Planning for the Sustainability of the Carolina Campus Community Garden (CCCG): a Model for Using a Campus Garden as an Educational and Research Tool for a University Community

A Capstone project submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health in the Department of Health Behavior
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We hereby pledge that this is our own work and we have followed the University of North Carolina at Chapel Hill honor code:
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Abstract

Background: The mission of the Carolina Campus Community Garden (CCCG) is to improve UNC’s lowest paid employees’ access to fresh fruits and vegetables by distributing the garden’s crops, which are produced by the shared efforts of staff, students, faculty, and local residents; and to serve as a learning community for developing gardening skills, facilitating healthy living, encouraging social responsibility and promoting interdisciplinary academic pursuits. Currently, the CCCG does not have a permanent plot of land at UNC, nor does it have sufficient, ongoing funding. In order to increase the sustainability of CCCG, it is important for CCCG to become institutionalized, defined by Curry (1991) as being formally articulated in an organization’s culture and policy, within UNC. Specifically, this entails securing a permanent location, sustained funding, and increasing utilization by the UNC community.

Methods: As a Capstone student team from the Department of Health Behavior at the University of North Carolina (UNC) Gillings School of Global Public Health, we advanced the CCCG’s goal of institutionalization by performing formative research to understand the needs, wants, and beliefs held by the community through a review of the literature, semi-structured interviews with key stakeholders within the UNC community, focus groups with housekeepers, and surveys with students and administrators. The formative assessment began with an extensive literature review, which informed our discussions with the UNC community. The perceptions and insights provided by these stakeholders helped us outline specific goals towards establishing the CCCG as a permanent part of the University. In addition to semi-structured interviews with UNC faculty and administrators, we also conducted focus groups with UNC housekeepers to uncover their perceptions of and experiences with the garden, and how they might shape long-term institutionalization. We also engaged students to understand their perceptions and experiences with the CCCG through a web-based survey. Finally, the Capstone student team disseminated its findings to the stakeholders (UNC administrators, faculty, housekeepers, and students) through an event designed to highlight the results of the formative assessment, CCCG Appreciation Day.

Results: Through engagement and assessment, the Capstone student team identified the following strategies to promote the institutionalization, and ensure sustainability, of the CCCG, prioritized in descending order: 1) secure a location for the garden plot 2) obtain permanent funding for the Community Garden Education Coordinator position 3) integrate the CCCG into the UNC Academic and Research communities 3) more effectively engage recipient stakeholders including UNC housekeepers 4) quantify benefits of the CCCG for housekeepers and the UNC community as a whole and 5) increase visibility and awareness of the CCCG in the UNC community.

Discussion: The CCCG brings together individuals from diverse backgrounds, united only by the act of gardening, the process of which creates fresh produce that is given to low-income UNC employees. At the individual level, outcomes include increased access to healthy foods, increased nutritional
knowledge, and increased physical activity. At the community level, the CCCG increases social capital, community, and social cohesion. Based on these and other benefits, the CCCG has garnered significant support from the University at all levels. However, the path to sustainability through institutionalization remains uncertain. This Capstone project has laid out a sustainability plan supported by months of formative research with the singular goal of moving the CCCG towards institutionalization. Hopefully the insight provided by this project will contribute to the institutionalization of the CCCG and its sustainability for years to come.

**Major Deliverables:**

- Literature Review
- Sustainability Plan
- CCCG Appreciation Day
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I. Introduction

Inspired by the World War II Victory Garden concept, a dedicated group of staff, students, faculty and community members began meeting in April 2009 to plan a community garden that would provide food for University employees, specifically the lowest paid employees (Primarily housekeepers), and a setting for gardening workshops and other educational opportunities that foster home gardening with limited space and resources. To assess the level of interest in the garden across campus, the UNC Employee Forum administered an online survey to all permanent UNC employees. Of the 1,253 respondents, 97 percent indicated support for the establishment of a community garden for employees. The Carolina Campus Community Garden (CCCG) was formally established in March of 2010 (North Carolina Botanical Garden, 2011).

The garden is a collaborative effort involving the UNC Employee Forum, the Center for Health Promotion and Disease Prevention (HPDP), and the North Carolina Botanical Garden (NCBG); the latter being the sponsoring university unit for the Garden. Two student organizations, Fair-Local and Organic (FLO) and the Carolina Garden Co-op, have also been supportive of the garden since the initiative started. In 2010, the Carolina Garden Co-op merged with the CCCG so that all parties involved could work together on one larger garden.

The CCCG is currently located on a parcel of land on Wilson Street off Cameron Avenue, not far from the Carolina Inn and in close proximity to UNC employees, staff, and students as depicted below in Figure 1. The garden was created in a way that facilitates its possible relocation with non-permanent structures and moveable garden boxes, as the University plans to develop the Wilson Street property in the coming years.
Daily management of the CCCG falls under the purview of a Community Garden Education Coordinator, or Education Coordinator, who is responsible for educational programming and evaluation, management of sustainably grown produce production and distribution, fundraising, and cultivating relationships with the University and the larger community. Labor is provided through volunteerism from the UNC community on most Wednesdays and Sunday afternoons. Food from the garden is distributed to low wage workers (Primarily housekeepers) on a weekly basis at the Cheek/Clark Building loading dock, near the UNC Cogeneration Facility, as seasonally available. The short-term and long-term planning for the garden is overseen by the CCCG Advisory Board, comprised of the Education Coordinator, representatives from NCBG, HPDP, housekeepers, and students.

Since its inception, the CCCG has become an integral part of the University community. Specifically, it has provided students, faculty, and staff with the valuable opportunity to work side-by-side outside of an academic setting. Additionally, the CCCG provides significant tangible benefits to the
University including nutritious produce freely distributed to the University’s lowest wage earners, an experiential laboratory for learning and research, and a public service opportunity for staff and students. Additionally, the CCCG offers the opportunity to promote sustainable gardening to the entire UNC community and its surrounding neighborhoods.

The CCCG’s success among community members is evident in the campus-wide support for its mission. For the past two years, funding for the Education Coordinator position has been provided by the Office of the Chancellor and the Provost’s Budget Committee. The UNC Properties Office convened a working group on July 2011 consisting of representatives from the UNC Property Office, Architecture and Facilities, Employees Forum, HPDP, and the CCCG to determine the best location for the CCCG once the Wilson Street parcel is developed, tentatively scheduled for 2017. This effort demonstrates the University’s commitment to maintain this resource. The Westside Neighborhood Association, representing the neighborhood surrounding the garden plot, also supports the initiative and has been involved with both short- and long-term planning.

To further ensure the sustainability of its work, the CCCG partnered with a group of Capstone students from the Department of Health Behavior at the UNC Gillings School of Global Public Health. Capstone, a year-long course in place of a thesis, is designed to teach students through experiential learning. The Capstone student team has utilized the course to work towards promoting the sustainability of the CCCG through the act of institutionalizing it within UNC. For the purposes of this project, institutionalization of the garden entails locating permanent land, ensuring recurring funding, and increasing utilization of the garden.

The process of understanding and conceptualizing institutionalization for CCCG began with formative research, including semi-structured interviews with key stakeholders within the UNC community. The perceptions and insights provided by these interviews helped outline specific actions necessary for solidifying the CCCG as a permanent part of the University. These interviews also helped
inform how UNC faculty may integrate the CCCG into their research and curricula, directly linking it to the University’s academic mission. Next, we conducted two focus groups with UNC housekeepers to uncover their perceptions of and experiences with the garden. We also engaged students through an online survey to assess their views about garden location. Concurrently, we conducted a literature review to shape and inform discussions with the UNC community, as well as to provide a base of evidence for a sustainability plan. Finally, we developed a sustainability plan to be used by the CCCG to guide the garden toward sustainability after the Capstone project has ended.

This Capstone summary report is designed to summarize and serve as a record of the Capstone student team’s experience. Following this introduction, a literature review presents the rationale behind our approach to promoting the sustainability of CCCG. Next, the summary report describes the formative research and methods behind the Capstone project. This includes a justification behind the work plan deliverables. The results section presents our sustainability, engagement, and assessment findings, and includes detailed descriptions of the purpose, methods, and key findings from each of our deliverables. Finally, the discussion section recaps the entire project, noting strengths, limitations, potential impact and benefits, lessons learned, and future considerations for sustainability.

II. Background

Community Gardens as a Tool to Build Social Capital

Social capital refers to social networks within a community that are governed by trust and mutual reciprocity and is associated with a number of positive outcomes (Putnam, 1995; ‘Yotti’ Kingsley, 2006). It is a term that simultaneously emerged from multiple fields of social science, including anthropology, political science, economics, and history (Carpiano, 2006; Putnam, 1995). Researchers in these fields noted that communities with high levels of social capital were associated with higher levels of positive attributes such as vibrant economic development, democratization, and high quality of life
In a twenty year observational study of regional governments that were demographically similar to each other in Italy, Putnam demonstrated that possessing social capital was strongly associated with high regional stability, as indicated by high civic engagement and effective governance (Putnam, 1995). More recently, public health researchers have started to examine the impact of social capital on health outcomes (Kawachi, 1999). Existing literature suggests that there are many positive correlations between social capital and quality of life and other health outcomes (Holt-Lunstad, Smith, & Layton, 2010; Kawachi, 1999). In light of these benefits, a growing number of public health interventions have sought to build social capital in geographical communities (Glover, 2004).

