

MOTIVATION OF PUBLIC GARDEN VOLUNTEERS

by

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of the requirements for the degree of Master of Science in Public Horticulture

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ABSTRACT

Volunteers and volunteering are an important aspect of public gardens, with over 40,000 volunteers contributing 2 million hours annually (AABGA, 1997). Understanding these volunteers' motivations, as reported by Clary and Snyder (1999), is important in keeping the volunteers satisfied and continuing to volunteer. This research sought to identify the motivations of volunteers at public gardens across the United States. The researcher gathered information first on the current state of volunteer programs at public gardens by means of a postcard survey. Next, the researcher selected 50 gardens to participate in the study, with surveys distributed to a sample of each garden's volunteers. Volunteers returned 1538 (52%) of the 2937 surveys distributed. The survey included the Volunteer Functions Inventory, items specific to garden volunteering, and demographic questions. The results, through principal factor analysis, indicated the presence of eight motivational factors. These were consistent with previous research, except for a split in the Values function and the addition of the Garden Setting function. Garden volunteers ranked the Values, Understanding, and Garden Setting functions as the three most important motivations. Results did vary across demographic variables, but, in general, demographics were a poor predictor of volunteers' motivations. Volunteers' open comments suggested the presence of more motivational functions in addition to those of the Volunteer Survey.

INTRODUCTION

Each year almost half of the United States adult population engages in some form of volunteer activity. That is just over 80 million people giving a total of around 15 billion hours annually (Independent Sector, 2001). These statistics are for all volunteering in the United States, but even the volunteering statistics specific to public horticulture are impressive. A 1996 survey of the member organizations of the American Association of Botanic Gardens and Arboreta (AABGA) reported in that year over 40,000 volunteers contributed over 2 million hours to public gardens (AABGA 1997).

The first logical question one might ask upon learning these statistics is “why?” What prompts so many Americans to give of their time and resources so freely? What are their motivations? Over the past few decades researchers have worked diligently to answer these questions of volunteers in general (Anderson & Moore, 1978; Clary et al., 1998; Schrock, 1998; Unger, 1991). But why do so many people volunteer at our nation’s public gardens? What motivates garden volunteers? Is their motivation unique to the “botanical world,” or are their motivations the same as the “generic American volunteer?”

The purpose of this research was to determine the motivations of public garden volunteers, how these motivations differ, if at all, from other volunteers’

motivations, and the importance of the garden setting as a motivator for volunteers. This information is significant in helping volunteer coordinators, directors of public gardens, and others involved with volunteer programs to understand what motivates garden volunteers; and understanding volunteers' motivations will facilitate management of volunteer programs in recruiting new volunteers and assigning satisfying tasks to both new and current volunteers. Volunteers whose motivations are matched with their work assignments are more likely to be satisfied with the work they are doing and more likely to continue volunteering and sharing their experiences with other potential volunteers (Clary et al., 1998). Another purpose of this research was to make volunteer coordinators aware that the survey instrument used for this research is a tool available for use in determining the motivation of volunteers and matching those motivations with the appropriate work assignment.

The terms "volunteer" and "garden volunteer" are used throughout this paper. For the purposes of this research, a *volunteer* is anyone giving time without monetary compensation. A *garden volunteer* is a volunteer at a public garden, including but not limited to arboreta, parks, botanical gardens, display gardens, and conservatories.

To accomplish the above stated purposes, the researcher first searched the literature of the motivations of garden volunteers. The author was also interested in discovering the role of the garden setting in volunteers' motivations and searched the body of literature dealing with the impact of plants on people.

LITERATURE REVIEW

In searching the literature, the author found much research pertaining to the motivations of volunteers. Through reading this literature, it became apparent that using a pre-existing survey, the Volunteer Functions Inventory, was appropriate to the present research. However, upon considering current theory of the impact of plants on people, the author decided it was necessary to tailor this generic survey to volunteers in a garden setting.

The Volunteer Functions Inventory

The simplest theory of volunteer motivation maintains that a volunteer has one of two motives: altruistic (helping others) or egoistic (helping one's own self interests) (Piliavin & Charng, 1990; Schrock 1998). Piliavin and Chang (1990) report past theorists have argued there is no such thing as true altruism. Any seemingly altruistic act, when scrutinized, can be found to have selfish motives; however, recently there has been a paradigm shift to general acceptance of altruism as a part of human nature (Clary et al., 1998; Cnaan & Goldberg-Glen, 1991; Unger, 1991). This contemporary research also supports that volunteers' motivations are complex and cannot be neatly classified as either altruistic or egoistic. Some specific motives

combine the altruistic and egoistic considerations, and many people indicate they have both kinds of reasons for volunteering (Clary and Snyder, 1999).

In addressing the question of volunteers' motivations in why they begin and continue to volunteer, Clary et al. (1998) adopted a strategy of functional analysis. Functional analysis is concerned with the personal and social functions being served by the volunteer's thoughts, feelings, and actions (Snyder, 1993). A central principle of functionalist theory, according to Clary et al. (1998), is that people can and do perform the same actions in the service of different psychological functions. In other words, volunteers may perform the same tasks, but for different reasons. One can draw from this theory that acts of volunteerism that appear quite similar on the surface may reflect distinctly different underlying motivational processes (Clary et al., 1998; Schrock, 1998).

Building on the framework of the functionalist theories of Katz (1960) and Smith et al. (1956), Clary et al. (1998) developed a set of six motivational functions served by volunteering: Values, Understanding, Social, Career, Protective, and Enhancement.

The Values function centers on the opportunities that volunteerism provides for individuals to express values related to altruistic and humanitarian concerns for others (Clary et al., 1998). As this function relates to garden volunteers, one might be motivated by belief in the mission or "cause" of the garden.

A second function served by volunteering, Understanding, involves the opportunity for volunteerism to permit new learning experiences and the chance to exercise knowledge, skills, and abilities that might otherwise go unpracticed (Clary et al., 1998). Garden volunteers might be motivated by the opportunity to learn about plants and gardening techniques.

A third function served by volunteering is Social, which reflects motivations concerning relationships with others. Volunteering may offer opportunities to be with one's friends or to engage in an activity viewed favorably by others (Clary et al., 1998).

The Career function is concerned with career-related benefits that may be obtained from participation in volunteer work (Clary et al., 1998). Though applicable to all age groups, the motivations behind the Career function tend to be most prevalent with young to middle age adults seeking to establish themselves in a profession.

The Protective function centers on protecting the ego from negative features of the self. It may serve to reduce guilt over being more fortunate than others and to address one's own personal problems.

The sixth function, Enhancement, involves a motivational process that centers on the ego's growth and development and involves positive strivings of the ego. This is in contrast to the Protective function's concern with eliminating negative aspects surrounding the ego.

Clary et al. (1998) developed the Volunteer Functions Inventory (VFI) as a means to measure these six functions of volunteering. It is a survey with thirty items, five for each of the six functions. The survey respondent scores each item on a Likert scale from 1 to 7. A score of 1 means the statement is “not at all important or accurate” and a score of 7 means it is “extremely important and accurate.” Table 1, page 7, lists the thirty items of the VFI, in order as they appear in the survey. To the right of each item is the first letter abbreviation of the function that item represents.

In conducting their research, Clary et al. (1998) sought to identify motivations of generic relevance to volunteerism. Thus, the items in the VFI are not specific to any one kind of volunteering, such as volunteering in a public garden. Clary and his colleagues recognized that “there will be circumstances where...more functions...will emerge, such as in cases where considerations relevant to specific forms of volunteerism are highly prominent” (Clary et al., 1998). The author wanted to clarify the role of the garden setting in garden volunteers’ motivations. Hence, a new function, Garden Setting, was added to the VFI to tailor it to this type of volunteering.

