

ABSTRACT

GLEN, CHARLOTTE DAWSON. Extension Master Gardener Volunteer Administration: Competencies and Training Needs of North Carolina Extension Agents. (Under the direction of Drs. K. S. U. Jayaratne and Gary Moore).

Volunteer administration competencies are an important aspect of job proficiency for Cooperative Extension professionals. This is particularly true of Extension agents with consumer horticulture programming responsibilities, for whom Master Gardener volunteers are an integral component of program delivery. This descriptive survey research study investigated the competencies that are important for Extension agents to lead successful Extension Master Gardener (EMG) programs, assessed the self-reported proficiency levels of these competencies among North Carolina Extension agents with Master Gardener volunteer administration responsibilities, and determined the training needs of these agents. The web-based survey instrument included 55 individual competency statements categorized into five competency constructs. The entire population of 66 N.C. Cooperative Extension agents with Master Gardener volunteer administration responsibilities was invited to participate in the study. A total of 35 agents participated, resulting in a 53% response rate.

All five competency constructs were perceived to be important, with mean scores ranging from 4.28 to 4.44 on a five-point scale. The competency constructs of personal skills and systems leadership were perceived to be the most important, followed by organizational culture, management skills, and organizational leadership. Individual competencies perceived as most important to successful Master Gardener volunteer administration were the abilities to effectively enlist the assistance of volunteers, create a positive environment in which volunteers can work and learn, cultivate successful working relationships with volunteers, plan and implement

training that prepares volunteers for service, and communicate Extension's mission and goals to volunteers.

Proficiency levels for all five constructs were perceived to be average, with mean scores ranging from 3.07 to 3.62 on a five-point scale. Agents felt most proficient in constructs they rated as most important, with personal skills, organizational culture, and systems leadership rating highest in self-reported proficiency and organizational leadership and management skills rating lowest. Statistical analysis of agents' self-reported proficiency levels within competency constructs revealed the demographic variable, number of Master Gardener volunteers in the EMG program, to have a moderate, positive correlation with self-reported proficiency in the organizational culture, personal skills, and management skills constructs. No other correlations between self-reported proficiency levels and demographic variables were found.

Training needs were identified by calculation of mean weighted discrepancy scores, which ranged from 3.39 to 5.50 for competency constructs. The greatest training need was for the management skills construct, followed by systems leadership, organizational leadership, personal skills, and organizational culture. Training need scores for the 55 individual competencies ranged from 2.06 to 8.43, with 16 competencies scoring greater than 5.0. Competencies with the highest training need scores were disengage volunteers who exhibit problematic behaviors, inspire volunteers to accept leadership positions, redirect MG volunteers who do not fit well in a position, and identify and implement strategies to retain volunteers.

The development of a volunteer administration competency assessment tool based on the finding of this study will allow agents to determine and prioritize their professional development needs. Educational opportunities and resource materials that support attainment of volunteer administration competencies should be made available to agents, with support for management

skills and systems leadership given the highest priority. Including volunteer administration duties in horticulture agent job postings, hiring candidates who demonstrate competence in volunteer administration, and promoting and recognizing attainment of volunteer administration competencies will result in increased competency proficiency, enhanced volunteer engagement, increased organizational capacity, and greater outcomes and impacts for program participants and communities. The findings of this study are limited to N.C. Cooperative Extension agents with Master Gardener volunteer administration responsibilities. Additional study, utilizing a multi-state sample, is needed to broaden the recommendations of this study beyond North Carolina.

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Extension Master Gardener Volunteer Administration: Competencies and Training Needs of
North Carolina Extension Agents

by
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A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Education

Agricultural and Extension Education

Raleigh, North Carolina
2019

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BIOGRAPHY

Charlotte Dawson Glen was raised in a rural, farming community in eastern North Carolina. Her life-long interest in horticulture was inspired by her grandmother, who was an avid naturalist and gardener, and her grandfather, a farmer and vegetable gardener who was always eager to share the harvest. Mrs. Glen attended NC State University in 1992 and 1994, majoring in horticulture. In 1993, she participated in a yearlong internship at Threave Gardens in Castle Douglas, Scotland that was sponsored by Scottish Heritage, USA. She later interned at Longwood Gardens in Kennett Square, PA, and move to New Zealand, transferring her degree to Lincoln University, Canterbury, New Zealand, from which she graduated with a Bachelor of Horticulture in 1998.

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ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my graduate advisory committee, Dr. Jay Jayaratne, Dr. Gary Moore, Dr. Lucy Bradley, and Dr. Harriett Edwards, for their guidance and support in completing this dissertation and my doctoral degree. With your encouragement and gentle prodding, I finally made it!

I would also like to thank my husband and children for their support and patience through this process, my parents, who have encouraged me all my life though in different ways, and my grandmother and grandfather for showing me the joy that can be found in a garden.

Most importantly, I would like to thank and acknowledge the many Master Gardener volunteers and horticulture agents who have chosen to share their knowledge and passion for horticulture with others. This research is dedicated to you and all you do to connect people, families, and communities with the many important benefits plants and gardening bring to our lives.

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CHAPTER 1

INTRODUCTION

Volunteers expand the capacity and enhance services provided by non-profit organizations, businesses, educational institutions, and community-based organizations across the United States. The Corporation for National and Community Service (2019) reports 77.3 million Americans, 30.3% of the population, age 16 and over volunteered nearly 6.9 billion hours in 2018 in support of religious, sports, hobby, cultural or arts organizations and educational or youth services. Major activities in which volunteers engaged were fundraising, collection and distribution of food and clothing, mentoring youth, teaching or tutoring, and providing general labor or transportation. Organizations engaging volunteers may realize many benefits, including increased quality of programs, the ability to offer services not otherwise possible, cost savings to the organization, and increased public support (Hager, 2004b). To maximize the benefits of volunteer involvement, organizations require staff dedicated to volunteer administration, yet lack of volunteer administration capacity is among the greatest barriers organizations face in mobilizing volunteers (Hager, 2004a).

Volunteers are an integral component of program delivery within Cooperative Extension, assisting in behind-the-scenes roles as well as direct client interaction in program areas ranging from 4-H youth development, family and consumer sciences, natural resources, and consumer horticulture (Boyd, 2004; Snider, 1985; Bezold, 1989; Washburn, Traywick, Copeland, & Vincent, 2017; Allred, Goff, Wetzels, & Lou, 2011; Bonneau, Darville, Legg, Haggerty, & Wilkins, 2009; McAleer, 2005; Meyer, 2007). Beginning in the 1960's, master volunteer programs were implemented to expand Extension's capacity to reach audiences with educational programming in areas such as composting, food preservation, and gardening; These programs

provide intensive and detailed training to volunteers, who then deliver education and research-based information to clients on Extension's behalf (Strauss and Rager, 2017).

The Extension Master Gardener program is a significant Extension master volunteer program with widespread recognition and support (McAleer, 2005). Initiated in 1972 by county Extension agents in Washington State, the original purpose of the Extension Master Gardener (EMG) program was to train local gardeners to answer common gardening questions so they could provide advice on behalf of Extension. The program spread rapidly in response to an overwhelming demand for horticultural information from the public and the quality of the training and outreach activities it provided (McAleer, 2005). By 1991, it had been replicated in 45 states and four Canadian provinces, and today can be found in all 50 American states, throughout Canada and in South Korea (Langellotto, Moen, Straub & Dorn, 2015). Initiated in North Carolina in 1979, the EMG program has since been established in 84 of N.C. Cooperative Extension's local centers, which operate in each of the state's 100 counties and among the Eastern Band of Cherokee Indians (emgv.ces.ncsu.edu, 2019).

Master Gardener volunteers are vital to the delivery of Extension's consumer horticulture programs, greatly expanding the organization's capacity to reach diverse audiences and provide communities with access to research-based information and technology (Lockett, Cummings & Ripley, 2010; McAleer, 2005; Meyer, 2007). Nationwide it is estimated conservatively that over 86,000 Extension Master Gardeners volunteer a total of over five million hours each year in service to their local Extension program, and are responsible for a minimum of eight million client contacts (Extension Master Gardener National Committee, 2018). In North Carolina, at least 3,200 EMG volunteers are engaged, volunteering over 200,000 hours in 2018 in roles that include serving as mentors for community and school gardens, maintaining demonstration

gardens, staffing gardening hotlines, teaching sustainable gardening practices, and organizing fundraisers in support of Extension's programming (NC State Extension, 2019). Extension agents based in county Extension centers across the state are primarily responsible for the recruitment, training, engagement, supervision, and recognition of these volunteers, in addition to responsibilities that may include consumer and commercial horticulture programming, pesticide education, and administrative duties.

Agents with volunteer administration responsibilities must be proficient in volunteer leadership and management competencies for Extension to realize fully the tremendous benefits and assets volunteers bring to the organization (Boyd, 2004; Lockett et al., 2010). Utilizing a Delphi study, Boyd (2004) identified 33 competencies organized within five constructs that all Extension agents who engage volunteers should possess. These competencies were validated in a Delphi study led by Lockett (2007) to determine which competencies are needed to be an effective and efficient Master Gardener volunteer coordinator. While various volunteer administration competency frameworks have been used to study 4-H youth development professionals' proficiencies and training needs (Culp & Kohlhagen, 2004; Schmiesing & Safrit, 2007; Stedman & Rudd, 2006), a thorough search of the literature revealed no studies that have assessed volunteer administration proficiency levels and training needs specific to agents with EMG program responsibilities.

Statement of the Problem

Volunteer administration competencies are an important aspect of job proficiency for Extension professionals (Boyd, 2004; Harder, Place, & Sheer, 2010). This is particularly true of agents with consumer horticulture programming responsibilities, for whom Master Gardener

volunteers are an integral component of program delivery (McAleer, 2005; Meyer 2007). With over 86,000 active Extension Master Gardener volunteers and EMG programs established in every state (Extension Master Gardener National Committee, 2018), research to identify the essential competencies specific to Master Gardener volunteer administration is critical.

Volunteer administration competencies needed by 4-H Youth Development agents have been well studied (Culp & Kohlhagen, 2004; Schmiesing & Safrit, 2007; Stedman & Rudd, 2006), however, very little research has been conducted to determine which competencies are most important in Master Gardener volunteer administration, current proficiency levels, or training needs. This lack of research limits agents' ability to understand competencies needed to succeed in their role, identify their professional development needs, seek appropriate training opportunities, develop their competency proficiency levels, and increase program outcomes and impacts. Further, this lack of knowledge diminishes Extension's impact by limiting the organization's ability to prioritize training needs, provide resources and support for professional development, and target hiring practices to select candidates best equipped for success.

Purpose of the Study

The purpose of this study was to determine which competencies are important for Extension agents to lead successful Extension Master Gardener programs, assess the self-reported proficiency levels of these competencies among North Carolina Extension agents with Master Gardener volunteer administration responsibilities, and determine the training needs of these agents. More specifically, the study sought to achieve the following objectives:

1. Determine the demographic characteristics of North Carolina Extension agents with Master Gardener volunteer administration responsibilities.

2. Determine which competencies are important for Extension agents to manage successful Extension Master Gardener programs and be effective leaders of Master Gardener volunteers, as perceived by county-level Extension personnel with volunteer administration responsibilities.
3. Determine the self-reported proficiency levels of North Carolina Extension agents with Master Gardener volunteer administration responsibilities.
4. Determine if there is any correlation between agents' self-reported proficiency levels and their demographic characteristics.
5. Identify training needs of North Carolina Extension agents with Master Gardener volunteer administration responsibilities.

Implications and Educational Significance

This study helps fill a gap in the literature and provides information necessary for the development of relevant professional development curricula and resources for Extension agents with Master Gardener volunteer administration responsibilities. As a result of this study, the competencies critical to leading a successful Extension Master Gardener program could be identified, along with agents' self-reported proficiency levels and training needs. Determining which competencies are most important and where proficiency gaps exist will:

- Empower agents to assess their volunteer administration proficiency levels, identify their professional development needs, and fill their competency and self-efficacy gaps;

- Equip Extension with the information needed to identify and hire individuals who possess the skills and knowledge necessary to succeed in their role as EMG volunteer coordinator;
- Enable the organization to prioritize professional development opportunities related to volunteer administration and provide agents with skills and knowledge they need to realize fully the strengths and benefits Master Gardener volunteers bring to their programs, maximizing both program impacts and return on the resources required to administer the program.

Additionally, this study addresses priority initiatives identified by the American Association for Agricultural Education’s 2016 – 2020 National Research Agenda, specifically the question within Research Priority Six: Vibrant, Resilient Communities, “What are the appropriate models for engaging volunteers in the delivery of educational programs in agricultural and natural resources?” (Roberts, Harder & Brashears, 2016, p.51).

Assumptions

1. The competencies listed in the research instrument represent those needed by EMG volunteer administrators to lead successful EMG programs.
2. Agents responded truthfully to questions within the research instrument.

Limitations of the Study

The findings of this study are limited to North Carolina Cooperative Extension agents with Extension Master Gardener volunteer administration responsibilities. The results of this study are based on self-reported proficiency levels, with the assumption that agents were truthful

in their responses to the research instrument. The potential for study participants to respond untruthfully to the research instrument is a limitation of this study.

Definition of Terms

Borich needs assessment model – An approach to identifying training needs based on a discrepancy model. Survey methodology is utilized to generate data based on respondents' perceived relevance (importance, or “what should be”) and perceived level of attainment (proficiency, or “what is”) of competencies aligned to the goals of the program. Mean weighted discrepancy scores, calculated for each item in the assessment, are used to identify and prioritize training needs. Also known as the Borich needs formula (Borich, 1980).

Competency – Knowledge, attitudes, skills and observable behaviors that lead to excellence in the workplace (Liles & Mustian, 2004).

Consumer horticulture – The cultivation, use, and enjoyment of plants, gardens, landscapes, and related horticultural items to the benefit of individuals, communities, and the environment (National Initiative for Consumer Horticulture, 2019).

Cooperative Extension - a nationwide, non-credit educational network that addresses public needs by providing non-formal education and learning activities to farmers, ranchers, communities, youth, and families. Cooperative Extension operates through the nation's Land-Grant University System in partnership with the National Institute of Food and Agriculture and state and local governments (National Institute for Food and Agriculture, 2019).

Extension agent - a land-grant university field-faculty employee who develops and delivers non-formal educational programs to assist people in the areas of economic and community development, 4-H youth leadership, family and consumer sciences, agriculture (including horticulture), and natural resources. Sometimes referred to as an Extension educator, county agent, or by their area of responsibility, e.g. horticulture agent.

Extension Master Gardener (EMG) program – A Cooperative Extension master volunteer program that recruits and trains local residents to serve as volunteers in their community. In exchange for intensive training in consumer horticulture, program participants agree to an annual volunteer commitment with Cooperative Extension. Master Gardener volunteers extend the resources of the land-grant university system by teaching research-based, consumer horticulture information and promoting the adoption of gardening and landscape best practices in their communities (Meyer, 2007).

Master volunteer program – Training model that provides hours of intensive, subject matter specific training to individuals in return for hours of volunteer service, with the goal of extending the reach of Extension educational programs beyond the capacity of the Extension staff alone (Laughlin & Schmidt, 1995).

Master Gardener volunteer (MGV) – a participant in the Extension Master Gardener program.

Volunteer – an individual who chooses to engage in planned activities to provide services to benefit others or an organization for no financial gain.

Volunteer administration – The systematic and logical process of working with and through volunteers to achieve an organization's objectives. Also known as volunteer management, volunteer coordination and volunteer engagement (McCurlley, Lynch & Jackson, 2012)

Volunteer administrator – An individual who mobilizes, engages and manages volunteers to carry out the programmatic goals of the organization. Typical duties include recruiting, orienting, matching, evaluating, and recognizing volunteers, as well as implementing policies and operating procedures to guide volunteer efforts. Also known as a volunteer manager, volunteer coordinator, or administrator of volunteers (Brudney & Heinlein, 2010).

Summary

Master Gardener volunteers are vital to the delivery of Extension’s consumer horticulture programming and outreach. Thousands of Extension personnel engage these volunteers as part of their day to day responsibilities, yet little is known about the volunteer administration competencies needed to lead successful Extension Master Gardener programs. Utilizing the competency constructs identified by Boyd (2004) and validated by Lockett (2007), this study sought to assess agents’ perceptions of the importance of 55 volunteer administration competencies, their self-reported proficiency levels, and training needs. This information will allow agents and Extension to prioritize and provide volunteer administration educational opportunities and resources, resulting in increased attainment of competencies, enhanced volunteer engagement, increased organizational capacity, and greater outcomes and impacts for program participants and the communities they serve.

CHAPTER 2

REVIEW OF LITERATURE

Within Cooperative Extension, volunteers are engaged in roles critical to the organization's mission, including program delivery to the public and service on advisory committees (Boyd, 2004). Since the 1960s, Extension has recruited and trained local residents to assist with the delivery of subject-matter specific programming directly to the public through master volunteer programs (Wolford, Cox, & Culp, 2001). The development of master volunteer programs is based on Roger's Diffusion of Innovations theory, which posits knowledgeable members of a community can influence the adoption of new practices among their peers (Rogers, 2010), thereby achieving Extension's mission to promulgate the adoption of research-based best practices. Master volunteer programs have proven to be effective in increasing impacts in many Extension program areas, including consumer horticulture (McAleer, 2005; Meyer, 2007), forest management (Allred et al., 2011), health and physical activity (Washburn et al., 2017), natural resources (Bonneau et al., 2009), well-owner education (Clemens, Swistock, & Sharpe, 2007), and food preservation (Bezold, 1989). Laughlin and Schmidt (1995) list the benefits of master volunteer programs to include multiplication of expertise, freeing of agent time for in-depth programming, building a support base of empowered volunteers, and enabling the development of issues-based curriculum by Extension faculty. While they also report barriers to implementing these programs, such as the time and resources required to train and manage volunteers and increased liability issues, they conclude master volunteer programs "may indeed be one of the best opportunities Cooperative Extension has in taking education to the people" (Laughlin & Schmidt, 1995, para. 10).