**The Benefits of Social Capital**

Social capital enhances the capacity of a community to overcome barriers to a safe and healthy living environment (D. Armstrong, 2000b; Baker, 2004; Glover, 2004; Twiss et al., 2003; Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007). Specifically, research shows that communities with low social capital have higher rates of crime (Twiss et al., 2003) while communities high in social capital have the capacity to resolve communal issues such as racism and crime (Glover, 2004; ‘Yotti’ Kingsley, 2006). Studies suggest that this correlation is due to the ability and capacity of communities with high levels of social capital to organize more effectively around issues because its members trust each other and are unified (Baker, 2004; Glover, 2004; Maller, 2005; Twiss et al., 2003; Uphoff, 2000; Wills, 2010).

**Community Gardens and Social Capital**

One method of creating social capital within a community is through community gardens. A community garden, as defined by the American Community Gardening Association (ACGA), is a plot of land in an urban, suburban, or rural setting tended to by a group of people (Teig et al., 2009). Historically, the public health literature around community gardens has focused on their tangible benefits, which include improved access to fresh foods (Allen, 1999; Baker, 2004; Wills, 2010) and
increased opportunities for physical activity (Abraham, 2010; Ellaway, Macintyre, & Bonnefoy, 2005; Hale et al., 2011). Recently, however, there has been a shift in the discussion towards considering the role of community gardens in the creation of social capital (Abbott, 2008; Abraham, 2010; Almedom, 2005; Cattell, 2001; Coleman, 1988; Hale et al., 2011; Hawe, 2000; ‘Yotti’ Kingsley, 2006). This growing body of literature suggests that community gardens have the potential to stimulate social capital growth by providing a forum for members to meet, interact, build trust and create a common identity (D. Armstrong, 2000a; Baker, 2004; Glover, 2004; Hancock, 2001; Hawe, 2000; Putnam, 1995; Twiss et al., 2003; Wakefield et al., 2007; Wills, 2010; ‘Yotti’ Kingsley, 2006).

This literature provides evidence that the process of creating social capital is usually not explicit (Baker, 2004; Glover, 2004; Twiss et al., 2003). When interviewed about their initial reasons for joining a garden, most gardeners cited physical wellbeing, such as improved nutrition and physical activity (Baker, 2004; Twiss et al., 2003; Wills, 2010). However, through the process of interacting with one another during gardening activities, participants start sharing feelings, thoughts, and concerns (Baker, 2004; Wills, 2010). This exchange builds trust that extends beyond the physical boundaries of the garden, which increases the social capital within a community (Baker, 2004; Wills, 2010). Additionally, the process of creating and maintaining a garden instills in its participants a sense of communal pride that facilitates the creation of a common identity (Baker, 2004).

In addition to the community-level benefits discussed earlier, social capital is also associated with a number of individual-level benefits including better perceptions of health and lower morbidity and mortality rates among people living in communities with high social capital (Kawachi, 1999; Putnam, 1995). These benefits are attributed to the increased amount of social support that an individual can access as a result of social capital (Kawachi, 1999; Putnam, 1995). Many studies have demonstrated the association between the number of social contacts, social support, and health (Holt-Lunstad et al., 2010; Kawachi, 1999; Uchino, 2006). Community gardens contribute to social network expansion by
encouraging people unfamiliar with one another to meet and interact (Twiss et al., 2003; Wills, 2010). Specifically, the interactions that take place at community gardens create “bridging social capital”, which is a type of social capital that connects people who are from different networks (Putnam, 1995; ‘Yotti’ Kingsley, 2006). Surveys of community gardens in the US and internationally suggest that the participants are diverse in age, education, occupation, and ethnicity (Baker, 2004; Glover, 2004; Twiss et al., 2003; ‘Yotti’ Kingsley, 2006). As discussed earlier, although most participants cite physical reasons for initial participation, they engage with each other while maintaining the garden, which facilitates social network expansion (Glover, 2004).

The potential of community gardens to generate bridging social capital is especially important given data suggesting that the social networks of contemporary Americans are actually shrinking, particularly among college students who, despite many opportunities to expand their networks, are more isolated than the general population (Kawachi, 1999; Putnam, 1995). While recent developments in social networking technology have helped reverse this trend, further research reveals that students benefiting from these opportunities are extraverted and already possess high levels of social capital, which actually widens the gap between students with low social capital and their more social counterparts (Kraut, 2002; Putnam, 2010). Community gardens, with their potential to bring together diverse participants, have been an appealing intervention for college administrators. For example, UC Santa Barbara has integrated community gardens into its educational curricula and found that they have been effective in reducing ethnocentrism and racism among students (Hoffman, Morales Knight, & Wallach, 2007). This case study illustrates the small but growing awareness of the potential role of gardens in creating social capital (Baker, 2004; Twiss et al., 2003; Wills, 2010).
Institutionalization

Unfortunately, community gardens often struggle to maintain the benefits that they deliver to participants (Wakefield et al., 2007). Organizational research suggests that one method to ensure that the benefits of a program are sustained over time is to institutionalize them (R. M. Goodman & Steckler, 1989; R. M. Goodman, McLeroy, Steckler, & Hoyle, 1993; Johnson, 2004b). Research on institutionalization suggests that successful efforts are comprised of: 1) a solid conceptualization of the term institutionalization, 2) community engagement and stakeholder buy-in, and 3) the development of a sustainability plan (R. M. Goodman et al., 1993; Johnson, 2004a; Pluye, 2004). We have applied these suggestions to our work with the CCCG to increase institutionalization. Specifically, we have defined institutionalization as locating permanent land, ensuring recurring funding, and increasing utilization of the garden. Based on this definition, we have engaged stakeholders, which include administrators, faculty, housekeepers, and students, through in-depth interviews, focus groups, and surveys. We have also adopted Johnson's framework for a sustainability plan and outlined action steps specific to CCCG.

Conceptualization

A prerequisite to planning for institutionalization is a conceptualization and operationalization of the term. The literature on institutionalization is vast and utilizes a number of different terminologies (Curry, 1991; Rabin, 2008). However, the dimensions of institutionalization remain constant, despite differences in terminology, and suggest a program must be formally articulated in an organization’s culture and policy (Curry, 1991; Johnson, 2004a; Prentice, 2001; Rabin, 2008; Shediac-Rizkallah & Bone, 1998). It has been suggested that the more mature the organization and the more project components exist within a project, the more likely it is to be institutionalized (Shediac-Rizkallah & Bone, 1998). Prentice provides a three pronged framework specific to institutionalization of service-learning on college campuses, which consists of structural integration, cultural integration, and procedural
integration. The first prong, structural integration, is integration of the program into immediate and future college plans (i.e. academic plans and university mission) and establishment of a budget for service-learning activities. Cultural integration, the second prong, is demonstrated by incorporating faculty, staff, and administrator participation, for example via faculty development activities, including service-learning course development. The final prong is procedural integration, which refers to the inclusion of descriptions or notations of the program in the course catalog. Although Prentice’s model for institutionalization was intended for service-learning, research on campus gardens indicates that they can also serve this purpose. Specifically, campus gardens have been utilized to facilitate learning in engineering, environmental sustainability, and issues pertaining to social justice (Apul & Philpott, 2011; Barlett & Chase, 2004; Barlett, 2011).

**Community Engagement and Stakeholder Buy-In**

The multifaceted dimensions of institutionalization discussed above require stakeholder buy-in at all levels (Chalker-Scott & Collman, 2006; Hazzard, Moreno, Beall, & Zidenberg-Cherr, 2011; Johnson, 2004a; Lopez, 2006). Specifically, it has been suggested that key community members will be more likely to support an effort such as institutionalization if they have been engaged with the effort from the beginning and their feedback has been solicited and incorporated (Centers for Disease Control and Prevention, 2009). Literature specific to institutionalization reveals that special attention should be given to engagement with high-level administrators because they are in a position to make policy changes and be influential champions in a university setting (Chalker-Scott & Collman, 2006; Johnson, 2004a). Community engagement strategies can be used to effectively garner support from high-level administrators (Grunbaum, 2011). Specific methods of community engagement include interviews, forums, and discussions that elicit stakeholder feelings and perceptions toward a program (Grunbaum, 2011). Successful community engagement will contribute significantly to the fulfillment of the three
prongs of institutionalization outlined by Prentice as it can identify high-level stakeholders that can assist in structural, cultural, and procedural integration (Johnson, 2004a; Prentice, 2001).

**Strategic Sustainability Plan**

Community engagement will not be successful if the feedback solicited during this process is not incorporated into the program (Grunbaum, 2011; Jewkes, 1998; Steckler, Dawson, Israel, & Eng, 1993). The findings from community engagement can be presented in a number of ways. In the context of institutionalization, a strategic sustainability plan is helpful because it provides a systematic approach to sustainability that includes clearly articulated goals and objectives (Johnson, 2004a). A number of sustainability templates exist, but Johnson recommends a model that includes sustainability factors, sustainability actions, and intended outcomes (Johnson, 2004a). Johnson has identified two components of sustainability factors, which include infrastructure capacity-building and sustainable innovation confirmation. Capacity building includes components such as champions, effective leadership, and administrative policies. Sustainable innovation confirmation occurs when the sustainability actions (identified through infrastructure capacity-building needs) have been met. Sustainability actions refer to a cycle identified by Johnson as necessary to institutionalization and include assessment, planning, implementation, evaluation, and modification/reassessment. This ongoing process helps ensure that the benefits of the intervention remain relevant and accessible to stakeholders. The intended outcomes consist of immediate and distal results. The immediate result is sustainability readiness, while the distal outcomes are integration of the intervention into the institution and continued benefits to stakeholders (Johnson, 2004a). As this model is consistent with the logic model used in public health program planning, it can be readily incorporated into larger program plans.