The Garden Setting

A recent popular trend of exploring the meaning of plants to people has led to a multi-disciplinary study known as human issues in horticulture (HIH) or people-plant relationships. Proponents of HIH have taken what has been almost completely anecdotal information and transformed it into theories which are supported

Table 1. The Volunteer Functions Inventory (VFI)

1	Volunteering can help me get my foot in the door at a place where I'd like to work.	C ¹
2	My friends volunteer.	S
3	I am concerned about those less fortunate than myself.	V
4	People I'm close to want me to volunteer.	S
5	Volunteering makes me feel important.	E
6	People I know share an interest in community service.	S
7	No matter how bad I've been feeling, volunteering helps me to forget about it.	P
8	I am genuinely concerned about the particular group I am serving.	V
9	By volunteering, I feel less lonely.	P
10	I can make new contacts that might help my business career.	C
11	Doing volunteer work relieves me of some of the guilt over being more fortunate than others.	P
12	I can learn more about the cause for which I am working.	U
13	Volunteering increases my self-esteem.	E
14	Volunteering allows me to gain a new perspective on things.	U
15	Volunteering allows me to explore different career options.	C
16	I feel compassion toward people in need.	V
17	Others with whom I am close place a high value on community service.	S
18	Volunteering lets me learn through direct "hands on" experience.	U
19	I feel it is important to help others.	V
20	Volunteering helps me work through my own personal problems.	P
21	Volunteering will help me succeed in my chosen profession.	C
22	I can do something for a cause that is important to me.	V
23	Volunteering is an important activity to the people I know best.	S
24	Volunteering is a good escape from my own troubles.	P
25	I can learn how to deal with a variety of people.	U
26	Volunteering makes me feel needed.	E
27	Volunteering makes me feel better about myself.	E
28	Volunteering experience will look good on my resume.	C
29	Volunteering is a way to make new friends.	E
30	I can explore my own strengths.	U

¹ Abbreviated functions: C=Career, E=Enhancement, P=Protective, S=Social, U=Understanding, V=Values.

by research (Kaplan & Kaplan, 1989; Lewis, 1996; Ulrich & Simon, 1986). Areas of focus include the effects of plants and gardening on human culture, communities, and individuals. Research has shown the presence of trees and forested areas plays a significant role in community satisfaction and enhancement of property values (Correll & Knetson, 1978; Schroeder & Cannon, 1987).

Nature has a quantifiable impact on the psychological and physical well-being of individuals (Relf, 1992). Ulrich's research on college students under stress proved that simply viewing plants can help in the recovery from stress by reducing blood pressure and muscle tension, while increasing positive feelings and reducing fear and anger (Ulrich 1979; Ulrich & Simons, 1986).

In a study of visitors to urban public gardens, Bennett and Swasey (1996) found the top three reasons for visiting a public garden are relaxation, stress reduction, and inspiration. With 91% of respondents indicating a reduction in stress level after visiting the garden, the researchers drew two important conclusions: first, stress reduction is an important reason for visiting public gardens; and second, a self-perceived reduction in stress levels results from a garden visit.

It follows then, that volunteers at public gardens would receive similar benefits as visitors to public gardens. The garden setting would relax the volunteers, decrease their stress, and inspire them. However, the question to be answered is, "to what extent is the garden setting a motivation for volunteering?" Though the question is simple, the answer is complex. Several variables must be considered: the

amount of time each volunteer is in contact with the physical garden (versus performing indoor tasks, out of view of nature); the amount of stress that comes with working in the garden versus merely visiting and strolling through; and the extent to which the volunteer is motivated by other functions, such as Social or Understanding.

MATERIALS AND METHODS

The researcher chose the Volunteer Functions Inventory (VFI), developed by Clary et al. (1998), as the primary survey tool for research on the motivations of public garden volunteers. To find out how the Garden Setting as a motivational function compares to the other six functions, the author added to the VFI a series of six items related to the garden setting, found in Table 2. Ideas for these items came through research conducted on stewardship program volunteers (Grese et al., 2000), extensive research of the literature on HH, and through the researcher's own experience in the garden setting.

The researcher sought to administer the Volunteer Survey (modified VFI) to a nation-wide sample of garden volunteers. However, existing information on the

Table 2. The Garden Setting; Volunteer Survey items 31 through 36

31. Volunteering at the garden contributes to my spiritual life.	G ¹
32. When volunteering at the garden, I feel peace of mind.	G
33. Volunteering at the garden is a chance for me to be outdoors.	G
34. I have a sense of oneness with the natural world.	G
35. I volunteer to be in a garden setting.	G
36. I feel less stress volunteering at the garden.	G

¹ G=garden experience

status of volunteering and volunteer programs in public gardens was not current and inadequate to the research. The most recent document containing such information was the Volunteer Directory, published by the American Association of Botanical Gardens and Arboreta (AABGA) in 1997. The researcher needed more recent information on each volunteer program, including the contact person for each, to facilitate selecting a sample for the Volunteer Survey. The postcard survey gathered this information, which preceded distribution of the Volunteer Survey.

Postcard Survey

The researcher mailed a postcard survey (Appendix A, page 49) to all institutional members of AABGA located within the United States (a total of 447 members), using the institutional member list provided by AABGA. The survey consisted of five questions, printed on a self-addressed, stamped postcard. These questions asked if each organization used volunteers and, if so, how many of those volunteers were active (work at least 30 hours per year). The survey also asked the name and contact information of the volunteer coordinator. Finally, the survey asked if the organization would be willing to participate in a survey of its volunteers, and if they would like to receive a copy of the survey results (in exchange for completing and returning the postcard survey).

The postcard survey was accompanied by a cover letter (Appendix B, page 50), addressed to AABGA's contact person for each organization. This letter briefly explained the goal of the research and asked that the survey be completed and

returned by the staff person who manages the organization's volunteers. The researcher mailed a second postcard survey and reminder cover letter (Appendix C, page 51) to all those who had not responded within three weeks of the first mailing. Data from returned postcards were entered into a spreadsheet database. Combined results of the two mailings were 303 returned surveys, a 68% response rate.

Volunteer Survey

Organizations qualified for further research by having at least 20 active volunteers and by indicating on the postcard survey they were willing to participate. A total of 148 organizations qualified, with a combined total of 19,146 volunteers.

The researcher arranged the organizations in order by mailing zip code so the sample of gardens would be geographically representative of the AABGA institutional membership by U.S. region. Appendix D, page 52, shows a map of the U.S. geographic regions, as defined by the 2001 AABGA membership directory. The researcher then selected 50 organizations using multi-stage probability sampling (Ilvento, 1986) with a goal of distributing 3,000 surveys. The researcher calculated that organizations with more than 314 active volunteers must be sampled because of their large number of volunteers relative to other gardens. Those organizations received a number of surveys proportionate to their size. For example, a garden with 600 volunteers had 3.1% of the combined total of 19,146 active volunteers, therefore 3.1% of the 3000 surveys, or 94, were distributed to volunteers of that organization. Organizations with 314 or fewer volunteers received 50 surveys. Those organizations

with fewer than 50 active volunteers received surveys for the exact number of active volunteers. The researcher distributed a total of 2,937 surveys (this number is less than 3,000 due to those organizations with fewer than 50 active volunteers). Appendix E on page 53 lists the organizations participating in the study and the number of surveys distributed to volunteers of each organization.

The researcher made arrangements for distribution of the surveys with the volunteer coordinator at each selected organization. Whenever possible, the researcher or volunteer coordinator randomly distributed the surveys by mail. In some cases, random distribution was either impossible or impractical and the volunteer coordinator distributed surveys through a convenient method.

The Volunteer Survey consisted of 44 items printed front and back on a single sheet of legal size paper (see Appendix F, page 54, for a copy of the survey). The survey was restricted to two pages in length to encourage a higher response rate. Items 1 through 30 were the VFI. The researcher developed items 31 through 36 as a means to tailor the VFI to the garden setting and placed them after the 30 VFI items. The researcher did this purposefully to keep the VFI unmodified so the results of this research could be compared with results of other research using the VFI.

