a Biotech Company
Integrative Product Developer, PPD, Inc., Research Triangle Park, NC
Private Practice, Philadelphia, PA
Research Scientist, Bio-Lex Technologies, NC
Research Scientist, Glaxo Smith Kline, PA
Scientist, Research Triangle Park, NC
Senior Research Scientist, Glaxo Smith Kline, Research Triangle Park, NC
Senior Scientist, Precision Biosciences
Staff Scientist, Migal-Galilee Technology Center, Israel

Government (3)

Research Fellow, Brookhaven National Laboratory
Research Microbiologist, US Army Edgewood Chemical Biological Center, MD
Scientist, NIH

Research Institute (3)

Staff Scientist
Global Vaccines, Inc.
Henry M. Jackson Foundation, Air Force Research Laboratory
International AIDS Vaccine Initiative, New York, NY

Homemaker (1)

Appendix D1 - Faculty Salary Compensation Plan

Microbiology and Immunology Department

Version 2 - January 1, 2010

Tenured/Tenured Track Faculty Salary Compensation Plan

Excellence in teaching and service (at the University, state, and national level) is expected from all faculty members. As recognition for their performance in these areas, Microbiology and Immunology tenured and tenure track faculty may be eligible for a variable salary and variable laboratory component if greater than 50% of their base salary is covered by outsource funding.

Outsource funding includes all funding sources outside any departmental support funds. This includes all grant funding, trust funds, core administrative funds, professorships or any UNC funding that contributes to a faculty member's salary.

Eligibility for Variable Salary Component

Tenured and tenure track faculty covering more than 50% of their **base** salary in the previous fiscal year by outsource funding will be eligible for the variable salary component. The supplemental or current variable component of a faculty member's salary will not be included in this calculation. To determine eligibility for the variable salary component, outsource funding (OF) will be divided by the base salary (B) from the previous fiscal year. $OF/B = \%$

The variable salary component will be paid or applied to a faculty member's salary from their outsource funding, not from state or indirect funds. A faculty member may choose to take a lesser amount or no amount of the variable salary component they are eligible for.

The following scale shows the amount for which a faculty member is eligible based on the percent of base salary covered by outsource funds.

Percent of outsource funding Assistant covering base salary	Variable component
51-60%	\$3,000
61-70%	\$6,000
71-80%	\$9,000
81-90%	\$12,000
> 91%	\$15,000

Examples:

Eligible: A faculty member has a base salary of \$100,000, with 40% of their salary being covered by state funds and 60% by other funds. The 60% effort that is covered from several different salary sources such as, 20% as PI on R01, 10% as Co-PI on R01, 35% on K02 and 5% on a professorship. As 60% of their base salary is covered by outsource funds, this faculty is eligible for \$3,000 in the variable salary component.

Not Eligible: A faculty member has a base salary of \$100,000 where 35% is covered by outsource and 65% by state funds. In this instance only 35% of the faculty's salary is covered by outsource funding which makes them ineligible for the variable salary component.

The variable salary component can increase or decrease as much as \$15,000 per year based on the overall percentage of outsource funding contributing to the faculty member's base salary from the previous fiscal year.

The variable salary will be added to the faculty member's salary at ARP time. The variable salary should not be modified throughout the year if outsource funding were to increase or decrease. The variable salary component would only be determined and calculated once a year at ARP time.

Contingencies

Faculty members who have funding administered in Centers outside of Microbiology and Immunology (M&I) are eligible for the salary component IF the Center's Chair or Director agrees to the salary variable increase.

The faculty member's outsource funding for the upcoming year will be required to be stable and comparable in funding level of the previous fiscal year. If a faculty member's outsource funding for the upcoming year will be dramatically reduce or be unable to absorb the variable salary component then they will not be eligible to receive the variable salary component.

If a faculty member's salary is above the NIH salary cap, then the cost sharing portion of their salary may be paid from a department salary source. If departmental funds are not available then the faculty member may not participate in receiving the variable salary component, unless they have outsource funding that will allow coverage of the cost sharing portion.

If a faculty member has received bridge funding in previous years and has an unpaid balance then all funds need to be repaid before they are eligible to receive the variable salary component.

Variable Laboratory Component

The variable laboratory component are funds given to the faculty member from the department to use towards laboratory operations such as materials, equipment, supplies, travel, food, etc.

Eligibility for Variable Laboratory Component

The department will establish an account in the faculty member's name for them to use and access these funds.

The variable laboratory funds will be used at the discretion of the faculty member to benefit the function and operations of their research laboratory. The department Chair also reserves the right to advise a faculty member to utilize their lab funds for requested materials, equipment, supplies, travel, etc.

The variable laboratory funds will not expire or terminate after a period of time, unless unforeseen financial circumstances at UNC were to arise.

The variable laboratory component will have a cap of \$15,000 and no funds over \$15,000 will be accumulated into the account even if the faculty member is eligible for additional variable laboratory funds.

Any remaining funds of \$15,000 or less after the fiscal year, will rollover to the next fiscal year. No additional funds will be supplemented into a variable laboratory account unless it falls below \$15,000 at the beginning of the next fiscal year (July 1st).

Contingencies

If a faculty member has a University trust account (6 account) with more than \$15,000 then they are NOT eligible for the variable laboratory component.

A faculty member is NOT eligible for the variable laboratory component if their research grants are administered in a department outside of Microbiology and Immunology.

If a faculty member has received bridge funding in previous years and has an unpaid balance, then all funds need to be repaid before they are eligible to receive the variable salary component.

Percent of outsource funding	
<u>covering base salary</u>	<u>Lab variable component</u>
51-60%	\$1,000
61-70%	\$2,000
71-80%	\$3,000
81-90%	\$4,000
> 90%	\$5,000

Appendix D2 - Faculty Honors and Distinctions, 2005-06 through 2009-10

Primary Faculty

Miriam Braunstein

Burroughs Wellcome Fund Investigator in the Pathogenesis of Infectious Disease Award, 2008

Blossom Damania

Ruth and Phillip Hettleman Prize for Artistic and Scholarly Achievement, UNC Chapel Hill, 2008

Burroughs Wellcome Fund Investigator in the Pathogenesis of Infectious Disease Award, 2006

American Heart Association Established Investigator Award, 2006-2011

Jefferson-Pilot Fellow in Academic Medicine, UNC Chapel Hill, 2005

Leukemia & Lymphoma Society Scholar, 2005-2010

Mary Lyon Alumnae Award, Mt. Holyoke College, 2005

Aravinda de Silva

W.R. Kenan research and scholarly sabbatical grant, UNC Chapel Hill, 2006

Bill Goldman

American Society for Microbiology Division F Lecturer, 2010

Jack Griffith

Glenn Award, Glenn Foundation for Medical Research, 2007

Grand Gold Medal of Comenius University, Slovak Republic, 2006

Elected Member, American Academy of Arts and Sciences 2005

Nancy Raab-Traub

Hyman Battle Distinguished Cancer Research Award, 2009

Fellow, American Academy of Microbiology, 2009

Henle Lecture, International Association for the Study of the Epstein-Barr Virus, Guangzhou, Peoples Republic of China, 2008

American Society for Virology State of the Art Lecturer, 2008

Sarah Graham Kenan Distinguished Professor, 2006

Croucher Foundation Speaker, Hong Kong, 2006

Jenny Ting

UNC-Chapel Hill Berryhill Lecture, 2010

National Multiple Sclerosis Society Hall of Fame, 2010

William Rand Kenan Professor of Microbiology & Immunology, UNC Chapel Hill, 2009 - present

Alumni Distinguished Professor of Microbiology & Immunology, UNC Chapel Hill, 1997-2009

Sandler Program in Asthma Research Awardee 2005-2008

Barb Vilen

J.V. Satterfield Research Award, Arthritis Foundation, 2008

Joint Faculty

Ralph Baric

Fellow, American Academy of Microbiology, 2010

Christina Burch

UNC Graduate School Faculty Award for Excellence in Doctoral Mentoring, 2008

Bruce Cairns

Leonard Tow Humanism in Medicine Award, UNC Chapel Hill, 2006

James W. Woods Faculty Award, UNC Chapel Hill, 2005

Jeff Dangl

American Society of Plant Biologists Stephen Hales Prize, 2009

International Society of Plant-Microbe Interactions Director's Prize, 2009

Member, US National Academy of Sciences, 2007

Fellow, American Association for the Advancement of Science, 2005

Mark Heise

Jefferson-Pilot Fellow in Academic Medicine, UNC Chapel Hill, 2008

Marcia Hobbs

University of North Carolina Teaching Excellence Award, 2005

Christian Jobin

Fitterman Basic Research Award, American Gastroenterological Association, 2005

Stan Lemon

John Ender's Award for Contributions in Medical Virology, Infectious Disease Society of America, 2009

Fellow, American Association for the Advancement of Science, 2007

Bruce Witte Annual Lecturer, Hepatitis B Foundation, 2007

David Margolis

Elected Member, American Society for Clinical Investigation, 2005

William J. Way award for contributions to HIV medicine, Duke University School of Medicine, 2005

Silva Markovic-Plese

Distinguished Clinician Award, Eastern North Carolina Chapter, National Multiple Sclerosis Society, 2007

Scott Plevy

Elected Member, American Society for Clinical Investigation, 2007

John Rawls

Pew Scholar in the Biomedical Sciences, Pew Charitable Trust, 2008

Matt Redinbo

Academic Leadership Fellow, UNC Institute for the Arts and Humanities, 2010-2011

Jon Serody

Elizabeth Thomas Endowed Chair in Medicine, Microbiology and Immunology,
2006

Balfour Sartor

Elected Member, American Association of Physicians, 2010
Basic Science Achievement Award, Chrohn's & Colitis Foundation of America,
2009

Appendix D3 - Teaching Assignments in Graduate Courses

Department of Microbiology & Immunology Faculty Teaching Assignments 2005-06 to 2009-10, Part 1 (Immunology & Molecular Biology Courses)															
Faculty	MCRO614 (Immunology)					MCRO712 (Immunology Seminar)					MCRO631 (Molecular Biology)				
	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10'	05-'06	'06-'07	'07-'08	'08-'09	'09-'10'	05-'06	'06-'07	'07-'08	'08-'09	'09-'10
Immunology															
Cairns	X	X	X	X	X										
Clarke				X	X				X						
Collins	X	X	X	X	X										
Flood															
Klapper				X	X		X								
Liu				X	X										
Markovic-Plese							X							X	
Matsushima															
Su	X	X	X		X	X								X	
Tisch						X									
Ting								X							
Vilen	X	X	X												
Wan									X						
Virology															
Abel															
Bachenheimer															
Baric															
Damania															
de Silva															
Dittmer															
Heise															
Johnston															
Kafri															
Margolis															
Newbold															
Pickles															
Raab-Traub															
Swanstrom															
Webster-Cyriaque															
White															
Bacteriology															
Bourret															
Braunstein															
Cotter															
Goldman															
Hobbs															
Kawula															
Miller															
Richardson															
Wolfgang															
Molecular Biology															
Edgell															
Giddings															
Griffith											X	X	X	X	X

Department of Microbiology & Immunology Faculty Teaching Assignments 2005-06 to 2009-10, Part 2 (Virology Courses)

Faculty	MCRO630 (Virology)					MCRO640 (Viral Pathogenesis)					MCRO711 (Virology Seminar)				
	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10'	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10
Immunology															
Cairns															
Clarke															
Collins															
Flood							X	X	X	X					
Klappe															
Liu															
Markovich-Plese															
Matsushima						X									
Su															
Tisch															
Ting															
Vilen															
Wan															
Virology															
Abel															X
Bachenheimer	X	X	X	X	X	X	X	X	X	X				X	X
Baric	X	X	X	X	X										
Damania	X	X	X	X	X			X	X		X	X			
de Silva					X	X		X	X	X					
Dittmer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Heise						X		X	X	X					
Johnston	X	X	X	X	X										
Kafri	X	X	X	X	X										
Margolis											X	X	X	X	X
Newbold	X	X	X	X	X										
Pickles	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Raab-Traub	X	X	X	X	X										
Swanstrom	X	X	X	X	X	X		X	X	X					
Webster-Cyriaque	X	X	X	X	X	X			X				X		
White	X	X	X			X					X				
Bacteriology															
Bourret						X									
Braunstein						X									
Cotter															
Goldman															
Hobbs															
Kawula															
Miller															
Richardson															
Wolfgang						X									
Molecular Biology															
Edgell															
Giddings															
Griffith															

Department of Microbiology & Immunology Faculty Teaching Assignments 2005-06 to 2009-10, Part 3 (Bacteriology & Writing Courses)

Faculty	MCRO635 (Bacteriology)					MCRO710 (Bacteriology Seminar)					MCRO795 (Writing)				
	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10'	05-'06	'06-'07	'07-'08	'08-'09	'09-'10'	05-'06	'06-'07	'07-'08	'08-'09	'09-'10
Immunology															
Cairns															
Clarke															X
Collins											X	X	X	X	
Flood															
Klapper															
Liu															
Markovich-Plese															
Matsushima															
Su															
Tisch															
Ting															
Vilen															
Wan															
Virology															
Abel															
Bachenheimer															
Baric															
Damania															
de Silva				X	X				X						X
Dittmer															
Heise															
Johnston															
Kafri															X
Margolis															
Newbold															X
Pickles															
Raab-Traub															
Swanstrom															
Webster-Cyriaque															
White									X						
Bacteriology															
Bourret		X		X	X					X	X	X	X	X	X
Braunstein		X		X	X	X				X					
Cotter					X										
Goldman				X	X										
Hobbs											X	X	X	X	X
Kawula		X		X	X		X			X					
Miller				X	X										
Richardson					X										
Wolfgang		X		X	X			X							
Molecular Biology															
Edgell											X	X	X	X	X
Giddings															X
Griffith															

Appendix D4 - Thesis Supervision & Thesis Committee Membership

Theses Supervised and Thesis Committee Participation by Primary Microbiology & Immunology Faculty, 2005-06 to 2009-10

Faculty	Microbiology & Immunology Degrees Earned		Ph.D. Degrees Earned					M.S. Degree & Information & Library Science	Microbiology & Immunology Thesis Committees
	Ph.D.	M.S.	Biochemistry & Biophysics	Biomedical Engineering	Genetics & Molecular Biology	Neurobiology	Oral Biology	Physiology	
Abel	N/A ^a								0
Bachenheimer	0				1				7
Bourret	0								11
Braunstein	3	1							7
Clarke	3								19
Collins	0		2						0
Cotter	N/A								5
Damania	5								23
de Silva	4	1							7
Dittmer	0				1				16
Edgell	0								0
Giddings	1			1				1	0
Goldman	N/A								4
Griffith	0		1		1				0
Johnston	5								0
Kafri	0				1				0
Kawula	4								13
Klapper	0								0
Matsushima	3					1	1		12
Moody	N/A								0
Moorman	N/A								0
Newbold	0								0
Pickles	1								5
Raab-Traub	3								11
Richardson	N/A								8
Su	2				2.5				22
Tamayo	N/A								2
Ting	7				5.5	1	1	1	14
Tisch	3						1		10
Vilen	3	2							10
Wan	N/A								4
White	0	1							3
Wolfgang	0	2							6

^aN/A indicates Not Applicable because faculty joined department too recently for a student to have completed degree.