The Extension Master Gardener (EMG) program is the most widely recognized master volunteer program in Extension (Meyer, 2007). Across the country, at least 86,000 Master Gardener volunteers (Extension Master Gardener National Committee, 2018) are directly involved in delivering consumer horticulture programs. Recruitment, training, engagement in service activities, and supervision of Master Gardener volunteers are primarily the responsibilities of local Extension agents based in county or regional Extension centers (McAleer, 2005). Nationwide, at least 1534 local Extension staff oversee Master Gardener volunteers serving in a wide variety of roles that support consumer horticulture programming (Dorn, Newberry, Bauske, & Pennisi, 2018). These roles include:

- responding to individual inquiries made by phone, email or in-person,
- promoting behavior change through workshops, classes, tours, and other non-formal educational activities,
- youth education,
- demonstrating environmentally sound gardening methods by maintaining teaching gardens,

and enhancing quality of life through horticulture programming that results in donations to food banks, greater appreciation for nature, and other well-being benefits (Dorn, Newberry, Bauske, & Pennisi, 2019).

Master Gardener Volunteer Motivations

A thorough understanding of what motivates individuals to volunteer within their organization is critical for volunteer administrators to effectively mobilize, engage and retain volunteers (Culp, 2013b; Houle, Sagarin & Kaplan, 2005). As a result, many studies have sought

to determine what motivates individuals to participate in the Extension Master Gardener program and the benefits they receive from participation. One of the earliest studies was conducted by Rohs and Westerfield (1996) among Master Gardener volunteers from 12 Atlanta metropolitan counties who completed EMG training in February of 1993. The study sought to determine the effect of attitudinal factors related to societal value, personal benefit, and influence of others on an individual's choice to participate in the EMG program. Other Master Gardeners were found to have the greatest influence on an individual's choice to join the program. Respondents perceived the program's highest value to society were related to providing horticultural education opportunities to others and benefits to the economy. Greatest perceived personal benefits respondents reported were the status of belonging to the program, the flexibility in volunteer work, and the excellence of the training materials.

During the 2000 Texas Master Gardener Annual Advanced Training Conference, Boyer, Waliczek & Zajicek, (2002) utilized a pretest/posttest to determine Master Gardeners' perceptions of quality of life benefits of program participation. Statistically significant improvements were found in the areas of physical activity, social activity, self-esteem, and nutrition, while gaining horticultural knowledge was the primary motivation for becoming a Master Gardener volunteer. Another study of Texas Master Gardener volunteers utilized a proportional stratified sample to ensure participation from each of the 12 Texas Cooperative Extension Districts (Mayfield and Theodori, 2006). Findings indicate participants' primary reasons for being involved in the Master Gardener Program were to receive training, to be associated with other gardeners, and to give back to the community. All participants were found to anticipate being involved in community development activities as part of their volunteer

service, with a focus on tasks that achieve specific goals in support of existing community development efforts.

Graduates of the spring 2006 Maine Master Gardener training were surveyed to determine what aspects of the program they most valued and to what degree they had adopted new practices as a result of program participation (Peronto & Murphy, 2009). When asked what was the most important thing learned from the EMG course, 42% of respondents listed specific gardening skills such as soil testing and pest management, while 20% indicated knowledge gained about the power of volunteering. Over 50% of respondents indicated they had adopted at least nine of 16 horticultural practices promoted during training, while 49% indicated their proudest accomplishment resulting from participation in the program was related to their volunteer work.

Knowledge gain and community service were also identified as motivations for program participation in a study of volunteers in the Florida EMG program (Strong & Harder, 2011a). Utilizing Houle's typology as the framework, competency related curiosity was found to have much influence, with the items "to feed an appetite for knowledge" and "to satisfy intellectual curiosity" rated highest. This was followed by the community service construct, which was perceived to have moderate influence. Other factors were found to have little to no influence. Similarly, a study of Ohio Extension master volunteers, in which Master Gardener volunteers comprised 72% of the sample, examined primary motivators for initiating and continuing volunteer service (Wolford et al., 2001). Utilizing McClelland's Learned Needs Theory, the study identified achievement as the highest motivator for initiating service, particularly to "learn new things" and "contribution to community", followed by affiliation, particularly that "Extension is a good organization" and "to meet other volunteers". For continuing service,

affiliation ranked slightly higher than achievement as a motivator. Power ranked considerably lower as a motivator for both initiating and continuing service.

While these studies have used a variety of frameworks to assess EMG volunteer motivations, all have reached similar conclusions – individuals are compelled to join and remain active in the EMG program to increase their knowledge of horticulture, give back to their community and realize personal benefits such as meeting others with similar interests.

Theoretical Framework

The Functional Approach to Volunteers' Motivations provides the theoretical framework for this study. Grounded in functional motivation theory, the Functional Approach to Volunteers' Motivations seeks to identify the processes that initiate, direct, and sustain volunteerism, an understanding of which is essential to informing the actions needed for successful volunteer administration (Snyder, Clary & Stukas, 2000). Core tenets of this approach are that:

- People are purposeful and goal-oriented. As such, individuals engage in volunteer work to satisfy important personal goals.
- Volunteer acts that appear similar on the surface may support different underlying motivations. As a result, individuals performing the same volunteer activity within an organization may be doing so for different reasons.
- The same activity can satisfy different motivational functions. Consequently, individuals may attempt to satisfy multiple goals or motives through a single volunteer activity.
- Volunteer administration success is directly related to the ability of the volunteer experience to fulfill the individual volunteer's motives for participation.

Volunteer recruitment, task selection, satisfaction, and commitment to sustained service depend upon matching an individual's motives to volunteer with the volunteer opportunities provided by an organization (Snyder et al., 2000). It is the volunteer administrator's role to facilitate the process, connecting individuals with organizations through communication of the organization's mission, volunteer opportunities, and impacts. The Functional Approach to Volunteers' Motivations helps volunteer administrators better understand why individuals are drawn to their organization and the goals they wish to fulfill through volunteerism. The approach identifies six motivational functions potentially served by volunteerism (Clary et al., 1998):

- *Values* – Often equated to altruism, the values function relates to individuals' motivations to act on important values, such as concern for the welfare of others and contributing to society.
- *Understanding* – The understanding function relates to an individual's motive to learn, gain knowledge, and apply skills and abilities through volunteerism.
- *Career* – The career function satisfies individuals' desire to increase job prospects and enhance their careers.
- *Social* – The social function relates to motivations an individual may feel to conform with expectations of those in his or her social circle.
- *Protective* – The protective function is one of two ego-related functions and refers to motives to avoid negative feelings, such as guilt about being more fortunate than others or to escape one's problems.
- *Enhancement* – The enhancement function is the other ego-related function. Enhancement motivations focus on the positive ego-related aspects of volunteerism such as increased self-esteem, growth in self-confidence, and self-improvement.

Clary et al. (1998) incorporated these functions into the Volunteer Functions Inventory (VFI), which has become the most frequently used instrument for assessing individuals' motivations to volunteer (Chacón, Gutiérrez, Sauto, Vecina, & Pérez, 2017). The VFI is a 30-item questionnaire composed of six scales, each of which contains five items related to the six motivational functions. Items are scored on a seven-point Likert scale, where one is "totally disagree" and seven is "totally agree". Examples of items from the questionnaire include, "Volunteering allows me to gain a new perspective on things" and "I can explore my own strengths" (Clary et al., 1998, p.1520).

At least three states have conducted studies to determine motivational factors of their Master Gardener volunteers using the 7-point VFI framework, the results of which reinforce individuals' top motivations for program participation relate to gaining knowledge and altruism. Schrock, Meyer, Ascher and Snyder (2000), surveyed a random sample of current and former Missouri MGVs to determine their reasons for becoming involved with the Extension Master Gardener program as part of a more extensive study of volunteer motivation and retention. A total of 282 responses were received, resulting in a 67.6% response rate. In 2011, Wilson and Newman conducted a similar study in Mississippi that also utilized a random sample and resulted in 233 completed surveys, for a 57% response rate. More recently, Takle, Haynes & Schrock (2016) published their findings of a study of Master Gardener volunteers in Iowa that sought to identify motivations for volunteering, social media use, and continuing education preferences. This census resulted in 1880 completed surveys and a 34% response rate. All three studies agree in their findings that the top VFI motivational factors for Master Gardener volunteers relate to the functions of understanding and values, followed by enhancement and social, while protective and career functions rank lowest, as shown in Table 1.

Table 1:
Findings of Master Gardener Volunteer Motivation Studies Utilizing the Volunteer Functions Inventory

Study	Function Category Mean Scores					
	Understanding	Values	Enhancement	Social	Protective	Career
Schrock, et al, 2000	5.25	5.19	3.98	3.42	2.73	2.39
Wilson & Newman, 2011	5.61	5.52	4.16	4.04	3.18	2.20
Takle, et al, 2016	5.27	4.89	3.93	3.64	2.68	1.84

Among the 30 individual motivational statements on the VFI, all three studies found the highest-rated motivational statements for participation in the EMG program were “I can learn more about horticulture and home gardening” and “Volunteering as a Master Gardener lets me learn horticulture through direct, hands-on experience,” both of which fall within the understanding function. The third highest-rated motivational statement in each of the studies was “I feel it is important to help others” from the values function (Schrock et al., 2000; Takle et al., 2016; Wilson & Newman, 2011). These findings agree with previous studies utilizing different frameworks to assess Master Gardener volunteer motivations and provide critical insights into actions volunteer administrators should take to recruit, satisfy and retain volunteers.

Volunteer Administration Competencies

Competencies refer to the “knowledge, attitudes, skills and observable behaviors that lead to excellence in the workplace” (Liles & Mustian, 2004, p.77). Multiple studies have identified competencies needed to be successful as an Extension agent, which include knowledge and skills related to volunteer development, understanding the vision and mission of Extension, leadership skills, and communication skills (Brodeur, Higgins, Galindo-Gonzalez, Craig & Haile, 2011; Cooper & Graham, 2001; Harder et al., 2010; Lakai, Jayaratne, Moore & Kistler, 2014).

Various volunteer administration competency frameworks have been used to study 4-H Youth Development professionals' proficiency levels. Culp & Kohlhagen (2004) utilized the GEMS Model of Volunteer Administration to identify competency levels and training needs of 4-H agents in Kentucky. The GEMS model divides volunteer management activities into four sequential categories that are depicted as an upward spiral to emphasize the ongoing nature of the process (Culp, 2012). The first letter of each of the four categories makes up the acronym that gives this model its name, as follows:

- *Generating* – Generating volunteers begins with conducting a needs assessment to identify volunteer opportunities and define position descriptions. Potential volunteers are identified and recruited. Screening allows volunteer managers to identify individuals with interests, skills, and knowledge needed to perform volunteer tasks and select the most appropriate individuals.
- *Educating* – Educating volunteers begins with orientating them to the organization, including its policies and procedures, then teaching them the knowledge, skills, and resources needed to succeed in their volunteer roles.
- *Mobilizing* – Volunteers are mobilized when they choose to engage in a task or activity. Effectively mobilizing volunteers requires knowing what motivates them to volunteer and providing guidance, support, and supervision.
- *Sustaining* – Sustaining volunteers is critical to any volunteer program's long-term success. Sustaining volunteers entails evaluating performances to ensure the needs of the individual and organization are being met, recognizing achievements both formally and informally, and redirecting or disengaging volunteers as necessary.

In the study of Kentucky 4-H agents, agents were found to perceive themselves as most competent in the mobilizing and educating categories, while the highest training needs that emerged were in the mobilizing and sustaining categories, specifically for competencies related to recognizing, supervising, and engaging volunteers (Culp & Kohlhagen, 2004). This is similar to the findings of Deppe and Culp (2001), who also found the sustaining and mobilizing categories to have the highest training need among Ohio 4H agents, though their highest ranking training needs related to the specific competencies of disengaging, redirecting, evaluation, and protecting volunteers.

Safrit, Schmiesing, Gliem and Gliem (2005) developed the PEP (Preparation, Engagement, and Perpetuation) Model for Contemporary Volunteer Management and Administration based upon published literature and contemporary practices of volunteer administrators. The model is comprised of 140 competencies incorporated into nine constructs, which are organized into three overarching categories, as follows:

- *Personal Preparation* – includes the constructs of personal and professional development, serving as an internal consultant, and program planning.
- *Volunteer Engagement* – comprises the recruitment, selection, orientation and training, and coaching and supervision constructs.
- *Program Perpetuation* – contains the constructs of recognition, as well as program evaluation, impact, and accountability.

Schmiesing and Safrit (2007) utilized the PEP model to conduct a census study among the members of the National Association of Extension 4-H Agents, in which 510 4-H agents participated. Respondents rated all nine constructs as important. With a mean score of 3.55, orientation and training rated slightly higher than the other eight constructs, while program

evaluation, impact, and accountability rated slightly lower, with a mean score of 3.34. Constructs with the highest and lowest perceived proficiency levels both came from the program perpetuation category, with program evaluation, impact, and accountability receiving the lowest mean score, at 2.71, and recognition achieving the highest mean score, at 3.04. Subtracting the competence mean score from the importance mean score for each of the nine constructs revealed the greatest gaps exist for the recruitment, program evaluation, impact, and accountability, and coaching and supervision constructs. These findings differ from a similar study conducted among members of the Association for Volunteer Administration (AVA), in which respondents rated all constructs as important, with program planning and recognition receiving the highest ratings, at 3.51 each, and serving as an internal consultant receiving the lowest rating, at 3.31 (Safrit & Schmiesing, 2005). Members of the AVA perceived themselves to be most proficient in those competencies they felt to be most important, recognition and program planning, and least proficient in serving as an internal consultant and program evaluation, impact, and accountability.

The Dimensions of Volunteer Administration (DVA) identifies seven competency constructs relevant to the volunteer administration profession that are drawn from the work of Boyd (2003) and the Association for Volunteer Administration's core competencies (Stedman & Rudd, 2004). The seven constructs are organizational leadership, systems leadership, organizational culture, personal skills, management skills, accountability, and commitment to the profession. Stedman (2004) utilized the DVA to determine volunteer administration competencies of county 4-H faculty in a nationwide study. The personal skills construct was perceived to have both the highest importance and highest proficiency levels among respondents, followed by the organizational culture construct. The greatest difference between perceived

importance and self-reported proficiency levels, and therefore greatest training need, was for the management skills construct, followed by accountability, then organizational leadership.

Five of the seven constructs of the DVA come from the findings of Boyd (2003), who utilized a Delphi technique to identify competencies needed by volunteer administrators for the coming decade. Boyd's study engaged a panel of 13 experts in volunteer administration, drawn from nonprofit organizations, regional volunteer centers, Extension specialists, and university faculty, to develop consensus on which competencies volunteer administrators will need in the year 2010. The expert jury initially identified 72 competency statements, which were combined to form the 33 competency statements that achieved consensus by round three of the study. The 33 statements were then sorted into the five constructs of organizational leadership, systems leadership, organizational structure, personal skills, and management skills. These findings were also published in the *Journal of Extension* (Boyd, 2004). In addition to core competencies, the expert jury identified barriers to acquiring volunteer administration competencies. Among the 12 barriers to reach consensus were "Volunteer administrator has too many other responsibilities", "Lack of knowledge of volunteer management skills needed", "Lack of access to necessary training/education to acquire competencies", and "Organizational hiring practices" (Boyd, 2003).

Following an extensive search of the literature, only one study that identifies competencies needed by administrators of Master Gardener volunteers was found. Using a Delphi technique with a panel of 15 expert county Extension agents in Texas, Lockett (2007) identified 64 competencies needed by agents to lead effective and efficient EMG programs, as well as the perceived benefits and limitations of being a Master Gardener volunteer coordinator. The greatest perceived benefits of serving as a Master Gardener volunteer coordinator related to increasing Extension's impact and the satisfaction derived from working with volunteers, while

the only limitations to reach consensus of the panel were “Takes a great deal of the agent’s time” and “Increased workload”. Findings of the study indicate competencies most needed to maximize EMG program impact and success include people skills, positive attitude, management skills, and the ability to articulate Extension’s mission and goals. Lockett sorted the competencies identified by the panel into Boyd’s five constructs, revealing close alignment of the two studies’ findings. The findings of Lockett’s dissertation study were later published by Lockett, Cummings and Ripley (2010) in the *International Journal of Volunteer Administration*.

Master Gardener Volunteer Administration Competencies

Comparing the competencies identified by Boyd (2003) with those identified by Lockett (2007) provides further insights into the skills, knowledge, attitudes and behaviors agents should possess to maximize success in their role as an administrator of Master Gardener volunteers.

Organizational Leadership

The organizational leadership construct comprises competencies in planning and needs assessment, as well as commitment to the organization’s mission and the ability to communicate the organization’s vision to volunteers, clientele, and the general public. Eight (24%) of the 33 competencies identified by Boyd (2003) are found within this construct, making it the second-largest construct after management skills. In Lockett’s 2007 study, a number of the 64 competencies identified related to organizational leadership, with 10 (15%) sorting into this construct, including “ability to articulate Extension’s mission and goals to the Master Gardeners”, one of the highest-rated competencies, attaining a panel mean score of 5.93 on a scale of 1 = strongly disagree, to 6 = strongly agree. A comparison of the alignment of organizational leadership competencies identified in the two studies is found in Table 2.

Table 2:
Comparison of Organizational Leadership Competencies

Boyd (2003)	Lockett (2007)*
<ul style="list-style-type: none"> • Commitment to the vision of the organization 	<ul style="list-style-type: none"> • Commitment to the mission of the group
<ul style="list-style-type: none"> • Ability to access needs of clients, community, volunteers, and the organization 	<ul style="list-style-type: none"> • Ability to conduct a sound program development and structuring process
<ul style="list-style-type: none"> • Long-range strategic planning skills • Short-range skills in planning and organizing 	<ul style="list-style-type: none"> • Goal orientation
<ul style="list-style-type: none"> • Articulation of volunteer efforts and accomplishments 	<ul style="list-style-type: none"> • Ability to communicate what the MG organization is doing and where it is going • Praising Master Gardeners to people outside of the organization
<ul style="list-style-type: none"> • Ability to turn needs into plans and plans into actions 	<ul style="list-style-type: none"> • Ability to think big but start small by seeing the big picture while identifying the individual steps to accomplish your goals • Leadership skills
<ul style="list-style-type: none"> • Articulation of organizational vision to stakeholders and others 	<ul style="list-style-type: none"> • Ability to communicate a shared vision • Ability to articulate Extension’s mission and goals to the Master Gardeners • Constantly communicating your messages, not just to Master Gardeners and not just at meetings
<ul style="list-style-type: none"> • Creative use of technology to effect program impact 	

* Competencies in bold reached consensus with 100% of panel members giving either a “5 = Agree” or “6 = Strongly Agree” rating of agreement.