For the first 36 items, the survey asked respondents to provide their motives for volunteering by indicating how important each of the 36 reasons was for them in doing volunteer work at their organization. Responses were based on a 7-point Likert scale from 1 (not at all important or accurate) to 7 (extremely important

and accurate). Demographic questions (37 through 43) included age, level of education, household income, profession, number of hours volunteered in the past year, volunteering tenure, and work assignment. Item 44 allowed the respondents to give additional comments about their motivation for volunteering

A cover letter accompanied the survey to explain who was conducting the research and the reason the research was important (Appendix G, page 57, is a sample cover letter). A “no postage necessary” return envelope accompanied each survey, to encourage a high response rate. Volunteers returned a total of 1,538 surveys, a 52% rate of response.

The researcher entered survey responses into a database using the statistical software package SPSS. Principal factor analysis for Volunteer Survey items 1 through 36 was performed using the Minitab software. The researcher computed summary statistics of the volunteers’ demographics from Volunteer Survey items 37 through 40, 42, and 43 using the SPSS software. Item 41 was omitted due to unclear wording of the question. The researcher computed the mean score for each item 1 through 36, mean scores for each motivational factor, and trends between volunteer demographics and scores on items 1 through 36 using the SPSS software. The volunteers’ open comments (item 44) were categorized by motivational function and tallied.

RESULTS

The primary purpose of this research was to identify the motivations of public garden volunteers. Information gathered through the Volunteer Survey also allowed the researcher to describe garden volunteers demographically and make correlations and comparisons between these demographics and volunteers' motivations. Because the VFI has been used in prior research, comparisons can be drawn between the garden volunteers and volunteers of other research. Of particular interest is the research performed by Shrock (1998) on Missouri Master Gardeners. His results are comparable to the present research results because he used the VFI and also asked demographic questions similar to those in the Volunteer Survey.

Demographics of Garden Volunteers

This is the first research to gather descriptive statistics of garden volunteers from a nation-wide sample. What it found is volunteers at gardens are typically above the age of fifty and well educated, with the majority being retired. Volunteers' incomes are variable but evenly distributed across a range. In comparison to Missouri Master Gardeners, the age, income, education, and number retired of garden volunteers are skewed to the upper limits of each demographic category

(Schrock 1998). Complete demographics of garden volunteers are in Appendix H, page 58.

For each region of the United States, Table 3 shows the number of gardens sampled, number of surveys distributed, number of surveys returned, and percentage of the total surveys returned. More than half the distributed and returned surveys are from the Southeast and Mid West regions because they have comparatively more gardens. The gardens chosen from those two regions hold a high proportion of the volunteer population from which the survey sample was selected.

An overwhelming majority (85.8 %) of garden volunteers responding to this survey indicated they are at least fifty years of age. Just over a third (34.1%) are 70 years or older, but less than 1% are 19 years or younger. Figure 1, page 17, illustrates this age disparity among garden volunteers.

Table 3. Survey distribution and return by U.S. geographic region

U.S. Region	Number of gardens sampled	Number of surveys distributed	Number of surveys returned	Percent of total surveys returned n=1538
Northeast	5	261	127	8.3
Mid Atlantic	6	295	185	12.0
Southeast	14	984	418	27.2
Mid West	16	932	576	37.5
Interior West	4	202	140	9.1
Pacific	5	263	92	6.0
Total	50	2,937	1,538	100.0

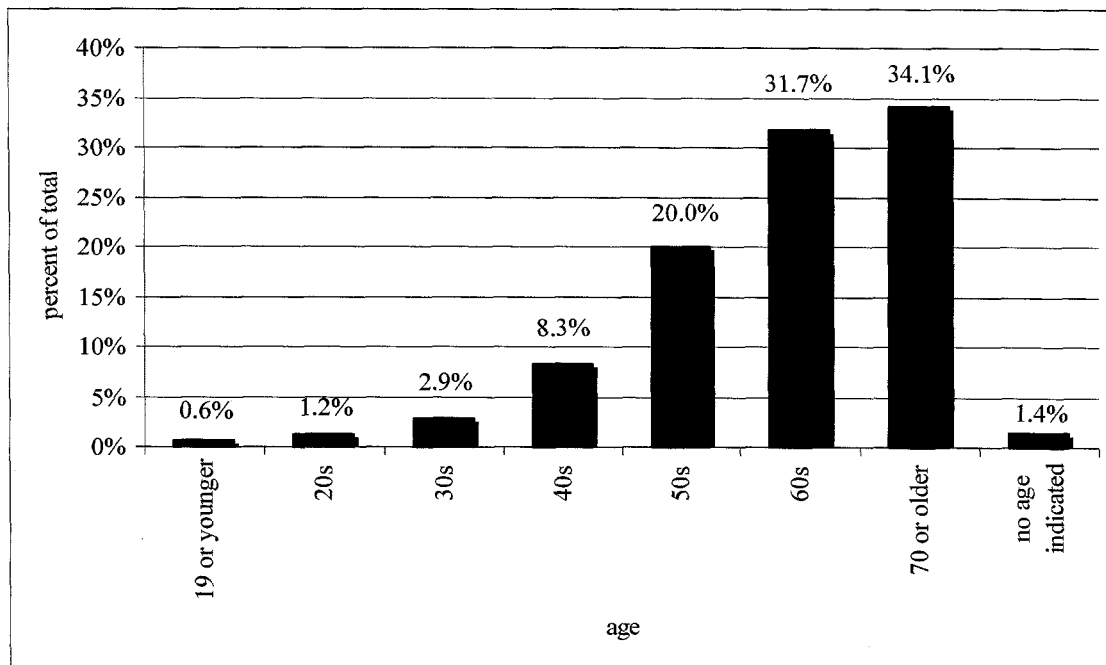


Figure 1. Age of garden volunteers

Public garden volunteers are older than the average of volunteers nationwide (regardless of activity or organization) and older than Missouri Master Gardeners. A nationwide survey by the Independent Sector reported in 1998 that individuals in the 35 to 44 age group volunteered the most, followed by individuals in the 45 to 54 age group (Independent Sector, 1999). From the present research, garden volunteers in their 30s, 40s, and 50s make up only 2.9%, 8.3%, and 20%, respectively of the total. In contrast to garden volunteers, Missouri Master Gardeners are more representative of volunteering on the national level with individuals in their 30s, 40s, and 50s comprising 12.7%, 27.2%, and 23.2%, respectively of the total. One possible

explanation for garden volunteers being older than the national average is that many volunteer opportunities at gardens favor retired individuals who can come during regular weekday work hours. This is not to say that volunteers do not work during the weekend; however, volunteer positions such as gardening alongside staff would likely be available only when the staff is working.

Garden volunteers are a highly educated group with 31.7% holding a college degree plus another 36.7% having some form of post-graduate education. Figure 2 shows the highest level of education of garden volunteers. Missouri Master Gardeners are highly educated, as well, with a comparable 30.9% being college