Appendix E1 - Director of Graduate Studies Annual Timeline

RBB
6/16/10

Annual Timeline Director of Graduate Studies Actions Department of Microbiology & Immunology

Year round

- Attend BBSP executive committee meetings at 2 pm on 1st & 3rd Wednesdays
- Confer with Student Services Manager about current student issues as needed

January

- Revise BBSP recruiting poster/materials
- Attend BBSP Friday recruiting lunches in January/February/March
- Check with \geq 6th year students and advisors concerning projected graduation timelines.

February

- Sign up new BBSP students who have done a summer rotation into department before March 1. Note that they can do a 4th spring rotation if desired. Talk about class requirements, TA history, and answer questions. Sign form only after PI has signed.
- Nominate department graduate students and postdocs to participate in University Research Day

March

April

- Confirm all 3rd year students have had thesis project approval meeting

May

- Attend 1.5 hour semi-annual UNC DGS retreat
- Sign up new BBSP students into department. Talk about class requirements, TA history, and answer questions. Sign form only after PI has signed.
- Check with \geq 6th year students and advisors concerning projected graduation timelines.

June

- Host BBSP rotation talks/welcome to department
- Update department entry in Graduate Record

July

August

- Attend annual UNC Graduate School information meeting
- Represent department at BBSP course orientation
- Organize & lead BBSP department orientation
- Help Dixie organize department faculty talks for BBSP students
- Solicit student nominations and pick new representative for Graduate Studies Advisory Committee
- Inform 3rd year students of thesis committee and thesis project approval timeline.
- Remind \geq 4th year students of need to hold annual thesis committee meeting

September

- Check with \geq 6th year students and advisors concerning projected graduation timelines.

October

- Remind 3rd year students of thesis committee deadline.

November**December**

- Attend half-day semi-annual UNC DGS retreat
- Confirm all 3rd year students have thesis committees. Remind all 3rd year students of March 31 thesis approval deadline
- Check with \geq 4th year students about thesis committee meetings

Annual Timeline 2010
Department of Microbiology & Immunology Written & Oral Preliminary Exams

January

- *Meet with any retake track students about oral exam*
- In conjunction with students, set date(s) and time(s) for February written exam organizational meeting. Reserve room(s)
- Revise/update meeting documents

February

- Send reminder message one week before meeting. Make copies of handouts.
- Meet with students. Go over written exam guidelines, how to find a topic, topic selection meeting document, and tips for writing a successful proposal.
- Send email to faculty indicating that topic selection period has begun. Be sure to include any faculty not on departmental listserv. Attach exam & topic meeting guidelines
- *Be sure oral exams are scheduled for students on fast retake track*

March

- Send email to students asking about progress on topic selection
- Send exam & topic meeting guidelines to non-departmental secondary reviewers.

April

- Send email to students two weeks before deadline asking about progress. Follow up with anyone having difficulties.
- Topic selection deadline is April 26, 2010
- Compile master list of students, advisors, topics, committee members

May

- Exam begins on May 10, 2010
- When exam starts, send email message to faculty announcing start of exam period, students should have no other commitments during that time, reminder of written exam rules, and seeking common readers.
- After reviewers are known, set Study Section date. Important to set date as soon as possible to maximize faculty attendance.
- Send email to students after 1.5 weeks, encouraging them to talk to reviewers

June

- Send email to students after three weeks, encouraging them to talk to reviewers
- Send due date reminder email to students at 4.5 weeks
- Exam ends on June 14, 2010
- Provide instructions to primary/secondary and common reviewers, including early warning of problems so can arrange additional reviewers.

- Announce study section time and date to all faculty; anyone can attend even if not an assigned reviewer. Advisors are encouraged to attend but cannot participate in discussion about their students.

July

- Get extra reviewers for any proposals in danger of not passing
- Send reminder email to reviewers one week before study section
- Send warning notices to research advisors of students who might not pass
- Collect written reviews and preliminary grades
- Prepare for Study Section meeting (order of review, warn leadoff reviewer) and aftermath (form letters and Incomplete instructions ready)
- Study section meeting on July 16, 2010
- Notify students of decisions and send out reviews (cc Dixie). Decision letters should mention thesis committee and project approval deadlines
- Meet with students who failed written exam; also talk to mentors and reviewers. *Decide if any students qualify for fast track retake.* Be sure a plan is in place for the others to succeed next year.
- In conjunction with students who passed written exam, set date and time for oral exam organizational meeting. Reserve room.
- Revise/update and photocopy oral prelim meeting documents
- Meet with students. Go over oral exam guidelines and tips for a successful oral exam.
- In 2010, get feedback on new exam format and topic selection guidelines to modify for next year.
- Send email to faculty informing them that oral exams will begin soon, asking for oral exam common reviewers, and include oral exam guidelines.

August

- *Make fast track retake offers as early as possible.*
- Assign common reviewers for oral exam committees. Inform students & Dixie.
- Arrange study section to grade revisions of proposals graded Incomplete

September/October

- Meet with students who convert Incomplete to Pass about oral exam
- Check periodically with Dixie/students to see if everyone has arranged/finished oral exams
- Compile final list of faculty participation
- Talk about prelims with second year students in Mcro795
- Talk about prelims individually with any second year students not in Mcro795

November

- *Start any fast track retake written exams*

December

- *Decide pass/fail for fast track retake written exams*

Appendix E3 - UNC Chapel Hill Research Core Facilities

ADME Mass Spectrometry Center

<https://www.med.unc.edu/tidwelllab/adme/adme-mass-spectrometry-center/>

Analytical Chemistry & Pharmacology

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=3>

Anatomic Pathology Research Core Lab

<http://www.med.unc.edu/wrkunits/2depts/patholog/aprc/>

Animal Clinical Chemistry and Gene Expression Laboratories

<http://www.med.unc.edu/anclinic/>

Animal Histopathology Core Facility (Mice)

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=12>

Animal Models Core (Transgenic and Knockout Mice)

<http://www.med.unc.edu/amc>

Animal Studies Core

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=1>

Bacterial Artificial Chromosome (BAC) Engineering Core Facility

<http://www.med.unc.edu/neuroscience/core-facilities/bac-engineering>

Biomedical Research Imaging Center (BRIC): Human Imaging Services

<http://bric.unc.edu/services/human-imaging-1>

Biomedical Research Imaging Center (BRIC): Image Analysis Core

<http://bric.unc.edu/services/image-analysis>

Biomedical Research Imaging Center (BRIC): Small Animal Imaging Facility

<http://bric.unc.edu/services/animal-imaging>

Biomolecular X-ray Crystallography Facility

<http://xtal.med.unc.edu/XRAY/>

Biospecimen Processing Facility

<https://genome.unc.edu/bsp/index.html>

Biostatistics & Clinical Data Management

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=5>

Cell and Developmental Biology Microscopy Imaging Facility

<http://www-cellbio.med.unc.edu/grad/depttest/cmifhome.htm>

Cellular Metabolism and Transport Core, School of Pharmacy
<http://pharmacy.unc.edu/uncsop/labs/the-unc-cellular-metabolism-and-transport-core>

Center for AIDS Research: Clinical Pharmacology and Analytical Chemistry Core
http://cfar.med.unc.edu/core_clinpharm.htm

Center for AIDS Research: Virology Core
http://cfar.med.unc.edu/core_virology.htm

Center for Gastrointestinal Biology and Disease (CGIBD): Gnotobiotic Core
<https://cgibd.med.unc.edu/gnotobiotic.php>

Center for Gastrointestinal Biology and Disease (CGIBD): Histology Core
<https://cgibd.med.unc.edu/histology.php>

Center for Gastrointestinal Biology and Disease (CGIBD): Immunotechnologies Core
<https://cgibd.med.unc.edu/immunotechnology.php>

Chapel Hill Analytical and Nanofabrication Laboratory (CHANL)
<http://www.chanl.unc.edu/>

Chemistry Department Electronics Facility
<http://www.chem.unc.edu/facilities/index.html?display=electronics&content=electronics>

Chemistry Department Instrument and Glass Shops
http://www.chem.unc.edu/facilities/index.html?display=glass_shop&content=glass_shop

Chemistry Department Mass Spectrometry Facility
http://www.chem.unc.edu/facilities/index.html?display=mass_spec&content=mass_spec

Chemistry Department NMR Facility
<http://www.chem.unc.edu/facilities/index.html?display=nmr&content=nmr>

Chemistry Department X-Ray Crystallography Facility
<http://www.chem.unc.edu/facilities/index.html?display=x-ray&content=x-ray>

Confocal and Multiphoton Imaging Facility
<http://www.med.unc.edu/neuroscience/core-facilities/confocal-and-multiphoton-imaging>

Cytokine Analysis Facility
<http://www.dent.unc.edu/research/facilities/cytokine.htm>

Digital Imaging Facility
<http://cancer.med.unc.edu/dif/>

Electron Microscopy Facility

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=8>

Flow Cytometry Core Facility

<http://flowcytometry.med.unc.edu/>

Functional Genomics Core

<http://www.med.unc.edu/neuroscience/core-facilities/expression-profiling-and-snp-genotyping-affymetrix>

Gene Therapy Center (GTC): Vector Core and Human Applications Laboratories

<http://genetherapy.unc.edu/jvl.htm>

Genomics and Bioinformatics Core

<http://cancer.med.unc.edu/genomicscore/>

High-Throughput Sequencing Facility

<http://www.unc.edu/htsf/>

Histology Research Core Facility

<http://www.med.unc.edu/physiolo/research/histology-facility/>

Human Embryonic Stem Cell Core Facility

<http://www.med.unc.edu/neuroscience/core-facilities/human-embryonic-stem-cell>

Immunology (Monoclonal Antibodies) Core Facility

<http://mabs.unc.edu/>

In Situ Hybridization Core Facility

<http://www.med.unc.edu/neuroscience/core-facilities/in-situ-hybridization>

Laboratory for Molecular Modeling, School of Pharmacy

Website under construction <http://mml.unc.edu/>

Lenti-shRNA Core Facility

<http://research.unc.edu/shRNA/index.html>

Macromolecular Interactions Facility

<http://hekto.med.unc.edu:8080/macinfac/>

Mammalian Genotyping Core

<http://mgc.unc.edu/>

Metabolomics Laboratory (by NMR)

<http://www.metabolomics.unc.edu/index.htm>

Michael Hooker Microscopy Facility

<http://mhmicroscopy.med.unc.edu/>

Microbiome Core Facility

<http://www.med.unc.edu/microbiome/>

Microprotein Sequencing and Peptide Synthesis Facility

<http://www.med.unc.edu/microimm/pepsyn/>

Microscopy Services Laboratory

<http://www.med.unc.edu/microscopy/>

Mouse Cardiovascular Models Core

<http://www.med.unc.edu/mhi/mcvcorelab>

Mutant Mouse Regional Resource Center

<http://www.med.unc.edu/mmrc/>

Neurodevelopmental Disorders Research Center (NDRC): Developmental
Neuroimaging Laboratory

http://www.fpg.unc.edu/~ndrc/core_services/neuroimaging_laboratory.cfm

Neurodevelopmental Disorders Research Center (NDRC): Human Behavioral
Phenotyping Laboratory

http://www.fpg.unc.edu/~ndrc/core_services/human_behavioral_laboratory.cfm

Neurodevelopmental Disorders Research Center (NDRC): Mouse Behavioral
Phenotyping Core

http://www.fpg.unc.edu/~ndrc/core_services/mouse_behavioral_laboratory.cfm

North Carolina Translational and Clinical Sciences Institute (NC TraCS): Biomedical
Informatics

http://tracs.unc.edu/index.php?option=com_content&view=article&id=154&Itemid=216

North Carolina Translational and Clinical Sciences Institute (NC TraCS): Biostatistics

http://tracs.unc.edu/index.php?option=com_content&view=article&id=202&Itemid=263

Nucleic Acids Core Facility

<http://cancer.med.unc.edu/nacf/>

Oligonucleotide Synthesis Core Facility

<http://www.med.unc.edu/olioli/index.htm>

Oral Microbiology Laboratory

<http://www.dent.unc.edu/research/facilities/oralmicrobiology.htm>

Pharmacometrics Core

<http://pharmacy.unc.edu/labs/pharmacometric-core>

Rapid Case Ascertainment

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=17>

RNAi High-Throughput Screening Facility

<http://cancer.unc.edu/rnaiscreeningfacility/index.html>

School of Pharmacy NMR Facility

<http://pharmacy.unc.edu/labs/nmr-facility>

Systems-Proteomics Center

<http://www.med.unc.edu/sysprot>

The R. L. Juliano Structural Bioinformatics Core Facility

<http://www.med.unc.edu/csb/SBI/index.html>

Tissue Culture Facility

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=18>

Tissue Procurement Core Facility

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=19>

Translational Pathology Core Facility

<http://cancer.med.unc.edu/research/cores/facility.asp?facilityID=21>

UNC Biomolecular NMR Laboratory

<http://hekto.med.unc.edu:8080/NMR/>

UNC Center for Bioinformatics

<http://bioinformatics.unc.edu/>

UNC Michael Hooker Proteomics Center

<http://proteomics.unc.edu/>

UNC Nutrition Obesity Research Center (NORC): Animal Metabolism & Phenotyping

http://www.sph.unc.edu/cnrc/core_e.html

UNC Nutrition Obesity Research Center (NORC): Communication for Health Applications and Intervention (CHAI) (Nutrition Behavioral Intervention) Core

http://www.sph.unc.edu/cnrc/core_d.html

UNC Nutrition Obesity Research Center (NORC): Molecular Biology and Nutritional Biochemistry Core