By sustaining community gardens through institutionalization, universities can contribute to the creation of social capital on their campuses. This novel intervention can help reverse the trend of
declining social capital by implementing a mechanism for bringing together community members and creating bridging social capital. The distal health outcomes associated with high levels of social capital suggest that this approach is worthwhile.

Established in 2008, the CCCG seeks to be a platform for generating social capital on the UNC campus. Like many campus gardens, it faces a number of obstacles to institutionalization. One important predictor of institutionalization is a program’s maturity and the degree to which it is already integrated within an organization. An assessment of CCCG reveals that the CCCG and its partner organizations (HPDP, UNC Employee’s Forum, NCBG) have already achieved a degree of integration within UNC as insiders to the University. Another important facet of institutionalization, as discussed above, is the presence of administrative champions. Dr. Alice Ammerman, a professor in the Department of Nutrition and Director of HPDP, also serves as co-chair for the 2011 Academic Plan steering committee, which is charged with continuing Carolina’s mission as a leading public university. In these capacities, Dr. Ammerman is an important base for support of the CCCG. It is also important to note that the CCCG is currently under the jurisdiction of the UNC Botanical Gardens, which has been a leader in native plant conservation and education in the southeastern United States for more than 40 years. Other champions for the CCCG include research fellow and project director, Dr. Molly DeMarco, at HPDP; faculty advisor and Director of the UNC Center for Public Service, Dr. Lynn Blanchard; Director of the UNC Botanical Gardens, Dr. Peter White; and the CCCG Education Coordinator, Claire Lorch.

The partial integration of CCCG within UNC and the presence of administrative champions suggest that CCCG has the potential to be institutionalized. The continued engagement of stakeholders and the creation of a sustainability plan will assist in this effort and increase the likelihood of achieving the three prongs of institutionalization outlined by Prentice, which include which consists of structural integration, cultural integration, and procedural integration.
III. Methods

A. Logic Model

To help conceptualize institutionalization within the context of CCCG, we have created a logic model. The CCCG logic model below illustrates the resources, inputs, activities, outputs, outcomes and impact of the Capstone project, with the overall goal of institutionalization in mind. The primary inputs for the Capstone project consisted of human resources, namely the skills and experiences of the Capstone student team, the community partners, the teaching team, and the faculty adviser. Activities included conducting the formative assessment, which served as the foundation for the Capstone activities and included semi-structured interviews, focus groups, student surveys, and their associated analyses. Also included in the activities section is the design and implementation of CCCG Appreciation Day, an event held at the garden plot, during which the Capstone student team disseminated the results of their findings to key stakeholders.

The outputs of the Capstone project included tangible products such as the final versions of the team’s formative research summary report, the literature review, and the sustainability plan. Outputs also included materials for CCCG Appreciation Day, such as the script, roster, and post Appreciation Day evaluations.

Outcomes included the fulfillment of the six action steps outlined by the Capstone team for institutionalization. These include a permanent location for the Garden, secured and recurring funding for the Community Garden Education Coordinator position, increased integration of CCCG into academic programs and research initiatives, increased participation of CCCG beneficiaries, increased data on CCCG impact, and increased visibility of CCCG. The intended impact of this Capstone project includes increased sustainability of the CCCG.
B. Planning for Sustainability

Sustainability of a public health intervention can be operationalized through three different lenses: maintenance of health benefits from a project, institutionalization of a project within an organization, and/or capacity building within the intended recipient, community, or organization (Shediak et al., 1998). Our Capstone project focused on the latter two categories. Our main objective was to ensure the CCCG remains a vital part of the UNC community.

Following our formative assessment, we conceptualized institutionalization as locating permanent land, ensuring recurring funding, and increasing utilization of the garden (academics and research). The factors that influence the sustainability of our Capstone project include project design and implementation factors, organizational factors, and factors within the broader community.
environment. The details of these formative assessment findings can be found in a later section of this summary report entitled “Engagement & Assessment Findings”.

C. Engagement & Assessment Activities

Progress towards sustainability was made through engagement and assessment activities. Principles of Community Engagement, a Centers for Disease Control document that guided our engagement activities, is a comprehensive resource for communities, health care professionals, and researchers to aid collaborative efforts to improve health (CDC, 2011). It defines community engagement as “the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people” (CDC, 1997). Over the last two decades, community engagement has become increasingly important as researchers and practitioners aim to bring sustainable, suitable, and culturally appropriate interventions to different communities.

The benefits of community engagement include increased trust, buy-in, coalition building, better communication among community members, and improved overall health outcomes (CDC, 1997; Shore, 2006; Wallerstein, 2002). As indicated by our background review of the literature, campus gardens are a forum for increased interaction among community members, leading to the creation of a unified and common identity. More than simply “being involved,” community engagement necessitates community participation in the form of shared responsibilities, decision-making, and creation of ideas (CDC, 2011). It consists of three dimensions, which include capacity building, coalition building, and empowerment. Capacity building requires increasing resources and skills, as well as cultivating a shared knowledge or awareness of an issue, among participants (CDC, 2011). Ideally, this shared knowledge is created through educational liberation, where an open and dynamic exchange of ideas occurs between “co-learners”, rather than through a one-sided, static transfer of information between parties (Freire,
Coalition building, defined as fostering the principle that coalitions can achieve together what they could not achieve alone, is another important contributor to community engagement (CDC, 2011). Finally, empowerment at the individual, group, and community levels is also integral to community engagement. While no single individual can explicitly empower a community, the combination of increased community participation, capacity building, and coalition building are all factors in working towards empowering a community.

In the context of the Capstone project, community engagement consisted of the involvement of key stakeholders within the UNC Community. These stakeholders included University administrators (vice chancellors, provosts, vice provosts), land use experts (University architects), faculty, housekeepers, and students. Stakeholders were engaged to uncover their current perceptions of the garden with the hope of eventually developing a shared understanding and increased awareness of the CCCG. The act of bringing together University administrators, land use experts, faculty, housekeepers, and students under a shared purpose has, in itself, fostered a sense of community among these groups.

Our Capstone student team engaged University administrators via semi-structured interviews, with the goal of gathering formative information on their perceptions of the CCCG and their suggestions on how to make it a sustainable entity on campus.

Faculty members were engaged similarly via semi-structured interviews used to gather data on their perceptions of the garden and suggestions for its sustainability. We also inquired as to the possibility of integrating the CCCG into classroom activities and research opportunities, aiming to build awareness of the CCCG as a teaching and research tool. In addition to interviewing faculty traditionally linked to community gardening course areas (e.g., public health and nutrition), we also interviewed distinguished faculty that teach courses in areas that were not currently users of the garden such as anthropology, public policy, law, and social work in order to generate ideas on ways the CCCG might broaden its scope and reach to include other academic disciplines.
In addition to University administrators and faculty members, we also engaged with housekeepers and students—two groups that benefit from CCCG from the food distributions and the volunteer opportunity, respectively. We engaged the housekeepers through focus group discussions designed to capture their opinions and feelings about food distributions and the CCCG as an organization. The housekeepers were able to voice their perceptions about a project that benefits them directly. Students were engaged through an online survey, which assessed their perceptions of CCCG activities and potential ramifications of relocation to an off campus location.

Finally we hosted CCCG Appreciation Day on March 23, 2012 for all stakeholders involved in the engagement activities. Presentations were made detailing the Capstone student team’s recommendations for sustainability and institutionalization of the CCCG, as well as personal testimonials from faculty, housekeepers, and students about their experiences with the garden.

Assessment activities were also an integral component to effectively engaging with the UNC community. First, we completed a thorough review of the literature. The literature made clear that our institutionalization efforts should pay special attention to engage high-level administrators (Johnson, 2004; Chalker-Scott, 2006). Consequently, we utilized a top-down approach in assessing the administrative structure and culture of the University, guided by our faculty advisor, in order to determine which key decision makers within the University to engage. Furthermore, we assessed the reach of the CCCG produce distribution, as tracked by the Garden Education Coordinator, including the number of individuals attending weekly produce distributions for the 2011 growing season.

B. Work Plan Deliverables

As discussed earlier, the deliverables produced by the Capstone student team were designed to help institutionalize the CCCG at UNC. The Capstone student team began with the first deliverable, a formative assessment comprised of qualitative interviews with key stakeholders, focus groups with
housekeepers to help define what institutionalization would look like at UNC, and a survey of students to assess their perceptions of CCCG. The findings of this formative assessment are discussed later under the “Engagement and Assessment Findings” section of the summary report. A supporting literature review, which can be found in the Background section of this document, complements the formative interviews, focus groups, and survey by grounding the evidence in peer reviewed literature. Together, these items revealed where the CCCG currently stands within the fabric of UNC and identified strategies to achieve its institutionalization.

The next deliverable, the CCCG Sustainability Plan, defines sustainability for the garden and lists actionable steps to achieve it. The document highlights the organizational background and structure, programmatic and financial strategies, goals, and recommendations for institutionalization of the CCCG in the UNC community. The recommended action strategies were informed by our discussions with UNC administrators, faculty, housekeepers, and students during our formative assessment, along with discussions with our community partners. They were designed to increase the value and utilization of the CCCG by these stakeholders through integration of the CCCG into course curricula, undergraduate research and service learning opportunities, and also to develop a case for the University to provide recurring funding for a full time Garden Educator position and a locate a permanent plot of land.