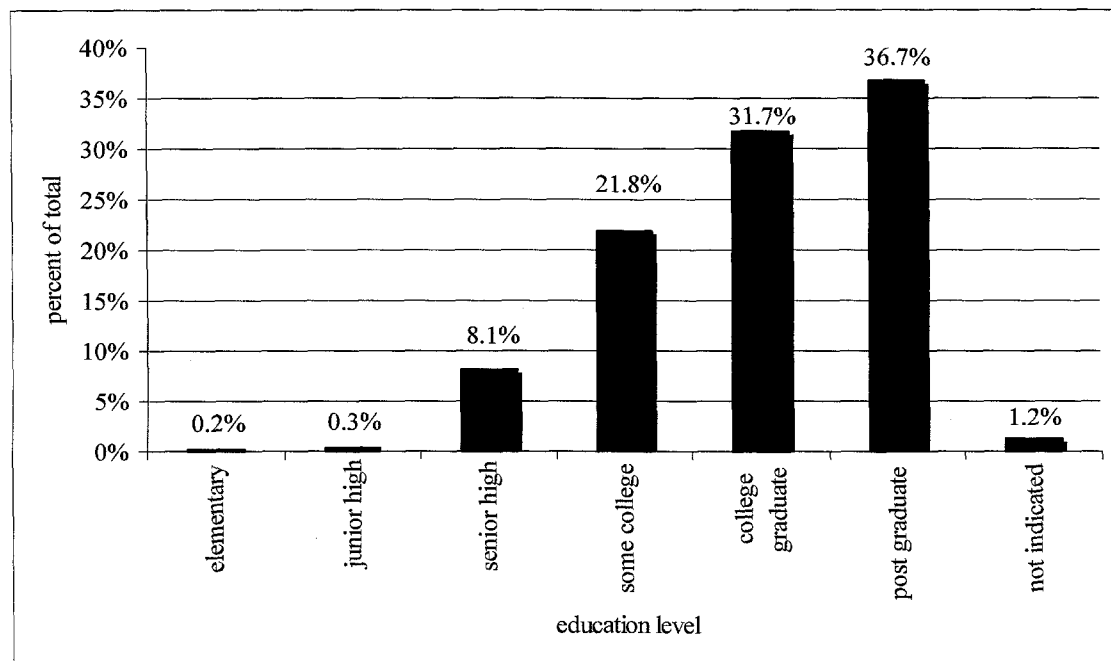


Figure 2. Garden volunteers' highest level of education

graduates plus another 22.2% having post-graduate education. The high percentage of garden volunteers who have at least a college degree is reflective of visitorship and volunteering in museums in general.

The only generalization which can be made regarding the household income of volunteers is that the range is great and fairly equally distributed from the \$25,000 level and up. Figure 3 shows the household income of volunteers in \$25,000 increments. The largest group (22.8%) earned from \$25,000 to 49,999. The next largest group (21% of volunteers) was in the \$50,000 to 74,999 range, followed by 20.2% of volunteers earning \$100,000 or more. The smallest group, earning less than

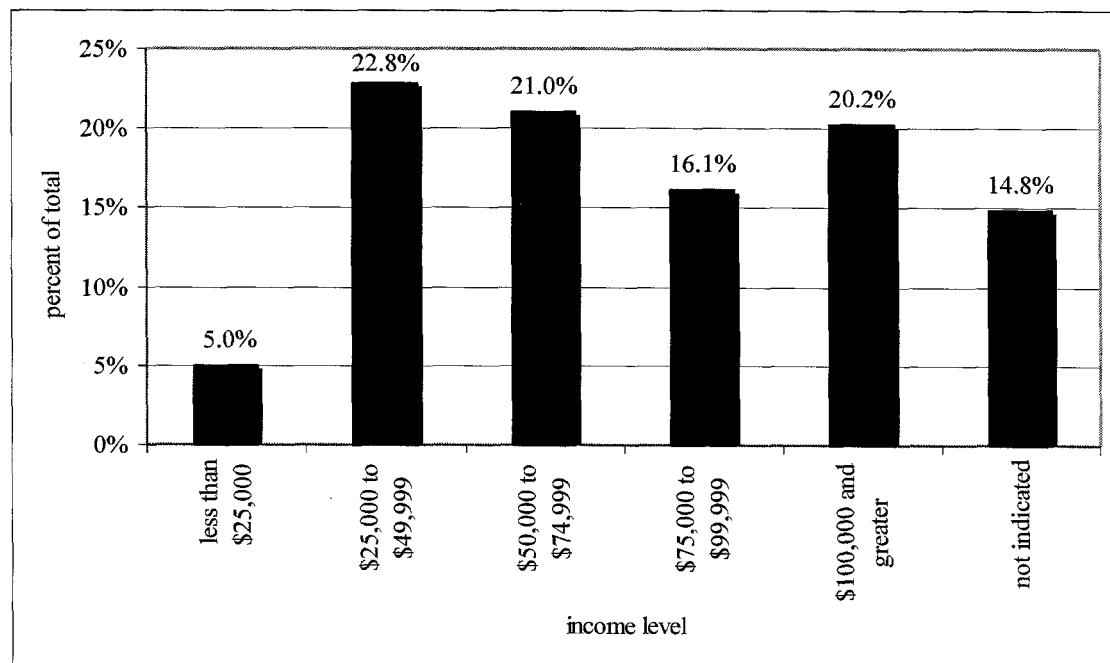


Figure 3. Household income of garden volunteers

\$25,000, comprised 5% of the volunteer population. Nearly 15% of volunteers did not respond to the survey item.

One might think that since this group of volunteers is so highly educated, their incomes would be skewed toward the upper limits of the scale. It is possible that the even distribution of incomes is a result of the high percentage of volunteers who are retired. Though they are highly educated, they have a fixed income which may be large or small, depending on each individual's retirement plan.

Table 4 shows the percentages of garden volunteers by their respective professions and comparison figures for Missouri Master Gardeners. The majority of garden volunteers are retired (52.8%), while the rest are distributed uniformly in all other professions: professional/medical/educator, trade/technical, homemaker, business/sales/service, and other. Of Missouri Master Gardeners, 26.9% are retired.

Table 4. Profession of garden volunteers

Profession	Percent of garden volunteers	Percent of Missouri Master Gardeners
Retired	52.8	26.9
Professional/ medical/ educator	10.0	22.5
Trade/ technical (including horticulture)	5.9	7.5
Homemaker	9.8	14.6
Business/ sales/ service	7.5	12.2
Other (including unemployed and volunteer)	8.1	5.6
Not indicated	5.9	N/A

The difference is likely a direct result of the age difference of the two groups.

Volunteers answering this survey indicated they have been serving their respective gardens from one month to as many as 37 years. Figure 4, page 22, shows the tenure of garden volunteers in yearly increments up to five years, then five year increments up to 10, 15, and 20 years, and a category for more than 20 years. The largest percentage, 16.9%, has tenure of between 5 and 10 years. The largest percentage for a single year, 15.5%, has tenure of up to one year. From one year to five years, the percentage of volunteers decreases almost steadily. Upon adding all columns in the graph at the ten-year level and higher, 17.9% have tenure of more than 10 years. This number looks impressive, but one must remember that this is 17.9% of all who are currently volunteering. Consider all the volunteers who have volunteered, including those who have stopped. Of all the volunteers the organization has had over the years, the percentage who has continued to volunteer for ten years or more would be much lower.

The Volunteer Survey asked volunteers to indicate their work assignments for their garden by circling the “one, most appropriate answer” from a list of seven general responsibilities. Volunteers could mark “other” if none of the seven listed accurately described the volunteer’s work. Most volunteers indicated only one work assignment. However, roughly 25% of respondents indicated multiple responsibilities of some combination. Table 5, page 24, shows the number and percentage of volunteers with each of the seven general responsibilities (garden guide,