http://www.sph.unc.edu/cnrc/core_c.html

UNC Nutrition Obesity Research Center (NORC): Nutrition Epidemiology Core

http://www.sph.unc.edu/cnrc/core_b.html

UNC-CH Genome Analysis Facility

<http://dnaseq.unc.edu/gafsite/Main.asp>

W. M. Keck Laboratory for Atomic Imaging and Manipulation

<http://www.physics.unc.edu/project/lcgin/www1/lab/index.html>

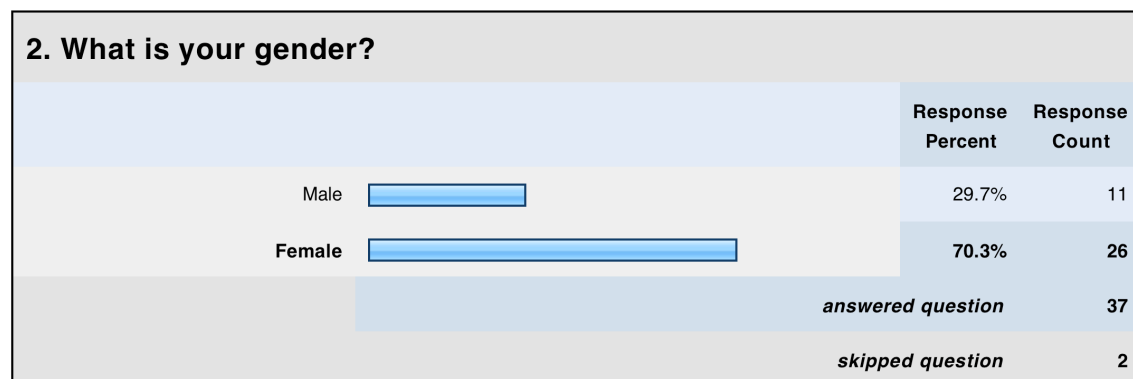
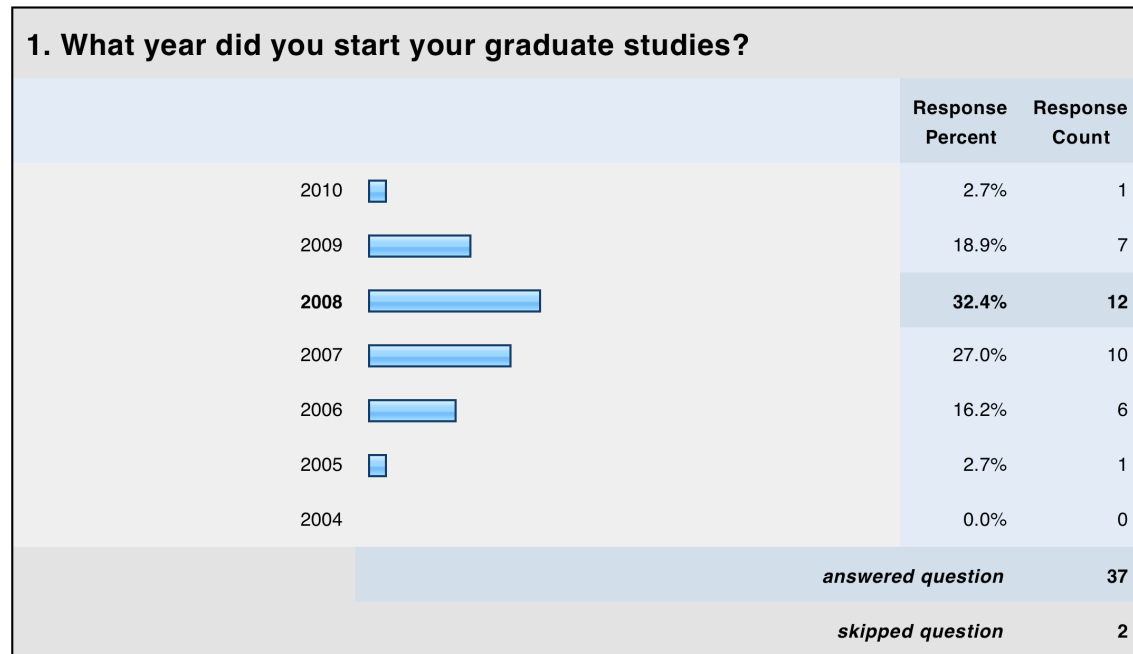
Zebrafish Aquaculture Core Facility

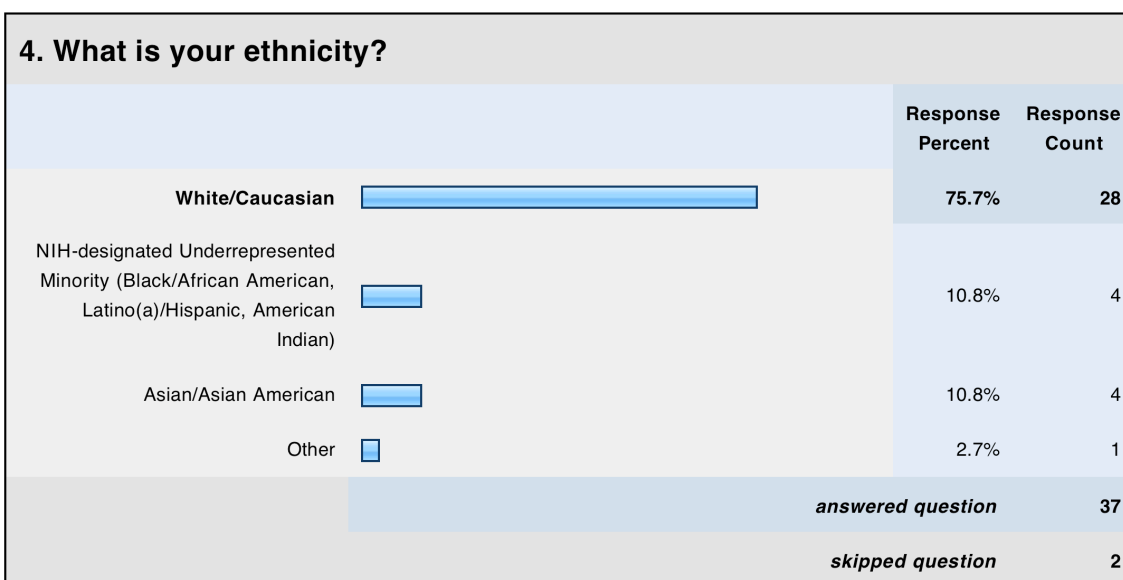
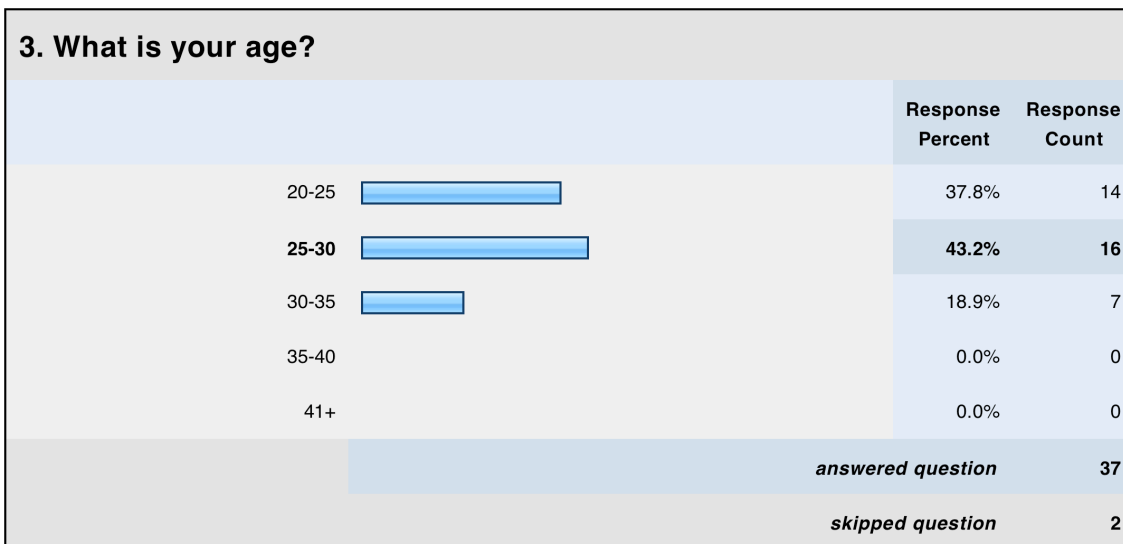
<http://www.med.unc.edu/physiolo/research/zebrafish-facility>

Appendix F1 - Graduate Student Survey Results



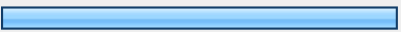

Note to reader: The SurveyMonkey.com output format for a summary report of an entire survey does not allow display of open-ended responses. Instead, the output for open-ended questions is displayed as the percent response. Therefore, the complete survey report is shown first, followed by individual responses to student survey questions 7, 8, 12, 15, 22, 24, 29, 31, and 33. All collected responses are included.

Graduate Student Survey



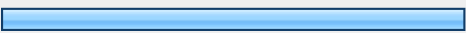






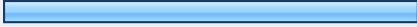

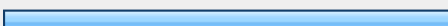


5. How many years of lab work experience did you have prior to starting graduate school?

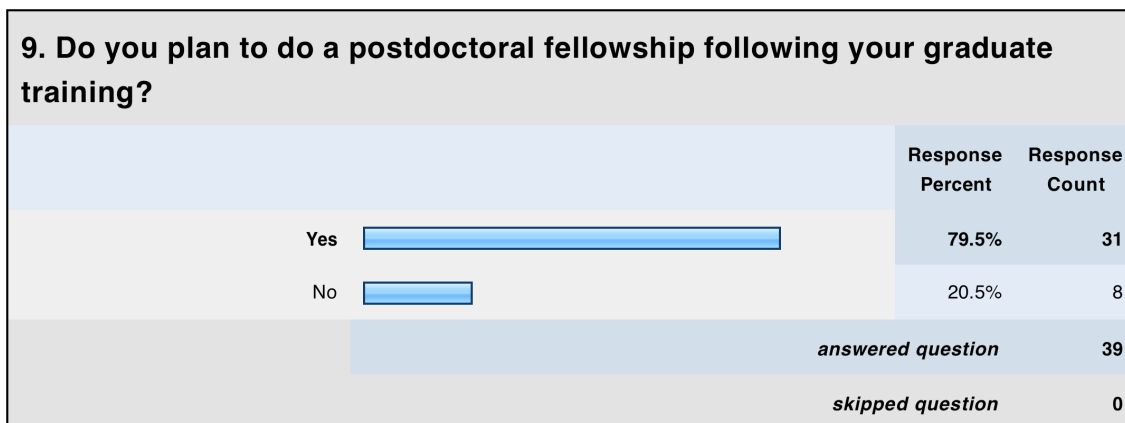
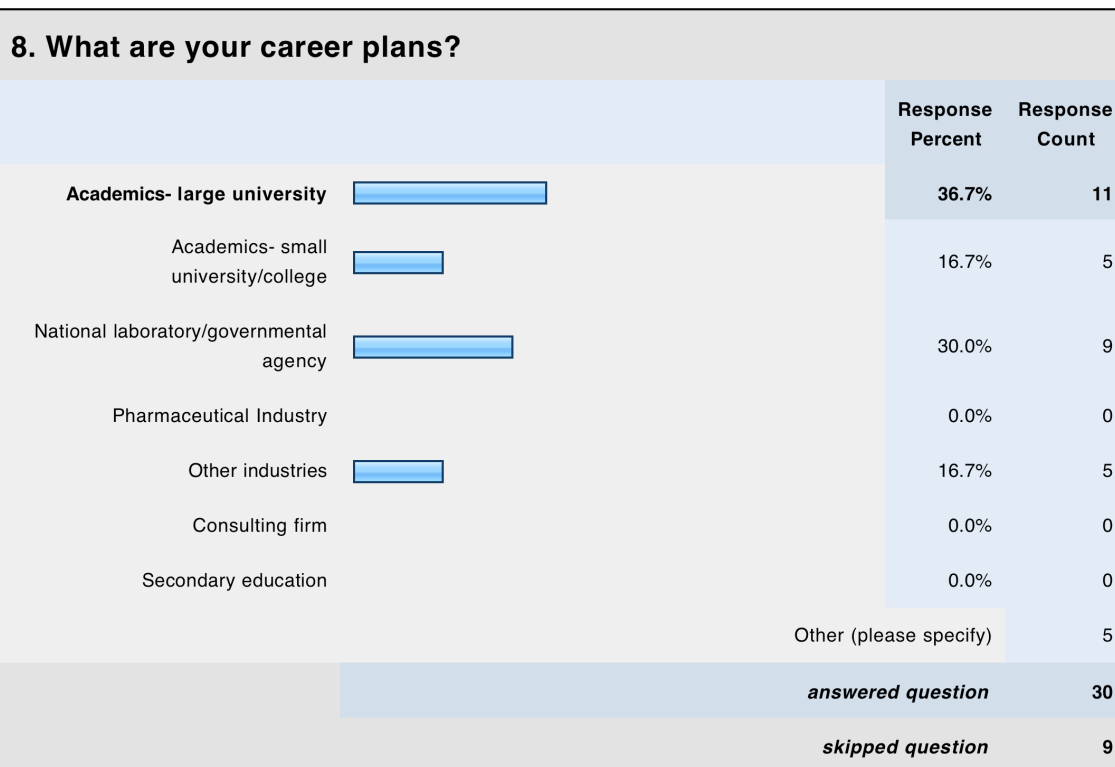
	Response Percent	Response Count
0 yrs 	5.4%	2
1 yr 	10.8%	4
2-5 yrs 	75.7%	28
5-10 yrs 	8.1%	3
11+ yrs	0.0%	0
In what capacity?		23
answered question		37
skipped question		2

6. From which of the following sources are you receiving financial assistance during your graduate training?

	Response Percent	Response Count
Graduate school fellowship 	20.0%	7
External fellowship 	14.3%	5
GSR	0.0%	0
Support from research mentor 	88.6%	31
Other (please specify)		5
answered question		35
skipped question		4

7. Concerning the scientific publications from your ongoing graduate training, please indicate:

		Response Percent	Response Count
Total number of publications (any author)		88.2%	30
Number of first-author publications		82.4%	28
Number of review articles		79.4%	27
Number of research articles		76.5%	26
Number of manuscripts in submission or review		85.3%	29
Number of abstracts		82.4%	28
Number of conferences attended		94.1%	32
<i>answered question</i>			34
<i>skipped question</i>			5


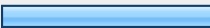




10. How important were the following to your deciding to join the Microbiology and Immunology department?						
	Very Important	Important	Unimportant	Very Unimportant	Rating Average	Response Count
PI presentations during orientation	19.4% (6)	29.0% (9)	45.2% (14)	6.5% (2)	1.00	31
PI appointment in department	38.7% (12)	35.5% (11)	25.8% (8)	0.0% (0)	1.00	31
Pre-graduate school influence(s)	34.4% (11)	28.1% (9)	31.3% (10)	6.3% (2)	1.00	32
Departmental requirements	6.5% (2)	38.7% (12)	41.9% (13)	12.9% (4)	1.00	31
Overall interest in microbiology	81.3% (26)	18.8% (6)	0.0% (0)	0.0% (0)	1.00	32
Department reputation	40.6% (13)	46.9% (15)	12.5% (4)	0.0% (0)	1.00	32
answered question						32
skipped question						7

11. Rank how satisfied you were with the following:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Number of M&I department labs accepting rotation students.	50.0% (16)	43.8% (14)	3.1% (1)	3.1% (1)	1.00	32
Usefulness of rotation reports.	6.5% (2)	61.3% (19)	25.8% (8)	6.5% (2)	1.00	31
Process of rotation reports.	3.2% (1)	61.3% (19)	29.0% (9)	6.5% (2)	1.00	31
Ability to keep informed about M&I department requirements.	24.2% (8)	66.7% (22)	0.0% (0)	9.1% (3)	1.00	33
Ability to keep informed about M&I events/seminars.	42.4% (14)	51.5% (17)	3.0% (1)	3.0% (1)	1.00	33
Ability to meet the department coursework requirements.	27.3% (9)	66.7% (22)	3.0% (1)	3.0% (1)	1.00	33
Ease of transition into the Microbiology and Immunology department.	36.4% (12)	60.6% (20)	0.0% (0)	3.0% (1)	1.00	33
answered question						33
skipped question						6

12. Please make any additional comments or suggestions in regards to the first year related to the M&I department:	
	Response Count
	6
<i>answered question</i>	6
<i>skipped question</i>	33