The need to communicate the organization’s purpose and the accomplishments of its volunteers, as well as utilize short and long-range planning skills, are themes shared by both

studies. These are competencies that have been identified as necessary to be successful as an Extension agent (Brodeur et al., 2011) as well as a volunteer administrator. Volunteer administrators skilled in organizational leadership competencies can connect their volunteers with meaningful, well-planned volunteer opportunities that are aligned with the organization's mission and relevant to community needs, as well as convey the achievements that result from volunteers' efforts. From a motivational functions approach, these competencies support the fulfillment of Master Gardener volunteers' self-motivations, which include feeling it is important to help others and a desire to do something for a horticultural cause about which they care.

Systems Leadership Construct

Competencies falling within the systems leadership construct involve understanding how the organization operates, sharing program ownership and power through delegation, collaboration, and leadership development, and the ability to build and sustain teams to address problems more effectively. This construct comprises five (15%) of the 33 competencies Boyd (2003) identified, many of which align directly with competencies identified by Lockett (2007), who sorted eight (12.5%) of the competencies his panel identified into this construct, as seen in Table 3.

Table 3:
Comparison of Systems Leadership Competencies

Boyd (2003)	Lockett (2007)*
<ul style="list-style-type: none"> Understanding the system in which you operate 	<ul style="list-style-type: none"> Leading with a shared vision and shared purpose Ability to give the volunteers the proper amount of responsibility within the organization
<ul style="list-style-type: none"> Shared leadership – shifting the mantel of leadership to others when the task calls for specific expertise 	<ul style="list-style-type: none"> Willingness to let volunteers plan and implement programs, yet be involved enough to provide guidance, assure accuracy of information, and compliance with Extension requirements Ability to develop the proper balance of ownership of the Master Gardener program between the volunteers and the Extension Agent
<ul style="list-style-type: none"> Understanding and utilizing group dynamics, personality types, and team-building strategies 	<ul style="list-style-type: none"> Committee work
<ul style="list-style-type: none"> Willingness to share power and give up control 	<ul style="list-style-type: none"> Allowing tasks to be completed in ways that you would not have personally done them Avoiding micro-managing the volunteers
<ul style="list-style-type: none"> Collaborating with others 	<ul style="list-style-type: none"> Ability to effectively enlist the assistance of Master Gardeners

* Competencies in bold reached consensus with 100% of panel members giving either a “5 = Agree” or “6 = Strongly Agree” rating of agreement.

Areas where competencies identified in both studies strongly agree include the need to share leadership, power, and ownership of the program. Snider (1985) also emphasized this need to share power, the balancing of which he termed the “dynamic tension”. If out of balance, with the agent assuming too much control, volunteers will be less committed to the program. On the

other hand, if volunteers assume too much control, Snider notes the program may become “self-serving to the personal interests of the volunteer leaders” (Snider, 1985, para. 18). As the volunteer administrator, it is the agent’s role to maintain this balance of power and ownership, which is built on a foundation of trust and confidence in each other. Laughlin (1990) reports finding and maintaining this balance takes a different type of energy than that needed for traditional Extension programming, often requiring greater flexibility in programming methodology to facilitate volunteer buy-in.

Organizational Culture

Competencies contained within the organizational culture construct include helping others within the organization value the contributions of volunteers, creating a positive environment for volunteers, and the ability to inspire and motivate volunteers through a well-communicated vision. A total of six (18%) of the 33 competencies identified by Boyd (2003) relate to organizational culture. Lockett identified considerably more competencies in this area, with 15 (23%) of his 64 competencies sorting into the organizational culture construct. Among these was “respect for the time and contributions of your volunteers”, another of the highest-rated competencies, as well as “positive attitude”, one of three, second-highest rated competencies to achieve a panel mean score of 5.80 on a six-point scale. The alignment of competencies identified by Boyd (2003) and Lockett (2007) within the organizational culture construct are shown in Table 4.

Table 4:

Comparison of Identified Organizational Culture Competencies

Boyd (2003)	Lockett (2007)*
<ul style="list-style-type: none"> Acting as an internal consultant on volunteer management within the organization 	<ul style="list-style-type: none"> Ability to identify and communicate the organization’s strengths and weaknesses Ability to identify and communicate the needs of the organization
<ul style="list-style-type: none"> Creating a positive environment in which volunteers can learn and operate 	<ul style="list-style-type: none"> Respect for the time and contributions of your volunteers Letting the volunteers know you are “going to bat” for them Knowing your volunteers and their life experiences and respecting them as professionals Ability to communicate Extension policies and procedures effectively Ability to offer guidance to autonomous associations, yet maintain direction within Extension parameters
<ul style="list-style-type: none"> Relationship skills – the ability to motivate and work with others effectively 	<ul style="list-style-type: none"> Willingness to take the time necessary to meet with MG program leaders to discuss objectives and answer questions Availability to Master Gardeners if they need assistance or advice
<ul style="list-style-type: none"> Inspiring commitment and eagerness to learn by volunteers 	<ul style="list-style-type: none"> Ability to inspire your volunteers to rise to the challenge Willingness to do the very things you ask of your volunteers Motivational skills
<ul style="list-style-type: none"> Trusting volunteers to get the job done 	<ul style="list-style-type: none"> Trusting volunteers to complete tasks given to them Expecting volunteers to follow through with what they say they will do
<ul style="list-style-type: none"> Positive attitude and energy – seeking success and helping others 	<ul style="list-style-type: none"> Positive attitude

* Competencies in bold reached consensus with 100% of panel members giving either a “5 = Agree” or “6 = Strongly Agree” rating of agreement.

Within the organizational culture construct, the abilities to create a positive, supportive environment and to motivate volunteers to engage in service are emphasized by both Boyd (2003) and Lockett (2007). In a study of adult Extension volunteers working with a community development program in the upper Midwest, the need to ensure a welcoming, respectful environment for volunteers was noted as crucial for successfully engaging volunteers (Vettern, Hall & Schmidt, 2009). Similarly, ensuring that volunteers feel accepted by the Extension staff is recommended by Terry, Pracht, Fogarty, Pehlke and Barnett (2013) as a practice to increase volunteer satisfaction and retention. Other practices recommended by Terry et al. (2013) are to provide new and challenging experiences and opportunities for existing volunteers and to clearly and continuously communicate the significant role volunteers play in the mission of the organization.

Volunteer motivation falls within the mobilizing category of the GEMS Model of Volunteer Administration. Mobilizing is the “point at which participation, service, leadership, and action all begin” (Culp, 2013b, para. 2), with successful mobilization of volunteers relying on an understanding of what motivates an individual to start and continue volunteer service with the organization and providing experiences that meet the volunteer’s goals and expectations. Culp (2013b) further notes that difficult volunteers are often the result of an inappropriate placement, in which the volunteer administrator did not take the time to appreciate which factors motivated the individual to serve.

Personal Skills Construct

The personal skills construct focuses on people skills and includes competencies in relationship building, creative problem solving, and effective communication. Among the competencies included in this construct, listening skills was specifically emphasized by the jury

of experts in Boyd's (2003) study. Lockett's jury also identified listening skills, along with "enjoy working with people," another of the three, second-highest rated competencies of his study. While Boyd's study identified five competencies within the personal skills construct, 15% of the total identified in his study, considerably more were identified in Lockett's study, with 15 competencies (23%) sorting into the personal skills construct. The competencies of communication skills, conflict resolution skills, and people skills strongly aligned between the two studies, emphasizing the significance these competencies play in successfully managing and leading Master Gardener volunteers. The alignment of competencies from both studies can be seen in Table 5.

Table 5:
Comparison of Identified Personal Skills Competencies

Boyd (2003)	Lockett (2007)*
<ul style="list-style-type: none"> • Ability to predict and manage change 	
<ul style="list-style-type: none"> • Creative thinking to accomplish goals and meet growing demands 	<ul style="list-style-type: none"> • Realization as an agent, you don't and can't possibly know everything • Commitment to gaining knowledge of subject matter
<ul style="list-style-type: none"> • Communication skills: verbal, non-verbal, listening 	<ul style="list-style-type: none"> • Oral communication skills • Listening skills • Written communication skills • Computer skills (word processing, internet usage, etc.)
<ul style="list-style-type: none"> • Good conflict resolution skills 	<ul style="list-style-type: none"> • Ability to understand the true source of conflict • Conflict resolution skills • Ability to say "no"
<ul style="list-style-type: none"> • People skills: The development of the total person 	<ul style="list-style-type: none"> • Enjoy working with people • "People" skills • Patience • Personal flexibility • Fairness with everyone • Interest in helping the public

* Competencies in bold reached consensus with 100% of panel members giving either a "5 = Agree" or "6 = Strongly Agree" rating of agreement.

In neither study did the jury reach consensus on technical knowledge in subject matter nor a background in volunteer administration as being necessary competencies. Lockett (2007) felt this implied that good people skills could compensate for limited subject matter knowledge or a lack of experience in volunteer administration. People skills have been emphasized by others as an essential competency needed by all Extension agents. "People skills" was the seventh most important competency identified as needed to be a successful county agent in a Delphi study among Arkansas Extension agents (Cooper & Graham, 2001). In a study among North Carolina

Extension agents of current proficiency levels and competencies needed to be successful in the 21st century, interpersonal skills was one of four new competencies identified (Lakai et al., 2014). Similarly, interpersonal skills were among 19 competencies identified in a nationwide Delphi study conducted by Harder et al. (2010) to determine the competencies new Extension professionals will need in 2015.

Management Skills

Competencies within the management skills construct include functions necessary to create and maintain a volunteer program, such as volunteer recruitment, training, recognition, and retention. Lockett (2007) notes that management skills make up the “business side” of EMG program implementation and that when combined with people skills, management skills allow agents to implement and sustain a successful Master Gardener program. Boyd (2004) notes these competencies “are found in most of the accepted volunteer management models and are the most frequently addressed skills during Extension trainings” (para. 22). As such, it is not surprising the management skills construct contained the greatest number of competencies within both studies, with 9 competencies (27% of the total) identified in Boyd’s study, and 16 competencies (25% of the total) identified in Lockett’s. The alignment of competencies from both studies are listed in Table 6.

Table 6:

Comparison of Identified Management Skills Competencies

Boyd (2003)	Lockett (2007)*
<ul style="list-style-type: none"> • Understanding the functions and implementation of an effective advisory system for volunteers • Competent in recruiting volunteers • Competent in screening volunteers • Competent in matching volunteers to agency needs • Competent in orienting and training volunteers • Competent in protecting volunteers, clients and the organization • Competent in evaluating volunteers efforts and accomplishments • Competent in recognizing volunteers • Competent in retaining volunteers 	<ul style="list-style-type: none"> • Strong consensus-building skills • Organizational skills • Ability to identify volunteer’s strengths and weaknesses and see where they would best function within the organization • Ability to delegate work • Patient steering of volunteers in the right direction • Plan and implement training for volunteers • Finding ways to secure resources, training, etc. • Ability to facilitate • Willingness to stand firm on your policies • Cautious understanding that decisions the Coordinator makes become policy • Willingness to be present at a majority of MG- related events (training sessions, monthly meetings, major planning sessions, MG- sponsored educational events) • Expressing gratitude to the Master Gardeners often • Crediting your program’s successes on the hard work and determination of your volunteers • Following through with what you say you will do • Management skills • Time management skills

* Competencies in bold reached consensus with 100% of panel members giving either a “5 = Agree” or “6 = Strongly Agree” rating of agreement.

Notably, the panel in Lockett's study did not identify recruiting and screening of volunteers as needed competencies, yet these are found in all widely accepted volunteer management models (Safrit & Schmiesing, 2012). This may be due to the Extension Master Gardener program's widespread popularity and positive reputation (McAleer, 2005; Meyer, 2007), as well as the program's strong ability to fulfill potential volunteers' motivations to learn more about horticulture. In studies that utilized the Volunteer Functions Inventory to assess why people join the program, the top two motivational statements reported by Master Gardener volunteers in three different states were "I can learn more about horticulture and home gardening" and "Volunteering as a Master Gardener lets me learn horticulture through direct, hands-on experience" (Schrock et al., 2000; Takle et al., 2016; Wilson & Newman, 2011). Studies utilizing other theoretical frameworks have consistently found the desire to gain knowledge to be a top motivator for participating in the Extension Master Gardener program (Mayfield & Theodori, 2006; Rohs & Westerfield, 1996; Strong & Harder, 2011a; Boyer et al., 2002; Wolford et al., 2001). An intensive initial training course and opportunities for ongoing and specialized learning are core tenets of the Extension Master Gardener program (Meyer, 2007) that fulfill both the organization's need for a knowledgeable volunteer staff and individuals' motivations to serve.

Summary

Many studies have investigated why individuals volunteer for the Extension Master Gardener program and the benefits they receive, among which gaining horticultural knowledge, serving the community, and self-esteem benefits consistently rank highest (Rohs & Westerfield, 1996; Schrock et al., 2000; Strong & Harder, 2011a; Takle et al., 2016; Wilson & Newman, 2011). These studies provide critical insights into actions necessary to recruit, engage and retain Master Gardener volunteers. Specific competencies agents with volunteer administration responsibilities require to be successful have been delineated in models such as the GEMS Model of Volunteer Administration (Culp, 2012), and Delphi studies conducted by Boyd (2003) and Lockett (2007). High levels of proficiency in these competencies are critical for agents to be successful in their role as volunteer administrators and for Extension as an organization to realize the tremendous benefits and enhanced capacity volunteers contribute to the organization.

CHAPTER 3

METHODOLOGY

A review of the literature revealed that it is important and relevant to Cooperative Extension to identify volunteer administration competencies and training needs required by Extension agents with Extension Master Gardener program responsibilities. The purpose of this descriptive survey research study was to determine which competencies are important for Extension agents to lead successful Extension Master Gardener (EMG) programs, assess the self-reported proficiency levels of these competencies among North Carolina Extension agents with Master Gardener volunteer administration responsibilities, and determine the training needs of these agents. More specifically, the study aims to achieve the following objectives:

1. Determine the demographic characteristics of North Carolina Extension agents with Master Gardener volunteer administration responsibilities.
2. Determine which competencies county-level Extension personnel with volunteer administration responsibilities believe are important for Extension agents to manage successful Extension Master Gardener programs and be effective leaders of Master Gardener volunteers.
3. Determine the self-reported proficiency levels of North Carolina Extension agents with Master Gardener volunteer administration responsibilities.
4. Determine if there is a correlation between agents' self-reported proficiency levels and their demographic characteristics.
5. Identify training needs of North Carolina Extension agents with Master Gardener volunteer administration responsibilities.

Population

The population for this study was North Carolina Cooperative Extension (NCCE) agents with Master Gardener volunteer administration responsibilities. This was a census study with the target population. The population frame was provided by the researcher, who maintains a list of all agents with EMG program responsibilities in her role as state coordinator for the NC State EMG program. At the time of the study, the EMG program was active in 80 of NCCE's local centers, which operate in each of the state's 100 counties and among the Eastern Band of Cherokee Indians. The agent position responsible for the EMG program was vacant in 7 of the 80 counties. Multi-county agents administered the program in six counties, with five agents leading the program in two counties and one agent administering the program in three counties, resulting in a study population of 66 agents based in 73 NCCE county centers. Of the 66 agents in the population, 15 had administrative responsibilities, serving as County Extension Director, in addition to their role as EMG volunteer coordinator.

An invitation to participate in the study was sent to the population by email on March 29, 2019, with follow-up invitations sent two weeks and four weeks after the initial invitation. A total of 35 agents responded to the invitation. A copy of the initial email invitation is available in Appendix A.

Instrumentation

Data for this study were gathered through a web-based survey developed with the online survey software tool, Qualtrics. The survey instrument was designed to determine agents' perceptions of the importance of 55 competencies organized within five competency constructs needed to lead a successful EMG program, as well as their self-reported proficiency level in each

construct and competency. The survey instrument contained primarily close-ended questions, with one open-ended question, and consisted of two major sections:

- Section 1: Scales for recording agents' perceptions on 55 items related to competency importance and proficiency.
- Section 2: Nine questions to collect demographic data.

Section one consisted of scales designed to measure agents' perceptions of the importance of, and their current proficiency in, five volunteer administration competency constructs. Each scale was composed of a list of competencies relevant to the scale construct. For each item, participants were asked to first rate their perception of the level of importance of each item in managing volunteers, and to then rate their current proficiency level in each item.

Responses to both questions were recorded on a five-point Likert scale as follows:

- Level of importance scale responses were: Not Important (1), Slightly Important (2), Moderately Important (3), Important (4), or Extremely Important (5).
- Level of proficiency scale responses were: Very Low (1), Low (2), Average (3), High (4), or Very High (5).

The competency construct scales and individual competency items included in each were identified through a review of the literature, with a focus on recent studies related to volunteer administrative competencies within the context of Cooperative Extension. The work of Boyd (2003), provided the foundation for the instrument, with modifications based on the findings of Lockett (2007) and Stedman (2004). The five construct scales and the number of items they each contained were as follows:

- Organizational Leadership – 10 items
- Systems Leadership – 10 items

- Organizational Culture – 10 items
- Personal Skills – 10 items
- Management Skills – 15 items

In addition to the 55 competency items listed in the scales, each participant was asked to identify any competencies not included in the survey that he/she felt were extremely important to lead a successful EMG program.

Section two of the survey instrument consisted of questions related to the demographic characteristics of participants, specifically each participant's gender, age, highest level of education, position rank, Extension district, years of experience with Extension, years of experience managing volunteers, percent of time dedicated to consumer horticulture programming, and number of Master Gardener volunteers in their program. The final instrument was submitted to the NCSU Institutional Review Board (IRB), which assigned the study exempt status. The survey instrument is available in Appendix B.

Validity and Reliability

Validity refers to the extent to which an instrument measures what it is intended to measure. A panel of experts established the content validity of the instrument. This panel was made up of the researcher's graduate committee and included three faculty members from North Carolina State University's Department of Agricultural and Human Sciences and one faculty member from the Department of Horticultural Science.

The face validity of the survey instrument was established by field testing the instrument among Virginia Extension agents with Master Gardener volunteer administration responsibilities. The original version of the instrument included 70 competency items and 15 demographic

questions. The results of the field study indicated the instrument was too long. As a result, the instrument was shortened by eliminating non-practical scale items and removing demographic questions not contributing to the study. Examples of non-practical scale items removed from the instrument include “work alongside volunteers”, “commit to the mission of Extension”, “enjoy working with people”, and “get along with others.” Demographic questions removed from the instrument asked respondents to indicate the major area of study for their undergraduate and graduate degrees, if they had training in volunteer management, to identify volunteer roles they had performed, and to identify characteristics of the respondent’s county.