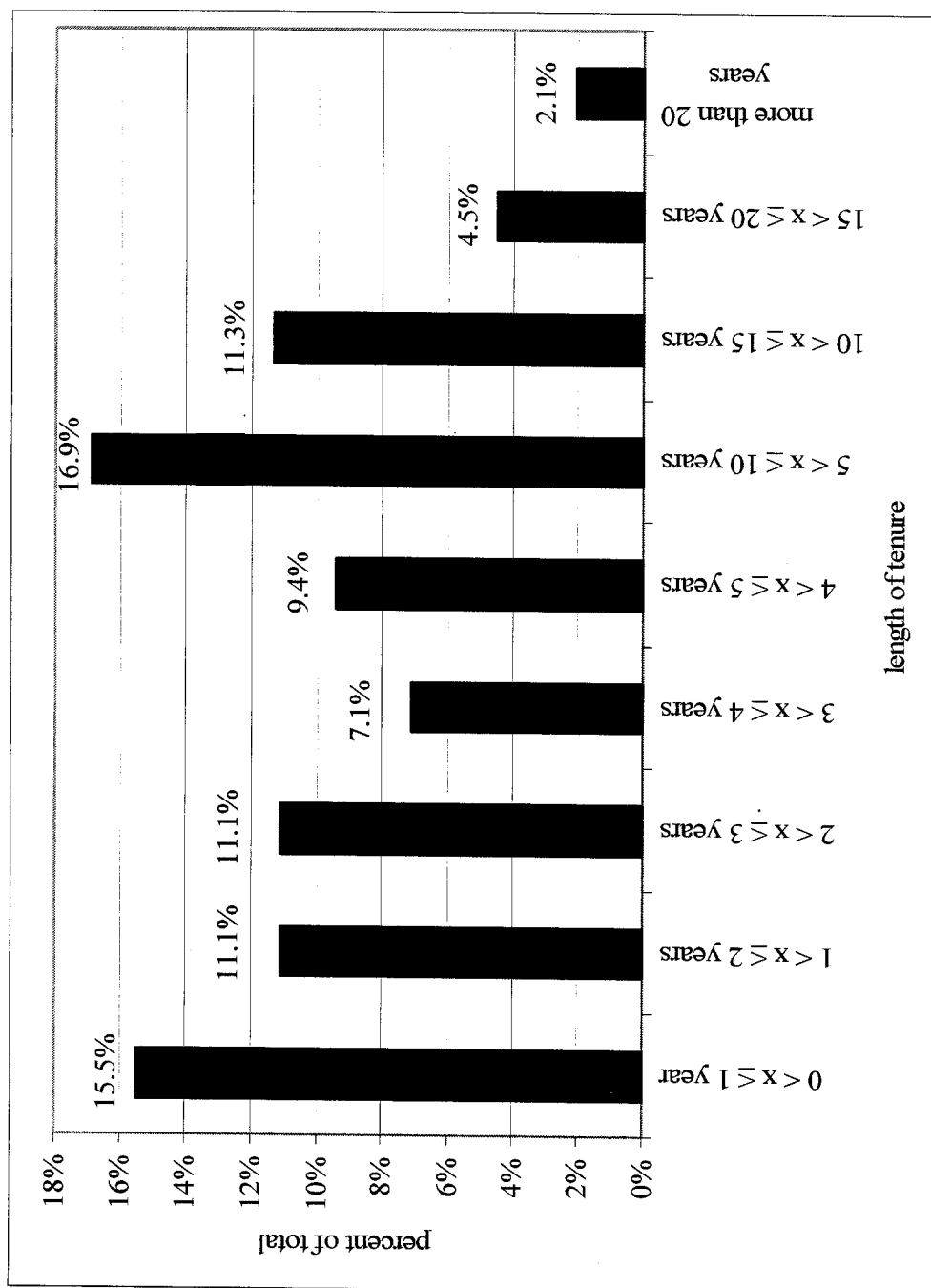


Figure 4. Tenure of garden volunteers

education/classes, horticulture/gardening, administrative/clerical, fundraising/special events, retail, and visitor services/programs). Any combination of these that represents more than 1% of respondents is also reported in Table 5. A “generalist” category includes all other multi-work assignment combinations that comprise 20.5% of the total. “Horticulture/gardening” is the single most popular category with 27.4% of the total. The researcher added “library” as a separate category since a significant number of volunteers indicated this as their single work assignment. Please note the “garden guide” category includes docents.

Item 41 of the Volunteer Survey, which asked the number of hours the volunteer contributed in the past year, must be omitted from analysis due to unclear wording. Some volunteers answered according to the number of hours they worked for the garden and some answered according to their total volunteer hours for all volunteer activities.

Volunteer Survey Factor Analysis

The research of Clary et al. (1998) clearly shows that the original VFI (the first 30 items of the Volunteer Survey) represents six distinct motivational functions: Values, Understanding, Social, Career, Protective, and Enhancement. Upon using the unmodified VFI and performing principal factor analysis of the results in the same manner, the researcher questioned if the data gathered from the Volunteer Survey would reflect these same six motivational functions. In this analysis, the researcher

Table 5. Garden volunteer work assignments

Work assignment	Number	Percent of total
horticulture/gardening	421	27.4%
generalist	315	20.5%
garden guide	196	12.7%
visitor services/programs	146	9.5%
fundraising/special events	82	5.3%
education/classes	69	4.5%
retail	55	3.6%
administrative/clerical	51	3.3%
other	49	3.2%
horticulture/gardening & fundraising/special events	46	3.0%
library	27	1.8%
none indicated	26	1.7%
garden guide & education/classes	21	1.4%
garden guide & horticulture/gardening	17	1.1%
garden guide & fundraising/special events	17	1.1%
Total	1,538	100.0%

also questioned if those items added to the VFI (numbers 31 through 36) would separate as their own function, that the researcher titled Garden Setting.

Principal factor analysis proved the presence of eight principal components, with a general loading of each item on its intended factor and not on other factors (shown in Table 6, page 26). The presence of eight factors is two more than Clary's et al. (1998) original six. The researcher deliberately added the Garden Setting function. Also, the Values function split into two separate factors. Therefore, the original six, plus the Garden Setting and the extra Values factor make a total of eight factors.

Generally, the motivational functions loaded on factors as expected. For example, in Table 6 the first motivational function listed is Garden Experience. Each of the items of Garden Setting (items 31 through 36) had their highest loadings on factor one. For example, item 31 received a .66 loading on factor 1. The higher the loading, the more likely that survey item fit within that factor. Table 6 reports only loadings with an absolute value of .40 or higher. Any loading lower than this the researcher has considered negligible.

The loadings within a factor show the degree of correlation among the items. For example, item 26 of Enhancement received a .55 on factor 7 and a .43 on factor 3. This means that item 26 shows correlation with items that had a high loading on factors 7 and 3, but the strongest correlation with those on factor 7, since .55 is greater than .43.

Table 6. Principal factor analysis with oblique rotation

VOLUNTEER SURVEY ITEMS		FACTOR							
		1	2	3	4	5	6	7	8
Garden Experience									
31	Volunteering at the garden contributes to my spiritual life.	.66							
32	When volunteering at the garden, I feel peace of mind.	.75							
33	Volunteering at the garden is a chance for me to be outdoors.	.81							
34	I have a sense of oneness with the natural world.	.81							

All items from the Garden Experience function loaded on factor 1 and on no other factors. All items from the Career and Social functions loaded solely on factors 2 and 4, respectively. All items from the Protective function, except item 11, loaded on factor 3; all from the Understanding function, except item 12, loaded on factor 5; and all from the Enhancement function, except item 29 loaded on factor 7. The factor analysis did reveal some correlation between the Understanding and Values functions, with item 12 from Understanding and items 8 and 22 from Protective loading together on factor 6. Item 18 from Understanding also had a strong secondary loading of .43 on factor 6. There is also correlation between the Enhancement and Understanding functions, with item 29 from Enhancement loading on factor 5 with items of the Understanding function. Also, the negative signs (-) preceding numbers in the Career function and part of the Values function indicate an inverse relationship with the other factors. The complete eight factor analysis is found in Appendix I, page 61.

In conducting a factor analysis in the Minitab software, eigenvalues are automatically generated. These are numbers that correspond to each factor. The higher the number, the more confidence there is that the factor is valid. Generally, eigenvalues that are larger than 1.0 are acceptable. The eigenvalues (and cumulative percent variance accounted for presented in parentheses) of the eight factors presented in this analysis were as follows: 11.71 (11.8%), 3.17 (22.5%), 2.50 (31.5%), 2.16 (40.5%), 1.78 (48.1%), 1.32 (55.0%), 1.01 (61.9%), 0.87 (68.2%). The first seven

factors have eigenvalues greater than 1.0. Though not customary, the researcher accepted the eighth factor with an eigenvalue of 0.87 due to the amount of meaning it added to the results. The decision to keep this eighth factor is supported by Tinsley and Tinsley (1987), who reported that Kaiser's criterion of retaining only eigenvalues above 1.0 may underestimate the number of meaningful factors. They go on to say that underestimation of the number of factors is usually a more serious problem than extracting too many factors. Appendix J, page 62, shows the results of a principal factor analysis with only those seven factors with eigenvalues greater than 1.0. In that analysis, the Protective and Enhancement functions loaded together. When Clary et al. (1998) forced a solution with one factor too few (five rather than six), they also found that the Protective and Enhancement functions loaded together.