The final deliverable, CCCG Appreciation Day, evolved from formative assessment results indicating a need for a shared understanding and greater awareness of the CCCG among administrators, faculty, housekeepers, and students. The Capstone student team presented attendees with a summary of the formative assessment, recommendations for making the CCCG a sustainable entity on campus. Personal accounts from housekeepers who benefited from the garden were also included, along with a presentation by a faculty member who taught a course utilizing the garden, as well as two students who participated in that course. In order for attendees to fully experience the garden, CCCG Appreciation Day was held on-site and included a tour, and a cooking demonstration that used garden produce.
Taken together, these deliverables advance the understanding of institutionalization of the CCCG and provide a framework for achieving it.

IV. Results

A. Sustainability Findings

Project Design and Implementation Factors

Our project design was predominantly informed by organizational change theory. According to the organizational change literature, institutionalization is the degree to which a program is integrated into the recipient setting or community via policies and practice (Goodman & Steckler, 1989, Hoelscher et. al., 2001, Shediak et al, 1998). The results of this assessment, which included University priorities and recommendations for increasing the reach and impact of the garden, informed the sustainability plan, which recommends actions for the long-term sustainability of the CCCG to our community partners.

Factors within the Organizational Setting

Through our formative research we uncovered a strategy for building consensus among the various stakeholders on major decisions regarding the CCCG. This has been achieved through the formation of a CCCG Advisory Council. While the CCCG Advisory Council meets monthly, the working group has not met consistently. This may reflect the competing demands of the members of the working group and may delay the identification of a permanent plot of land for the garden.

Support for the CCCG from the higher-level University administration has been demonstrated by the two consecutive approvals of yearly funding for the CCCG Education Coordinator from the Office of the Provost’s Budget Committee. This funding must be renewed yearly making the future of the Education Coordinator position uncertain. The Vice Provost for Academic Initiatives, whose
responsibilities include oversight of the Botanical Garden, has demonstrated support of the CCCG by applying for the CCCG Education Coordinator position to become a permanent position within the Botanical Garden’s budget beginning in the upcoming budget cycle.

**Factors within the Broader Community Environment**

The difficulties in obtaining funding for the CCCG were and are complicated by an economic recession and subsequent budget cuts to higher public education in North Carolina. As previously mentioned, the CCCG has received funding from the Chancellor’s Office and the Provost’s Budget Committee for an Education Coordinator position for the past two years, demonstrating support. Though the funding was not recurring, the University affirmed its commitment to considering funding for the following fiscal year. Based on previous funding allocations and our formative research, the University political environment is supportive of the CCCG; however, there are some divisions between stakeholders on where and how the garden plot will operate.

In terms of overall support by the UNC-Chapel Hill community, the CCCG is reinforced by many students, staff, faculty, and a larger community of volunteers who help maintain the garden during bi-weekly workdays. The abundance of volunteers at workdays is promising, but presents an additional challenge in terms of volunteer management. There is already some integration into service learning, academics, and research across departments at UNC, as there are several classes, including the APPLES service learning class, that are utilizing the CCCG as a learning tool. For example, Professor Rachel Willis’s American Studies class, “Documenting the Community,” will use the CCCG as the focus for their coming summer project. Our Capstone project itself is further indication of the beginning of the integration of the CCCG into graduate level academics at UNC.

Additionally, low wage UNC workers receive the garden’s produce twice weekly, with 15-30 employees attending each distribution. By the Education Coordinator’s estimates, 90 low wage workers mainly comprised of housekeepers, regularly participated in the weekly distribution of free produce,
representing 23% of the roughly 400 lowest paid UNC employees. This partnership, between the CCCG and the UNC Employee’s Forum, is important to the current service mission of the CCCG for recruiting distribution participants and advocating for increased support for the distributions by facilities management.

Finally, allegations of housekeepers mistreatment both bolstered and hindered our efforts. An independent consulting group was hired in 2011 to evaluate the climate and culture existing among housekeepers at UNC after several concerns were raised regarding housekeeper harassment, discrimination, and unfair treatment (PRM Report). As a result of this situation, administrators may have been incentivized to continue supporting the CCCG as a sign of political goodwill; however, housekeepers may have felt apprehensive or less willing to engage with other university groups. Engagement with these stakeholders was further complicated by scheduling and language barriers.

B. Engagement & Assessment Findings

Through its engagement and assessment activities, the Capstone student team learned of many areas that should be addressed in order to realize the goal of institutionalizing the CCCG. The following strategies were identified as critical factors to promote the institutionalization, and therefore sustainability, of the CCCG and are prioritized in descending order: secured location, recurring funding for the Community Garden Education Coordinator position, academic and research integration, recipient participation, increased data on impact, and marketing the garden.

Secured Location

The first and most pressing matter is to find a permanent location for the garden plot. All stakeholders agree on the importance of maintaining the CCCG, and many would ideally have it stay where it is. However, other options were suggested that may offer long term sustainability, such as
Carolina North or Odum Village. Academic faculty specifically expressed concern about the accessibility of the CCCG for courses and therefore have been more interested in keeping the CCCG on campus.

Regardless of potential future location, the garden plot is currently not considered in the UNC Master Plan, which outlines projected building over the next five years. Inclusion in the Master Plan at a location that is deemed suitable by all parties is the ultimate goal that would greatly increase the likelihood of sustainability.

The formative assessment did not identify any direct solutions to this issue; however, the need for direct and consistent communication between the CCCG, administrators, academics, and land use professionals is a mandatory next step. A working group consisting of the CCCG, administrators, and land use professionals was formed in the summer of 2011 and had the intention of meeting regularly, but the group has only met twice due to scheduling difficulties. The re-formation and consistent, long-term activity of this working group would increase the communication between key stakeholders and, in turn, increase the likelihood of reaching a decision on where the garden plot could be permanently located.

Recurring Funding for Community Garden Education Coordinator Position

Also imperative to the sustainability of the CCCG is the recurring funding the Garden Educator position. The responsibilities of this position include, but are not limited to, educational programming and evaluation, management of sustainably grown produce production and distribution, fundraising, and cultivating relationships with the University and the larger community. Currently, this position has been included in the NCBG 2012-13 budget request and is pending approval.

Academics and Research Integration

Developing additional research and academic endeavors involving the garden would also increase its sustainability. Many administrators see the CCCG as a potential “living laboratory” for
experiential learning, a demonstration project in sustainability, and a means of encouraging multi-
disciplinary cooperation among different departments of the university. The CCCG already serves as a
site placement for an APPLES service learning course, a student-led, staff-supported program that builds sustainable, service-learning partnerships among students, faculty, and communities in North Carolina and beyond. This class, and other courses that have utilized the garden, align with several of the UNC Academic Plan’s guidelines and represents a strong link between the CCCG and UNC academics. Therefore, it is very important for the CCCG to maintain any courses currently utilizing the garden though APPLES. Furthermore, all undergraduates at UNC are required to satisfy an experiential education requirement. Currently, there are not many classes offered that fulfill this requirement. All APPLES courses should be encouraged to acquire the “Experiential Learning” designation. This would likely attract more students and further establish an academic link with the garden.

Increase Recipient Participation

Engaging CCCG beneficiaries (UNC housekeepers) to actively participate in garden activities would increase the sustainability of the program. For example, surveying them about their preferences in produce should be pursued in order to encourage their active participation in the planning and execution of CCCG operations. Additionally, increasing the housekeepers’ buy-in may lead to more active CCCG participation. The Habitat for Humanity model of sweat equity in which individuals who will own the homes must first volunteer a certain number of hours building homes for others was suggested by some administrators. Similarly encouraging housekeepers who receive produce from the CCCG to increase their involvement with the garden beyond distribution may increase their investment in the garden. However, still other administrators expressed concern that most housekeepers cannot afford to live in the Chapel Hill area and also work multiple jobs, making volunteering extremely difficult.

Our focus group discussions with housekeepers presented mixed views on increasing participation in the form of volunteer hours. Some focus group participants agreed with the difficulties
in volunteering while others revealed an interest in volunteering in the garden. Some were enthusiastic and asked if their school aged children could volunteer with them. However, barriers to volunteering were also revealed, including those who were not aware that they were able to volunteer.

It is clear that talks between the CCCG and the UNC housekeeping staff are needed in order to determine the desirability and feasibility of increasing recipient participation. It will be important for the CCCG’s board (in which UNC housekeepers are represented) to continue this topic as an ongoing item on their agendas in order to determine the level of desire for this model, and the feasibility of its implementation (i.e., communicating workday dates and times to housekeepers). Additionally, working with housekeeping supervisors to determine how their employees could use their community service leave would provide opportunities for the housekeepers to participate through volunteering. Holding bi-annual volunteer days that are more amenable to housekeepers’ schedules or better advertising current workdays to housekeepers could increase participation through volunteering. As volunteering is often difficult, other forms of participation should be encouraged, such as sharing personal testimonials that were instrumental in winning a recent grant and presented during CCCG Appreciation Day. An evaluation of CCCG Appreciation Day revealed that these testimonials were the most impactful portion of the program for attendees. Further possibilities for participation include taking pictures of their garden-inspired home meals for use on the CCCG website, or sharing healthy recipes.