Reliability refers to the degree to which an instrument measures what it measures consistently. The reliability of the scales employed in this study was determined by calculating Cronbach’s alpha. Reliability coefficients ranged between 0.83 and 0.93, indicating all scales had very good (0.80 – 0.89) to excellent (0.90 – 1.0) reliability. Scores for each of the scales are listed in Table 7.

Table 7:
Summary of Instrument Reliability by Competency Construct

Competency Construct	Number of Items	Cronbach’s Alpha Reliability Coefficient Level of Importance	Cronbach’s Alpha Reliability Coefficient Level of Proficiency
Organizational Leadership	10	0.83	0.94
Systems Leadership	10	0.84	0.82
Organizational Culture	10	0.89	0.82
Personal Skills	10	0.87	0.84
Management Skills	15	0.92	0.93

Data Collection

Data for this study were collected through a web-based survey administered during March and April of 2019. Each NCCE agent with Master Gardener volunteer administration responsibilities was invited by email to participate in the study, in a message that included the purpose of the study, a link to the survey instrument, and a statement explaining that by taking the survey they were giving informed consent to participate. To maximize the response rate, the Tailored Design Method (Dillman, 2011) was incorporated into the survey's design and delivery. An email seeking participation was sent four times over six weeks. A week before sending the initial invitation, a pre-notice message was emailed to the population advising them in the following week they would receive an invitation to participate in the study and explaining the purpose of the study. The initial invitation, which gave two weeks to respond, was sent by the researcher on March 29, 2019. Follow up invitations, each giving two weeks to respond, were sent on April 11 and April 25. An additional invitation encouraging participation was sent to the population by Dr. Rich Bonanno, Director of NC State Extension, on April 22. Based on the IRB's requirement for anonymity, the identities of respondents and non-respondents were unknown; therefore, each of the four invitations was sent to the entire population.

Thirty-five agents responded to the survey, out of a possible 66, yielding a 53% response rate. Meta-analysis has shown that response rates to web-based survey methodology is often lower than more traditional survey methodologies, such as face-to-face and mail, raising concerns that result may be biased due to non-response error (Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008). While the response rate to this study was considerably higher than the 18.9% response rate achieved in a recent national study in which local EMG program coordinators (county agents) were invited to participate by email from their state EMG program

coordinator (Dorn et al., 2018), it is not high enough to dismiss non-response error. As a result, measures to control for non-response error were taken; specifically, early and late responders were compared to determine if statistical differences existed, with late responders defined as those completing the survey after the third contact from the researcher (Lindner, Murphy, Briers, 2001). An independent t-test was used to compare major demographic variables of early and late responders. No statistical differences between the two groups were found, therefore findings of this study could be generalized to the study population.

Data Analysis

Data were analyzed using the software package, Statistical Package for the Social Sciences (SPSS), version 25. Descriptive statistics were used to summarize findings. Scales were analyzed to determine measures of central tendencies and variability through the calculation of means and standard deviations for each item. Aggregate mean scores were calculated and used to rank and compare scales. Training needs were identified by the calculation of mean weighted discrepancy scores (Borich, 1980).

Descriptive statistics were used to analyze demographic data with frequencies and measures of central tendency used to describe respondents in terms of their demographics. Correlation analysis was used to determine whether self-reported proficiency levels varied with demographic characteristics. Data obtained from the single open-ended question was summarized using content analysis.

Summary

The purpose of this descriptive survey research study was to determine which competencies are important for Extension agents to lead and manage successful Extension Master Gardener volunteer programs, to assess the self-reported proficiency levels of these competencies, and to determine the training needs of North Carolina Cooperative Extension (NCCE) agents with Master Gardener volunteer administration responsibilities. The population for this census study was the 66 NCCE agents serving as Master Gardener volunteer coordinators at the time of the study.

The web-based survey instrument included two sections. Section one determined agents' perceptions of the importance of, and their self-reported proficiency levels in, 55 volunteer administration competencies organized within five competency construct scales. The competency construct scales and individual competency items were identified through a review of the literature, with a focus on recent studies related to volunteer administrative competencies within the context of Cooperative Extension. Section two collected demographical data.

The instrument was determined to have acceptable validity and reliability through panel review and pilot testing. Descriptive statistics were used to summarize findings with training needs identified by the calculation of mean weighted discrepancy scores (Borich, 1980). Nonresponse error was addressed such that the 35 responses to this study could be applied to the study population of NCCE agents with Master Gardener volunteer administration responsibilities.

CHAPTER 4

FINDINGS

This chapter describes the data collected through the survey instrument, which have been analyzed using descriptive statistics and correlation analysis. The purpose of this study was to determine which competencies are important for Extension agents to lead successful Extension Master Gardener (EMG) programs, assess the self-reported proficiency levels of these competencies among North Carolina Extension agents with Master Gardener volunteer administration responsibilities, and determined the training needs of these agents. The findings described in this chapter are organized and reported by the five objectives of this study.

Finding Related to Objective 1

The first objective of this study was to determine the demographic characteristics of North Carolina Cooperative Extension agents with Master Gardener volunteer administration responsibilities. Study participants were asked to indicate their gender, age, highest level of education completed, Extension district in which they are located, percent of their programming time dedicated to consumer horticulture, number of active volunteers in the EMG program, position rank, years of Extension experience, and years of volunteer management experience. The majority (58.8%) of respondents were female. Responses to age categories ranged from “30 years or less” to “61 – 70 years”, with the greatest number (30.3%) reporting their age as 31 – 40 years, followed by 41 to 50 years (27.3%). Study respondents were highly educated, with the majority, 67.6%, having a master’s degree and 5.9% having a doctoral degree. Table 8 provides a summary of the distribution of respondents by gender, age, and highest level of education completed.

Table 8:
Distribution of Respondents by Gender, Age and Level of Education

Characteristic	<i>n</i>	%
Gender, N=34		
Female	20	58.8
Male	14	41.2
Age Group (years), N=33		
30 or less	2	6.1
31 – 40	10	30.3
41 – 50	9	27.3
51 – 60	6	18.2
61 – 70	6	18.2
Level of Education, N=34		
Bachelor’s degree	9	26.5
Master’s degree	23	67.6
Doctoral degree	2	5.9

North Carolina Cooperative Extension operates an Extension center in each of the state’s 100 counties and among the Eastern Band of Cherokee Indians. For administrative purposes, county centers are grouped into the following five districts: Northeast, North Central, Southeast, South Central, and West (Extension Information Technology, 2016), as seen in Figure 1.

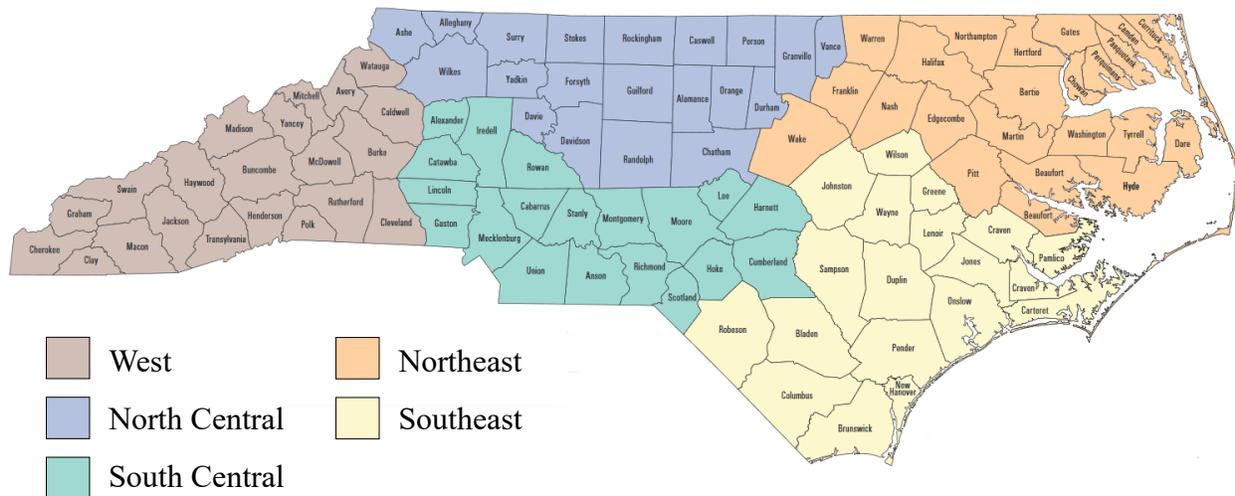


Figure 1: *N.C. Cooperative Extension District Map*

Greatest participation came from agents in the Southeast Extension District, who comprised 27.3% of total respondents, while agents in the West district had the lowest participation, at 9.1% of total respondents. In response to the question, “Approximately what percent of your time is dedicated to consumer horticulture programming, including Master Gardener volunteer administration”, the majority (67.7%) of respondents reported over 50% of their time spent on consumer horticulture programming. The category most frequently selected was 51 - 75%, reported by 41.2% of respondents, with 26.5% reporting 76% or more of their time dedicated to consumer horticulture programming. The number of Master Gardener volunteers respondents reported active in their county Extension Master Gardener program ranged from eight to 180, with 25 or less volunteers the most frequently selected category, reported by 32.3% of respondents, followed by 26 to 50 volunteers, reported by 25.8%. Only 16.1% of respondents reported EMG programs of over 100 volunteers. Table 9 lists the distribution of respondents by Extension district, percent time dedicated to consumer horticulture programming, and number of active Master Gardener volunteers.

Table 9:

Distribution of Respondents by Extension District, Percent Time Dedicated to Consumer Horticulture Programming, and Number of Master Gardener Volunteers

Characteristic	<i>n</i>	%
Extension District, N=33		
Northeast	6	18.2
North Central	7	21.2
Southeast	9	27.3
South Central	8	24.2
West	3	9.1
Percent of Time Dedicated to Consumer Horticulture, N=34		
25% or less	3	8.8
26 – 50%	8	23.5
51 – 75%	14	41.2
76% or greater	9	26.5
Number of Active Master Gardener Volunteers, N=31		
25 or less	10	32.3
26 – 50	8	25.8
51 – 75	5	16.1
76 – 100	3	9.7
101 – 125	2	6.5
126 – 150	1	3.2
151 or more	2	6.5

Extension agents in North Carolina may hold one of three position ranks, as well as administrative responsibilities. The titles of the position ranks, in order of tenure, are Assistant Extension Agent, Associate Extension Agent, and Extension Agent. While agents may be hired into the organization with a bachelor's degree at the Assistant Extension Agent rank, to receive the Associate Extension Agent rank an agent must have completed a graduate degree and successfully gone through the title promotion process. Agents who have administrative responsibilities are given the title of County Extension Director and must have achieved the rank of Associate Extension Agent to serve in this position. When asked their current position rank, the majority (58%) of respondents indicated they are at the Assistant Extension Agent rank of their position. Only 15.2% of respondents had administrative responsibilities and carry the title of County Extension Director. Responses to the question, "How many years of experience do you have working for Extension, including in other states," ranged from one to 30 years, with a mean of 10.35 years. Respondents were typically in the early stages of their career, with 38.7% reporting five years or less experience working with Extension, and another 22.6% reporting between six and 10 years' experience. Responses to the question, "How many years of experience do you have managing volunteers, including years working for Extension and non-Extension agencies," ranged from zero to 25, with a mean of 12.58. Six to 10 years' experience managing volunteers was reported by 25.8% of respondents, followed by 16 to 20 years, reported by 22.6%. The distribution of respondents by position rank, years of Extension experience, and years of experience managing volunteers is listed in Table 10.

Table 10:
Distribution of Respondents by Position Rank, Years of Extension Experience, and Years of Volunteer Management Experience

Characteristic	<i>n</i>	%
Position Rank, N=33		
Assistant Extension Agent	19	57.6
Associate Extension Agent	5	15.2
Extension Agent	4	12.1
County Extension Director	5	15.2
Years of Extension Experience, N=31		
0 – 5	12	38.7
6 – 10	7	22.6
11 – 15	3	9.7
16 – 20	5	16.1
21 – 25	3	9.7
26 – 30	1	3.2
Years of Volunteer Management Experience, N=31		
0 – 5	6	19.4
6 – 10	8	25.8
11 – 15	5	16.1
16 – 20	7	22.6
21 – 25	5	16.1

When years of Extension experience are compared with years of volunteer management experience, one can see that for each category except the first (5 years or less) and last (26- 30 years), agents report more years of volunteer management experience than Extension experience.

This indicates a portion of these agents acquired volunteer administration experience outside their role in Extension. A comparison of the distribution of years of volunteer management experience and years of Extension experience may be seen in Figure 2.

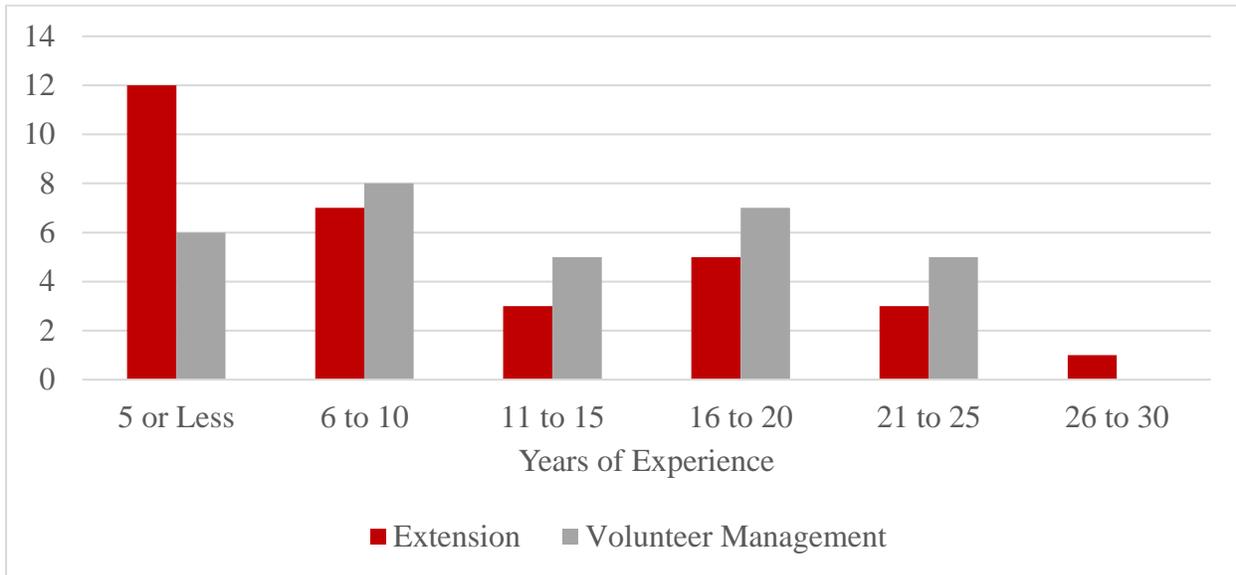


Figure 2: *Comparison of Distribution of Years of Extension Experience and Years of Volunteer Management Experience, N=31.*

Findings Related to Objective 2

The second objective of this study was to determine which volunteer administration competencies are important for agents to lead successful Extension Master Gardener programs, as perceived by North Carolina Extension agents responsible for Master Gardener volunteer administration. Agents’ perceptions of the importance of 55 volunteer administration competencies divided among five competency constructs were recorded through a web-based survey instrument. The five competency constructs were organizational leadership, systems leadership, organizational culture, personal skills, and management skills. Each construct contained 10 competencies, except management skills, which contained 15. Competency importance was recorded on a five-point Likert scale ranging from 1, “Not Important”, to 5,

“Extremely Important”. Individual competency mean scores ranged from 3.94 to 4.76. Mean scores of competencies within each construct were aggregated then divided by the total number of competencies within the construct to give an overall mean score that allowed for the comparison and ranking of competency constructs. Little difference was found between overall importance mean scores for the five competency constructs, which ranged from 4.28 to 4.44. The construct perceived as most important was personal skills, with a mean score of 4.44, followed by systems leadership, 4.41, and organizational culture, 4.36. Competency constructs perceived as slightly less important were management skills, 4.34, and organizational leadership, 4.28. The ranges of construct-related competency mean scores, overall mean scores and ranks for each competency construct are listed in Table 11.

Table 11:
Range of Competency Mean Scores, Overall Mean Scores and Rank for Construct Importance

Construct	Range	<i>M</i>	Rank
Personal Skills	4.12 – 4.71	4.44	1
Systems Leadership	3.97 – 4.76	4.41	2
Organizational Culture	4.09 – 4.71	4.36	3
Management Skills	3.94 – 4.68	4.34	4
Organizational Leadership	3.94 – 4.66	4.28	5

Study participants scored the perceived importance of each of the 55 individual competencies on a five-point Likert scale ranging from 1, “Not Important”, 2, “Slightly Important”, 3, “Moderately Important”, 4, “Important”, to 5, “Extremely Important”. All

individual competencies were considered either “moderately important” or “important”, with mean scores ranging from 3.94 to 4.76.

Competencies were ranked in order of importance based on their mean score, from one to 55, with one being most important. Each of the five highest-ranked competencies originated from a different competency construct. “Effectively enlist the assistance of MG volunteers”, from the systems leadership construct, was the highest-rated competency, achieving a mean score of 4.76. This was followed by “cultivate successful working relationships with MG volunteers” (personal skills) and “create a positive environment in which MG volunteers can work and learn” (organizational culture), both of which achieved a mean score of 4.71. “Plan and implement training that prepares individuals for MG volunteer service” (management skills) had a mean score of 4.68, while the mean score of the fifth highest-rated competency, “communicate Extension’s mission and goals to MG volunteers” (organizational leadership) was 4.66. Only three competencies achieved mean scores below 4.0. They were “evaluate Master Gardener volunteers performance and satisfaction”, from the management skills construct, with a mean score of 3.94; “creatively use technology to increase program impact” (organizational leadership), also 3.94; and “use team-building strategies with Master Gardener volunteers to increase program impact” (systems leadership), 3.97. The importance mean score and overall rank of each competency organized within their competency constructs can be found in Tables 12, 13, 14, 15, and 16.