Regardless if seven or eight functions were accepted, the original Values function (containing Volunteer Survey items 3, 8, 16, 19, and 22) split into two functions in this research. One can understand why this occurred upon examining the individual items. Items 3, 16, and 19 fell within factor eight, shown in Table 6, page 26. The items read as follows: "I am concerned about those less fortunate than myself," "I feel compassion toward people in need," and "I feel it is important to help others." The tone of these items implies the volunteer experience involves helping people who are in need. There is no direct relationship between volunteering at a public garden and helping the needy. Items 8 and 22 loaded on factor 6, shown in Table 6, and read as follows: "I am genuinely concerned about the particular group I

am serving,” and “I can do something for a cause that is important to me.” The tone of these two items involves helping a “cause” rather than needy individuals. A direct link can be established between volunteering at a garden and supporting the “cause” or mission of that organization. The author, however, is not implying that one of these Values functions had a lower mean score than the other. The author is stating that the factor analysis revealed a relationship among the items in each function.

Comparison of Motivational Functions and Demographic Correlations

The factor analysis confirms there are eight motivational functions represented by the items in the Volunteer Survey: Understanding, Garden Setting, Enhancement, Social, Protective, Career, and two within the original Values function. For the purposes of discussion and comparison with other research, the Values function, which loaded onto two separate factors in the factor analysis (discussed above; see Table 6, page 26) will be treated as the one, original Values function, containing Volunteer Survey items 3, 8, 16, 19, and 22. It is necessary to treat the Values function as a whole for the purpose of comparison with results of previous research. Therefore, for the purposes of discussion, there are seven functions valid to the present research: Values, Understanding, Garden Setting, Enhancement, Social, Protective, and Career.

The Values function, followed by Understanding and Garden Setting, received the three highest mean scores. Enhancement was fourth, followed by Social and Protective. Career had the lowest score. Table 7 shows the mean scores for each

of the functions. All mean scores were statistically significant at the 95% confidence level. Table 7 also shows the mean scores of each function given by the Missouri Master Gardeners as reported by Schrock (1998). The two groups ranked the functions the same, with the exception of Values and Understanding being inverted. However, Schrock reported no significant difference between the means of those two functions. The means for each function between the two groups were similar, with the largest difference of .6 points in the Career function. Note the Garden Setting function was not a part of Schrock's research. Appendix K, page 63, contains the full results of the Volunteer Survey, items 1 through 36.

The results of this research also support the research of Clary et al. (1999).

Table 7. Motivational functions as ranked by garden volunteers and Missouri Master Gardeners

Function	Garden volunteers' mean scores ¹	Missouri Master Gardeners' mean score ¹
V Values	5.01	5.19 ²
U Understanding	4.90	5.25 ²
G Garden Setting	4.70	- ³
E Enhancement	4.19	3.98
S Social	3.22	3.42
P Protective	2.97	2.73
C Career	1.79	2.39

¹Means from 7-point Likert scale, 1=not at all important or accurate, 7=extremely important and accurate.

²All means, except Values and Understanding, are statistically significant from one another for the Missouri Master Gardeners.

³The Garden Setting function was not a part of Shrock's (1998) research on Missouri Master Gardeners.

Through several studies, Clary et al. found that typically, the Values, Understanding, and Enhancement functions were scored highest by volunteers. In the present research these three functions scored the highest (not including the Garden Setting function which is unique to the present research). Allison et al. (2002) administered the VFI to volunteers of an organization that focuses on episodic volunteering in the community. In that research, the Values, Understanding, and Enhancement functions had the highest scores, followed by Protective, Social, and Career.

Table 8, page 32, shows the mean of each of the 36 items of the Volunteer Survey, arrayed in descending order by mean. The motivational functions mixed in this ranked list, but in general, items of the Values, Understanding, and Garden Setting functions are in the top half of the list. The first, second, and fourth ranked items are from the Values function, with mean scores of 5.68, 5.64, and 5.48; the third, fifth, and eighth ranked items are from the Understanding function with scores of 5.62, 5.08, and 4.85; and the sixth, seventh, and ninth ranked items are from the Garden Setting function with mean scores of 4.93, 4.91, and 4.84. Five of the six lowest scored items were from the Career function, with mean scores of 2.04, 1.81, 1.76, 1.69, and 1.67. Enhancement, Social, and Protective function items mixed in the bottom half of the list. The motivations “I feel it is important to help others,” “I can do something for a cause that is important to me,” and “Volunteering lets me learn through direct ‘hands on’ experience” ranked the highest, with no significant difference in their means. “I can make new contacts that might help my business

Table 8. Mean scores for each Volunteer Survey item, in descending order

Rank	Function ¹	Volunteer Survey item	Mean
1	V	19. I feel it is important to help others.	5.68
2	V	22. I can do something for a cause that is important to me.	5.64
3	U	18. Volunteering lets me learn through direct "hands on" experience	5.62
4	V	08. I am genuinely concerned about the particular group I am serving.	5.48
5	U	14. Volunteering allows me to gain a new perspective on things	5.08
6	G	35. I volunteer to be in a garden setting.	4.93
7	G	32. When volunteering at the garden, I feel peace of mind.	4.91
8	U	12. I can learn more about the cause for which I am working.	4.85
9	G	33. Volunteering at the garden is a chance for me to be outdoors.	4.84
10	E	29. Volunteering is a way to make new friends	4.83
11	G	34. I have a sense of oneness with the natural world.	4.81
12	G	36. I feel less stress volunteering at the garden.	4.61
13	U	30. I can explore my own strengths.	4.57
14	E	27. Volunteering makes me feel better about myself.	4.44
15	U	25. I can learn how to deal with a variety of people.	4.37
16	E	26. Volunteering makes me feel needed.	4.37
17	P	07. No matter how bad I've been feeling, volunteering helps me to forget about it.	4.35
18	V	16. I feel compassion toward people in need.	4.26
19	S	06. People I know share an interest in community service	4.15
20	E	13. Volunteering increases my self-esteem.	4.12
21	G	31. Volunteering at the garden contributes to my spiritual life.	4.10
22	V	03. I am concerned about those less fortunate than myself.	3.98
23	S	17. Others with whom I am close place a high value on community service.	3.73
24	S	23. Volunteering is an important activity to the people I know best.	3.40
25	P	09. By volunteering, I feel less lonely.	3.28
26	E	05. Volunteering makes me feel important.	3.21
27	P	24. Volunteering is a good escape from my own troubles.	2.81
28	S	02. My friends volunteer.	2.63
29	P	20. Volunteering helps me work through my own personal problems.	2.53
30	S	04. People I'm close to want me to volunteer	2.19
31	C	15. Volunteering allows me to explore different career options.	2.04
32	P	11. Doing volunteer work relieves me of some of the guilt over being more fortunate than others.	1.88
33	C	01. Volunteering can help me get my foot in the door at a place where I'd like to work.	1.81
34	C	28. Volunteering experience will look good on my resume	1.76
35	C	10. I can make new contacts that might help my business career	1.69
36	C	21. Volunteering will help me succeed in my chosen profession.	1.67

¹Abbreviated functions: V=Values, U=Understanding, G=Garden Setting, E=Enhancement, P=Protective, S=Social, and C=Career.

career” and “volunteering will help me succeed in my chosen profession” ranked the lowest by garden volunteers as motivations.

Table 9 outlines the strongest correlations between the motivational functions and the volunteer demographics of age, education, income, and tenure. As might be expected, there was a strong negative correlation between volunteer age and scores of items in the Career function. As age increased, career related motivation became less important. The same is true for age and the Understanding function, but Social motivations became more important as age increased. The more educated the volunteer, the less important the motivations in the Protective, Enhancement, and Values functions.