13. Rate your coursework satisfaction:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
How satisfied are you with the number of courses required?	25.0% (8)	65.6% (21)	6.3% (2)	3.1% (1)	1.00	32
How satisfied are you with the number of courses offered (versus the number required- enough variety)?	13.3% (4)	56.7% (17)	23.3% (7)	6.7% (2)	1.00	30
<i>answered question</i>						32
<i>skipped question</i>						7

14. Do you think that students should be required to take certain courses?		
	Response Percent	Response Count
Yes 	60.0%	18
No 	40.0%	12
<i>answered question</i>		30
<i>skipped question</i>		9

15. Are there other areas or topics on which you think courses should be offered?		
	Response Percent	Response Count
Yes 	44.8%	13
No 	55.2%	16
If yes, what?		13
answered question		29
skipped question		10

16. Rank your satisfaction with MCRO614 Immunobiology.						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Quantity of writing exercises.	5.0% (1)	70.0% (14)	15.0% (3)	10.0% (2)	1.00	20
Quality of writing exercises.	5.0% (1)	70.0% (14)	15.0% (3)	10.0% (2)	1.00	20
Quantity of reading journal articles.	5.0% (1)	80.0% (16)	5.0% (1)	10.0% (2)	1.00	20
Quality of selected journal articles.	10.0% (2)	75.0% (15)	5.0% (1)	10.0% (2)	1.00	20
Organization of the classes (No. of instructors, format, etc.).	5.0% (1)	85.0% (17)	5.0% (1)	5.0% (1)	1.00	20
Depth of the material covered.	20.0% (4)	55.0% (11)	10.0% (2)	15.0% (3)	1.00	20
Course modification on student feedback.	5.3% (1)	78.9% (15)	10.5% (2)	5.3% (1)	1.00	19
answered question						20
skipped question						19

17. Rank your satisfaction with MCRO630 Virology:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Quantity of writing exercises.	30.8% (4)	53.8% (7)	15.4% (2)	0.0% (0)	1.00	13
Quality of writing exercises.	15.4% (2)	69.2% (9)	15.4% (2)	0.0% (0)	1.00	13
Quantity of reading journal articles.	15.4% (2)	61.5% (8)	23.1% (3)	0.0% (0)	1.00	13
Quality of selected journal articles.	23.1% (3)	53.8% (7)	23.1% (3)	0.0% (0)	1.00	13
Organization of the classes (No. of instructors, format, etc.).	23.1% (3)	53.8% (7)	15.4% (2)	7.7% (1)	1.00	13
Depth of the material covered.	15.4% (2)	69.2% (9)	15.4% (2)	0.0% (0)	1.00	13
Course modification on student feedback.	10.0% (1)	80.0% (8)	10.0% (1)	0.0% (0)	1.00	10
<i>answered question</i>						13
<i>skipped question</i>						26

18. Rank your satisfaction with MCRO635 Microbial Pathogenesis I:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Quantity of writing exercises.	28.6% (4)	71.4% (10)	0.0% (0)	0.0% (0)	1.00	14
Quality of writing exercises.	42.9% (6)	57.1% (8)	0.0% (0)	0.0% (0)	1.00	14
Quantity of reading journal articles.	42.9% (6)	50.0% (7)	7.1% (1)	0.0% (0)	1.00	14
Quality of selected journal articles.	35.7% (5)	57.1% (8)	7.1% (1)	0.0% (0)	1.00	14
Organization of the classes (No. of instructors, format, etc.).	42.9% (6)	42.9% (6)	14.3% (2)	0.0% (0)	1.00	14
Depth of the material covered.	42.9% (6)	50.0% (7)	7.1% (1)	0.0% (0)	1.00	14
Course modification on student feedback.	23.1% (3)	69.2% (9)	7.7% (1)	0.0% (0)	1.00	13
<i>answered question</i>						14
<i>skipped question</i>						25

19. Rank your satisfaction with MCRO640 Microbial Pathogenesis II:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Quantity of writing exercises.	28.6% (4)	64.3% (9)	7.1% (1)	0.0% (0)	1.00	14
Quality of writing exercises.	42.9% (6)	57.1% (8)	0.0% (0)	0.0% (0)	1.00	14
Quantity of reading journal articles.	21.4% (3)	64.3% (9)	14.3% (2)	0.0% (0)	1.00	14
Quality of selected journal articles.	42.9% (6)	50.0% (7)	7.1% (1)	0.0% (0)	1.00	14
Organization of the classes (No. of instructors, format, etc.).	28.6% (4)	57.1% (8)	14.3% (2)	0.0% (0)	1.00	14
Depth of the material covered.	57.1% (8)	35.7% (5)	7.1% (1)	0.0% (0)	1.00	14
Course modification on student feedback.	16.7% (2)	66.7% (8)	16.7% (2)	0.0% (0)	1.00	12
	answered question					14
	skipped question					25

20. Rank your satisfaction with MCRO795 Research Concepts (Grant Writing):						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Quantity of writing exercises.	19.2% (5)	73.1% (19)	3.8% (1)	3.8% (1)	1.00	26
Quality of writing exercises.	23.1% (6)	38.5% (10)	34.6% (9)	3.8% (1)	1.00	26
Quantity of reading journal articles.	8.7% (2)	60.9% (14)	21.7% (5)	8.7% (2)	1.00	23
Quality of selected journal articles.	8.7% (2)	60.9% (14)	21.7% (5)	8.7% (2)	1.00	23
Organization of the classes (No. of instructors, format, etc.).	8.0% (2)	52.0% (13)	32.0% (8)	8.0% (2)	1.00	25
Depth of the material covered.	7.7% (2)	53.8% (14)	30.8% (8)	7.7% (2)	1.00	26
Course modification on student feedback.	13.0% (3)	52.2% (12)	26.1% (6)	8.7% (2)	1.00	23
	answered question					26
	skipped question					13

21. Rank your satisfaction with MCRO710-712 Seminar/Tutorials:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Quantity of writing exercises.	9.1% (2)	72.7% (16)	13.6% (3)	4.5% (1)	1.00	22
Quality of writing exercises.	13.6% (3)	63.6% (14)	22.7% (5)	0.0% (0)	1.00	22
Quantity of reading journal articles.	18.2% (4)	77.3% (17)	4.5% (1)	0.0% (0)	1.00	22
Quality of selected journal articles.	22.7% (5)	63.6% (14)	13.6% (3)	0.0% (0)	1.00	22
Organization of the classes (No. of instructors, format, etc.).	17.4% (4)	56.5% (13)	26.1% (6)	0.0% (0)	1.00	23
Depth of the material covered.	24.0% (6)	60.0% (15)	16.0% (4)	0.0% (0)	1.00	25
Course modification on student feedback.	30.0% (6)	55.0% (11)	15.0% (3)	0.0% (0)	1.00	20
answered question						25
skipped question						14

22. Please make any additional comments or suggestions in regards to courses/coursework:	
	Response Count
	5
answered question	5
skipped question	34

23. Rank your satisfaction with the following:

	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Benefit of student seminars in helping to improve scientific presentation skills.	45.2% (14)	48.4% (15)	6.5% (2)	0.0% (0)	1.00	31
Quality of the departmental seminars (MCRO701/02).	18.8% (6)	62.5% (20)	15.6% (5)	3.1% (1)	1.00	32
Opportunities to present your research in the department other than student seminar (e.g. Research in Progress seminars, in lab, etc.).	41.9% (13)	51.6% (16)	6.5% (2)	0.0% (0)	1.00	31
Opportunities to present your research outside of the department (e.g. UNC, local, national or international conferences).	20.0% (6)	63.3% (19)	13.3% (4)	3.3% (1)	1.00	30
Availability of your PI to meet with you.	59.4% (19)	28.1% (9)	12.5% (4)	0.0% (0)	1.00	32
Quality of mentorship from your PI.	53.1% (17)	34.4% (11)	12.5% (4)	0.0% (0)	1.00	32
Quality of mentorship from other faculty in the department.	46.9% (15)	43.8% (14)	6.3% (2)	3.1% (1)	1.00	32
Communication from the graduate student advisor on requirements and policy changes.	35.5% (11)	45.2% (14)	19.4% (6)	0.0% (0)	1.00	31
Opportunities to write manuscripts.	34.5% (10)	58.6% (17)	6.9% (2)	0.0% (0)	1.00	29
Opportunities to write grants.	20.0% (6)	63.3% (19)	16.7% (5)	0.0% (0)	1.00	30
Usefulness of the ethics training.	3.2% (1)	54.8% (17)	29.0% (9)	12.9% (4)	1.00	31
Opportunities for students to receive training in BSL3.	38.5% (10)	42.3% (11)	19.2% (5)	0.0% (0)	1.00	26
Student access to core facilities and shared equipment.	38.7% (12)	61.3% (19)	0.0% (0)	0.0% (0)	1.00	31
Training on use of core facilities and shared equipment.	25.8% (8)	54.8% (17)	16.1% (5)	3.2% (1)	1.00	31
Opportunities to collaborate with	32.3% (10)	61.3% (19)	6.5% (2)	0.0% (0)	1.00	31



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Others in the department.						
Opportunities to collaborate with others at the university.	24.1% (7)	62.1% (18)	13.8% (4)	0.0% (0)	1.00	29
<i>answered question</i>						32
<i>skipped question</i>						7



24. Please make any additional comments or suggestions in regards to research training:

	Response Count
	5
<i>answered question</i>	5
<i>skipped question</i>	34

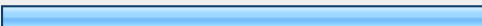

25. Did you follow the old format or new format (current second years) of the written preliminary exam?

	Response Percent	Response Count
New 	57.1%	16
Old 	42.9%	12
<i>answered question</i>		28
<i>skipped question</i>		11

26. Do you feel that there were adequate preparation resources available?

	Response Percent	Response Count
Yes 	60.7%	17
No 	39.3%	11
<i>answered question</i>		28
<i>skipped question</i>		11

27. Do you feel that there was adequate time to write the proposal?

	Response Percent	Response Count
Yes 	92.9%	26
No 	7.1%	2
<i>answered question</i>		28
<i>skipped question</i>		11

28. Rank your satisfaction with the following:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Process of the topic selection committee meeting.	14.3% (4)	64.3% (18)	14.3% (4)	7.1% (2)	1.00	28
Method of selecting topic selection committee members/proposal readers.	14.3% (4)	67.9% (19)	14.3% (4)	3.6% (1)	1.00	28
Topic selection guidelines and restrictions (in/out of field, degree of relatedness to personal/lab research).	11.1% (3)	37.0% (10)	37.0% (10)	14.8% (4)	1.00	27
Receptiveness of faculty for feedback and assistance during the prelim process.	39.3% (11)	39.3% (11)	17.9% (5)	3.6% (1)	1.00	28
Availability of faculty for feedback and assistance during the prelim process.	35.7% (10)	42.9% (12)	17.9% (5)	3.6% (1)	1.00	28
Objectiveness and fairness of evaluation.	25.9% (7)	59.3% (16)	11.1% (3)	3.7% (1)	1.00	27
Time between the written exam and the oral exam completion.	26.1% (6)	52.2% (12)	21.7% (5)	0.0% (0)	1.00	23
Method of selecting your orals committee members.	23.8% (5)	61.9% (13)	14.3% (3)	0.0% (0)	1.00	21
Orals committee meeting process.	29.4% (5)	58.8% (10)	11.8% (2)	0.0% (0)	1.00	17
Usefulness of the preliminary exam format for your current research project.	10.7% (3)	50.0% (14)	21.4% (6)	17.9% (5)	1.00	28
Usefulness of the preliminary exam format for your own scientific development.	25.0% (7)	53.6% (15)	14.3% (4)	7.1% (2)	1.00	28
answered question						28
skipped question						11

29. Please make any additional comments or suggestions about the qualifying exam:

	Response Count
	6
<i>answered question</i>	6
<i>skipped question</i>	33

30. Rank your satisfaction with the following:





	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Variety of options/opportunities to teach.	10.3% (3)	75.9% (22)	13.8% (4)	0.0% (0)	1.00	29
Amount of time you are required to devote to TAing.	10.3% (3)	75.9% (22)	10.3% (3)	3.4% (1)	1.00	29
Timing of the TAing requirement (2nd and 3rd year).	14.3% (4)	75.0% (21)	10.7% (3)	0.0% (0)	1.00	28
Personal benefit from the TAing experience.	23.1% (6)	53.8% (14)	19.2% (5)	3.8% (1)	1.00	26
Training and resources provided by faculty and staff during the TAing experience.	7.7% (2)	76.9% (20)	15.4% (4)	0.0% (0)	1.00	26
					<i>answered question</i>	29
					<i>skipped question</i>	10

31. Please make any additional comments or suggestions about the teaching assistantship:	
	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	35

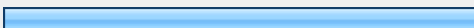

32. Rank your satisfaction with the following:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
Committee formation process.	15.0% (3)	75.0% (15)	5.0% (1)	5.0% (1)	1.00	20
Committee meeting set-up/organization.	15.0% (3)	75.0% (15)	5.0% (1)	5.0% (1)	1.00	20
Frequency of committee meetings.	11.8% (2)	82.4% (14)	5.9% (1)	0.0% (0)	1.00	17
Advice during your dissertation development within committee meetings.	50.0% (9)	44.4% (8)	5.6% (1)	0.0% (0)	1.00	18
Advice during your dissertation development outside of committee meetings.	27.8% (5)	66.7% (12)	5.6% (1)	0.0% (0)	1.00	18
<i>answered question</i>						20
<i>skipped question</i>						19

33. Please make any additional comments or suggestions about the dissertation process:	
	Response Count
	1
<i>answered question</i>	1
<i>skipped question</i>	38

34. How satisfied are you overall with the Microbiology and Immunology Department?

		Response Percent	Response Count
Very Satisfied		31.3%	10
Satisfied		62.5%	20
Unsatisfied		3.1%	1
Very Unsatisfied		3.1%	1
answered question			32
skipped question			7

35. Would you recommend this department to other trainees?

		Response Percent	Response Count
Yes		90.6%	29
No		9.4%	3
answered question			32
skipped question			7

36. How would you rank the department in the following terms:

	Very Poor	Poor	Good	Excellent	Rating Average	Response Count
Compared with other departments at this institution.	3.2% (1)	3.2% (1)	45.2% (14)	48.4% (15)	1.00	31
Compared with other departments at other institutions.	3.1% (1)	0.0% (0)	46.9% (15)	50.0% (16)	1.00	32
answered question						32
skipped question						7

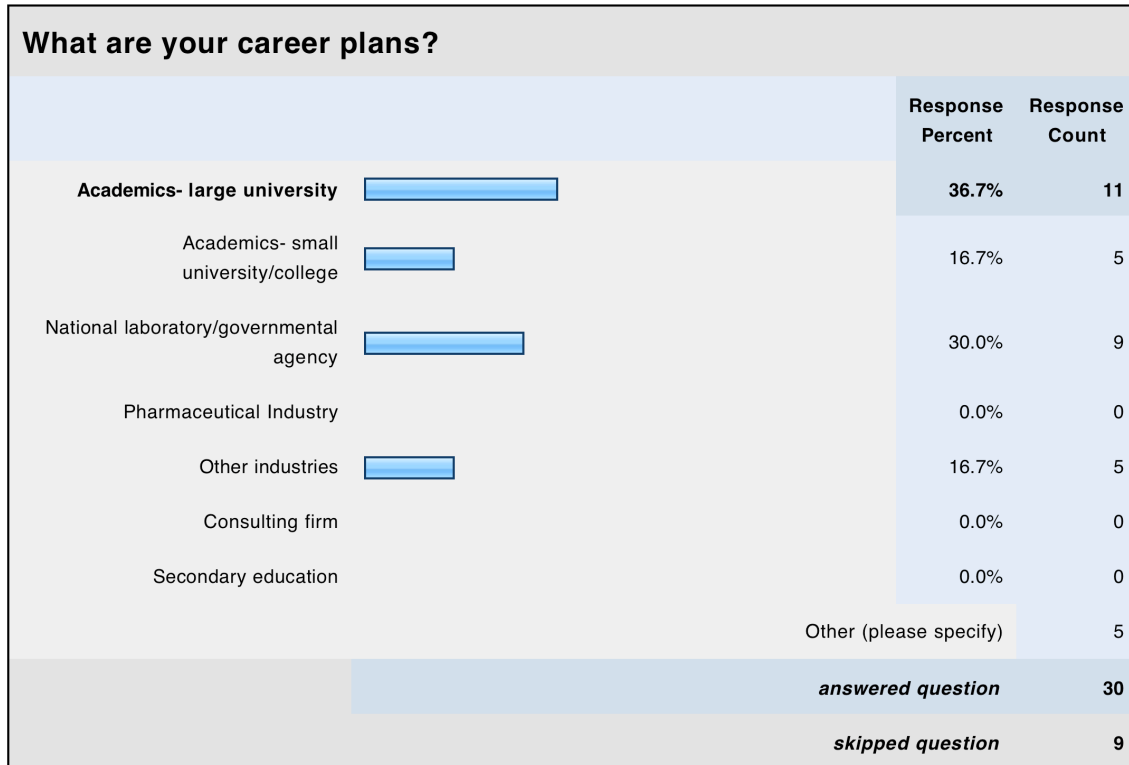
Student Question 7.