Table 12:
Importance Mean Scores and Rank of Organizational Leadership Competencies, N=35

Competency	<i>M</i>	SD	Rank
Communicate Extension's mission and goals to Master Gardener (MG) volunteers.	4.66	0.54	5
Use Extension's vision and mission to plan the Extension Master Gardener (EMG) program.	4.60	0.65	7
Explain volunteer opportunities in the context of Extension's mission.	4.40	0.65	21
Effectively communicate the efforts and accomplishments of MG volunteers in the context of Extension's mission.	4.34	0.64	28
Conduct needs assessment to determine programming priorities.	4.23	0.69	41
Coordinate and prioritize actions to achieve program goals.	4.23	0.69	42
Identify volunteer opportunities based on priorities derived from needs assessment.	4.20	0.63	44
Set long-range program goals but break them down into actionable steps.	4.14	0.85	46
Engage MG volunteers in planning to define EMG program goals.	4.09	0.70	50
Creatively use technology to increase program impact.	3.94	0.84	54

Table 13:

Importance Mean Scores and Rank of Systems Leadership Competencies, N=33

Competency	<i>M</i>	<i>SD</i>	Rank
Effectively enlist the assistance of MG volunteers.	4.76	0.43	1
Delegate responsibility to MG volunteers.	4.59	0.50	9
Give volunteers the freedom to plan and implement projects, yet be involved enough to provide guidance and assure compliance with Extension requirements.	4.59	0.61	11
Explain to volunteers how the EMG program operates within Cooperative Extension.	4.56	0.56	13
Inspire volunteers to accept leadership positions.	4.53	0.62	16
Empower volunteers to serve as effective leaders.	4.44	0.61	18
Engage volunteers in creating a shared vision and purpose for the EMG program.	4.35	0.65	26
Collaborate with others to achieve program goals.	4.24	0.61	39
Use understanding of personality types to better communicate with MG volunteers.	4.06	0.95	52
Use team building strategies with MG volunteers to increase program impact.	3.97	0.83	53

Table 14:
Importance Mean Scores and Rank of Organizational Culture Competencies, N=34

Competency	<i>M</i>	<i>SD</i>	Rank
Create a positive environment in which volunteers can work and learn.	4.71	0.52	2
Demonstrate respect for the time and contributions of MG volunteers.	4.65	0.65	6
Trust MG volunteers to complete the tasks given to them.	4.38	0.60	24
Understand what motivates MG volunteers to serve.	4.35	0.69	27
Be available to MG volunteers.	4.32	0.59	31
Motivate MG volunteers to learn continually.	4.32	0.68	32
Teach others about the value and impact of volunteers.	4.29	0.63	36
Identify ways to help MG volunteers succeed.	4.26	0.62	38
Inspire commitment in MG volunteers.	4.24	0.61	40
Help others in the workplace work effectively with volunteers.	4.09	0.67	51

Table 15:

Importance Mean Scores and Rank of Personal Skills Competencies, N=34

Competency	<i>M</i>	<i>SD</i>	Rank
Cultivate successful working relationships with MG volunteers.	4.71	0.46	3
Effectively resolve conflict.	4.59	0.50	8
Actively listen to MG volunteers when they have a problem.	4.59	0.56	10
Verbally communicate ideas clearly to others.	4.56	0.56	14
Maintain an open mind when interacting with MG volunteers.	4.50	0.56	17
Identify areas where change is needed.	4.41	0.56	19
Communicate effectively in writing.	4.38	0.65	23
Assess one's own professional knowledge, skills and abilities to determine professional development needs.	4.32	0.54	30
Help others reach their full potential.	4.18	0.63	45
Develop creative solutions to accomplish change.	4.12	0.77	47

Table 16:
Importance Mean Scores and Rank of Management Skills Competencies, N=31

Competency	<i>M</i>	<i>SD</i>	Rank
Plan and implement initial and advanced training that prepares individuals for MG volunteer service.	4.68	0.48	4
Disengage volunteers who exhibit problematic behaviors.	4.56	0.56	12
Provide volunteers with a comprehensive orientation to the EMG program.	4.55	0.56	15
Recruit new MG volunteers using a variety of methods that target likely prospects.	4.41	0.61	20
Identify and implement strategies to retain MG volunteers.	4.39	0.56	22
Utilize an advisory committee or leadership team to enhance EMG program effectiveness.	4.38	0.60	25
Provide position descriptions to assist volunteers in selecting meaningful volunteer opportunities.	4.33	0.54	29
Provide MG volunteers with the resources needed to assist in their volunteer efforts.	4.32	0.54	33
Use appropriate methods to recognize MG volunteers for their efforts.	4.32	0.59	34
Screen applicants to ensure suitable individuals are accepted into the program.	4.32	0.84	35
Work with volunteers to identify where they will best function in the program based on their skills and interests.	4.27	0.63	37
Redirect MG volunteers who do not fit well in a particular position into a different position within the program.	4.21	0.59	43
Assess risk and develop policies to manage risk.	4.09	0.75	48
Collect and analyze data to evaluate EMG program outcomes.	4.09	0.79	49
Evaluate volunteers' performance and satisfaction.	3.94	0.74	55

In addition to scoring each of the competencies listed within the five scales, agents were asked to, “Please list any competencies not listed in this survey that you feel are extremely important to lead a successful Extension Master Gardener program.” Six agents submitted a total of nine unique responses, which were analyzed for content and grouped into existing competency constructs. Seven of the write-in responses expanded on or replicated existing competencies, with three sorting into the systems leadership construct, two sorting into the personal skills construct, and one sorting into each the organizational culture and organizational leadership constructs. Of the write-in responses, two were new competencies not already represented in the instrument, “hard work” and “time management”. Hard work aligns with the organizational culture construct, supporting the competencies related to inspiring commitment, being available to volunteers, and creating a positive environment. Time management is often identified as a core competency for agent success (Cooper & Graham, 2001), seen as supporting professionalism (Lakai et al., 2014) and personal growth (Brodeur et al., 2011). Within the constructs of this study, time management is an important competency that best aligns with the personal skills construct. Write-in responses are listed in Table 17.

Table 17:
Additional Competencies Considered Important for Successful Master Gardener Volunteer Administration

Write In Response	Aligning Construct
Team dynamics	Systems Leadership
Handling group problems	Systems Leadership
Early on define and demonstrate the agent as the leader of the volunteers, not the other way around	Systems Leadership
Encouragement	Personal Skills
Concern for volunteers' wellbeing	Personal Skills
Time management*	Personal Skills
Trust	Organizational Culture
Hard work*	Organizational Culture
Determining size of Master Gardener program needed to meet needs in county	Organizational Leadership

*New competencies not represented in the survey instrument

Findings Related to Objective 3

The third objective of this study was to determine the self-reported proficiency levels of North Carolina Extension agents with Master Gardener volunteer administration responsibilities. Agents' perceptions of their proficiency levels in 55 volunteer administration competencies divided among five competency constructs were recorded through a web-based survey instrument. The five competency constructs were organizational leadership, systems leadership, organizational culture, personal skills, and management skills. Each construct contained 10 competencies, except management skills, which contained 15. Proficiency levels for each competency were recorded on a five-point Likert scale ranging from 1, "Very Low", to 5, "Very High". Proficiency level mean scores for individual competencies ranged from 2.70 to 4.03. Mean scores of competencies within each construct were aggregated then divided by the total number of competencies within the construct to give an overall mean score that allowed for the comparison and ranking of constructs. Competency construct overall mean scores for self-reported proficiency levels ranged from 3.07 to 3.62. Personal skills was the construct in which agents reported themselves as having the highest proficiency, with a mean score of 3.62. This was followed by organizational culture, 3.59, and systems leadership, 3.46. Constructs in which agents reported themselves as having the lowest proficiency levels were organizational leadership, with a mean score of 3.40, and management skills, 3.07. The ranges of construct-related competency mean scores, overall proficiency level mean scores and ranks for each competency construct are listed in Table 18.

Table 18:

Range of Competency Mean Scores, Overall Mean Scores and Rank for Construct Proficiency

Construct	Range	<i>M</i>	Rank
Personal Skills	3.15 – 4.03	3.62	1
Systems Leadership	2.97 – 3.74	3.46	2
Organizational Culture	3.24 – 4.00	3.59	3
Organizational Leadership	3.14 – 3.89	3.40	4
Management Skills	2.70 – 3.47	3.07	5

Study participants scored their perceived proficiency level for each of the 55 competencies on a five-point Likert scale as follows: 1, “Very Low”, 2, “Low”, 3, “Average”, 4, “High”, and 5, “Very High”. Competencies were ranked in order of self-reported proficiency level based on their mean score, from one to 55, with one being most proficient. For the majority (85%) of competencies, proficiency levels were perceived to be “average”, with mean scores ranging from 3.00 to 3.91. Only two competencies achieved mean scores of 4.0 or greater. These were “cultivate successful working relationships with MG volunteer”, from the personal skills construct, with a mean score of 4.03, and “demonstrate respect for the time and contributions of MG volunteers”, from the organizational culture construct, with a mean score of 4.00. Self-reported proficiency levels in six competencies were rated as “low”, with mean scores ranging from 2.70 to 2.97. The five lowest-rated competencies were from the management skills construct, with “disengaging volunteers who exhibit problematic behaviors” achieving the lowest mean score of 2.70, followed by “redirect MG volunteers who do not fit well in a particular position elsewhere in the program” and “assess risk and develop policies to manage risk” both

achieving a mean score of 2.76. The mean scores for self-reported proficiency levels and overall rank of each competency organized within their competency constructs can be found in Tables 19, 20, 21, 22, and 23.

Table 19:
Proficiency Level Mean Scores and Rank of Organizational Leadership Competencies, N=35

Competency	<i>M</i>	<i>SD</i>	Rank
Communicate Extension's mission and goals to Master Gardener (MG) volunteers.	3.89	0.80	4
Use Extension's vision and mission to plan the Extension Master Gardener (EMG) program.	3.80	0.83	8
Engage MG volunteers in planning to define EMG program goals.	3.51	0.85	21
Explain volunteer opportunities in the context of Extension's mission.	3.51	0.89	22
Coordinate and prioritize actions to achieve program goals.	3.31	0.83	35
Conduct needs assessment to determine programming priorities.	3.29	0.67	36
Set long-range program goals but break them down into actionable steps.	3.20	0.90	39
Creatively use technology to increase program impact.	3.17	0.86	40
Effectively communicate the efforts and accomplishments of MG volunteers in the context of Extension's mission.	3.17	0.89	41
Identify volunteer opportunities based on priorities derived from needs assessment.	3.14	0.81	44

Table 20:

Proficiency Level Mean Scores and Rank of Systems Leadership Competencies, N=33

Competency	<i>M</i>	<i>SD</i>	Rank
Give volunteers the freedom to plan and implement projects, yet be involved enough to provide guidance and assure compliance with Extension requirements.	3.74	0.93	9
Delegate responsibility to MG volunteers.	3.70	0.95	12
Explain to volunteers how the EMG program operates within Cooperative Extension.	3.65	0.85	14
Effectively enlist the assistance of MG volunteers.	3.62	0.82	15
Collaborate with others to achieve program goals.	3.59	0.82	17
Engage volunteers in creating a shared vision and purpose for the EMG program.	3.53	0.83	19
Use understanding of personality types to better communicate with MG volunteers.	3.47	0.90	25
Empower volunteers to serve as effective leaders.	3.24	0.86	37
Inspire volunteers to accept leadership positions.	3.15	0.82	43
Use team building strategies with MG volunteers to increase program impact.	2.97	0.90	50

Table 21:
Proficiency Level Mean Scores and Rank of Organizational Culture Competencies, N=34

Competency	<i>M</i>	<i>SD</i>	Rank
Demonstrate respect for the time and contributions of MG volunteers.	4.00	0.74	2
Create a positive environment in which volunteers can work and learn.	3.88	0.64	5
Be available to MG volunteers.	3.82	0.83	7
Trust MG volunteers to complete the tasks given to them.	3.74	0.75	11
Motivate MG volunteers to learn continually.	3.68	0.68	13
Teach others about the value and impact of volunteers.	3.44	0.75	26
Help others in the workplace work effectively with volunteers.	3.38	0.78	27
Inspire commitment in MG volunteers.	3.35	0.60	29
Understand what motivates MG volunteers to serve.	3.32	0.77	33
Identify ways to help MG volunteers succeed.	3.24	0.70	38

Table 22:

Proficiency Level Mean Scores and Rank of Personal Skills Competencies, N=34

Competency	<i>M</i>	<i>SD</i>	Rank
Cultivate successful working relationships with MG volunteers.	4.03	0.63	1
Communicate effectively in writing.	3.91	0.67	3
Actively listen to MG volunteers when they have a problem.	3.85	0.74	6
Maintain an open mind when interacting with MG volunteers.	3.74	0.75	10
Assess one's own professional knowledge, skills and abilities to determine professional development needs.	3.59	0.70	16
Verbally communicate ideas clearly to others.	3.59	0.74	18
Identify areas where change is needed.	3.53	0.86	20
Effectively resolve conflict.	3.47	0.90	23
Help others reach their full potential.	3.32	0.59	31
Develop creative solutions to accomplish change.	3.15	0.82	42

Table 23:

Proficiency Level Mean Scores and Rank of Management Skills Competencies, N=31

Competency	<i>M</i>	SD	Rank
Plan and implement initial and advanced training that prepares individuals for MG volunteer service.	3.47	0.90	24
Utilize an advisory committee or leadership team to enhance EMG program effectiveness.	3.38	0.92	28
Provide MG volunteers with the resources needed to assist in their volunteer efforts.	3.35	0.81	30
Provide volunteers with a comprehensive orientation to the EMG program.	3.32	0.91	32
Use appropriate methods to recognize MG volunteers for their efforts.	3.32	0.98	34
Work with volunteers to identify where they will best function in the program based on their skills and interests.	3.12	0.91	45
Recruit new MG volunteers using a variety of methods that target likely prospects.	3.06	1.00	46
Provide position descriptions to assist volunteers in selecting meaningful volunteer opportunities.	3.03	0.98	47
Screen applicants to ensure suitable individuals are accepted into the program.	3.03	1.06	48
Identify and implement strategies to retain MG volunteers.	3.00	0.85	49
Evaluate volunteers' performance and satisfaction.	2.85	0.78	51
Collect and analyze data to evaluate EMG program outcomes.	2.85	0.82	52
Redirect MG volunteers who do not fit well in a particular position into a different position within the program.	2.76	0.86	53
Assess risk and develop policies to manage risk.	2.76	0.89	54
Disengage volunteers who exhibit problematic behaviors.	2.70	1.02	55

Findings Related to Objective 4

The fourth objective of this study was to determine whether relationships exist between agents' self-reported proficiency levels and their demographic variables. Correlation coefficients were calculated for demographic variables with the overall proficiency score, as well as with the proficiency scores for each of the five constructs, organizational leadership, systems leadership, organizational culture, personal skills, and management skills. Demographic variables included agents' age, gender, position rank, percent of their time dedicated to consumer horticulture programming, number of Master Gardener volunteers in their EMG program, years of Extension experience, years of volunteer administration experience, and Extension district in which they are based. A 55-item instrument with a five-point Likert-scale (1=very low, 2=low, 3=average, 4=high, 5=very high) recorded agents' perceived proficiency levels in volunteer administration competencies. Responses from all 55 items on the scale were aggregated to produce an agent's overall proficiency level. Overall proficiency levels as measured by this instrument may range from 55, very low proficiency, to 275, very high proficiency. Self-reported overall proficiency levels of respondents had a 133-point range with a minimum of 130 (low) and a maximum of 263 (very high). The mean overall proficiency level was 185.50 (average proficiency) with a standard deviation of 29.33, while the mode was 188. Calculating quartile distributions of respondents' overall proficiency scores reveals agents in North Carolina have widely varied self-reported proficiency levels, with almost equal numbers occurring in each quartile, though the majority fall within the first and second quartile. The distribution of respondents' self-reported overall proficiency level scores by quartile is summarized in Table 24.

Table 24:
Distribution of Overall Proficiency Scores, N=30

Range of Score	<i>n</i>	%
1 st quartile (130 to 158)	8	26.7
2 nd quartile (159 to 188)	8	26.7
3 rd quartile (189 to 201)	7	23.3
4 th quartile (202 to 263)	7	23.3

Statistical analysis revealed there is only one correlation between agents' self-reported overall proficiency level and the demographic variables investigated in this study. There was a moderate positive correlation (0.459) between overall proficiency and the number of Master Gardener volunteers in the agent's EMG program. This correlation is significant at the $p < 0.05$ level (2-tailed) and indicates that agents with larger EMG programs are more likely to perceive themselves to have higher overall proficiency levels in volunteer administration. Correlation statistics are summarized in Table 25.

Table 25:

Correlation Coefficients Between Agents' Overall Proficiency Level and Demographic Variables

	OP	Age	Gender	Rank	%	MGV	Edu	EE	VAE	ED
Overall Proficiency (OP)	-									
Age	.064	-								
Gender	-.106	-.189	-							
Position Rank	.041	.147	-.048	-						
% Time Dedicated to Consumer Horticulture (%)	-.271	.013	-.258	-.282	-					
Number of MGVs (MGV)	.459*	.103	-.323	.046	.010	-				
Education Level	.245	.113	-.062	.126	-.063	.270	-			
Extension Experience (EE)	.072	.335	-.235	.509**	-.259	-.128	-.165	-		
Volunteer Administration Experience (VAE)	-.160	.216	-.240	.181	-.103	-.441*	-.279	.645**	-	
Extension District (ED)	-.048	.258	-.193	.027	-.178	-.129	-.145	.192	.111	-

*Correlation is significant at the $p < 0.05$ (2-tailed)

**Correlation is significant at the $p < 0.01$ (2-tailed)

The 55 items in the proficiency scale were divided among the five competency constructs of organizational leadership, systems leadership, organizational culture, personal skills, and management skills. Each of the constructs contained 10 items, except management skills, which contained 15 items. When aggregated, it is possible for self-reported proficiency levels within each of the 10-item constructs to range from 10 (very low proficiency) to 55 (very high proficiency), while proficiency levels within the 15-item scale may range from 15 (very low proficiency) to 75 (very high proficiency). Responses for each of the five competency constructs were aggregated to determine agents' overall proficiency in each construct. For the four, 10-item constructs, self-reported overall construct proficiency levels ranged from 13 (very low

proficiency) to 50 (very high proficiency). For the 15-item management skills construct, self-reported proficiency levels ranged from 22 (low proficiency) to 72 (very high proficiency). Table 26 contains a summary of the maximum, minimum, range, mean and standard deviation of agents' self-reported proficiency levels for each of the five competency constructs.