The researcher grouped volunteers by their work assignment and compared the scores they gave each of the motivational functions. For the seven

Table 9. Correlations between volunteer demographics and motivational functions

Demographic	Motivational function	Correlation ¹
Age	Career	-.48
Age	Understanding	-.16
Income	Protective	-.13
Tenure	Career	-.13
Education	Protective	-.12
Income	Enhancement	-.10
Education	Enhancement	-.09
Age	Social	.08
Education	Values	-.08

¹Correlations are significant at $p < .01$.

functions, only the Garden Setting showed significant differences among gardeners with different work assignments. Table 10 shows the average score given to the Garden Setting function by work assignment. As would be expected, the volunteers whose work assignment directly involves contact with the garden (garden guide, horticulture/gardening, generalist) scored the Garden Setting function the highest, in general. Volunteers whose work assignment is partly or wholly a garden guide rated the function highest, followed by those involved in horticulture/gardening and those who are generalists (have several work assignments). Those whose work takes

Table 10. Mean scores of Garden Setting function by volunteers' work assignments, in descending order

Work assignment	Mean score
garden guide & education/classes	5.6
garden guide & horticulture/gardening	5.5
garden guide & fundraising/special events	5.4
horticulture/gardening	5.2
horticulture/gardening & fundraising/special events	5.1
generalist	5.0
garden guide	4.7
fundraising/special events	4.4
education/classes	4.4
none indicated	4.2
library	4.1
visitor services/programs	3.9
other	3.6
administrative/clerical	3.6
retail	3.5

place indoors (retail, administrative/clerical, visitor services/programs) gave the Garden Setting function the lowest mean scores.

The profession of the volunteer only had implications in predicting how the volunteer would rate the Career function. Figure 5 shows the average score of the function, broken down by the volunteers' professions. Those volunteers who are retired rated the Career function the lowest, with an average score of 1.34. The highest rating, an average of 2.75, was given by volunteers in the trade/technical profession, that included horticulturists. The next highest ratings came from those in

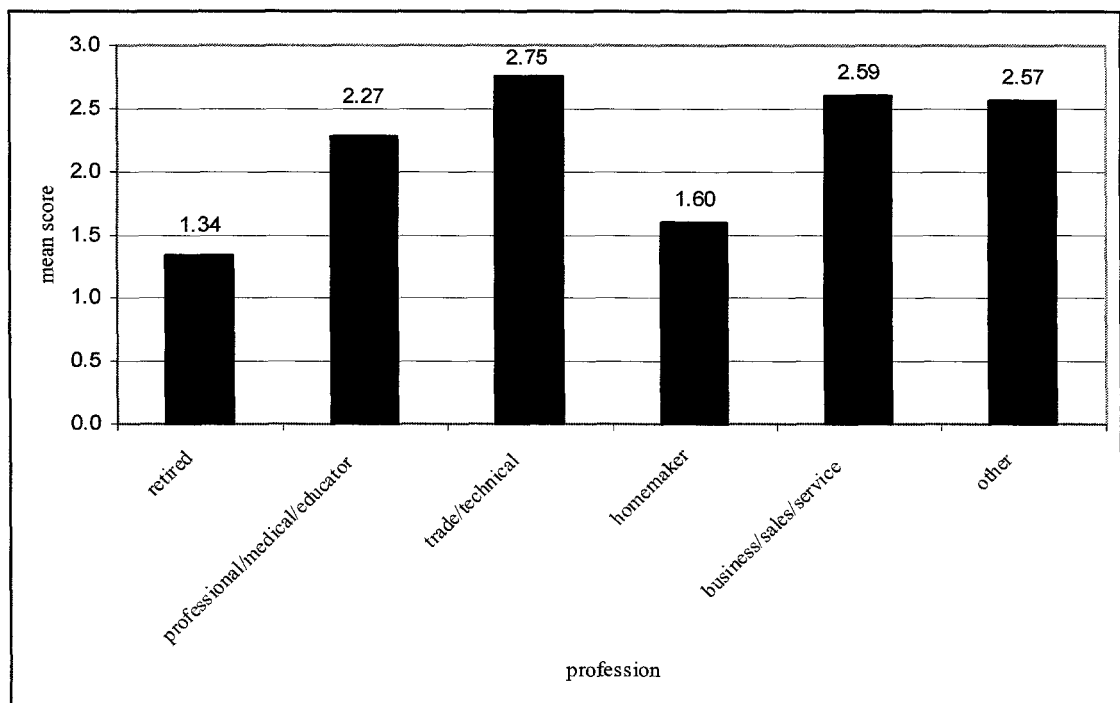


Figure 5. Mean score of the Career function by volunteers' professions

business/sales/service and other (which includes those seeking employment), with average scores of 2.59 and 2.57, respectively

The researcher tracked the U.S. region from which each survey was returned. This demographic proved to be a poor predictor of how garden volunteers would rate the motivational functions.

Overall, except for the above discussed cases, demographics were a poor predictor of how a volunteer would rate the motivational functions. The Volunteer Survey gathered information for seven demographic variables: age, education, income, profession, tenure, work assignment, and U.S. geographic region. With these seven demographic variables and seven motivational functions, there were 49 possible categories in which to report statistical significance and/or correlations. Of these 49, only 11 (discussed above) proved to show any trends that can be used as predictors of how a volunteer will rate a motivational function, but most of these are weak.

Schrock (1998) also found that demographic information was a poor predictor of motivation for volunteering in Missouri Master Gardeners.

Volunteers' Open Comments

The last item of the Volunteer Survey (number 44) asked volunteers "Is there anything else you would like to add about your motivation for volunteering." Of the 1538 volunteers returning the survey, 743 or 48 % responded to item 44. The researcher carefully analyzed these comments and decided if each fit within one or more of the seven motivational functions. Of the 743 who wrote open comments, 533

described motivations that aligned with at least one of the motivational functions. The number of responses which aligned with each motivation is shown in Table 11.

Because the question was open ended, response lengths were variable. For many responses, reference to two or more motivations was made.

Table 11. Responses to item 44, categorized by motivational function

Motivational function	Number of responses	Percent of responses to item 44 (n=743)	Percent of all surveys (n=1538)
Values	187	25.2	12.2
Enhancement	157	21.1	10.2
Understanding	138	18.6	9.0
Social	122	16.4	7.9
Garden Experience	112	15.1	7.3
Enjoyment ¹	43	5.8	2.8
Staff ¹	36	4.8	2.3
Perks ¹	16	2.2	1.0
Protective	8	1.1	0.5
Career	2	0.2	0.1

¹Functions added as a result of the open comments.

It is interesting to evaluate how the motivational functions ranked in popularity for item 44 as compared with their mean scores for items 1 through 36 (see Table 7, page 30). As with the mean scores, Values ranked first in popularity in volunteers' open comments. Many of these comments mentioned that the volunteer work is a form of "giving back to the community." Others stated the desire to support

the mission of their respective gardens. Still others remarked that they used their volunteer position as a platform for educating others.

Like Values, the Protective and Career functions were ranked the same by their mean scores and frequency of appearance in the open comments (numbers 6 and 7, respectively). There is an obvious disparity between these two functions and the other five, which all had a frequency of more than 100. Eight volunteers made comments related to the Protective function, and two for Career. This is a reflection of the two functions' mean scores from the first 36 survey items, which were the two lowest.

Three distinct motivations emerged in addition to the seven motivational functions: enjoyment, staff, and perks (see Table 11, page 37). Forty-three volunteers explicitly commented that they volunteer because it is enjoyable and fun. Thirty-six stated they volunteer because it is such a pleasure to work for the volunteer coordinator and/or staff. Sixteen volunteers mentioned perks of volunteering, such as gift shop discounts and free admission, as a motivation to volunteer.