**Garden Impact**

The increased quantification of benefits that the CCCG delivers and presentation of these data to key administrators at regular intervals is an important part of increasing sustainability. This would be achieved by keeping official records of distribution statistics. In addition to the current tracking of pounds of produce distributed, summarizing the number of housekeepers and their level of satisfaction would also be beneficial in documenting the impact of the garden.
Moreover, evaluation of student experiences could provide important information about the educational impact of the garden, and perhaps even serve as a recruiting tool. Course evaluations could include specific questions regarding the students’ experience with the garden, and volunteer surveys could document learning beyond the classroom. Future engagement activities should seek to identify students’ perspectives of the CCCG, as they are an influential population on campus that could potentially limit buy-in of the CCCG in the long term. Moreover, most of the CCCG activities impact student activities and curricula, so their input would be invaluable in identifying potential areas of interest for courses and research, as well as experiential learning activities. Future recommendations include holding student focus groups through academic channels (e.g., classes with an environmental or social justice focus), and among representatives of different student groups in order to identify areas for further student involvement. This information could be used in publicity and recruitment efforts as well as provide valuable information for improving the impact of the garden.

Marketing

Finally, it is important to increase the visibility of the CCCG among the campus community. This would help garner support for the CCCG among administrators, faculty, and particularly students, whose support has been identified as very important by many administrators. While the CCCG already attracts a large and consistent volunteer base, many of whom are UNC students, it is clear that more could be done to increase awareness of the CCCG. The CCCG has taken steps towards increasing awareness in recent months by creating a new logo, printing t-shirts, and being involved with a “flash-mob” at the UNC Pit. Sustainability would be encouraged if visibility measures could be included as a permanent fixture in the CCCG’s annual budget. If monies were set aside each year for the intended purpose of increasing awareness though new and creative mediums, it would increase the likelihood of long-term sustainability for the organization.
The administrators who participated in the formative assessment were in positions of authority within the University and have the ability to initiate the necessary changes to facilitate institutionalization. This was considered a strength of this particular stakeholder group. A challenge with our housekeeper stakeholders involved deciding on the most feasible and politically appropriate way in which to engage these housekeepers, given the tensions surrounding their relationship with the University. This situation attracted much media coverage and has been at the forefront of many University employees’ minds. Great care was taken by the Capstone student team to ensure that housekeepers felt at ease, in order to dissipate any understandably apprehensive feelings about the team’s motivations in conducting focus groups.

C. Summary of Deliverables

Together with our community partner, the team identified three deliverables to address the current needs of the CCCG: (1) A Literature review for the sustainability of the CCCG at UNC, (2) CCCG Appreciation Day, Content, Materials and Plan, (3) Sustainability plan for the institutionalization of the CCCG. Each deliverable is described in detail below.

<table>
<thead>
<tr>
<th>Deliverable 1: Literature Review for the Sustainability of the CCCG at UNC</th>
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<tbody>
<tr>
<td><strong>Purpose:</strong> To provide a review of the literature on the social capital benefits associated with community gardens and the institutionalization of community gardens on college campuses. Specifically, we hope to have built a case for the institutionalization of community gardens on college campuses by demonstrating their ability to generate social capital.</td>
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**Timeline:** October 2011 – February 2012 (Approx. 5 months)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Key Findings</th>
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</thead>
<tbody>
<tr>
<td>Conducted searches using PubMed and Google Scholar.</td>
<td>There is growing evidence that gardens are an effective tool for creating social capital within a community (Abbott, 2008; Abraham, 2010; Almedom, 2005; Cattell, 2001; Coleman, 1988; Hale et al., 2011; Hawe, 2000; ‘Yotti’ Kingsley, 2006). This is especially</td>
</tr>
<tr>
<td>Although initial literature review search began with a query for general benefits of community gardens, it became apparent that a more suitable focus for our Capstone project was the benefits associated specifically with social capital (as this was more in line with the mission of the CCCG). From this point onward, the search terms for benefits included “social</td>
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capital and community gardens”, “community cohesion and community gardens”, “capacity building and community gardens”, and “social networks and community gardens”.

- The literature on the health benefits of social capital associated with community gardens is relatively new and growing, so we also had to conduct independent searches of social capital and health (search terms included “social capital and health”, “social support and health”, and “social networks and health”). From this, we were able to conceptualize and categorize the documented social capital benefits of community gardens into community-level health benefits and individual-level health benefits.

- There was a gap in existing literature on institutionalization of campus community gardens, so we conducted independent searches for institutionalization, sustainability of campus gardens, and sustainability of campus organizations. Search terms included “institutionalization of health interventions”, “institutionalization and community gardens”, and “institutionalization and university or college settings”.

- The three broad topics of our literature review (social capital and community gardens, health benefits of social capital, and institutionalization of community gardens) yielded roughly 70 relevant published articles.

**Deliverable 2: CCCG Appreciation Day, Content, Materials, and Plan**

**Purpose:** The CCCG Appreciation Day at the garden plot was held for all participants of interviews and focus groups to share in the findings of the Capstone student team. This event provided an opportunity for the Capstone student team to present a summary of results from our formative assessment, with the overall goal of building awareness and fostering a shared understanding of the CCCG.

**Timeline:** January 2012 – March 2012 (Approx. 3 months)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Key Findings</th>
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<tr>
<td>- The CCCG Appreciation day was held at the garden on March 23, 2012.</td>
<td>Attendees of CCCG Appreciation Day were surveyed about their experience. Results indicated that CCCG Appreciation Day contributed to a shift in participants’ perceptions of CCCG by increasing their awareness of CCCG activities. Additionally, most respondents believed that CCCG Appreciation Day should occur on an annual basis. Respondents were also asked to rank the recommendations for institutionalization suggested by the Capstone student team. Results indicate that the most important recommendation identified by respondents is permanent funding for the Community Garden Education Coordinator.</td>
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<tr>
<td>- Attendees included participants of formative assessment interviews,</td>
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<td>- CCCG Advisory Board, and interested guests.</td>
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<tr>
<td>- Presentations highlighted administrators’ perceptions of the</td>
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<tr>
<td>- CCCG and insights for making it a sustainable entity on the UNC</td>
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<tr>
<td>- campus; faculty suggestions</td>
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regarding academic and research integration of the CCCG; and an account of UNC housekeepers’ perceptions of and experiences with the CCCG.

- A faculty member, students, and housekeepers shared personal accounts of experiences with the garden.

position, followed closely by the acquisition of permanent land, and engaging more with recipient stakeholders. The survey also prompted respondents for their feedback on Appreciation Day contents to facilitate improvements for future events. The findings from the survey will contribute significantly to the institutionalization of CCCG by identifying participants’ (including key administrators) perceptions of CCCG, which will facilitate efforts to align CCCG with University goals and needs. The results will also assist in the prioritization of actions necessary for institutionalization.

### Deliverable 3: Sustainability Plan for the Institutionalization of the CCCG

**Purpose:** To serve as a guiding document to 1) prioritize steps the CCCG can take to work towards land permanence and recurring funding, 2) assess and quantify the value and benefit provided by the CCCG to the University community, and 3) ensure the continued distribution of produce to UNC housekeepers

**Timeline:** September 2011 – April 2012 (Approx. 8 months)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Key Findings</th>
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<tbody>
<tr>
<td>• An informal review of existing sustainability plan literature on the internet was conducted</td>
<td>Key findings included the need for:</td>
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<tr>
<td>• An appropriate outline was devised and approved by the community partners</td>
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<tr>
<td>• 22 semi-structured interviews were conducted with key stakeholders within the UNC community identified with faculty advisor to capture key stakeholders’ perceptions of the CCCG, and their insights into what could make it sustainable on the UNC campus</td>
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<tr>
<td>• 2 focus group discussions were conducted with housekeepers to uncover their perceptions of and experiences with the garden, and ways to effectively engage them</td>
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<tr>
<td>• A survey was conducted to reach students volunteering or enrolled in a course utilizing the garden to learn more about their commuting patterns to the garden and their motivations to be involved with the CCCG</td>
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<tr>
<td>• Capstone student team members drafted sections of the plan. Sections drew from the Capstone Summary Report, background</td>
<td></td>
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<tr>
<td>• Secured Location – A pressing priority for the CCCG is to find a permanent location for the garden plot. Inclusion in the UNC Master Plan would greatly increase the likelihood of institutionalization.</td>
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<tr>
<td>• Staff Funding – An equally pressing priority for the CCCG is to establish recurring funding for the Education Coordinator position. The responsibilities of this position are central to the continued success of the CCCG.</td>
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<tr>
<td>• Academics - Developing additional research and academic endeavors involving the garden would increase the likelihood of institutionalization.</td>
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<tr>
<td>• Increasing Recipient Participation - Engaging CCCG beneficiaries to actively participate in garden activities may increase the sustainability of the program by demonstrating the distributions are of value for them to invest in supporting the CCCG mission.</td>
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<tr>
<td>• Garden Impact - Improved quantification of</td>
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</table>
research, conversations with our community partners, and our formative assessment
- The final document described what sustainability meant for the garden and actionable steps on how to achieve it. The document highlighted the organizational background and structure, contextual considerations, achievements, programmatic and fiscal strategies, goals and recommendations for institutionalization of the CCCG in the UNC community.

benefits that the CCCG delivers and communication of these data to key administrators at regular intervals.
- Marketing - Increasing the visibility of the CCCG among the campus community would help garner support among administrators, faculty, and particularly students who currently comprise the greatest volunteer base.

V. Discussion

A. Strengths and Limitations of Engagement & Assessment Activities

The engagement and assessment activities largely defined the content of the Capstone project. First, formative assessment results were comprehensive and rapidly disseminated to faculty, directly resulting in the inclusion of the CCCG in the curriculum of “Communications and Nonprofits” (COMM625) and “Documenting a Community” (AMST 275). Both of these classes served to strengthen academic linkages with the CCCG, notably in traditionally non-garden focused subject areas, as well as to broaden campus-wide awareness of the CCCG.