34 Individual Responses to Student Survey Question 7: Concerning the scientific publications from your ongoing graduate training, please indicate:

Total number of publications (any author)	Number of first-author publications	Number of review articles	Number of research articles	Number of manuscripts in submission or review	Number of abstracts	Number of conferences attended
5	1	0	5	0	0	1
3	0	3	0	1	4	2
2	1	0	0	0	15	10
2	0	1	1	1	3	5
2	0	0	0	1	0	10
2	0	0	0	1	4	4
2	0	0	2	1	0	0
1	1	1	0	2	0	1
1	1	1	0	0	0	0
1	1	0	1	0	2	2
1	0	0	1	1	0	1
1	0	0	1	0	2	1
1	0	0	1	0	2	1
1	0	0	1	0	0	2
1	0	0	0	0	3	2
0	1	1	0	1	0	1
0	0	0	0	2	3	3
0	0	0	0	2	1	1
0	0	0	0	1	2	3
0	0	0	0	1	3	3
0	0	0	0	1	0	1
0	0	0	0	1	0	0
0	0	0	0	1	0	0
0	0	0	0	0	4	4
0	0	0	0	0	2	0
0	0	0	0	0	0	2
0	0	0	0	0	0	1
0	0	0	0	0	0	1
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Student Question 8

Graduate Student Survey



Other (please specify)		
1	undecided	Aug 5, 2010 4:16 PM
2	undecided	Aug 5, 2010 4:18 PM
3	Industry or government, academic is possible. Mostly: undecided.	Aug 5, 2010 6:07 PM
4	undecided	Aug 7, 2010 9:40 PM
5	Not sure yet	Aug 10, 2010 1:17 PM

Student Question 12

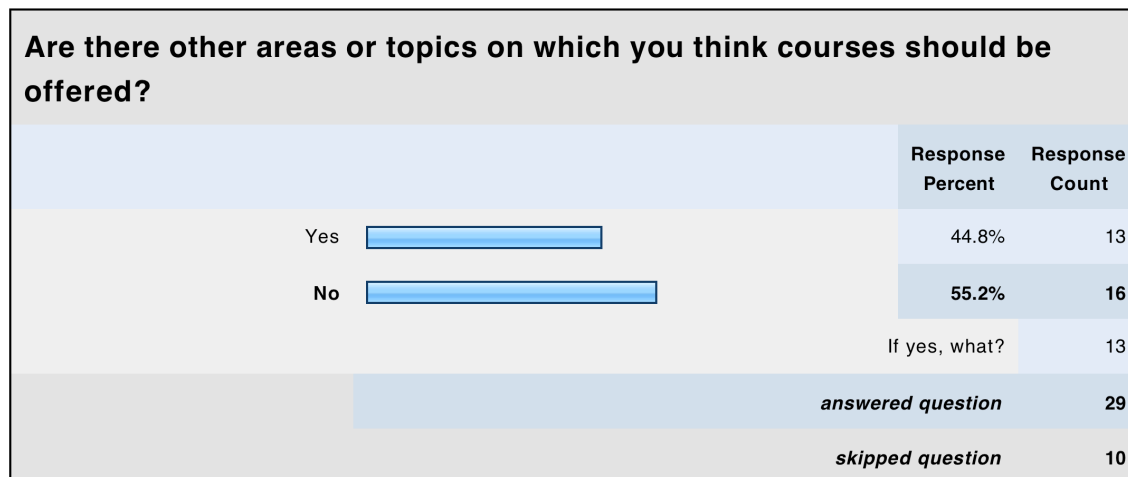
Graduate Student Survey

Please make any additional comments or suggestions in regards to the first year related to the M&I department:	
	Response Count
	6
<i>answered question</i>	6
<i>skipped question</i>	33

Response Text		
1	The M&I seminars and events were not very widely publicized to me while I was in BBSP and had not yet joined the department. Since I was already set on joining this department, I would have liked to be more informed and involved at an earlier stage, though this will not be true for all students.	Aug 5, 2010 4:22 PM
2	More pizza at seminars	Aug 5, 2010 4:46 PM
3	Dixie is wonderful, without her we would not survive our first year at UNC M&I.	Aug 5, 2010 6:21 PM
4	Department felt disjointed. The camaraderie of department was low.	Aug 6, 2010 5:22 PM
5	Rotation reports were not well explained and pretty much a waste of time.	Aug 9, 2010 3:26 PM
6	I would greatly appreciate easy access to a list of seminar speakers for all the departments associated with the school of medicine.	Aug 9, 2010 4:59 PM

Student Question 15

Graduate Student Survey



If yes, what?		
1	I am surprised there is not a bacteriology course similar to the virology course.	Aug 5, 2010 4:27 PM
2	I'm not sure...but I feel like options are somewhat limited	Aug 5, 2010 4:33 PM
3	Advanced Immunology (the current course is an undergraduate level course)	Aug 5, 2010 4:41 PM
4	More advanced immunology; genetics course	Aug 5, 2010 5:07 PM
5	A course covering the business side science, both in academia running a lab and in industry, dealing with management and related topics.	Aug 5, 2010 5:10 PM
6	I'd like more variety in virology courses. Rather than have one course with a faculty parade where everyone teaches for one day (and it's impossible to learn and retain anything meaningful), I would prefer if one person go over the basics of virology (main modes of entry, life-cycle, etc.) and then have separate classes for each class of virus (i.e. one class just on retroviruses or vector-borne viruses)	Aug 5, 2010 6:18 PM
7	More specific courses, for example innate immunity, or RNA viruses	Aug 5, 2010 6:45 PM
8	Epidemiology, Biostatistics	Aug 6, 2010 3:34 PM
9	It would be intriguing to have coursework that focuses on writing publication style documents instead of focusing solely on the development of grants. There is little instruction on how to construct a good thesis document.	Aug 6, 2010 5:30 PM
10	viral evolution	Aug 6, 2010 6:21 PM
11	but parasitology would be fun	Aug 9, 2010 3:27 PM
12	eukaryotic pathogens	Aug 9, 2010 5:03 PM
13	Basic Biochemical techniques lab	Aug 10, 2010 1:55 PM

Student Question 22

Graduate Student Survey

Please make any additional comments or suggestions in regards to courses/coursework:	
	Response Count
	5
<i>answered question</i>	5
<i>skipped question</i>	34

Response Text		
1	For all questions, I have no basis to determine whether the course improved upon student feedback. For questions #5-7, I did not take virology nor microbial pathogenesis, and thus all responses are non applicable.	Aug 5, 2010 5:07 PM
2	I realize that, at this point in our careers, no one wants to be required to take particular courses. However, if the department strives to make all graduate students well-rounded in all of the subject areas the department covers (the alleged logic for requiring students to attend departmental seminars), then it would seem to me that students should be required to take 1 course in each of the major areas the department encompasses (i.e. Immunology, Virology, Bacteriology/Pathogenesis). I feel as if this may be more effective, as it would ensure that all students are given a similar foundation in each of these related but distinct disciplines. That being said, I would not eliminate the requirement to attend departmental seminars, but rather use courses to make it easier to glean useful information from all the seminars, departmental and student.	Aug 6, 2010 3:12 PM
3	The grant writing course is helpful for gaining an introduction to the grant writing process. However, I feel like the writing assignments could be improved upon. More time could be spent on developing one complete grant draft rather than several smaller assignments. The feedback from the instructors was valuable although the delivery of criticism was sometimes downright disrespectful and rude, each student should be assumed to be trying their best and should not be "putdown". In addition this course has previously only introduced grant writing in a format that reflected the preliminary examination, yet funding sources are even more varied nowadays and an introduction to different styles of grants should be addressed.	Aug 6, 2010 5:30 PM
4	More pizza needs to be served there is simply not enough	Aug 6, 2010 6:21 PM
5	Grant writing was not relevant for our prelim exam. We should have been taught the new format of grant writing. Also the assignments were not realistic because they were only one page writing assignments.	Aug 10, 2010 1:55 PM

Student Question 24

Graduate Student Survey

Please make any additional comments or suggestions in regards to research training:	
	Response Count
	5
<i>answered question</i>	5
<i>skipped question</i>	34

Response Text		
1	Both the ethics and statistics training were not very useful. They should be taught and could be very useful, but need to be improved.	Aug 5, 2010 4:29 PM
2	It would be nice to see more immunology departmental seminars. I also have been disappointed in the degree of collaboration at UNC. UNC was portrayed as a highly collaborative environment when I visited, but since arriving I have witnessed very little collaboration. This is especially disappointing because the range of research done at UNC is quite broad, which should allow for many opportunities for investigators to collaborate on novel and interesting research. I have yet to witness this.	Aug 6, 2010 3:26 PM
3	There have been a number of requirement and policy changes since I have joined the department. While I do not necessarily disagree with the requirements and changes that have been made I do take issue with the way these decisions have been made and especially with the dispersal of information regarding any changes. First of all, these changes feel like they are made without any student input and are retroactively applied, which is frustrating and difficult to accept as a student. Secondly, when these changes are implemented at a meeting they are not conveyed to students in a timely manner. In particular, the changes to the deadline for thesis approval were made and not shared by the graduate student advisor for several weeks. Instead I heard "rumors" from students and heresay from other individuals. In fact when my PI was directly questioned it was the believe that any changes would not affect current students but would only be applicable to rising 3rd years and new students. It is unfair for some students to receive information from forthcoming PIs while others are unaware until the graduate student advisor sends out a notice. All students should be armed with the same information regarding requirements and policy changes at any given time.	Aug 6, 2010 5:36 PM
4	More food we as scientist should be able to focus on research not food	Aug 6, 2010 6:29 PM
5	Please no more angry emails from Bob!	Aug 9, 2010 3:28 PM

Student Question 29

Graduate Student Survey

Please make any additional comments or suggestions about the qualifying exam:	
	Response Count
	6
<i>answered question</i>	6
<i>skipped question</i>	33

Response Text		
1	I did not enjoy spending so much time on a topic that was not useful for developing my graduate thesis topic. I feel that the change in allowing students to focus on topic in their fields is a good one.	Aug 5, 2010 4:24 PM
2	<p>The topic selection guidelines were ambiguous and there were several issues that arose regarding topic choice. This may get better when the format is no longer so new, but there needs to be a clear dividing line between what is allowed and what is not allowed for topics.</p> <p>Also, I feel is completely unrealistic to write a grant proposal without any editing or critique from others. This situation would never arise in real life. Perhaps a system can be instituted where certain designated people (i.e. not your mentor) can provide editing assistance.</p>	Aug 5, 2010 4:34 PM
3	I didn't comment on the orals part, because I have not taken that part of the exam yet. As for the written part I feel that it was poorly organized and the expectations were not clearly set, which lead to a lot of unnecessary confusion and anxiety. The replies I received, with regards to pre-lim exam procedure, from the graduate student adviser were often accusatory, had an extremely negative tone and were poorly written. In the future I would encourage a calmer more professional attitude be taken when corresponding with students. A graduate student adviser that is not able to communicate in a professional manner does not inspire confidence in his ability to direct the program nor advise students.	Aug 5, 2010 5:23 PM
4	Objectiveness seems almost unattainable with this system, but that reflects the actual grant review process at the NIH, so although I acknowledge that it's not totally objective or fair, I am satisfied with it. I would have liked to have more details about setting up my oral exam immediately after learning that I passed so that I could schedule the exam in a more timely manner. Also, not knowing who the common committee members will be adds time to that. Finally, I'd prefer to confer with my PI about reviewers for the oral instead of the primary reviewer, since these members may go on to serve on my thesis committee.	Aug 6, 2010 4:15 PM
5	I hope that the new format will be more useful to students. The considerable time needed to develop 2 topics that are not related to a student's own research is detrimental to a student's dissertation progress. The new format will hopefully allow the student to do investigative research that may prove useful to the development of one's knowledge of the lab's research area (i.e. at least the same organism albeit a different avenue). This can aid the student in gaining a more holistic understanding of where their research fits into the larger scheme.	Aug 6, 2010 5:40 PM

Response Text		
6	Please standardize the topic selection meeting expectations among faculty members. We were told by Dr. Cannon that we didn't need to have every detail worked out for topic selection, and then many people were surprised by the level of detail expected from our topic selection committee members.	Aug 9, 2010 3:30 PM

Student Question 31

Graduate Student Survey

Please make any additional comments or suggestions about the teaching assistantship:	
	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	35

Response Text		
1	The opportunities for TAing are sufficient, but I would like additional options with more lecturing responsibilities for people who are interested in teaching in the future.	Aug 5, 2010 5:24 PM
2	I would like more opportunities to teach more advanced classes.	Aug 5, 2010 5:35 PM
3	It would be preferable to have other options for courses we are allowed to TA.	Aug 5, 2010 6:22 PM
4	It seems to me that the timing of TAing could be improved. TAing during the 2nd year is difficult as these students are finishing up coursework, starting to hit a stride in their permanent lab, and in addition are developing prelim topics. There seem to be more appropriate years than the 2nd year requirement.	Aug 6, 2010 5:42 PM