Table 26:
Agents' Proficiency Levels Minimum, Maximum, Range, Mean, and Standard Deviation per Competency Construct

Competency Construct	Min	Max	Range	Mean	SD
Organizational Leadership, N=35	13.00	46.00	33.00	34.00	6.28
Systems Leadership, N=33	21.00	47.00	26.00	34.61	6.07
Organizational Culture, N=34	28.00	48.00	20.00	35.85	4.96
Personal Skills, N=34	29.00	50.00	21.00	36.18	4.75
Management Skills, N=31	22.00	72.00	50.00	45.97	10.10

Statistical analysis of agents' self-reported proficiency levels within competency constructs revealed the demographic variable, number of Master Gardener volunteers in the EMG program, has a moderate, positive correlation with the three of the five constructs. For organizational culture and personal skills there is a positive correlation of .440 and .363, respectively, at the $p < 0.05$ level (2-tailed). For management skills, there is a .489 correlation at the $p < 0.01$ level (2-tailed). This indicates that agents with larger EMG programs, who are responsible for the coordination of greater numbers of volunteers, are more likely to rate highly their proficiency levels in the areas of organizational culture, personal skills and management skills, though the number of volunteers in an agent's program is not an indication of the agent's rating of their proficiency in leadership competencies. Table 27 summarizes correlation statistics

for agents' self-rated proficiency levels and their demographic characteristics within the five competency constructs.

Table 27:

Correlation Coefficients Between Agents' Competency Construct Proficiency Levels and Number of Master Gardener Volunteers

Construct	Correlation Coefficient for Number of Master Gardener Volunteers
Organizational Leadership	.136
Systems Leadership	.312
Organizational Culture	.440*
Personal Skills	.363*
Management Skills	.489**

*Correlation is significant at the $p < 0.05$ (2-tailed)

**Correlation is significant at the $p < 0.01$ (2-tailed)

Findings Related to Objective 5: Training Needs

The final objective of this study was to identify the training needs of North Carolina Extension agents with Master Gardener volunteer administration responsibilities. Training needs were identified by the calculation of mean weighted discrepancy scores (Borich, 1980). This method calculates the training need for each competency by first subtracting the perceived proficiency level score from the perceived importance level score, producing a discrepancy score that is then multiplied by the mean perceived importance score to give a weighted discrepancy score. In the final step, weighted discrepancy scores are summed and divided by the number of responses for each item to produce the mean weighted discrepancy score (MWDS). Higher MWDS values indicate an item has a higher training need than those with lower MWDS values.

Mean weighted discrepancy scores were calculated for each of the five competency constructs, organizational leadership, systems leadership, organizational culture, personal skills, and management skills. Scores ranged from 3.39 to 5.50. The construct with the highest MWDS,

and therefore the greatest training need, was management skills, with a score of 5.50, while the construct with the lowest training need was organizational culture, with a score of 3.39. Mean weighted discrepancy scores and training need rank for all competency constructs are listed in Table 28. For comparison, overall mean scores and ranks of the importance level and self-reported proficiency level of each construct are also listed.

Table 28:
Comparison of Competency Construct Importance Scores and Rank, Proficiency Level Scores and Rank, MWDS, and Training Need Rank

Competency Construct	Importance <i>M</i>	Importance Rank	Proficiency <i>M</i>	Proficiency Rank	MWDS	Training Need Rank
Management Skills	4.34	4	3.07	5	5.50	1
Systems Leadership	4.41	2	3.46	3	4.18	2
Organizational Leadership	4.28	5	3.40	4	3.78	3
Personal Skills	4.44	1	3.62	1	3.62	4
Organizational Culture	4.36	3	3.59	2	3.39	5

Mean weighted discrepancy scores for each competency were calculated. The distribution of scores ranged from 2.06 to 8.43, with 38% achieving a score ranging from 3.0 to 3.9. Three competencies scored greater than 6.0, with two ranging from 6.0 to 6.9 and one scoring over 7.0. The distribution of competency MWDS by competency construct are listed in Table 29.

Table 29:
Distribution of Competency MWDS by Competency Construct

Competency Construct (total items)	2.9 or less	3.0 – 3.99	4.0 – 4.99	5.0 - 5.99	6.0 – 6.99	7.0 or greater
Organizational Leadership (10)	1	7	1	1		
Systems Leadership (10)	2	3	2	2	1	
Organizational Culture (10)	4	4	2			
Personal Skills (10)	1	7	1	1		
Management Skills (15)			4	9	1	1
TOTAL (55)	8	21	10	13	2	1
Percentage	14.6	38.2	18.2	23.6	3.6	1.8

Four of the five competencies with the greatest training need were from the management skills construct, including the competency with the highest score, 8.43, “disengage volunteers who exhibit problematic behaviors”. The second-highest score, 6.26, was achieved by the competency, “inspire volunteers to accept leadership positions”, from the systems leadership construct. The other three greatest training need competencies from the management skills construct were “redirect Master Gardener volunteers who do not fit well in a position”, with a score of 6.07, “identify and implement strategies to retain Master Gardener volunteers”, 5.99, and “recruit new Master Gardener volunteers”, 5.88.

Competencies with the lowest training need scores came from a variety of constructs. The competency with the lowest training need and score of 2.06 was “communicate effectively in writing”, from the personal skills construct. This was followed by “be available for Master

Gardener volunteers”, with a score of 2.16, from the organizational culture construct, and “engage Master Gardener volunteers in planning to define EMG program goals”, 2.34, from the organizational leadership construct. The mean weighted discrepancy scores and overall training need rank of each competency organized within their competency constructs are listed in Tables 30, 31, 32, 33, and 34.

Table 30:
Mean Weighted Discrepancy Scores and Training Need Rank of Organizational Leadership Competencies

Competency	<i>MWDS</i>	Rank
Effectively communicate the efforts and accomplishments of MG volunteers in the context of Extension's mission.	5.08	14
Identify volunteer opportunities based on priorities derived from needs assessment.	4.44	18
Conduct needs assessment to determine programming priorities.	3.99	28
Set long-range program goals but break them down into actionable steps.	3.90	31
Explain volunteer opportunities in the context of Extension's mission.	3.90	32
Coordinate and prioritize actions to achieve program goals.	3.87	35
Use Extension's vision and mission to plan the EMG program.	3.68	37
Communicate Extension's mission and goals to MG volunteers.	3.59	39
Creatively use technology to increase program impact.	3.04	46
Engage MG volunteers in planning to define EMG program goals.	2.34	53

Table 31:
Mean Weighted Discrepancy Scores and Training Need Rank of Systems Leadership Competencies

Competency	MWDS	Rank
Inspire volunteers to accept leadership positions.	6.26	2
Effectively enlist the assistance of MG volunteers.	5.46	10
Empower volunteers to serve as effective leaders.	5.35	12
Explain to volunteers how the EMG program operates within Cooperative Extension.	4.16	25
Delegate responsibility to MG volunteers.	4.03	26
Use team building strategies with MG volunteers to increase program impact.	3.97	29
Give volunteers the freedom to plan and implement projects, yet be involved enough to provide guidance and assure compliance with Extension requirements.	3.92	30
Engage volunteers in creating a shared vision and purpose for the EMG program.	3.58	40
Collaborate with others to achieve program goals.	2.74	51
Use understanding of personality types to better communicate with MG volunteers.	2.39	52

Table 32:
Mean Weighted Discrepancy Scores and Training Need Rank of Organizational Culture Competencies

Competency	<i>MWDS</i>	Rank
Understand what motivates MG volunteers to serve.	4.48	17
Identify ways to help MG volunteers succeed.	4.39	20
Create a positive environment in which volunteers can work and learn.	3.88	34
Inspire commitment in MG volunteers.	3.74	36
Teach others about the value and impact of volunteers.	3.66	38
Demonstrate respect for the time and contributions of MG volunteers.	3.01	47
Help others in the workplace work effectively with volunteers.	2.89	48
Trust MG volunteers to complete the tasks given to them.	2.83	49
Motivate MG volunteers to learn continually.	2.80	50
Be available to MG volunteers.	2.16	54

Table 33:

Mean Weighted Discrepancy Scores and Training Need Rank of Personal Skills Competencies

Competency	<i>MWDS</i>	Rank
Effectively resolve conflict.	5.13	13
Verbally communicate ideas clearly to others.	4.43	19
Develop creative solutions to accomplish change.	4.00	27
Identify areas where change is needed.	3.89	33
Help others reach their full potential.	3.57	41
Maintain an open mind when interacting with MG volunteers.	3.44	42
Actively listen to MG volunteers when they have a problem.	3.38	43
Cultivate successful working relationships with MG volunteers.	3.19	44
Assess one's own professional knowledge, skills and abilities to determine professional development needs.	3.18	45
Communicate effectively in writing.	2.06	55

Table 34:
*Mean Weighted Discrepancy Scores and Training Need Rank of Management Skills
 Competencies*

Competency	MWDS	Rank
Disengage volunteers who exhibit problematic behaviors.	8.43	1
Redirect MG volunteers who do not fit well in a particular position into a different position within the program.	6.07	3
Identify and implement strategies to retain MG volunteers.	5.99	4
Recruit new MG volunteers using a variety of methods that target likely prospects.	5.88	5
Provide volunteers with a comprehensive orientation to the EMG program.	5.65	6
Plan and implement initial and advanced training that prepares individuals for MG volunteer service.	5.64	7
Provide position descriptions to assist volunteers in selecting meaningful volunteer opportunities.	5.64	8
Screen applicants to ensure suitable individuals are accepted into the program.	5.59	9
Assess risk and develop policies to manage risk.	5.41	11
Collect and analyze data to evaluate EMG program outcomes.	5.05	15
Work with volunteers to identify where they will best function in the program based on their skills and interests.	5.05	16
Utilize an advisory committee or leadership team to enhance EMG program effectiveness.	4.38	21
Use appropriate methods to recognize MG volunteers for their efforts.	4.32	22
Evaluate volunteers' performance and satisfaction.	4.29	23
Provide MG volunteers with the resources needed to assist in their volunteer efforts.	4.19	24

Summary

This chapter described the data collected through the survey instrument, which were analyzed using descriptive statistics and correlation analysis. Findings related to the five research objectives were shared. Respondents were distributed statewide and were primarily females between the ages of 31 and 50 who held a graduate degree and the position rank, Assistant Extension Agent. Respondents had an average of 10.35 years of experience in Extension, with zero to five years most frequently reported, and an average of 12.58 years of volunteer administration experience. The majority of respondents spent over half their time on consumer horticulture programming and coordinated EMG programs with 50 or fewer volunteers.

All competency constructs were perceived to be important, with overall mean scores ranging from 4.28 to 4.44 on a five-point scale. The personal skills construct was perceived to be most important, followed by systems leadership, then organizational culture. Management skills and organizational leadership were perceived to be the least important. Self-reported proficiency levels in all competency constructs were perceived to be average, with overall mean scores ranging from 3.07 to 3.62. Agents felt they were most proficient in personal skills, followed by organizational culture, then systems leadership. Constructs in which agents reported themselves as having the lowest proficiency levels were organizational leadership and management skills.

Self-reported overall proficiency levels ranged from 130 to 263. Statistical analysis revealed only one correlation between agents' overall proficiency level and demographic variables investigated in this study. There was a moderate positive correlation of .459 between overall proficiency and the number of Master Gardener volunteers in the agent's EMG program. When analyzed at the construct proficiency level it was revealed the constructs contributing to

the correlation between the number of volunteers and self-reported overall proficiency level were organizational culture, personal skills, and management skills.

Training need scores were calculated utilizing the Borich Needs Assessment model (Borich, 1980). Construct training need scores ranged from 3.39 to 5.50. The construct with the highest score, and therefore greatest training need, was management skills, which was followed by systems leadership, then organizational leadership. Personal skills and organizational culture had the lowest training need scores. Sixteen individual competencies achieved training needs scores of 5.0 or greater, with disengaging volunteers, inspiring volunteers to accept leadership positions, and redirecting volunteers revealed to have the greatest training need.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter discusses conclusions based on the results of this descriptive survey research study and presents recommendations for practice and future research. The purpose of this study was to determine which competencies are important for Extension agents to lead successful Extension Master Gardener (EMG) programs, to assess the self-reported proficiency levels of these competencies among North Carolina Extension agents with Master Gardener volunteer administration responsibilities, and to determine the training needs of these agents.

Conclusions Related to Objective 1

The first objective of this study was to determine the demographic characteristics of North Carolina Cooperative Extension agents with Master Gardener volunteer administration responsibilities. The majority (58.8%) of agents serving in this role are female, which is consistent with responses to similar studies, including a nationwide study of local Extension Master Gardener coordinators (Dorn et al., 2018), agents serving with N.C. Cooperative Extension (Lakai et al., 2014), and national studies of 4-H Youth Development agents (Safrit & Schmeising, 2005; Stedman, 2004). Respondents were found to be relatively young, with 57.6% between the ages of 31 and 50, well educated, with 73.5% holding graduate degrees, and in the early stages of their Extension career, with 38.7% having five years or less Extension experience. This agrees with the findings of Lakai et al. (2014) and are similar to those of Dorn et al. (2018), except for the age demographic. In Dorn's nationwide study of Master Gardener volunteer coordinators, the average age of local coordinators was 52 years, with the greatest number of respondents considerably older, in the 61-70 years category, and 15.8% reporting their

employment status as retired. This is likely a reflection of other states' practice of recruiting experienced volunteers, which could include retired agents, to serve in the role of Master Gardener volunteer coordinator, while in North Carolina this role is reserved for paid Extension staff. On average, participants in this study were younger and better educated than members of the Association for Volunteer Administration (AVA), the majority of which held a bachelor's degree and had a median age of 49 (Safrit & Schmiesing, 2005), while participants in both studies had similar experience levels, serving an average of seven years in their current position. Agents in this study were slightly younger than 4-H agents in similar studies (Deppe & Culp, 2001; Schmiesing & Safrit, 2007; Stedman, 2004), but had similar education levels and years of experience.

The majority (57.6%) of respondents held the position rank of Assistant Extension Agent, another reflection that most are in the early stages of their career. The fact that many Extension agents serving in volunteer administration roles are relatively new to their career can have implications for their success and training needs. Snider (1985) noted it would be difficult for entry-level Extension agents to lead complex volunteer programs that require strong organizational, program development, communication, and personal skills. Snider observed that agent self-confidence is a key factor in allowing volunteers to share ownership of the program and recommended strong support be given to new agents and that volunteer leadership be included in the job description when recruiting these positions. Cassill, Culp, Hettmansperger, Stillwell, and Sublett (2012) also commented that involving volunteers can be challenging for new Extension professionals, especially delegating tasks to volunteers. They recommend that agents delegate the tasks that they like best, as those are the tasks at which they are likely to be most confident and therefore best at supervising.

Study respondents reported between zero and 25 years of volunteer administration experience, with a mean of 12.6 years, and mode of six to 10 years. However, their years of Extension experience was slightly lower, with a mean of 10.4 years, and mode of 0-5 years. This indicates some respondents held volunteer administration positions before being hired by Extension. In studies of 4H agents, Deppe and Culp (2001) also found agents reported greater years of volunteer administration experience than Extension experience, while Stedman (2004) found a mode of 11-15 years for both Extension and volunteer administration experience.

Sixty-eight percent of respondents in this study spend over 50% of their time dedicated to consumer horticulture programming; only nine percent spend 25% or less of their time on this programming area. The number of active Master Gardener volunteers within respondents' programs ranged from eight to 180. The majority of programs were small to medium in size with 32.8% of agents coordinating 25 or fewer volunteers, and 41.9% coordinating between 26 and 75 volunteers.

Conclusions Related to Objective 2

The second objective of this study was to determine which volunteer administration competencies agents responsible for coordinating Master Gardener volunteers perceived as important to lead successful Extension Master Gardener programs. All five competency constructs – organizational leadership, systems leadership, organizational culture, personal skills, and management skills – were perceived to be important on a five-point Likert scale ranging from 1=not important to 5=very important. The highest and lowest rated constructs, personal skills (mean=4.44) and organizational leadership (mean=4.28), were separated by a 0.16 range on a five-point scale, indicating close conformity in the perceived importance of the constructs

and affirming the significance of competencies in each of these categories. The constructs contained a total of 55 individual competencies, of which 52 achieved a rating above the 4.0, or important, level. This upholds the findings of Boyd (2004) and Lockett (2007) that a wide range of competencies are needed by Extension agents serving in volunteer administration roles, including competencies in leadership and personal skills, which go beyond the management skills that are primarily emphasized in many volunteer administration models.

Extension horticulture agents responding to this study and 4H agents participating in a study conducted by Stedman (2004) that utilized the same competency constructs both perceived personal skills to be the most important construct for volunteer administration. The personal skills construct includes competencies in relationship building, creative problem solving, and effective communication. These skills have been shown to be significant to all Extension agents, identified as necessary for agent success in Delphi studies among Arkansas Extension staff (Cooper & Graham, 2001) and Extension staff nationwide (Harder et al., 2010), and as one of four new competencies needed by North Carolina Extension agents to be successful in the 21st century (Lakai et al., 2014). In Lockett's 2007 study, the personal skills construct was one of the largest, topped only by management skills in the number of competencies contained. In noting that neither his nor Boyd's 2003 study identified subject matter knowledge or prior experience in volunteer administration as a necessary competency, Lockett inferred that good people skills could mitigate for a lack of competency in these areas. He further concluded, "that the enjoyment of working alongside people and partnering with people is fundamental to having a successful Master Gardener program" (Lockett, 2007, p. 66).

Neither the GEMS Model of Volunteer Administration proposed by Culp (2012) nor the PEP model developed by Safrit et al. (2005) include personal skills among their competencies,

focusing primarily on competencies associated with volunteer management such as recruiting, selecting, orienting, training, supervising, recognizing and evaluating volunteers. The GEMS model does include competencies related to systems leadership within the mobilize category, specifically delegating responsibility and leadership development. In studies utilizing the GEMS model to assess 4H agents' volunteer administration competencies, the mobilize category was reported as the most frequently used by agents in Kentucky (Culp & Kohlhagen, 2004) and the second most frequently used by agents in Ohio (Deppe & Culp, 2001). This aligns with the findings of this study, in which horticulture agents perceived systems leadership to be the second most important competency construct after personal skills, and supports the conclusions of Snider (1985) that managing the balance of power and program ownership between themselves and their volunteers is one of the key roles agents play in engaging volunteers.