In addition to initially engaging multiple stakeholders through our assessment activities, we were able to re-engage with many of them for full dissemination of our results with CCCG Appreciation Day. This effort to engage University officials and follow-through of dissemination to stakeholders will help address the need for greater awareness of the CCCG as expressed by key stakeholders. CCCG Appreciation Day provided a way for administrators, faculty, land-use professionals, , and students to gain an understanding of what it will take to make the garden a sustainable entity on campus and included suggestions for academic and research integration of the CCCG, as well as an account of housekeepers’ perceptions and experiences with the organization.
Limitations existed regarding time and resources within the scope of this project as we decided which stakeholder groups we could fully engage. Given our time limitations and the decision-making capabilities of housekeepers, we chose to prioritize developing relationships with high-level administrators over housekeepers and students. We were only able to do two focus groups with a small number (n=8) of housekeepers, which limited the information we could draw from this stakeholder group. Students were also engaged only minimally, with an online survey about their commuting patterns (n=37). Similarly, our engagement activities could have been strengthened had we held focus groups with those who manage the housekeepers, specifically housekeeping administrators. These personnel are in charge of informing housekeepers of the CCCG and transporting them to distributions. Identifying barriers and facilitators to communications between housekeepers and their managers would have been beneficial as such information may have aided us in recruiting participants for housekeeper focus group discussions. This understanding of the strengths and weaknesses helped define the potential impacts and benefits of the Capstone project.

B. Potential Impact & Benefits

There is growing evidence that gardens are a source of community and individual social capital, which is generated when individuals from diverse backgrounds come together and bond over communal, in this case gardening, activities. At the CCCG, this occurs regularly on workdays at the garden plot, as students, local neighborhood residents, and university faculty and staff convene to maintain the garden, creating social capital among the participants. Community level social capital has been associated with increased capacity to overcome collective D. Armstrong, 2000b; Baker, 2004; Glover, 2004; Twiss et al., 2003; Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007). The individual level benefits of social capital can be observed in students’ survey responses as well, which suggested improved physical well-being as a result of participating in CCCG activities. By working to institutionalize
the CCCG, the Capstone student team’s efforts help ensure that the above benefits will continue to be consistently delivered.

C. Lessons Learned & Challenges

As a result of this Capstone project, the Capstone student team learned several key lessons. First, an internal champion was extremely important for establishing relationships. Our faculty advisor, Dr. Lynn Blanchard, provided guidance on navigating the University administration that enabled us to carry out the formative assessment portion of this project. Dr. Blanchard provided these stakeholders an introduction to the Capstone project via email that likely facilitated the administration’s positive reception to our student inquiry. Secondly, a solid relationship with our Capstone partner organization was integral to the success of the Capstone project. HPDP’s full support enabled the Capstone student team members to complete their tasks. HPDP was committed and engaged throughout the span of the Capstone project, responding to our requests for further mentoring, continued feedback, and additional meetings. Lastly, a professional, collaborative rapport among the Capstone student team members was vital in creating an experience that was both productive and rewarding.

Over the course of the project, we also encountered a number of challenges. Engaging housekeepers via focus groups in a politically charged campus environment, as described earlier, was difficult to maneuver. It took time to establish a channel of communication with this group of stakeholders, and even when this was achieved, the resultant focus group discussion guide had to be modified in order to avoid controversial topics. From an organizational standpoint, navigating five Capstone student team members’ schedules required creative solutions, considering the members’ varying work and family responsibilities. In addition, universities are unique organizations and consist of a multitude of stakeholders. With three core missions tied to academics, research and service, UNC presents challenges and advantages to advocating for funding. Challenges include defining where the
CCCG fits at UNC, as it is not an institute, nor does it belong to a specific department while advantages include the fact that it has so many different potential uses across academic units. Finally, complex decision-making structures that involve hierarchical bureaucracy that, based on our interviews, we could make institutionalizing an entity within the University challenging.

D. Considerations for Sustainability

To assist in the institutionalization of the CCCG, many components of our Capstone project should be maintained over time to ensure that key stakeholders remain engaged and CCCG continues to be relevant to the University’s mission. Specifically, events such as CCCG Appreciation Day should be maintained to ensure that the benefits of the CCCG are conveyed to key administrators. We have thus provided our community partners with materials for CCCG Appreciation Day so that they have a template for planning future events.

Additionally, low-wage employees should continue to inform the CCCG’s day-to-day operation in order to continue to increase their buy-in. This could be done through a variety of methods including focus groups, surveys, or meetings. We provided our community partners with our interview guides, as well as our contacts within the housekeeping community, to ensure that they had the capacity to repeat focus groups specifically.

Student surveys should also be administered regularly to solicit their feedback on the CCCG. This input can be used to expand the CCCG’s role in academics and extracurricular activities. To encourage the continuation of these surveys, we have outlined the steps we took to administer the surveys for our community partners and provided them with the specific questions we used.

Additionally, most stakeholders believe that the CCCG could not be considered institutionalized without the University taking responsibility for the majority of funding. In the long term, a more diversified source of funding, including external grants, may be sought to ensure sustainability. We have
provided detailed recommendations regarding diversified funding to our community partners in our sustainability plan. As sustainability is the overall goal of our Capstone project, the timeline for this component of our capstone project extends for the duration of this academic year. As reflected in the definition of sustainability outlined in this document, it is our goal that the CCCG remain operational beyond the duration of our project.

VI. Conclusions & Recommended Next Steps

The CCCG has garnered significant support from the University at all levels, including top administrators. Despite this multilateral support, the path to sustainability, through institutionalization, remains uncertain. However, in spite of these challenges, it continues to provide significant tangible benefits to the University, fresh produce for the University’s lowest wage earners, an experiential learning laboratory for class work and research, and a public service site for staff and students. The CCCG also provides countless intangible benefits, including increased goodwill among administrators and housekeepers and social cohesion among various stakeholder groups.

Sustainability through institutionalization for the CCCG means a permanent garden space, recurring funding for an Education Coordinator position, integration into the academic and research mission of the University, and continued service to the needs of lower wage UNC employees. By following the action steps outlined in the Sustainability Plan prepared by the Capstone student team, the CCCG can harness their growing support and popularity among a wide array of UNC community members. Close adherence to these action steps will allow the CCCG to thrive at UNC for years to come.


VII. Appendices

Final Work Plan

Carolina Campus Community Garden (CCCG)
Capstone REVISED Work Plan
February 2012

A. Capstone student team Members

<table>
<thead>
<tr>
<th>Name, Degree(s)</th>
<th>Community Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Members</strong></td>
<td>Molly De Marco, Melissa Cunningham, Claire Lorch</td>
</tr>
</tbody>
</table>
| **Community Partners** | UNC Center for Health Promotion & Disease Prevention  
1700 Martin Luther King Jr. Blvd. CB# 7426, Chapel Hill, NC 27599-7426  
*Phone:* (919) 966-9563  
*Fax:* (919) 966-3374  
*E-mail:* molly_demarco@unc.edu, melissa@unc.edu, clorch@email.unc.edu |

<table>
<thead>
<tr>
<th>Name, Degree(s)</th>
<th>Faculty Adviser</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty Adviser</strong></td>
<td>Lynn Blanchard</td>
</tr>
</tbody>
</table>
| **Clinical Associate Professor** | Clinical Associate Professor  
Health Behavior  
Carolina Center for Public Service  
CB#3142  
Chapel Hill, NC 27599-3142  
*Phone:* (919) 843-7570  
*Fax:* (919) 843-7370  
*E-mail:* blanchard@unc.edu |

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trent Johnson</td>
<td>530-400-4724</td>
<td><a href="mailto:trent@unc.edu">trent@unc.edu</a></td>
</tr>
<tr>
<td>Veronica Conti</td>
<td>301-461-4742</td>
<td><a href="mailto:vconti@email.unc.edu">vconti@email.unc.edu</a></td>
</tr>
<tr>
<td>Anne Cabell</td>
<td>919-906-6190</td>
<td><a href="mailto:acabell@email.unc.edu">acabell@email.unc.edu</a></td>
</tr>
<tr>
<td>Shelly Yu</td>
<td>561-789-0758</td>
<td><a href="mailto:shyu@email.unc.edu">shyu@email.unc.edu</a></td>
</tr>
<tr>
<td>Chris Akiba</td>
<td>612-772-4533</td>
<td><a href="mailto:akiba@email.unc.edu">akiba@email.unc.edu</a></td>
</tr>
</tbody>
</table>
B. Working Title
Planning for the Sustainability of the Carolina Campus Community Garden (CCCG): a Model for Using a Campus Garden as an Educational and Research Tool for a University Community

C. Capstone project Description

The Carolina Campus Community Garden (CCCG) is an organization that maintains an on campus garden plot at the University of North Carolina at Chapel Hill (UNC) for growing fresh vegetables and fruit, with the goal of enabling access to fresh produce for low wage workers, and to foster community among staff, students, faculty and local residents. The Capstone student team will look to prioritize the more immediate goal of institutionalizing the CCCG so that it can continue to carry out its mission. Henceforth, “CCCG” will refer to the garden as an organization, and “garden plot” will refer to the garden as a physical entity. Currently, the CCCG does not have a permanent plot of land at UNC and is only temporarily funded. It is the goal of the Capstone student team to institutionalize the CCCG by working within the University to build awareness about and increase utilization of the CCCG.