Student Question 33

Graduate Student Survey

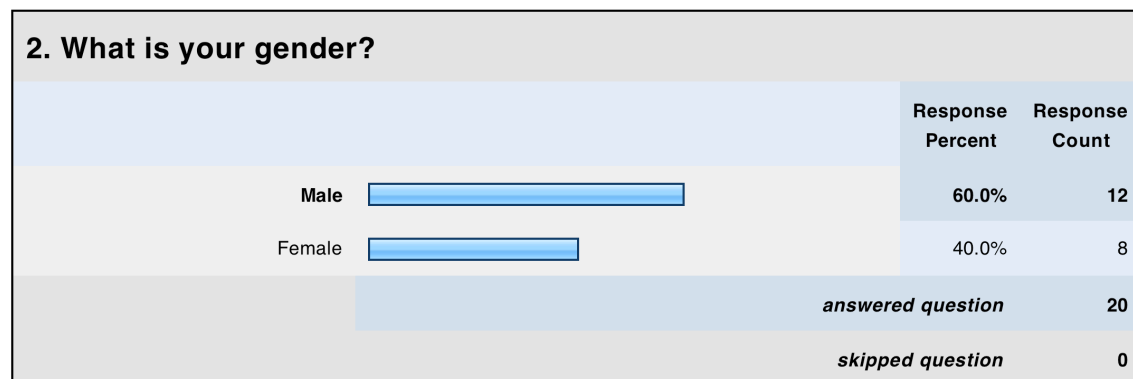
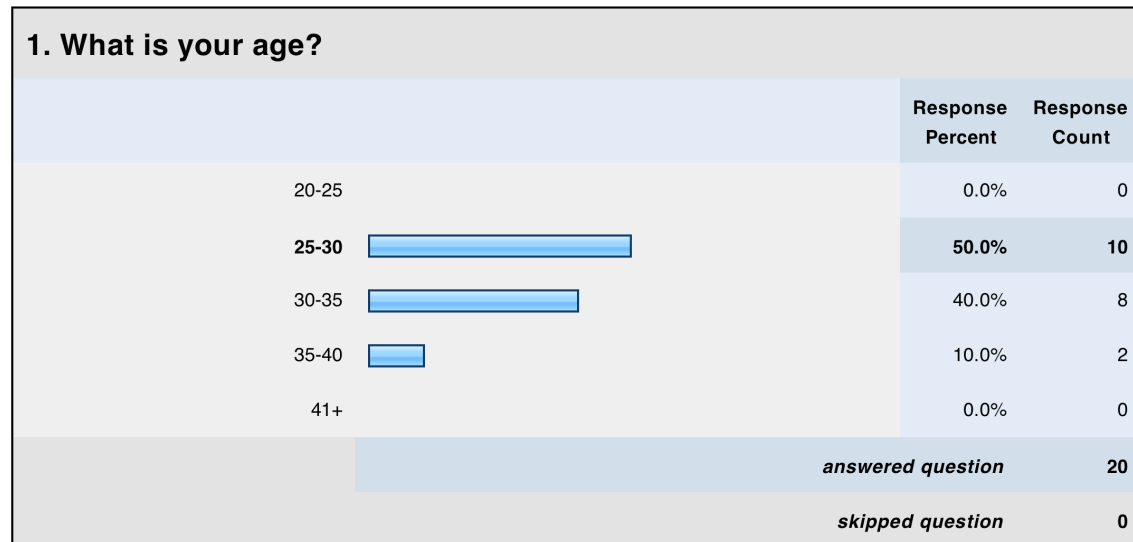
Please make any additional comments or suggestions about the dissertation process:	
	Response Count
	1
<i>answered question</i>	1
<i>skipped question</i>	38

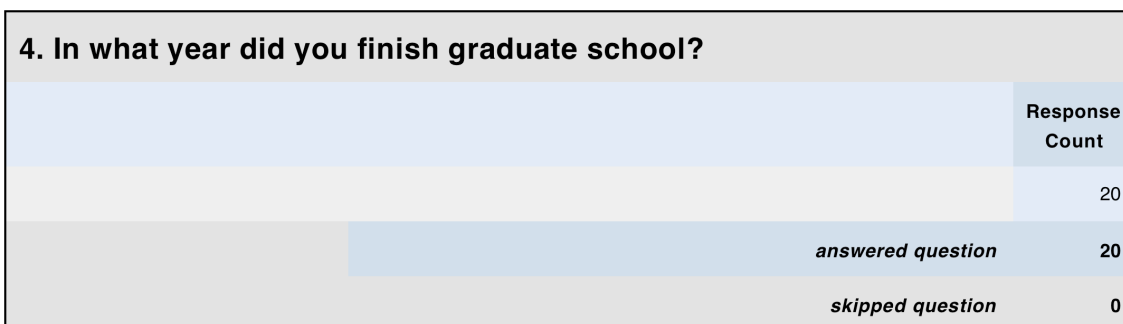
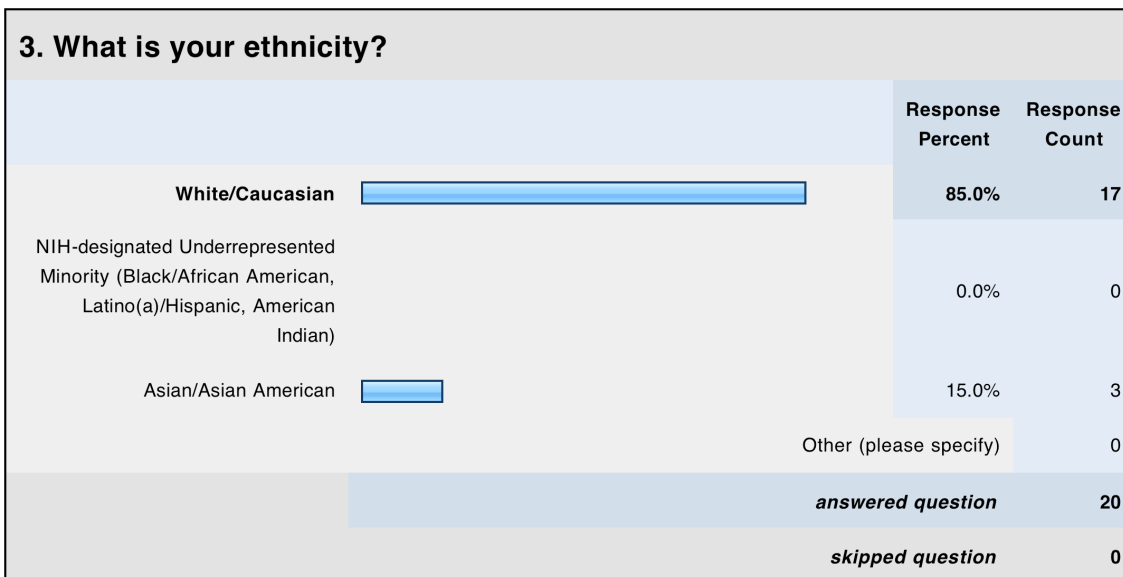
Response Text		
1	I have not done any of this yet.	Aug 5, 2010 5:25 PM

Appendix F2 - Postdoctoral Scholar Survey Results

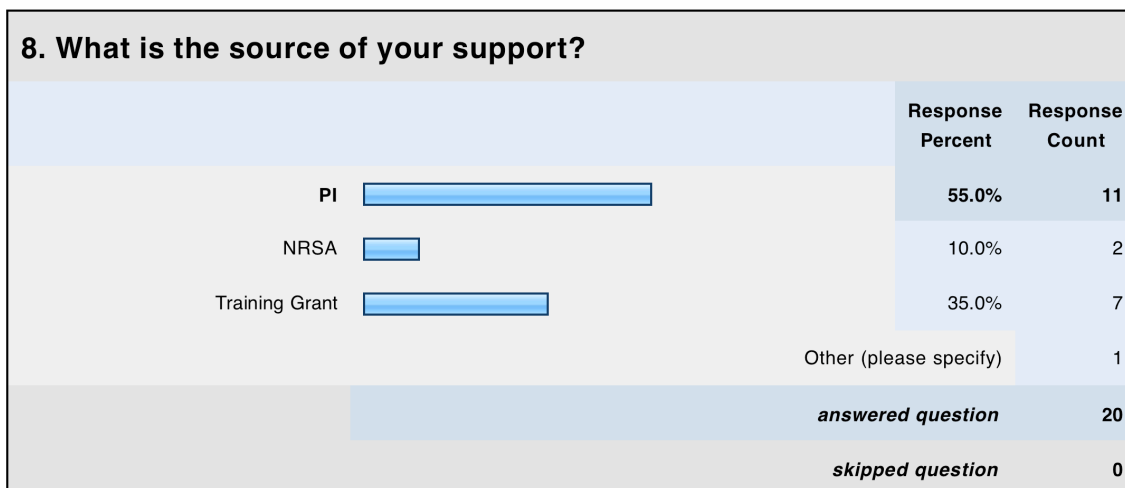
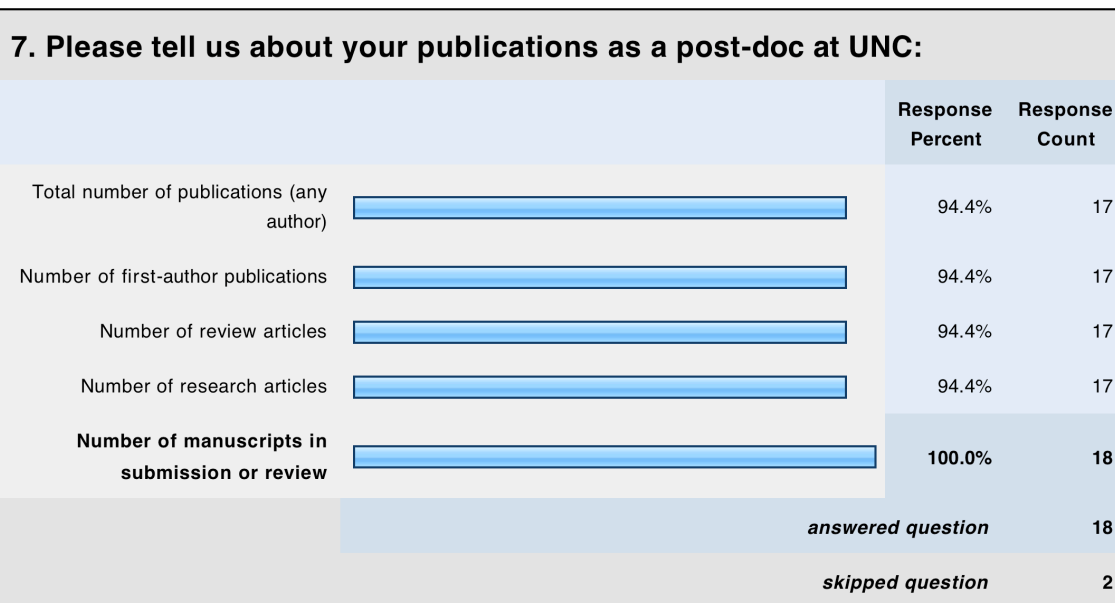
Note to reader: The SurveyMonkey.com output format for a summary report of an entire survey does not allow display of open-ended responses. Instead, the output for open-ended questions is displayed as the percent response. Therefore, the complete survey report is shown first, followed by individual responses to postdoc survey questions 4, 6, 7, 11, 14, and 19. All collected responses are included.

Post-doc Survey









9. Please rate your satisfaction of the following:


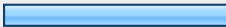

	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
If you have your own funding, please indicate how satisfied you are with departmental administrative support.	62.5% (5)	12.5% (1)	12.5% (1)	12.5% (1)	1.00	8
Please indicate how satisfied you are with the total compensation package you receive (insurance etc).	15.0% (3)	60.0% (12)	15.0% (3)	10.0% (2)	1.00	20
<i>answered question</i>						20
<i>skipped question</i>						0

10. Please tell us about your research opportunities:			
	Yes	No	Response Count
Do you feel there are enough opportunities for oral presentations?	88.9% (16)	11.1% (2)	18
Do you feel there are enough opportunities for poster presentations?	66.7% (12)	33.3% (6)	18
Do you feel your mentor is available and open to discuss your work?	83.3% (15)	16.7% (3)	18
Do you feel other faculty members are available and open to discuss your work?	77.8% (14)	22.2% (4)	18
Do you feel you have enough opportunities to attend meetings?	83.3% (15)	16.7% (3)	18
Do you feel there is enough financial support to attend meetings?	82.4% (14)	17.6% (3)	17
Do you feel you have enough opportunities to write grants?	88.2% (15)	11.8% (2)	17
Do you get enough support during grant writing?	82.4% (14)	17.6% (3)	17
Do you feel there are enough opportunities to learn research ethics?	100.0% (18)	0.0% (0)	18
Do you feel your colleagues in the dept have good research ethics?	100.0% (17)	0.0% (0)	17
answered question			18
skipped question			2




11. Please tell us about your research collaborations:			
	Yes	No	Response Count
Do you have collaborations within the department?	50.0% (9)	50.0% (9)	18
Do you have collaborations with other people at UNC?	50.0% (9)	50.0% (9)	18
Do you have collaborations with labs at other universities?	33.3% (6)	66.7% (12)	18
	If no, how can we improve?		3
	answered question		18
	skipped question		2

12. Please rate your satisfaction with the following:						
	Very Poor	Poor	Good	Excellent	Rating Average	Response Count
Do you feel you get good mentorship from your advisor?	0.0% (0)	16.7% (3)	27.8% (5)	55.6% (10)	1.00	18
Do you feel you get good mentorship from other faculty members?	5.9% (1)	17.6% (3)	58.8% (10)	17.6% (3)	1.00	17
If applicable, how satisfied are you with the BSL-3 training?	0.0% (0)	16.7% (1)	66.7% (4)	16.7% (1)	1.00	6
	answered question					18
	skipped question					2

13. Please rate your level of satisfaction with the following:						
	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Rating Average	Response Count
The level of departmental support/advice you receive in career development.	5.9% (1)	70.6% (12)	17.6% (3)	5.9% (1)	1.00	17
The level of career advice from your advisor.	33.3% (6)	50.0% (9)	5.6% (1)	11.1% (2)	1.00	18
The level of career advice from other faculty members.	12.5% (2)	43.8% (7)	37.5% (6)	6.3% (1)	1.00	16
<i>answered question</i>						18
<i>skipped question</i>						2