The management skills construct was perceived as one of the least important of the five constructs in this study, second only to organizational leadership, which ranked lowest in importance. This is similar to the findings of Stedman (2004), who reported 4H agents also ranked the management skills construct among the lowest in importance. While agents did not perceive management skills to be as important as personal skills, systems leadership, or organizational culture, competencies in this construct are essential for effective and efficient volunteer administration, as shown by studies utilizing models such as GEMS (Culp & Kohlhagen, 2004; Deppe & Culp, 2001) and PEP (Safrit & Schmiesing, 2005; Schmiesing & Safrit, 2007).

In comparing findings of this study to those utilizing the GEMS and PEP models, the most notable discovery is that in all studies, evaluation is ranked among the lowest competencies in terms of importance. In this study, "evaluate volunteers' performance and satisfaction" was

one of two individual competencies receiving the lowest importance mean score (3.94). In studies utilizing the GEMS model, “evaluate”, which includes competencies related to program evaluation and evaluating volunteer satisfaction, was ranked lowest in frequency of use by 4H agents in Ohio (Deppe & Culp, 2001) and 16th least utilized out of 18 competencies by 4H agents in Kentucky (Culp & Kohlhagen, 2004). In studies utilizing the PEP model, 4H agents across the country ranked “evaluate and report” as least important (Schmiesing & Safrit, 2007), while members of the Association for Volunteer Administration (AVA) ranked it as seventh in importance out of the nine competency categories (Safrit & Schmiesing, 2005). Though agents may not perceive evaluating volunteer satisfaction to be important, volunteer satisfaction has been directly linked to volunteer retention and is an important indicator of a volunteer’s intention to remain engaged with an organization (Terry et al., 2013). Monitoring volunteer satisfaction and understanding its drivers – a supportive leadership climate and benefits of volunteerism – can help agents recognize underlying issues contributing to volunteer turnover and address them before they become major problems.

The five highest-ranked individual competencies in this study represent each of the five constructs and are a direct reflection of the purpose of the Extension Master Gardener program, which is to expand Extension’s capacity by recruiting and training local residents to volunteer in roles that teach and promote research-based consumer horticulture best practices in their communities (Meyer, 2007). Listed in order of perceived importance, they were 1) Effectively enlist the assistance of volunteers, 2) Create a positive environment in which volunteers can work and learn, 3) Cultivate successful working relationships with volunteers, 4) Plan and implement training that prepares volunteers for service, and 5) Communicate Extension’s mission and goals to volunteers. These five competencies also support fulfillment of the primary

motivational factors of individuals joining the Extension Master Gardener program, which are to gain horticultural knowledge and help others (Schrock et al., 2000; Takle et al., 2016; Wilson & Newman, 2011). Providing effective training is essential to meeting volunteers' motivational expectations and the expectation of Extension that Master Gardener volunteers share accurate, non-biased information consistent with the latest research findings. Extension agents with 4H Youth Development responsibilities have also emphasized the importance of competency in training volunteers. Ohio 4H agents reported "educate" as the most frequently used competency category in a study utilizing the GEMS model to assess volunteer administration competencies (Deppe & Culp, 2001), while Kentucky agents reported it as the second most utilized of the four main categories (Culp & Kohlhagen, 2004). Similarly, 4H agents participating in a nationwide study based upon the PEP model rated "orient and train" as the most important competency for volunteer administrators (Schmiesing & Safrit, 2007).

Comparing individual competency importance rankings in this study to those of Lockett's 2007 Delphi study reveal several direct alignments. Most notably, are strong agreement on the high level of importance of competencies in the systems leadership and organizational culture constructs, specifically creating a positive environment, demonstrating respect for the time and contributions of volunteers, effectively enlisting the assistance of volunteers, and sharing power and ownership by giving volunteers freedom to plan and implement projects, yet staying involved enough to provide guidance. The competency ranked as most important by Texas expert agents, "ability to articulate Extension's mission and goals to Master Gardener volunteers," from the organizational leadership construct, ranked in the top five most important for North Carolina agents, emphasizing agents must be able to help Master Gardener volunteers understand and connect with Extension's mission. In comparing lower-ranking competencies

from both studies, three stand out. In both studies, technology use rated lowest in importance, which is not surprising considering both groups placed high emphasis on people skills. Other competencies that ranked low in importance in both studies were policy development and team building/consensus-building skills.

The open-ended question, “Please list any competencies not listed in this survey that you feel are extremely important to lead a successful Extension Master Gardener program,” generated nine unique responses, seven of which replicated or expanded upon competencies already represented in the instrument, particularly within the systems leadership and personal skills constructs. Two new competencies not represented in the study instrument were identified, time management and hard work. Time management is a core competency for agent success (Brodeur et al., 2011; Cooper & Graham, 2001; Lakai et al., 2014) that is especially critical for agents serving in volunteer administration roles. “Takes a great deal of the agent’s time” and “increased workload” were the only two statements to reach consensus when Texas agents were asked, “What are the limiting factors of being a Master Gardener coordinator?” (Lockett, 2007). The time required to oversee master volunteer programs was identified as a disadvantage of this program delivery method by Laughlin (1990) and Laughlin and Schmidt (1995), clearly indicating strong time management skills and dedication to hard work are among the many competencies required of agents for programs such as the Extension Master Gardener program to succeed.

Conclusions Related to Objective 3

The third objective of this study was to determine the current self-reported proficiency levels of North Carolina Extension agents with Master Gardener volunteer administration

responsibilities. Self-reported proficiency levels for all five constructs – organizational leadership, systems leadership, organizational culture, personal skills, and management skills – were perceived to be “average”, on a five-point scale ranging from 1, “very low”, to 5, “very high”. Construct mean scores ranged from a high of 3.62 for personal skills proficiency to a low of 3.07 for management skills proficiency. Proficiency level mean scores for all constructs and individual competencies were lower than the importance mean scores. This gap in “what is,” proficiency, and “what should be,” importance, indicates agents are not performing at the level they need or wish to be.

Overall, agents felt most proficient in constructs they rated as most important. The personal skills construct was perceived as both most important and highest in proficiency. For all other constructs, self-reported proficiency rankings were within one position of importance rankings, with organizational culture and organizational leadership rating one position higher in proficiency compared to importance, and systems leadership and management skills rating one position lower. In a national study encompassing the same competency constructs, 4H agents ranked their self-perceived proficiency levels very similar to North Carolina horticulture agents participating in this study, with both indicating highest perceived proficiency in the personal skills construct and lowest perceived proficiency in management skills (Stedman, 2004). In the 4H study, construct rankings for proficiency levels directly matched construct rankings for importance. Direct or near direct matches between Extension professionals’ rankings of competency importance and perceived proficiency levels have also been found in studies utilizing the GEMS model (Deppe & Culp, 2001; Culp & Kohlhagen, 2004) and other frameworks (King & Safrit, 1998) to assess volunteer management competencies. This is not surprising considering that if an individual feels a specific skill or knowledge is important to

their job performance they may be more motivated to gain proficiency in that competency. In addition, Moore and Rudd (2005) reported participants in studies utilizing self-reported proficiency levels are unlikely to rate themselves as “low” or “very low” in a competence they feel to be important. As a result, self-reported proficiency ratings may reflect agents’ perceptions of competence importance rather than their actual proficiency levels.

Self-reported proficiency level mean scores for individual competency items ranged from 2.70 to 4.03, with 85% of individual competencies rated between 3.00 – 3.99, or “average” perceived proficiency. Only two competencies achieved ratings above the 4.00 or “high” perceived proficiency level. These were “cultivate successful working relationships with volunteers”, 4.03, and “demonstrate respect for the time and contributions of volunteers”, 4.00, indicating agents feel comfortable with their ability to work alongside their volunteers and value their contributions. Six competencies achieved mean scores below the 3.00 or “low” perceived proficiency level, with disengaging and redirecting volunteers ranking lowest, followed by developing risk management policies, evaluating volunteers’ satisfaction, evaluating EMG program outcomes, and using team-building strategies. Low self-perceived proficiency in evaluation has also been found among 4H agents and members of the Association for Volunteer Administration (AVA). In studies utilizing the GEMS model, 4H agents in Ohio rated their self-perceived proficiency for “evaluate” 16th lowest among 18 volunteer administration competencies (Deppe & Culp, 2001) while 4H agents in Kentucky ranked it 17th lowest (Culp & Kohlhagen, 2004). In the same studies, self-perceived proficiency levels in redirecting and disengaging volunteers were among the lowest-ranked competencies. In studies utilizing the PEP model to assess volunteer administration competencies, 4H agents and AVA members ranked their self-perceived proficiency levels in “evaluate and report” lowest among nine competency

categories (Schmiesing & Safrit, 2007; Safrit & Schmiesing, 2005). Low self-reported proficiency in evaluation was also found in a study of N.C. Cooperative Extension agents, whose perceived proficiency levels in evaluation ranked among the lowest of the 42 competencies assessed (Lakai et al., 2014).

Proficiency in evaluating program outcomes and impacts and volunteers' satisfaction has direct implications for the success of the EMG program. Understanding and sustaining volunteers' satisfaction with their volunteer experience is critical to volunteer retention (Terry et al., 2013). Evaluating and communicating the outcomes and impacts of volunteers' efforts are important to both volunteer retention and recruitment, helping to fulfill the motivational functions that attract and keep Master Gardener volunteers' active in the program (Schrock et al., 2000; Takle et al., 2016; Wilson & Newman, 2011). A need to clearly communicate the public value of the EMG program has been identified as a challenge the program faces moving forward (Meyer, 2007). Further, evaluation of program outcomes and impacts is essential to Extension's ability to meet stakeholder's reporting expectations, operate in an accountability-based funding environment, and attract new clients by demonstrating proven value (Stup, 2003). Developing agents' skills in evaluating program outcomes is essential for communicating the tremendous value of this program to its volunteers, funding partners, and the public, as well as recognizing the accomplishments of Master Gardener volunteers.

Conclusions Related to Objective 4

The fourth objective of this study was to determine whether agents' self-reported proficiency levels are related to their demographic variables. Correlation coefficients were calculated for demographic variables and the overall proficiency score, as well as demographic

variables and the proficiency score for each of the five constructs - organizational leadership, systems leadership, organizational culture, personal skills, and management skills. The demographic variables used in this correlation analysis were gender, age, position rank, percent of their time dedicated to consumer horticulture programming, number of Master Gardener volunteers within the agent's EMG program, level of education, years of Extension experience, years of volunteer administration experience, and the Extension district in which they are based.

A moderate positive correlation of 0.46, significant at the 0.05 level, was found between the demographic variable, number of volunteers, and self-reported overall proficiency scores. No other significant correlations between overall proficiency and demographic variables were found. When analyzed at the construct proficiency level, moderate, positive correlations were found between the demographic variable, number of volunteers, and the constructs organizational culture (0.44, $p < 0.05$), personal skills (0.36, $p < 0.05$) and management skills (0.49, $p < 0.01$). This indicates there is a relationship between the agent's overall self-reported proficiency and the number of Master Gardener volunteers in their program, specifically that as one increases, so does the other. Further, self-reported proficiency in the constructs organizational culture, personal skills, and management skills contribute to the relationship between overall proficiency and number of volunteers. This means higher numbers of volunteers in an agent's EMG program are associated with higher self-reported proficiency levels in the organizational culture, personal skills, and management skills constructs, and vice-versa, though the number of volunteers does not relate to an agent's self-reported proficiency in organizational or systems leadership.

In studies that assessed 4H agents' self-reported volunteer administration proficiency levels, the demographic characteristics age and years of experience have been found to have a weak to moderate positive correlation with self-reported proficiency levels in some competency

categories. Stedman (2004) utilized the same volunteer administration competency constructs as this study to conduct correlation analysis between self-reported construct proficiency levels and the demographic variables, gender, age, years as a volunteer administrator, years in Extension, and whether or not the agent was certified in volunteer administration. Age was the only demographic variable found to have a relationship with self-reported construct proficiency levels. Specifically, age was found to have a weak to moderate positive correlation at the 0.05 significance level with all constructs except personal skills. The strongest relationship existed between age and management skills (correlation coefficient = 0.44), while the weakest was between age and organizational leadership (0.29). In studies utilizing the GEMS model, no correlations were found between self-reported competency proficiency levels and the demographic characteristics gender, age, level of education, years as an Extension agent, years as a volunteer administrator, or Extension district location for 4H agents in Ohio (Deppe & Culp, 2001), while only weak positive relationships were found between the demographic variables age, years as an Extension agent, and years as a volunteer administrator and some stages of the GEMS model among 4H agents in Kentucky (Culp & Kohlhagen, 2004). The strongest correlations were between the “educate” competency and years of experience, with years as an Extension agent having a correlation coefficient of 0.30 at the 0.01 significance level, and years as a volunteer administrator having a coefficient of 0.27. Similarly, Lakai et al. (2014) found age and years of Extension experience to be positively correlated with North Carolina Extension agents’ overall self-reported proficiency in core competencies needed to be successful in the 21st century, while gender, position rank, education level, area of job responsibility and professional association membership had no relationship.

It was initially surprising that correlation analysis revealed no relationships between agents' age or years of experience with their self-reported proficiency levels in volunteer administration, especially considering agents perceive these competencies to be important. Several factors could prevent North Carolina horticulture agents from gaining competencies as age and experience increase. "Increased workload" and the "amount of time required to administer the program" have been identified as challenges facing agents serving as Master Gardener volunteer coordinators (Laughlin & Schmidt, 1995; Lockett, 2007; McAleer, 2005). "Increased workload" and "lack of time" have also been identified as the most significant barriers preventing N.C. Cooperative Extension agents from acquiring competencies, while "lack of motivation" had the least effect (Lakai et al., 2012). While North Carolina agents may wish to increase their competencies in volunteer administration, the overwhelming nature of the day to day duties of the job is one possible barrier that could be preventing them from pursuing educational opportunities.

Boyd (2003) identified several barriers to acquiring volunteer administration competencies that could prevent North Carolina agents from increasing their proficiency levels as years of experience and age increase. These include lack of knowledge of volunteer management skills needed, lack of understanding of the drivers of volunteer systems, and organizational hiring practices. When hiring individuals for agent positions that coordinate the EMG program, degrees in horticulture or other subject-matter related fields are preferred. As a result, many agents come to the organization with little knowledge or experience in volunteer administration. This lack of knowledge alone may prevent agents from gaining competencies, as they do not know where to begin or what to prioritize for professional development. Another barrier identified by Boyd, that the volunteer administrator has too many other responsibilities,

could play a role in preventing North Carolina agents from gaining competencies in volunteer administration. In North Carolina, agents have responsibilities beyond the EMG program, which include educational programming for local residents, commercial growers, and pesticide applicators. It could be that agents prioritize gaining competency to meet horticulture programming responsibilities over pursuing competencies in volunteer administration, or that the organization at the local or state level places greater emphasis and value on, or provides more opportunities for, building subject matter expertise compared to volunteer leadership and management skills.

The other surprising finding was that the relationship between the number of volunteers and overall self-reported proficiency was not related to leadership constructs. Instead, it was due to self-reported proficiency level increases in the personal skills, management skills, and organizational culture constructs. One possibility to explain why agents' perceptions of their proficiency levels are not increasing with years of experience may be that individuals who are attracted to horticulture agent positions in counties with large EMG programs come to the position with greater self-efficacy and competency in volunteer administration, specifically skills related to volunteer management, personal skills and creating a positive organizational culture. Conversely, it could be that when someone hired into one of these positions does not possess these competencies, they do not remain in the position long.

Conclusions Related to Objective 5

The final objective of this study was to identify the training needs of North Carolina Extension agents with Master Gardener volunteer administration responsibilities. Training need scores were determined through the calculation of mean weighted discrepancy scores (MWDS)

as described by the Borich Needs Assessment Model (Borich, 1980). Applying the Borich needs formula to each of the five competency constructs - organizational leadership, systems leadership, organizational culture, personal skills, and management skills – revealed agents' greatest training need exists for the management skills construct (MWDS=5.50), followed by systems leadership (4.18). The constructs with the lowest training need scores were organizational leadership (3.78), personal skills (3.62) and organizational culture (3.39). As would be expected, constructs' training need scores had an inverse relationship with self-reported proficiency level mean scores, with constructs rating lower in proficiency level achieving higher training need scores. A construct's importance mean score did not directly reflect its training need score. These findings are similar to those of Stedman (2004), whose study encompassed the same volunteer administration competency constructs to assess the training needs of 4H agents. In both studies, the management skills construct was found to have the greatest training need, with the remaining four constructs all ranking within one position of each other between the two studies.

Training need scores for the 55 individual competencies ranged from 2.06 to 8.43, with 16 competencies scoring greater than 5.0. Of these, 11 were from the management skills construct, including the competencies with the highest and third-highest score, “disengage volunteers who exhibit problematic behaviors,” and “redirect MG volunteers who do not fit well in a position,” respectively. A study utilizing the GEMS model of volunteer administration to assess Ohio 4H agents' training needs revealed similar findings (Deppe & Culp, 2001). As with this study, training need scores were greatest for competencies related to management skills, with “disengage” and “redirect” volunteers ranking highest in training need out of 18 competencies.

It is important to note that high training need scores for the redirect and disengage competencies do not indicate a widespread problem with program volunteers. Instead, it is an indication that agents feel these competencies are very important to the success of the program, yet they do not feel confident in their abilities to perform them. Difficult volunteers are challenging to manage, yet avoiding dealing with them can result in serious consequences for the program, including decreased productivity and morale of program volunteers and staff, loss of good volunteers, and negative perceptions of Extension by the public (Fry & Langellotto, 2013). Culp and Doyle (2011) note that the need to redirect or disengage a volunteer is often the result of incorrect volunteer placement, failure of the screening process, or poorly designed volunteer role descriptions. As a result, the volunteer either enters a role without understanding what is expected of them or takes on tasks for which their interests, skills, and knowledge are not well matched. While disengaging volunteers may occasionally be necessary, proficiency in other management skills can minimize the need to take this last resort action (Culp & Doyle, 2011; O'Neill, 1990). Best practices that prevent the need for disengagement include redirecting volunteers to other roles for which they are better suited, recruiting and screening volunteers to ensure they are a good match for the organization and volunteer roles available, providing well-written, accurate volunteer position descriptions, and orienting volunteers to the mission and policies of Extension. Within this study, the training need score for each of these best practice competencies was greater than 5.0. Weaknesses in these competencies may be contributing to a need to redirect and disengage volunteers more frequently than necessary, which can be minimized by building agents' proficiency in all management skills competencies.