We will accomplish this by doing formative research including semi-structured interviews with key stakeholders within the UNC community. The perceptions and insights provided by these stakeholders will help us outline specific goals towards solidifying the CCCG as a permanent part of the University, e.g., securing recurring funds for a staff position, land, etc. These interviews will also help us understand how UNC faculty may integrate the CCCG into their curricula, directly linking it with the University’s academic mission, and how administrators and faculty envision integrating the CCCG into research projects. We also plan to conduct focus groups with housekeepers to uncover their perceptions of and experiences with the garden, and how we might effectively engage them. A literature review will be conducted in order to better shape and inform our discussions with the UNC community.

D. Deliverables & Activities

Deliverable 1: Formative Assessment

Project Leader: Chris Akiba

Purpose: The formative assessment will consist of a systematic approach to gathering information from key stakeholders. We will conduct 35 semi-structured interviews in order to capture key stakeholders’ perceptions of the CCCG, and their insights into what could make it sustainable on the UNC campus. We will also conduct two focus group discussions with UNC housekeepers to uncover their perceptions of and experiences with the garden. Lastly, we will administer surveys to students to obtain a deeper understanding of their involvement with their garden.

The semi-structured Interviews will last approximately 30 minutes, and will be digitally recorded unless the request to record is denied by the interviewee. Interviews will include University administrators, land use experts, and faculty. Two focus groups will be conducted with UNC housekeepers, each lasting for approximately one-hour. Participants will include 6-10 UNC housekeepers, as well as a facilitator and a scribe from the Capstone student team.

Semi-Structured Interviews

Administrator interviewees include the Executive Vice Chancellor and Provost, Vice Chancellors, Executive Associate Provosts, Chair of the Employee Forum, and several others. Questions will first gather basic demographics, such as roles and responsibilities within the University. Then, questions will be asked to determine perceptions of the CCCG and uncover insights to its
Sustainability on campus. Open-ended questions will be tailored according to administrator responsibilities, namely securing financial support in the University setting, integration into the University curricula and research, impact on housekeepers, and potential means to a permanent garden plot location on campus.

Interviews with University land use experts will include professors and employees in the City and Regional Planning Department, UNC Property Office, and UNC Facilities office. Interviews will be similar in format to those conducted with administrators, with the goal of better understanding the University’s land use policies and how they relate to the CCCG. Questions will concentrate on background information on the space the garden currently occupies, potential future locations for the garden plot, factors contributing to the choice of location for the garden plot, and how to make the garden plot a priority in University land use planning.

Faculty and lecturer interviews will be similarly structured and contain questions aimed at understanding how faculty can or have previously incorporated the garden plot into their curricula and/or research projects. Specific questions include how using the garden plot can enhance their teaching and/or research, and what partnerships might benefit the CCCG in improving the utilization of the garden in research, e.g., APPLES Service Learning Courses, Office of Undergraduate Research.

Focus Group Discussions

In addition to the one-on-one interviews with key administrators, we will also conduct focus group discussions among housekeepers in order to capture their perceptions, thoughts, and personal experiences with the CCCG. Discussion questions will be designed to promote an open dialogue on a variety of topics including general knowledge of the garden and its work days, barriers and facilitators to participation in food distributions, and whether these distributions are meeting housekeepers’ needs.

We will use the results of this formative assessment to shape our final deliverables, particularly CCCG Appreciation Day and the sustainability plan.

Student Surveys

Through our initial interviews with key administrators, land use experts, and faculty, we noticed that there was some tension around the garden’s future location and its impact on student involvement. Specifically, many faculty members expressed concern that an off-campus location would deter students from utilizing the garden on a regular basis. However, key administrators have shared that access to on-campus land is contentious due to limited space. To obtain a better understanding of the potential impact of this issue, we will design and administer a survey to students who are currently utilizing the garden. The results of these surveys will be presented at CCCG Appreciation Day and used to inform our recommendations in the sustainability plan.

Activities and Timeline

<table>
<thead>
<tr>
<th>Activities</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Key Stakeholder Interviews</td>
<td>Due: 1/15/12</td>
</tr>
<tr>
<td></td>
<td>Completed: 1/15/12</td>
</tr>
<tr>
<td>1.1 Learn about the current Administrative organizational structure via ‘Admin101’ with Lynn Blanchard</td>
<td>Due: 9/6/11</td>
</tr>
<tr>
<td></td>
<td>Completed: 9/6/11</td>
</tr>
<tr>
<td>Task Description</td>
<td>Due Date</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Identify potential interview subjects</td>
<td>9/20/11</td>
</tr>
<tr>
<td>Develop semi-structured interview guide</td>
<td>9/20/11</td>
</tr>
<tr>
<td>Develop research questions</td>
<td>9/20/11</td>
</tr>
<tr>
<td>Develop interview questions and probes</td>
<td>9/20/11</td>
</tr>
<tr>
<td>Finalize interview guide</td>
<td>9/20/11</td>
</tr>
<tr>
<td>Schedule and conduct tape recorded interviews with key UNC community stakeholders</td>
<td>9/16/11 – 1/15/12</td>
</tr>
<tr>
<td>Review interview results and appropriately adjust the interview guide</td>
<td>weekly 9/16/11- 1/15/12</td>
</tr>
<tr>
<td>Compile results of all interviews (highlight key findings, pull out illustrative quotes)</td>
<td>1/15/12</td>
</tr>
<tr>
<td>Each team member read every interview transcript</td>
<td>1/30/12</td>
</tr>
<tr>
<td><strong>UNC Housekeeper Focus Groups</strong></td>
<td><strong>Week of 12/19/11</strong></td>
</tr>
<tr>
<td>Develop focus group discussion guide</td>
<td>12/1/11</td>
</tr>
<tr>
<td>Present focus group discussion guide to teaching team for review</td>
<td>12/1/11</td>
</tr>
<tr>
<td>Present focus group discussion guide to community partners for review</td>
<td>12/9/11</td>
</tr>
<tr>
<td>Conduct focus groups with UNC housekeepers</td>
<td>Week of 3/2/2012</td>
</tr>
<tr>
<td>Each team member read every focus group transcript</td>
<td>3/9/2012</td>
</tr>
<tr>
<td><strong>Student Surveys</strong></td>
<td><strong>3/9/2012</strong></td>
</tr>
<tr>
<td>Create draft of student survey</td>
<td>2/1/2012</td>
</tr>
<tr>
<td>Submit draft to community partners, teaching team, and faculty advisor for review</td>
<td>2/1/2012</td>
</tr>
<tr>
<td>Incorporate feedback from community partners, teaching team, and faculty advisor and finalize</td>
<td>2/5/2012</td>
</tr>
<tr>
<td>Activity</td>
<td>Due Date</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>3.4 Administer student surveys</td>
<td>2/6/2012</td>
</tr>
<tr>
<td>3.5 Analyze results and summarize</td>
<td>3/9/2012</td>
</tr>
<tr>
<td><strong>4.0 IRB Approval</strong></td>
<td><strong>Due: 10/29/11</strong>&lt;br&gt;<strong>Completed: 10/29/11</strong></td>
</tr>
<tr>
<td>4.1 Complete determination form documenting that, based on research intentions and IRB requirements, IRB approval is not necessary for the project.</td>
<td>10/29/2011</td>
</tr>
<tr>
<td><strong>5.0 Summarizing/Analyzing Results</strong></td>
<td><strong>Due: 3/16/2012</strong>&lt;br&gt;<strong>Completed: 3/1/12</strong></td>
</tr>
<tr>
<td>5.1 Summarize results thus far for discussion at mid-October community partner meeting at HPDP</td>
<td>10/18/11</td>
</tr>
<tr>
<td>5.2 Summarize results thus far for discussion at December community partner meeting</td>
<td>12/6/11</td>
</tr>
<tr>
<td>5.3 Analyze and summarize results of semi-structure interviews, focus groups, and surveys</td>
<td>3/16/12</td>
</tr>
</tbody>
</table>

**Deliverable 2: Literature Review**

**Project Leader:** Shelly Yu

**Purpose:** To provide a review of the literature related to the institutionalization of community gardens on college campuses. Specifically, we will provide information on social capital benefits associated with gardens and the institutionalization of community gardens within university settings. This review is intended to inform our efforts in institutionalizing the CCCG. Additionally, the literature review will be distributed to our community partners, who can disseminate the information to other campus gardens as a resource.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Determine scope of literature review</td>
<td><strong>Due: 9/13/11</strong>&lt;br&gt;<strong>Completed: 9/13/11</strong></td>
</tr>
<tr>
<td>2.0 Conduct first draft of literature review</td>
<td><strong>Due: 3/1/12</strong>&lt;br&gt;<strong>Completed: 3/1/12</strong></td>
</tr>
<tr>
<td>3.0 Submit final literature review</td>
<td><strong>Due: 4/1/12</strong>&lt;br&gt;<strong>Completed: 4/1/12</strong></td>
</tr>
</tbody>
</table>