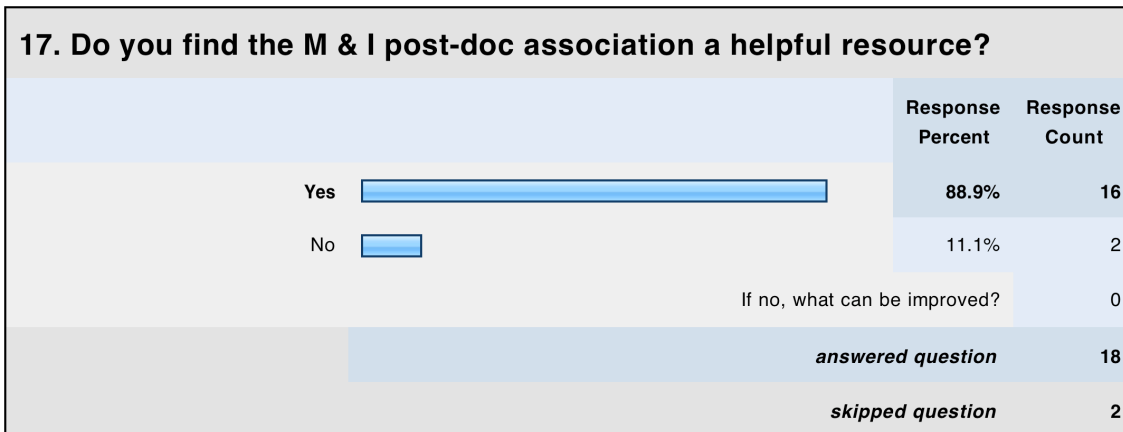
14. What are your future career goals?				Response Percent	Response Count
Academics- large university				50.0%	7
Academics- small university/college				42.9%	6
National laboratory/governmental agency				7.1%	1
Pharmaceutical Industry				0.0%	0
Other industries				0.0%	0
Consulting firm				0.0%	0
Secondary education				0.0%	0
Other (please specify)					3
<i>answered question</i>					14
<i>skipped question</i>					6

15. Please indicate your level of satisfaction with departmental research resources.

		Response Percent	Response Count
Very Satisfied		27.8%	5
Satisfied		55.6%	10
Unsatisfied		16.7%	3
Very Unsatisfied		0.0%	0
answered question			18
skipped question			2

16. Please answer the following questions:

	Yes	No	Response Count
Is the work environment conducive for successful science?	94.4% (17)	5.6% (1)	18
Do you feel there is a good interaction between students and post docs?	88.9% (16)	11.1% (2)	18
Do you feel there is a good interaction among post docs?	83.3% (15)	16.7% (3)	18
Do you feel there is a good interaction between faculty and post docs?	83.3% (15)	16.7% (3)	18
Would you recommend this department to others for their post doc?	83.3% (15)	16.7% (3)	18
answered question			18
skipped question			2



18. How important were the following in the choice of your current post doc?

	Very Important	Important	Unimportant	Very Unimportant	Rating Average	Response Count
The university	22.2% (4)	44.4% (8)	22.2% (4)	11.1% (2)	1.00	18
The department	11.1% (2)	38.9% (7)	44.4% (8)	5.6% (1)	1.00	18
Your mentor	94.4% (17)	5.6% (1)	0.0% (0)	0.0% (0)	1.00	18
answered question						18
skipped question						2

19. Please include any general comments here:

	Response Count
	1
answered question	1
skipped question	19

Postdoc Question 4

Postdoc Survey Question 4: In what year did you finish graduate school

Answer	Number of Responses
2002	1
2003	1
2004	0
2005	1
2006	1
2007	4
2008	5
2009	6
2010	1

Postdoc Question 6.

20 Individual Responses to Postdoc Survey Question 6: Please tell us about your publications:

Total number of publications (any author)	Number of first-author publications	Number of review articles	Number of research articles	Number of manuscripts in submission or review
14	8	1	13	0
12	2	3	8	2
11	4	0	11	0
10	3	2	8	1
9	1	3	6	3
7	4	1	6	0
7	2	0	7	2
6	4	1	5	0
6	3	1	5	1
5	4	0	5	2
5	4	0	5	0
5	1	1	4	0
4	3	0	4	0
4	2	0	4	5
4	2	0	4	0
3	3	1	2	0
3	1	0	3	0
3	1	0	0	0
2	2	0	2	1
1	1	0	1	1

Postdoc Question 7.

18 Individual Responses to Postdoc Survey Question 7: Please tell us about your publications as a postdoc at UNC:

Total number of publications (any author)	Number of first-author publications	Number of review articles	Number of research articles	Number of manuscripts in submission or review
7	0	3	4	3
5	0	0	5	5
2	2	1	1	0
2	1	1	1	0
1	1	0	1	0
1	1	0	1	0
1	0	0	1	1
1	0	0	1	0
0	0	0	0	2
0	0	0	0	1
0	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Postdoc Question 11

Post-doc Survey

Please tell us about your research collaborations:			
	Yes	No	Response Count
Do you have collaborations within the department?	50.0% (9)	50.0% (9)	18
Do you have collaborations with other people at UNC?	50.0% (9)	50.0% (9)	18
Do you have collaborations with labs at other universities?	33.3% (6)	66.7% (12)	18
If no, how can we improve?			3
<i>answered question</i>			18
<i>skipped question</i>			2

If no, how can we improve?		
1	?	Aug 6, 2010 6:37 PM
2	I just haven't had time to build them up yet; it's not a failing of the department	Aug 6, 2010 6:41 PM
3	it is at the moment not needed	Aug 20, 2010 8:15 PM

Postdoc Question 14

Post-doc Survey



Other (please specify)		
1	I intended to use this postdoc as my launch pad toward a career in academins. Unfortunately, my researchis not going well and I have not had much success here at UNC. I have begun to explore other career options, however, resources for identifying and learning about alternative careers are very limited.	Aug 6, 2010 6:41 PM
2	undecided	Aug 7, 2010 2:35 AM
3	in general: industry; but these days you have to take what you get...	Aug 20, 2010 8:16 PM

Postdoc Question 19

Post-doc Survey


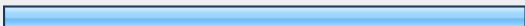
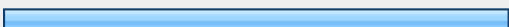
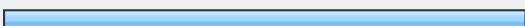

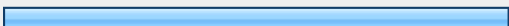

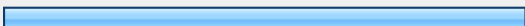
Please include any general comments here:	
	Response Count
	1
answered question	1
skipped question	19

Response Text		
1	I am woefully unimpressed with the level of involvement of the current and past administration. There is absolutely no concern for post doctoral training only servitude.	Aug 6, 2010 11:07 PM

Appendix F3 - Faculty Survey Results

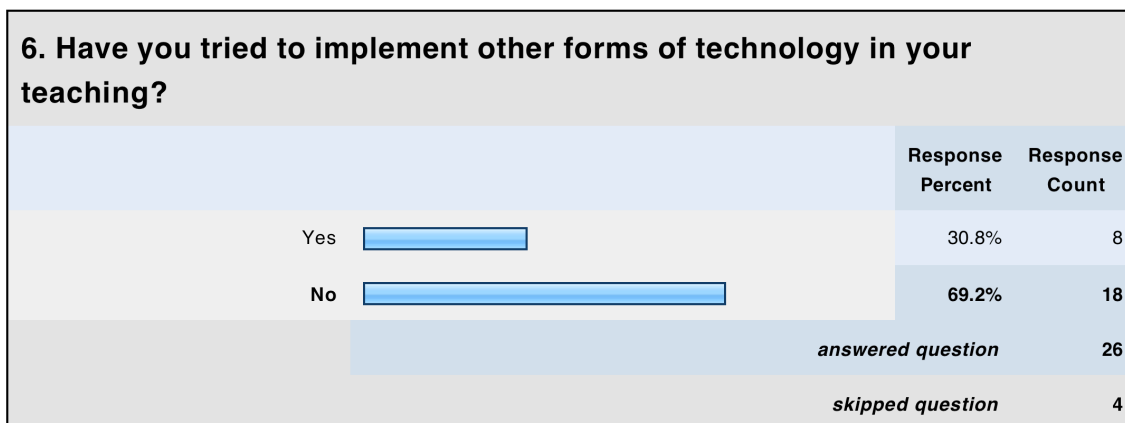
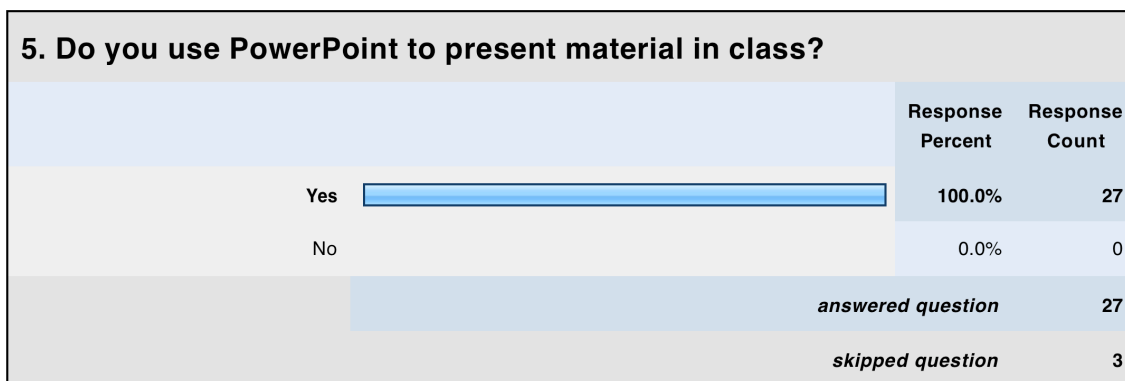
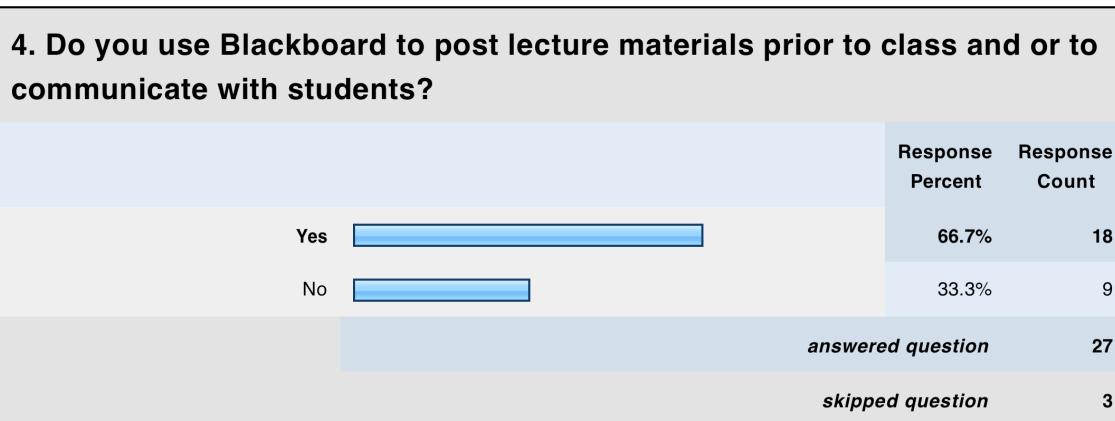
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M&I Self Study on Graduate and Post-doctoral Education

1. Demographics		
		Response Percent Response Count
Year of 1st appointment at UNC		100.0% 29
Current rank		100.0% 29
Years in rank		96.6% 28
Gender		100.0% 29
Age		100.0% 29
M&I courses in which you are currently participating		96.6% 28
# of graduate students in your lab currently		100.0% 29
# of post-docs in your lab currently		100.0% 29
answered question		29
skipped question		1

2. For each statement, choose from strongly agree to strongly disagree.						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
I am satisfied with my teaching responsibilities within the M&I graduate program.	48.1% (13)	44.4% (12)	7.4% (2)	0.0% (0)	1.00	27
I would like to do more graduate student teaching.	7.7% (2)	15.4% (4)	57.7% (15)	19.2% (5)	1.00	26
I would like to do less graduate student teaching.	3.7% (1)	11.1% (3)	66.7% (18)	18.5% (5)	1.00	27
My teaching assignments match my areas of expertise.	48.0% (12)	44.0% (11)	8.0% (2)	0.0% (0)	1.00	25
The physical environment/resources of the classrooms are adequate.	11.5% (3)	50.0% (13)	30.8% (8)	7.7% (2)	1.00	26
The course director for the course (s) in which I teach is supportive.	62.5% (15)	37.5% (9)	0.0% (0)	0.0% (0)	1.00	24
answered question						28
skipped question						2

3. Please comment on how you feel about your teaching responsibilities and how your participation in M&I teaching could be improved:	
	Response Count
	10
answered question	10
skipped question	20



7. Please provide suggestions for how technology can be applied to your improve your teaching.

	Response Count
	9
<i>answered question</i>	9
<i>skipped question</i>	21

8. For each statement, choose from strongly agree to strongly disagree:

	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
The subject coverage of 600 level departmental courses is adequate.	28.6% (6)	66.7% (14)	4.8% (1)	0.0% (0)	1.00	21
The number of 600 level courses is sufficient.	22.7% (5)	72.7% (16)	4.5% (1)	0.0% (0)	1.00	22
The subject coverage of 700 level departmental seminar/tutorial courses is adequate.	35.0% (7)	65.0% (13)	0.0% (0)	0.0% (0)	1.00	20
The number of 700 level courses is sufficient.	30.0% (6)	70.0% (14)	0.0% (0)	0.0% (0)	1.00	20
The courses in which I teach are well organized.	59.1% (13)	40.9% (9)	0.0% (0)	0.0% (0)	1.00	22
The content of the courses in which I teach is appropriate for graduate students.	47.8% (11)	47.8% (11)	4.3% (1)	0.0% (0)	1.00	23
One or more course in which I teach is in need of updating.	0.0% (0)	9.1% (2)	68.2% (15)	22.7% (5)	1.00	22
One or more course in which I teach is in need of a major re-organization.	0.0% (0)	0.0% (0)	63.6% (14)	36.4% (8)	1.00	22
The course director for the courses in which I teach is doing a good job	57.1% (12)	42.9% (9)	0.0% (0)	0.0% (0)	1.00	21
	<i>answered question</i>					24
	<i>skipped question</i>					6

9. Please comment on how the number and/or content of graduate courses in M&I can be improved to optimize graduate student training.