Additional management skills competencies with training need scores above 5.0 included competencies in retaining and training volunteers. Understanding what motivates individuals to

volunteer with an organization is the foundation for recruiting, satisfying, and retaining volunteers (Snyder et al., 2000). Gaining horticulture knowledge is the greatest motivator for individuals joining and remaining in the Extension Master Gardener program (Boyer et al., 2002; Schrock et al., 2000; Strong & Harder, 2011a; Takle et al., 2016; Wilson & Newman, 2011). Hence, the ability to plan and provide excellent initial and ongoing training opportunities for Master Gardener volunteers not only ensures volunteers can perform the tasks and duties necessary for program success, it also contributes to volunteer recruitment, satisfaction, and retention. In addition to training in horticultural topics, increasing Master Gardener volunteers' efficacy in instructional strategies by offering training in adult teaching and learning techniques is an important factor in increasing volunteer retention (Strong & Harder, 2011b).

Increasing competency in volunteer retention relies on an understanding of its drivers. Hager and Brudney (2004) assessed the effect of management practices on volunteer retention in a study of nearly 3,000 non-profit charities across the United States, resulting in the recommendation that "charities interested in increasing retention of volunteers should invest in recognizing volunteers, providing training and professional development for them, and screening volunteers and matching them to organizational tasks" (p. 1). Providing position descriptions based on assessed organizational needs is a critical function of matching Extension volunteers to meaningful roles that will help fulfill the mission of the organization and satisfy volunteer motivations (Culp, 2013a). Effective position descriptions should include a position title, general purpose of the position, qualifications needed, specific responsibilities, time requirement, support and benefits provided, and who will supervise the position (Culp, 2013a). Once matched with a meaningful volunteer opportunity, participants in Extension master volunteer programs have been found to most value intrinsic forms of recognition, including achieving personal goals,

having others seek their opinion, being part of a group, and receiving compliments from peers (Wolford et al., 2001). Additional recommendations for increasing volunteer retention emphasize the interrelated nature of volunteer administration competencies and rely on competencies in management skills, organizational culture, and organizational leadership. These include using recognition strategies that focus on the value of the volunteer, involving volunteers in the recruitment process, commitment to volunteer screening, creating a positive environment in which volunteers feel accepted by all members of the Extension staff, providing challenging new experiences for existing volunteers, and regularly communicating the important role volunteers play in the mission of the organization (Terry et al., 2013).

Following management skills, systems leadership was identified as the construct with the next greatest training need in this study. Competencies within this construct relate to sharing program ownership, engaging volunteers in program management, delegating tasks, and developing volunteer leaders. When compared to the four categories of the GEMS model, competencies within this construct most closely align with the mobilize category. Studies utilizing the GEMS model to assess 4H agents' volunteer administration competencies identified the mobilize category as having the greatest training need among agents in Kentucky (Culp & Kohlhagen, 2004) and the second greatest training need for agents in Ohio (Deppe & Culp, 2001). Increasing agents' proficiency in these competencies should be a priority, as they are essential for developing leadership and other skills that empower volunteers to serve in middle management positions, which greatly increase the organization's outreach capacity and potential impacts (Lockett & Boleman, 2008).

Within the systems leadership construct, competencies with the highest training need scores were inspiring volunteers to accept leadership positions, enlisting the assistance of Master

Gardener volunteers, and empowering volunteers to serve as leaders. Building proficiency in these competencies is directly related to building proficiency in the management skills construct. The first step to engaging individuals in volunteer service and leadership is recruiting individuals whose interests match the needs and mission of the organization (Culp, 2012). While it is often recommended to appeal to potential volunteers' motivations to gain horticulture knowledge by focusing on the educational opportunities the EMG program offers (Schrock et al. 2000; Takle et al., 2016; Wilson & Newman, 2011), messages designed to recruit new Master Gardeners should also promote the volunteer service expectation of the program, rather than advertising it solely as a gardening class. Volunteer opportunities and expectations should be clearly communicated upfront to ensure individuals joining the program understand what is expected of them and that they are prepared for and anticipate being part of volunteer service when their initial training is completed. Training and orientation must sufficiently prepare new volunteers to serve in appropriate roles; if it does not, the result will likely be "frustration, poor performance, and a poor retention rate" (Culp, 2013b, para. 1). Additional management skills volunteer administrators should utilize to engage their volunteers in service that meets the organization's needs include providing clear job descriptions, allocating resources needed to perform the role, and providing supervision that offers constructive feedback and frequent communication (Strauss & Rager, 2017).

Inspiring and empowering volunteers to serve in leadership roles increases the capacity of the entire program and should be a core goal of any EMG program. Building skills in the organizational culture construct will enable volunteer administrators to foster and nurture leadership development, which begins with creating a positive group culture that promotes learning, trust, and engagement in a secure, accepting environment (Lockett & Boyd, 2012). This

can be achieved by modeling positive and supportive behaviors and holding group members to the same expectation, coordinating mentor programs, facilitating reflective learning opportunities for volunteers, and engaging volunteers in needs assessment, program development, and delivery. Leadership development takes time, and volunteers must remain engaged in the program for this to happen. Having an effective and functional volunteer program with an organized structure built upon research-based volunteer administration best practices will provide the environment needed to retain volunteers and develop their leadership potential, leading to greater benefits for the volunteers, as well as the organizations and communities they serve.

Recommendations

Based on the findings of this study, a review of the literature, and insights gained through this research, the following recommendations are made for NC State Extension administration and North Carolina Extension agents with Master Gardener volunteer administration responsibilities:

1. Many competencies beyond horticultural subject matter knowledge and the management skills listed in most volunteer administration models are needed to lead a successful Extension Master Gardener program. While agents of all levels of experience will benefit from increasing their proficiency in volunteer administration, agents in the early career stage should especially be supported. Early career agents should be surveyed to determine the most effective methods to provide this support. Possibilities include coaching and mentoring from agents who have been identified as volunteer engagement experts and who currently manage a considerable number of Master Gardener volunteers,

peer discussion groups, a thorough orientation to the Extension Master Gardener program and introduction to volunteer administration competency areas within the first few months of hire, asynchronous learning resources such as videos and self-directed online modules, and face-to-face small group and large group training workshops.

2. All agents engaging Master Gardener volunteers will benefit from educational opportunities and resource materials that increase their volunteer administration competencies. Priority should be given first to developing materials and training that will empower agents to attain competency in management skills and systems leadership. Initial focus areas should include volunteer leadership development, creating a positive environment that supports shared ownership of the program, recruiting volunteers whose interests and motivations align with the organization, orienting volunteers to the mission and policies of Extension, providing training that prepares volunteers for service roles, developing position descriptions, and evaluating volunteer satisfaction and program outcomes. Additional benefits can be realized by extending these resources to key Master Gardener volunteers serving in leadership roles at the county level.
3. An Extension Master Gardener volunteer administration competency inventory should be developed to enable agents to self-assess their areas of strength and weakness, allowing them to identify and prioritize their professional development needs. To gain a more well-rounded and objective view of their competencies, agents should also invite their volunteers and supervisors to rate their proficiency levels. Matching the inventory to existing resources for building volunteer administration competencies will further empower agents to improve their knowledge and skills.

4. When advertising positions that include responsibility for coordinating a local Extension Master Gardener program, volunteer administration duties should be listed and clearly described in all job postings. NC State Extension should seek candidates for these positions that demonstrate awareness of and experience in volunteer administration competencies, with a focus on personal skills, systems leadership, and organizational culture.
5. No correlation between years of experience and self-reported overall proficiency levels were found in this study. One possible reason agents are not developing these competencies, which they perceive to be important, could be that they see no evidence these competencies are directly valued by Extension administration. Ways that Extension administration could demonstrate attainment of these competencies are valued include ensuring all volunteer administration competency constructs are included and emphasized in agent competency frameworks, position descriptions, performance appraisal tools, and outcome and impact reporting. In addition, the demonstration of competency in volunteer administration and program outcomes related to volunteer engagement should be required in the title promotion assessment process.
6. District and county Extension directors should be made aware of the importance of volunteer administration competencies to achieving program outcomes and agent success. Directors should be encouraged to support agents in the attainment of volunteer administration competencies and made aware of professional development resources available to agents.

7. Attainment of volunteer administration competencies should be encouraged and rewarded by Extension at all levels. Awards that recognize and celebrate agent achievement in volunteer engagement should be created at the state, district and national levels.

Implications for Future Research

This study revealed the following areas that are recommended for future research:

- This study assessed agents' perceptions of the importance of and their current proficiency levels in volunteer administration competencies. A study of Master Gardener volunteers' perceptions of the importance of and their supervising horticulture agents' current proficiency levels in these competencies would contribute to a more complete understanding of the knowledge, skills, and attributes necessary to determine the training needs of agents with Master Gardener volunteer administration responsibilities. The addition of County Extension Directors' perceptions of the importance of volunteer administration competencies and the proficiency levels of the agents they supervise to the study would provide a 360° assessment of agents' competencies and training needs.
- Based on the findings of this study, North Carolina Extension agents' volunteer administration proficiencies are not increasing with experience. Additional study is needed to identify barriers preventing agents from gaining proficiency in these competencies, as well as their training preferences, and tools, resources, and management factors that would encourage the attainment of volunteer administration competencies.
- Replicating this study at five-year intervals would allow N.C. Cooperative Extension to document the development of horticulture agents' proficiency levels, assess the effectiveness of efforts to build competencies, track trends in perceptions related to

volunteer administration competencies, and identify new competencies needed for the future.

- The training needs identified in this study apply only to N.C. Cooperative Extension agents with Master Gardener volunteer program responsibilities. Modifying the instrument used in this study to assess volunteer administration training needs of all N.C. Cooperative Extension agents would allow the organization to prioritize training and offer resources and support that efficiently address the development of volunteer administration core competencies of all agents.
- This study and its findings are limited to North Carolina Extension agents with Master Gardener volunteer administration responsibilities. Replication of this study utilizing a multi-state sample is needed to broaden the recommendations of this study beyond N.C. Cooperative Extension, as well as identify whether regional differences in competencies exist and to guide training and resource development priorities of the Extension Master Gardener National Committee.
- The instrument utilized in this study comprised 55 items divided among five scales. Replicating this study among a larger population of Master Gardener volunteer coordinators to collect more responses would allow for the use of factor analysis to refine this instrument and improve its efficacy as a Master Gardener volunteer administration competency assessment tool.

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APPENDICES

Appendix A:

Email Invitation to Participate in the Study

You are invited to participate in a research study to assess the current level of volunteer administration competencies and training needs among North Carolina Extension agents with Master Gardener volunteer administration responsibilities.

If you understand the information below and agree to participate in the study, please click on the following link to start the online survey:

https://ncsu.qualtrics.com/jfe/form/SV_bPzHwbNvg6dQG4R

The deadline to participate is April 18th and the survey should take 15-20 minutes to complete.

Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. If you agree to participate, you will complete an online survey. The information you provide will be used to complete my doctoral research study and made available for N.C. Cooperative Extension to improve the Extension Master Gardener program.

There is minimal risk associated with this research. I will not report any identifiable information. Aggregated data will be used in reports. The information you provide will be kept confidential. If you have any question, please contact the researcher, Charlotte Glen, Campus Box 7609, Raleigh, NC 27609, cdglen@ncsu.edu, 919-515-1226. If you feel you have been treated unfairly according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the IRB Regulatory Compliance Administrator, Box 7514, NCSU Campus (919-515-4514).

Thank you for your contribution to support Extension volunteer administration best practices!

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Charlotte Glen
State Coordinator,
NC Extension Master Gardener Program
College of Agriculture and Life Sciences
Department of Horticultural Science
P: 919-515-1226
Campus Box 7609
charlotte_glen@ncsu.edu

Appendix B: Survey Instrument

NC STATE UNIVERSITY

Extension Master Gardener Volunteer Leadership Competency Study

Thank you for participating in this study. The survey should take 15 to 20 minutes to complete and has six sections:

1. **Organizational Leadership Competencies**
2. **Systems Leadership Competencies**
3. **Organizational Culture Competencies**
4. **Personal Skills Competencies**
5. **Management Skills Competencies Section**
6. **Demographic Data**

Your time and participation are greatly appreciated. Your contribution to this study will help identify and prioritize agent training needs and support development of Extension volunteer management best practices.



SECTION 1: Organizational Leadership

For each of the following competencies, please select the response you feel best represents:

- the **level of importance** of the competency in managing volunteers, AND
- **your proficiency level** in each competency

Please be sure to select two responses for each competency - a response for the importance and another indicating your proficiency.

	Importance level of this competency in managing volunteers is:					My proficiency level in this competency is:				
	Not Important	Slightly Important	Moderately Important	Important	Extremely Important	Very Low	Low	Average	High	Very High
1. Use Extension's vision and mission to plan the Extension Master Gardener (EMG) program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Communicate Extension's mission and goals to Master Gardener (MG) volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Explain volunteer opportunities in the context of Extension's mission.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Conduct needs assessment to determine programming priorities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Identify volunteer opportunities based on priorities derived from needs assessment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Engage MG volunteers in planning to define EMG program goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Set long-range program goals but break them down into actionable steps.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Coordinate and prioritize actions to achieve program goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Effectively communicate the efforts and accomplishments of MG volunteers in the context of Extension's mission.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Creatively use technology to increase program impact.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



SECTION 2: Systems Leadership

For each of the following competencies, please select the response you feel best represents:

- the **level of importance** of the competency in managing volunteers, AND
- **your proficiency level** in each competency

Please be sure to select two responses for each competency - a response for the importance and another indicating your proficiency.

	Importance level of this competency in managing volunteers is:					My proficiency level in this competency is:				
	Not Important	Slightly Important	Moderately Important	Important	Extremely Important	Very Low	Low	Average	High	Very High
1. Explain to volunteers how the EMG program operates within Cooperative Extension.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Engage volunteers in creating a shared vision and purpose for the EMG program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Effectively enlist the assistance of MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Delegate responsibility to MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Give volunteers the freedom to plan and implement projects, yet be involved enough to provide guidance and assure compliance with Extension requirements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Inspire volunteers to accept leadership positions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Empower volunteers to serve as effective leaders.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Use understanding of personality types to better communicate with MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Use team building strategies with MG volunteers to increase program impact.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Collaborate with others to achieve program goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



SECTION 3: Organizational Culture

For each of the following competencies, please select the response you feel best represents:

- the **level of importance** of the competency in managing volunteers, AND
- **your proficiency level** in each competency

Please be sure to select two responses for each competency - a response for the importance and another indicating your proficiency.

	Importance level of this competency in managing volunteers is:					My proficiency level in this competency is:				
	Not Important	Slightly Important	Moderately Important	Important	Extremely Important	Very Low	Low	Average	High	Very High
1. Create a positive environment in which volunteers can work and learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Teach others about the value and impact of volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Help others in the workplace work effectively with volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Demonstrate respect for the time and contributions of MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Be available to MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Understand what motivates MG volunteers to serve.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Inspire commitment in MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Motivate MG volunteers to learn continually.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Identify ways to help MG volunteers succeed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Trust MG volunteers to complete the tasks given to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



SECTION 4: Personal Skills

For each of the following competencies, please select the response you feel best represents:

- the **level of importance** of the competency in managing volunteers, AND
- **your proficiency level** in each competency

Please be sure to select two responses for each competency - a response for the importance and another indicating your proficiency.

	Importance level of this competency in managing volunteers is:					My proficiency level in this competency is:				
	Not Important	Slightly Important	Moderately Important	Important	Extremely Important	Very Low	Low	Average	High	Very High
1. Identify areas where change is needed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Develop creative solutions to accomplish change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Verbally communicate ideas clearly to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Communicate effectively in writing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Actively listen to MG volunteers when they have a problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Effectively resolve conflict.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Cultivate successful working relationships with MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Maintain an open mind when interacting with MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Help others reach their full potential.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Assess one's own professional knowledge, skills and abilities to determine professional development needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



SECTION 5: Management Skills

For each of the following competencies, please select the response you feel best represents:

- the **level of importance** of the competency in managing volunteers, AND
- **your proficiency level** in each competency

Please be sure to select two responses for each competency - a response for the importance and another indicating your proficiency.

	Importance level of this competency in managing volunteers is:					My proficiency level in this competency is:				
	Not Important	Slightly Important	Moderately Important	Important	Extremely Important	Very Low	Low	Average	High	Very High
1. Recruit new MG volunteers using a variety of methods that target likely prospects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Screen applicants to ensure suitable individuals are accepted into the program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Provide volunteers with a comprehensive orientation to the EMG program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Plan and implement initial and advanced training that prepares individuals for MG volunteer service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Work with volunteers to identify where they will best function in the program based on their skills and interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Provide position descriptions to assist volunteers in selecting meaningful volunteer opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Provide MG volunteers with the resources needed to assist in their volunteer efforts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Importance level of this competency in managing volunteers is:					My proficiency level in this competency is:				
	Not Important	Slightly Important	Moderately Important	Important	Extremely Important	Very Low	Low	Average	High	Very High
8. Collect and analyze data to evaluate EMG program outcomes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Evaluate volunteers' performance and satisfaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Use appropriate methods to recognize MG volunteers for their efforts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Identify and implement strategies to retain MG volunteers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Redirect MG volunteers who do not fit well in a particular position into a different position within the program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Disengage volunteers who exhibit problematic behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Assess risk and develop policies to manage risk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Utilize an advisory committee or leadership team to enhance EMG program effectiveness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please list any competencies not listed in this survey that you feel are extremely important to lead a successful Extension Master Gardener program.



SECTION 6: Demographic Data

1. What is your gender:

- Female
 - Male
-

2. What is your current age:

- 30 years or less
- 31 - 40 years
- 41 - 50 years
- 51 - 60 years
- 61 - 70 years
- 71 years or greater

3. What is your position title?

- Assistant Extension Agent
 - Associate Extension Agent
 - Extension Agent
 - County Extension Director
 - Other:
-

4. Approximately what percent of your time is dedicated to consumer horticulture programming, including Master Gardener volunteer administration?

- 25% or less
 - 26% - 50%
 - 51% - 75%
 - 76% - 100%
-

5. How many volunteers are active in your Extension Master Gardener program?

6. What is the highest level of education you have completed?

- Bachelor Degree
- Master Degree
- Doctoral Degree
- Other - Please specify:

7. How many years of experience do you have working for Extension (including in other states)?

8. How many years of experience do you have managing volunteers (including years working for Extension and non-Extension agencies)?

9. What is your Extension District:

- Northeast
- North Central
- Southeast
- South Central
- West