**Deliverable 3: Sustainability Plan**

**Project Leader:** Veronica Conti

**Purpose:** To serve as a guiding document to 1) prioritize steps the CCCG can take to work towards land permanence and recurring funding, 2) assess and quantify the value and benefit
provided by the CCCG to the University community, and 3) ensure the continued distribution of produce to UNC’s lowest wage employees. The results of our formative assessment will inform each of these areas and ultimately a sustainability plan that will enable the CCCG to remain operational well beyond the duration of this project.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Timeline</th>
</tr>
</thead>
</table>
| 1.0 Review existing community garden sustainability plans and visit 2 other University gardens | Due: 9/7/11-10/6/11  
Completed: 10/5/11 |
| 2.0 Analyze land use policies to understand how land is appropriated in the University setting | Due: 9/1/11 – 9/30/11  
Completed: 9/30/11 |
| 3.0 Integrate formative research results into sustainability plan | Due: 3/16/12  
Completed: 3/15/12 |
| 4.0 Write sustainability plan based on formative research | Due: 1/15/12 – 3/1/12  
Completed: 3/1/12 |

**Deliverable 4: CCCG Appreciation Day**

**Project Leader:** Anne Cabell

**Purpose:** The CCCG Appreciation Day at the garden plot will be held for all participants of interviews and focus groups to share in the findings of the Capstone student team. This event will provide an opportunity for the Capstone student team to present a summary of results from our formative assessment, with the overall goal of building awareness and fostering a shared understanding of the CCCG. Presentations will highlight administrators’ perceptions of the CCCG and insights for making it a sustainable entity on the UNC campus. Faculty suggestions regarding academic and research integration of the CCCG will also be included, along with an account of the UNC housekeepers’ perceptions of and experiences with the CCCG.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Timeline</th>
</tr>
</thead>
</table>
| 1.0 Develop Garden Appreciation Day content | Due: 3/1/12  
Completed: 3/1/12 |
| 2.0 Advertise Garden Appreciation Day (ongoing during interviews; written invitations) | DUE: 1/1/12-2/20/12  
Send save the date by 1/20/12  
Send written invitations by 2/20/12  
Completed: 2/20/12 |
| 3.0 Conduct Garden Appreciation Day | Due: 3/23/12  
Completed: 3/23/12 |

**E. Important Health Behavior Principles**

a. **Theory-Grounded**

Considering our goals surrounding policy change and community support, our Capstone project will be grounded in several theories. This includes the diffusion of innovation (in order to diffuse, disseminate, communicate, and sustain information about the CCCG), organizational development theory (to assess and potentially change UNC’s climate and culture in support of
CCCG), and social marketing theory to tailor our message to more effectively engage different subgroups of the University community that were defined during our formative assessment.

b. Evidence-Based

We will use evidence-based information in creating the content, marketing plan, and administrative tasks for Garden Appreciation Day. Evidence-based research will guide the development of our sustainability plan. This research will inform our analysis of land-use policies to support community gardens in a university setting, as well as guide our interactions with University administrators and planning experts. Finally, we will review the literature available on creating a comprehensive toolkit intended to aid institutionalization of community gardens in other university settings across the nation.

c. Participatory

Our Capstone project will be participatory by engaging four different sub-populations of our target population within the broader UNC community; UNC administrators, faculty, students, and housekeepers. Our project will engage UNC administrators and faculty via semi-structured interviews with the goal of gathering formative information on their perceptions of the CCCG and their suggestions on how to make it a sustainable entity on campus. Administrator interviews will take an additional focus on financial, land use, and housekeeper engagement issues while faculty interviews will focus especially on the possibility of the CCCG as a teaching and research tool. Students will be engaged with the CCCG project through surveys, as well as campus events such as sustainability day, and classes that integrate the garden into their curriculum. In addition we will engage UNC housekeepers, through focus group interviews designed to capture their perceptions, thoughts, and experiences with the CCCG. The results of these focus groups will help inform strategies on how to improve the content and reach of food distributions along with uncovering how housekeepers might be further engaged. The culminating result of our participatory efforts will be to invite members of our aforementioned target sub-populations to a CCCG Appreciation Day in March 2012 to present to-date results of our project, further the UNC community’s awareness of the CCCG, and help garner added buy-in from UNC administrators, faculty, students, and housekeepers.

d. Public Health-Oriented

The goal of our Capstone project can be understood within the context of immediate and future goals. Our immediate goal includes the institutionalization of the CCCG on the UNC campus as a vehicle for increasing access to fresh produce access by the low-income population of UNC housekeepers, a multi-disciplinary academic and research tool, and a model of sustainable agriculture. As a result of our sustainability plan and toolkit, awareness of and demand for sustainable agriculture will grow not only on the UNC campus but throughout the country leading to improved environmental, physical, mental, and community health. Environmental Health: The current industrial agriculture system consumes fossil fuel, water, and topsoil at unsustainable rates and contributes to increasing air and water pollution, soil depletion and diminishing biodiversity. In addition, the pesticides used heavily in industrial agriculture are associated with elevated cancer risks for both farm workers and consumers (Horrigon et al., 2002). Sustainable agriculture has the potential to reverse many of these troubling environmental health trends (USAID). Physical Health: Studies show that community gardens are a viable method of increasing access to fresh fruits and vegetables, which can be an important asset in lower income populations that may often lack access (Willis, 2010, Hoffman 2007, McCormack, 2010). In turn, increased availability and access to healthy food options may
help stem rising trends in obesity and other chronic disease (CDC, 2010). Community gardens may also provide a platform for increased physical activity which can lead to obesity prevention (Crespo et al., 1996, Yusuf et al., 1996 and Magnus et al., 1979). In the long term, these changes include lasting impacts on the local food culture with the normalization of physical activity and consumption of healthy foods.  

**Mental Health:** In addition to improved physical health, gardening, being outside, and interacting with others can have lasting benefits to mental health and personal well-being (Hoffman, 2007, Bellows et al., 2008). **Community Health:** Beyond the individual level, the activities of the CCCG will also help to foster an engaged community. By working in the garden together, participants will be able to interact with others in the community in a way that they may not have before.

e. **Attention to the Potential for Sustainability and Dissemination**

The main objective of our Capstone project is to ensure that the CCCG remains a vital part of the UNC community. For example, the formative assessment, which entails communication with the UNC administration, will be an iterative process in order to ensure that the CCCG’s activities remain relevant to the mission of the University. Mechanisms to ensure that there is ongoing dialogue will be put in place. The results of the formative assessment will be shared with CCCG staff and will inform the creation of all other deliverables. Additionally, we have provided our focus group interview guides as well as the student surveys so that CCCG can continue to seek input from these groups and monitor changes in perceptions of CCCG activities.

F.  **IRB Implications**

The deliverables of this Capstone project do not require IRB approval.

G.  **Roles & Responsibilities**

*The student team has identified the following team members for the roles listed below:*

a. **Teaching Team Liaison:** Veronica Conti

b. **Mentor (Community Partner and Faculty Adviser) Liaisons:** Anne Cabell (HPDP), Shelly (Dr. Lynn Blanchard)

c. **Department Liaison:** Trent Johnson

H.  **Resources**

a. **Capstone Site Resources**

The Health Behavior department might reimburse up to $100 of expenses relating to the direct activities necessary to carry out the established deliverables of the Capstone student team.

The student team will have access to an office space where the team can meet. They also have access to computers, printing, copying, faxing, and phone use.

b. **Community Partner Key Personnel**

<table>
<thead>
<tr>
<th>Name, Degree(s)</th>
<th>Title</th>
<th>Relationship to Capstone student team</th>
<th>Communication Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Ammerman, PhD</td>
<td>Director, Center for Health Promotion and Disease Prevention</td>
<td>Oversees HPDP</td>
<td>Communication will be done via Molly</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Area(s) of Expertise</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Kurt Ribisil</td>
<td>Historic Neighborhood President</td>
<td>Marketing, neighborhood dynamics</td>
<td></td>
</tr>
<tr>
<td>Jonathan Morgan</td>
<td>Associate Professor, School of Government</td>
<td>Economic and community development</td>
<td></td>
</tr>
<tr>
<td>Jackie Overton</td>
<td>Chair Employee Forum</td>
<td>Employee needs/housekeeper access</td>
<td></td>
</tr>
<tr>
<td>Philip Berke, PhD</td>
<td>Professor; Deputy Director, Institute for the Environment</td>
<td>DCRP Professor</td>
<td></td>
</tr>
</tbody>
</table>

### c. Consultants on Call

#### I. Logistical Considerations

#### a. Timing

The CCCG has certain seasons when it is most productive, and we should keep this in mind when scheduling the Administrator Day.

Other dates to keep in mind:
1. APHA Annual Meeting from October 29 – November 2
2. APA Annual Meeting from April 14-17

#### b. Travel

The student team plans on visiting 2 other community gardens in University settings. They will confine their visits to universities within a 1.5 hour radius (Duke, NC State, Elon, High Point, Campbell, etc). HPDP is willing to assist by providing a state car or van.

#### c. Other

It is also important to note that while gardening skills are beneficial, they are also not required for students as a prerequisite for their participation in the Capstone project.
Permissible Uses of Information

d. Ownership of the Deliverables

The community partner owns the final deliverables. However, Health Behavior reserves the right to publicly list the organization as a community partner, to keep copies of all Capstone student team's final deliverables for review by the Health Behavior community, and to include a brief project description in Capstone promotional materials.

The Capstone deliverables will be made publically available and thus will be available to the Capstone student team for any future professional endeavors.

e. Authorship

If published, the lead Capstone student team member assigned to the specific deliverable will be included as author, if his/her work is of suitable quality. Other Capstone student team members could potentially receive co-authorship for a publication that they did not lead, if their contribution warrants authorship.

f. Use of Recorded Materials

Community partners and future Capstone Health Behavior students may use the materials produced by the Health Behavior MPH students during the Capstone project.