	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	26

10. For each statement, choose from strongly agree to strongly disagree:

	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
The TA experience is an important part of graduate education.	48.0% (12)	40.0% (10)	12.0% (3)	0.0% (0)	1.00	25
The TA experience helps our students' career development.	44.0% (11)	44.0% (11)	12.0% (3)	0.0% (0)	1.00	25
Graduate students should TA more than 2 semesters.	0.0% (0)	4.0% (1)	56.0% (14)	40.0% (10)	1.00	25
Graduate students should TA less than 2 semesters.	16.0% (4)	24.0% (6)	48.0% (12)	12.0% (3)	1.00	25
<i>answered question</i>						25
<i>skipped question</i>						5

11. Please comment on whether you think our graduate students should receive teaching training, if our program does so adequately, and, if not, how it could be improved:

	Response Count
	7
<i>answered question</i>	7
<i>skipped question</i>	23

12. For each statement, choose from strongly agree to strongly disagree:						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
Graduate students should take more courses.	0.0% (0)	16.7% (4)	58.3% (14)	25.0% (6)	1.00	24
Graduate students should take fewer courses.	4.2% (1)	12.5% (3)	62.5% (15)	20.8% (5)	1.00	24
M&I courses offered to graduate students adequately prepare them for research in an M&I laboratory.	12.0% (3)	88.0% (22)	0.0% (0)	0.0% (0)	1.00	25
Seminar/tutorial type courses teach students how to read and evaluate research papers.	41.7% (10)	58.3% (14)	0.0% (0)	0.0% (0)	1.00	24
Proposal writing courses teach students how to write research proposals.	39.1% (9)	56.5% (13)	0.0% (0)	4.3% (1)	1.00	23
<i>answered question</i>						25
<i>skipped question</i>						5

13. Please comment on whether you feel that the quality or quantity of courses offered to our graduate students could be improved and, if so, how:	
	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	26

14. For each statement, choose from strongly agree to strongly disagree:						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
Writing the research proposal is a valuable exercise for our graduate students.	60.0% (15)	36.0% (9)	4.0% (1)	0.0% (0)	1.00	25
Graduate students benefit from faculty guidance while preparing their research proposal.	44.0% (11)	48.0% (12)	8.0% (2)	0.0% (0)	1.00	25
I spend too much time helping students with their proposals.	0.0% (0)	16.7% (4)	75.0% (18)	8.3% (2)	1.00	24
The time I devote to helping students with their proposals is well spent.	17.4% (4)	78.3% (18)	4.3% (1)	0.0% (0)	1.00	23
The time students devote to writing their proposals is appropriate and well spent.	29.2% (7)	62.5% (15)	8.3% (2)	0.0% (0)	1.00	24
The proposal evaluation process is fair.	37.5% (9)	58.3% (14)	0.0% (0)	4.2% (1)	1.00	24
The oral exam process is fair.	31.8% (7)	68.2% (15)	0.0% (0)	0.0% (0)	1.00	22
answered question						25
skipped question						5

15. Please comment on whether you feel that the qualifying exam process could be improved and, if so, how:	
	Response Count
	6
answered question	6
skipped question	24

16. For each statement, choose from strongly agree to strongly disagree:						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
M&I graduate students are adequately prepared for post-doctoral studies in top research laboratories.	54.2% (13)	45.8% (11)	0.0% (0)	0.0% (0)	1.00	24
M&I graduate students are adequately trained in the design of original research and preparation of research proposals.	50.0% (12)	50.0% (12)	0.0% (0)	0.0% (0)	1.00	24
M&I graduate students are adequately trained in the preparation of manuscripts for publication.	17.4% (4)	78.3% (18)	4.3% (1)	0.0% (0)	1.00	23
M&I graduate students receive adequate information and guidance regarding career options.	17.4% (4)	69.6% (16)	13.0% (3)	0.0% (0)	1.00	23
M&I graduate students receive adequate training in the preparation and presentation of research seminars.	41.7% (10)	54.2% (13)	4.2% (1)	0.0% (0)	1.00	24
answered question						24
skipped question						6

17. Please comment on whether you feel that the M&I graduate program could be improved and, if so, how:	
	Response Count
	4
answered question	4
skipped question	26

18. For each statement, choose from strongly agree to strongly disagree:						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Rating Average	Response Count
Post-doctoral scholars in M&I are adequately prepared for faculty positions in top research universities and institutions.	23.8% (5)	66.7% (14)	9.5% (2)	0.0% (0)	1.00	21
Post-doctoral scholars in M&I are adequately trained in the design of original research and preparation of research proposals.	33.3% (7)	66.7% (14)	0.0% (0)	0.0% (0)	1.00	21
Post-doctoral scholars in M&I are adequately trained in the preparation of manuscripts for publication.	33.3% (7)	61.9% (13)	4.8% (1)	0.0% (0)	1.00	21
Post-doctoral scholars in M&I receive adequate information and guidance regarding career options.	22.7% (5)	59.1% (13)	18.2% (4)	0.0% (0)	1.00	22
Post-doctoral scholars in M&I receive adequate training in the preparation and presentation of research seminars.	27.3% (6)	59.1% (13)	13.6% (3)	0.0% (0)	1.00	22
Post-doctoral scholars in M&I have sufficient opportunities to present their research in the form of posters or seminars.	22.7% (5)	63.6% (14)	9.1% (2)	4.5% (1)	1.00	22
Post-doctoral scholars in M&I have opportunities for collaborations with other laboratories at UNC.	40.9% (9)	59.1% (13)	0.0% (0)	0.0% (0)	1.00	22
Post-doctoral scholars in M&I have opportunities for collaborations with other laboratories at other universities.	38.1% (8)	61.9% (13)	0.0% (0)	0.0% (0)	1.00	21
answered question						23
skipped question						7

19. Please comment on whether you feel that the training of post-doctoral scholars in M&I could be improved and, if so, how:

	Response Count
	5
<i>answered question</i>	5
<i>skipped question</i>	25

Faculty Question 1

Faculty Survey Question 1a: Year of 1st appointment at UNC

Answer	Number of Responses
1969	1
1975	1
1977	1
1983	1
1986	1
1988	2
1992	3
1995	3
1996	1
2001	2
2003	1
2004	1
2005	1
2006	1
2008	4
2009	4

Faculty Survey Question 1b: Current rank

Answer	Number of Responses
Assistant Professor	7
Associate Professor	7
Full Professor	14
Lecturer	1

Faculty Survey Question 1c: Years in rank

Answer	Number of Responses
Less than 1	2
1	2
2	4
3	3
4	2
5	1
7	1
8	3
9	2
10	2
13	2
15	1
17	1
22	1
Unknown	2

Faculty Survey Question 1d: Gender

Answer	Number of Responses
Female	9
Male	20

Faculty Survey Question 1e: Age

Answer	Number of Responses
33	1
36	2
37	1
40	1
42	1
44	1
45	1
48	2
49	2
50	1
51	1
52	2
53	2
54	1
55	2
56	1
58	1
62	1
65	1
66	1
71	1

Faculty Survey Question 1f: M&I courses in which you are currently participating

Answer	Number of Responses
Graduate courses	22
Medical students only	2
None	4
Undergraduate/dental only	1

Faculty Survey Question 1g: # of graduate students in your lab currently

Answer	Number of Responses
0	10
1	4
2	5
3	1
4	6
5	3

Faculty Survey Question 1h: # of postdocs in your lab currently

Answer	Number of Responses
0	9
1	7
2	7
3	2
4	3
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	1

Faculty Question 3

M&I Self Study on Graduate and Post-doctoral Education

Please comment on how you feel about your teaching responsibilities and how your participation in M&I teaching could be improved:	
	Response Count
	10
<i>answered question</i>	10
<i>skipped question</i>	20

Response Text		
1	I was happy to take on the co-directorship of 630 and I believe that Ray and I have made some much needed improvement in the course organization. I've been less satisfied with my attempts to get other faculty out of their "comfort zones" on taking on new or different teaching assignments.	Aug 4, 2010 7:25 PM
2	The room (library) is small and stuffy.	Aug 4, 2010 8:13 PM
3	I prefer teaching seminar/tutorial classes over lectures.	Aug 4, 2010 8:36 PM
4	I enjoy teaching graduate students and am happy with the way I am utilized.	Aug 4, 2010 9:34 PM
5	I'm happy with my first year of teaching - and happy to see it increase somewhat in the coming year. I don't feel that I have enough experience here, however, to suggest avenues for improvement.	Aug 4, 2010 10:29 PM
6	About right. The immunologists also rotate in the teaching of special topics course.	Aug 5, 2010 6:09 PM
7	-Am happy with collaborative decision making process of course content, teaching commitment and role	Aug 6, 2010 1:43 PM
8	I have had a secondary appointment in M&I for 1 year, and I have not yet contributed to the department's teaching responsibilities. I do however contribute to multiple courses in my primary department.	Aug 10, 2010 1:49 AM
9	I am satisfied with my teaching load in terms of the number of courses in which I am involved. More faculty participation in MCRO795 is needed to lighten the burden of proposal reviews on the existing faculty.	Aug 23, 2010 1:44 PM
10	I love teaching and feel the current departmental environment is extremely supportive regarding the teaching staff.	Aug 23, 2010 3:07 PM

Faculty Question 7

M&I Self Study on Graduate and Post-doctoral Education

Please provide suggestions for how technology can be applied to your improve your teaching.	
	Response Count
	9
<i>answered question</i>	9
<i>skipped question</i>	21

Response Text		
1	N/A	Aug 4, 2010 7:26 PM
2	I am a fan of reading, writing, and discussion, not technology.	Aug 4, 2010 8:01 PM
3	It would be good to have a classroom in which a projector and a whiteboard can be used simultaneously, i.e. where the screen doesn't cover the board.	Aug 4, 2010 9:36 PM
4	In the MS1 course, we had used video capture of the lectures which improves the student's learning opportunity. One problem is the arrow for the remote pointer may go off-screen and it is sometimes difficult to place it back onto the screen. It would be beneficial if a setting on the remote pointer or screen would prevent the arrow from moving off the screen and getting lost. This problem may be lecture room specific (Bondurant Hall).	Aug 5, 2010 6:14 PM
5	a computer that works	Aug 6, 2010 9:50 AM
6	More significant concern is too much technology in the class room. Discussion is most important	Aug 6, 2010 1:44 PM
7	Turning Point is an interactive question/answer mode in powerpoint that can be used to get immediate feedback. I would like to have a classroom that allows me to use the white board and the projector at the same time.	Aug 9, 2010 4:34 PM
8	Better integration of web-based course management systems across the SOM in medical and graduate teaching would be useful.	Aug 23, 2010 1:46 PM
9	I think the audience response system improves participation and learning. I am trying to use Poll Everywhere this semester in conjunction with the Dept. of Teaching and Learning in an effort to utilize the audience response system without the added cost.	Aug 23, 2010 3:09 PM

Faculty Question 9

M&I Self Study on Graduate and Post-doctoral Education

Please comment on how the number and/or content of graduate courses in M&I can be improved to optimize graduate student training.	
	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	26

Response Text		
1	One semester is inadequate to cover prokaryotic biology. I think we need two semesters. In the past, there have not been sufficient students to warrant two semesters on prokaryotes, but now with the BBSP program it might be time to reconsider.	Aug 4, 2010 9:39 PM
2	I am unable to answer several of these questions due to unfamiliarity with the courses.	Aug 4, 2010 10:31 PM
3	Course work is about the right amount. The requirement for graduate students to attend departmental seminars for the first two years is beneficial.	Aug 5, 2010 6:17 PM
4	Not having taught at the graduate level here, I do not feel capable of comment.	Aug 23, 2010 3:10 PM

Faculty Question 11

M&I Self Study on Graduate and Post-doctoral Education

Please comment on whether you think our graduate students should receive teaching training, if our program does so adequately, and, if not, how it could be improved:	
	Response Count
	7
<i>answered question</i>	7
<i>skipped question</i>	23

Response Text		
1	I'm satisfied with the teaching experiences that our students get.	Aug 4, 2010 7:29 PM
2	I have no idea whether the teaching training that our graduate students receive is adequate.	Aug 4, 2010 9:40 PM
3	I think teaching experience is an essential part of graduate education, but 2 semesters is enough.	Aug 4, 2010 10:32 PM
4	I think the 2 semester requirement is the right length of time to gain experience in teaching. If a student wants to teach more because a teaching college will be their career choice, the option is there.	Aug 5, 2010 6:20 PM
5	I think given the large number of our students who state interest in pursuing careers in teaching, this should remain mandatory for all.	Aug 7, 2010 8:05 PM
6	I strongly believe that one semester is adequate.	Aug 10, 2010 1:51 AM
7	As graduate student numbers in our department have increased, I have seen the true teaching requirement diminish. I would like to see Berryhill labs reinstated, and have each TA be responsible for one entire section of students. Right now, the teaching load has been lessened, but so to the ability to learn to teach effectively.	Aug 23, 2010 3:12 PM

Faculty Question 13

M&I Self Study on Graduate and Post-doctoral Education

Please comment on whether you feel that the quality or quantity of courses offered to our graduate students could be improved and, if so, how:	
	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	26

Response Text		
1	There is probably room for more writing experiences within the 600 and 700 level courses.	Aug 4, 2010 7:31 PM
2	can't evaluate if our writing class is working	Aug 4, 2010 8:37 PM
3	I think the faculty should be encouraged to provide writing opportunities where possible so that students become better prepared for their written preliminary examination, their dissertation and future fellowships.	Aug 5, 2010 6:22 PM
4	Again, I feel unqualified to comment as I do not teach graduate student courses.	Aug 23, 2010 3:13 PM

Faculty Question 15

M&I Self Study on Graduate and Post-doctoral Education

Please comment on whether you feel that the qualifying exam process could be improved and, if so, how:	
	Response Count
	6
<i>answered question</i>	6
<i>skipped question</i>	24

Response Text		
1	Proposal process this year was a DISASTER. Conflicting instructions, conflicting goals, uneven viewpoint on expectations for grading.	Aug 4, 2010 8:04 PM
2	Faculty are seldom prepared to fail students who do very poorly on the written exam.	Aug 4, 2010 8:16 PM
3	Not enough experience with this yet ...	Aug 4, 2010 10:34 PM
4	no comments	Aug 5, 2010 6:24 PM
5	I have an inordinate number of students that I have helped recently, but that is because I have students from more than one department seeking help.	Aug 9, 2010 4:37 PM
6	There is no N/A option	Aug 23, 2010 3:14 PM

Faculty Question 17

M&I Self Study on Graduate and Post-doctoral Education

Please comment on whether you feel that the M&I graduate program could be improved and, if so, how:	
	Response Count
	4
<i>answered question</i>	4
<i>skipped question</i>	26

Response Text		
1	I can only evaluate my own students and those in virology labs	Aug 4, 2010 8:39 PM
2	I'm very impressed so far with how well this program trains graduate students. Based on interactions with more senior students - it's effective!	Aug 4, 2010 10:36 PM
3	I did not comment on manuscript preparation because that is something that is lab specific.	Aug 4, 2010 11:56 PM
4	A Research day in which all graduate students and postdocs present their work, either short talks and posters might improve their scientific communication skills.	Aug 5, 2010 6:26 PM

Faculty Question 19

M&I Self Study on Graduate and Post-doctoral Education

Please comment on whether you feel that the training of post-doctoral scholars in M&I could be improved and, if so, how:	
	Response Count
	5
<i>answered question</i>	5
<i>skipped question</i>	25

Response Text		
1	I think we largely ignore postdocs at the departmental level and put little collective effort into their training. I know very little about how postdoctoral training experiences vary from lab to lab and whether or not it is adequate, which is why I did not answer most of the questions in this section. We might want to discuss as a department whether or not we should leave postdoctoral training entirely up to individual labs or create some additional training structure at the department level.	Aug 4, 2010 9:50 PM
2	My answers reflect my first impression based on the post-docs with whom I've interacted here so far and the opportunities presented to the post-docs in my lab.	Aug 4, 2010 10:38 PM
3	Many of these questions are lab PI specific. I do think the opportunities are there and that most PIs do a good job of helping their postdocs take advantage of the opportunities.	Aug 4, 2010 11:58 PM
4	A research forum or research day in which postdocs gather to present their work and exchange ideas would unify the different labs across the campus. Perhaps a forum such as the oral presentations by the graduate students could be a template for a postdoctoral fellow oral presentation series.	Aug 5, 2010 6:30 PM
5	Important for post-docs to have an opportunity to develop their own 'style', specifically in teaching - perhaps becoming more active in undergraduate teaching. Our graduate students have a role in 'teaching', but that's for experience and training - post-docs need 'polishing' and an opportunity to take responsibility with immediate feedback from the appropriate course director.	Aug 23, 2010 1:43 PM