In a study comparing the VFI to an open-ended probe, Allison et al. (2002) also found three motives for volunteering in addition to the VFI's six. Theirs were enjoyment, religiosity, and team-building. Though garden volunteers made no comments regarding the latter two, enjoyment was a function identified among their open comments. Clary et al. (1998) recognized the VFI does not address all motivations of volunteering, but those which tend to be generic to all volunteers.

They clearly stated the possibility of more or fewer motivational functions, dependent on the specifics of the volunteer activity. The present research and the research of Allison et al. (2002) support the notion of more than six motivational functions. ✓

The data presented above is complex, interrelated, and must be thought through carefully in order to extract meaning of value to practitioners of garden volunteer management.

DISCUSSION

The demographic data gathered through this research support some widely held notions about garden volunteers. These volunteers are older, well-educated individuals who are mostly retired. Garden volunteers are not necessarily wealthy, but tend to have incomes spread evenly across a range. What might be surprising to some regarding garden volunteers' demographics is they are much older than the national average of all volunteers in this country. The age of these volunteers is even more impressive when one considers the potential physical intensity of much the volunteer work in a garden. The most popular work assignment for these volunteers is horticulture and gardening, where the volunteers perform laborious gardening tasks either alone or alongside staff members.

Volunteer Survey items 1 through 36 were the core of the survey. The original VFI, the first 30 items, were deliberately left intact even though the researcher added six questions about the Garden Setting. The researcher acknowledges having the six Garden Setting items listed consecutively (items 31 through 36) may have influenced results specific to that function; however, it was more important that the results of the 30 VFI items not be influenced by the added items in order to draw valid comparisons with previous research.

The factor analysis performed indicates that the same motivational functions Clary et al. (1998) reported for their 30-question VFI hold true for the motivations of garden volunteers. The only important difference is the Values function which split and loaded onto two factors. One group of Values items spoke of helping others, while the other group spoke only of helping a group or cause, and not necessarily helping people directly. This split of the Values function in the factor analysis indicates that as volunteers responded to the survey, they recognized the differences in the items and their applicability to garden volunteering.

The factor analysis clearly shows the Garden Setting items added to the VFI as a separate and distinct function from the other six motivational functions. Though the consecutive order of the questions may have influenced the results, the questions were strongly associated; there is no denying the presence of the Garden Setting function.

The presence of this Garden Setting function sets this research apart from previous research. This function received the third highest mean, just behind Values and Understanding. These data support the notions of Human Issues in Horticulture, a field of study dedicated to scientific research and documentation of the importance of plants to people. Being in a relaxing, natural, garden environment is important to garden volunteers; so much so, in fact, that it likely influences the decision to volunteer at a garden versus another organization. It could even influence the decision of whether or not to volunteer at all.

Garden volunteers ranked their motivations (by mean score) as follows:

Values, Understanding, Garden Setting, Enhancement, Social, Protective, and Career. ✓

These results are similar to what research on other types of volunteers has indicated, from Master Gardeners to college students to a wide variety of community based volunteering. The rankings, in fact, aligned almost perfectly with what Schrock (1998) reported of Missouri Master Gardeners. The similarity occurred despite important differences in the demographics of the two groups. This, in turn, serves to support even further the findings of the present research and Schrock's reported findings that demographics are a poor predictor of volunteer motivations. ✓

Though, in general, volunteer demographics did prove to be a poor predictor of volunteer motivations, a few conclusions can be drawn. These conclusions, more than anything, serve to reinforce what any practical person might assume about volunteers. First, the older the volunteer, the less important Career is as a motivator. It makes sense that those volunteers who are retired would not have career related motivations; whereas, those volunteers who are already in the field of horticulture might be using the volunteer experience to gain job-related skills or as an access to a position within the organization.

The older the volunteer, the more likely he or she is to be motivated by social interaction and the less likely he or she is to be motivated by the learning experience. Perhaps those who are older have fewer people to socialize with because

they are retired and miss the social component of work; and, possibly, younger volunteers are slightly more eager to learn through volunteering as a means to enhance their professional careers.

The Garden Setting is, logically, most important as a motivator to garden guides and those directly involved in physical gardening since these are the people who experience the garden the most. If a volunteer motivated by the garden setting, for example, were assigned work indoors and away from the garden he or she might become dissatisfied and not remain in that volunteering obligation.

What the researcher must emphasize is the findings of this research on the motivations of garden volunteers present a generalization of the group. This is not to say that a volunteer coordinator can assume each of the volunteers he or she manages has the exact same motives.

As stated earlier, one purpose of this research was to increase volunteer coordinators' awareness of the VFI as a tool in volunteer management. New or current volunteers can be given the VFI (with 30 items) or Volunteer Survey (the VFI plus six Garden Setting items) to answer. It takes a few minutes and is a quick way for the volunteer coordinator to assess the motivations of individual volunteers. Simply asking volunteers their motivations is the most direct way to discover this information, but all individuals may not be able to articulate their motivations.

Once the motivations of the volunteer have been discovered, then a task which matches this motivation may be assigned. For example, a volunteer whose

primary motivation is in the Understanding function might be placed in an activity working closely with a staff member or another knowledgeable volunteer who is willing and able to help this new volunteer to learn. A volunteer whose primary motivation falls within the Garden Setting function should be given a task which will keep the volunteer in direct contact with the physical garden, such as gardening or giving garden tours. It is important to recognize that volunteers' motivations can and do change over time; so, having volunteers respond to the VFI more than once over a period of time will help in determining if the volunteer's work is continuing to match his or her motivations.

The research of Clary et al. (1998) supports the notion that volunteers whose motivations match their work assignments will be more satisfied with their volunteer experiences and more likely to intend to continue volunteering. Then it follows that maximizing the fit between motivation and work assignment has the potential to lessen the turnover rate in an organization's volunteer force, thereby conserving the organization's resources by decreasing recruitment and training expenses.

CONCLUSIONS AND RECOMMENDATIONS

This research presents information on the demographics of garden volunteers, their motivations for volunteering, and the relationships between volunteer demographics and motivations. From this information, the researcher derives conclusions and recommendations.

Conclusions:

- The findings of this research are academically strong as they support the findings of others' research in the order the six motivational functions are ranked by volunteers. ✓
- The findings of this research support the findings of Clary et al. in their development of the Volunteer Functions Inventory with the six motivational functions.
- The Garden Setting is a valid motivational function, distinct from the six motivational functions of the Volunteer Functions Inventory.
- Garden volunteers are motivated by functions related to their personal values, ✓ an interest in learning, and being in the garden setting. This means they are volunteering because they believe in the mission or cause of the garden or because they believe in giving back to the community. These volunteers are

life long learners and come to the garden to increase their knowledge and skills. The volunteers are also coming because the garden itself is important to them for its beauty or relaxing effects.

- Demographic information on garden volunteers is the first of its kind and tells the story of who garden volunteers are. In brief, garden volunteers are an older, well educated group of mostly retired individuals.
- Garden volunteers' motivations are similar to those of volunteers at other types of organizations. The singular difference is the Garden Setting, which is specific to garden volunteering.
- Demographic information is a poor predictor of the motivations of garden volunteers.
- The volunteers' open comments suggest there may be yet more motivational functions common among garden volunteers, including Enjoyment, Staff, and Perks.

Recommendations:

- In-depth individual interviews should be conducted with garden volunteers to uncover other motivational functions, as suggested by the volunteers' open comments of this research.
- Volunteer coordinators must be aware that volunteers are motivated by one or more functions and must seek to identify these motivations in selecting suitable tasks for them. This may be accomplished through interviewing the

volunteer or using tools such as the VFI, Volunteer Survey, or others.

Knowing an individual volunteer's motivations will help place that volunteer in a work assignment which matches his/her motivations.

APPENDICES

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APPENDIX A

POSTCARD SURVEY

1. Does your garden use volunteers? Yes ☐ No ☐

2. If yes, about how many work at least 30 hours per year? _____

3. Who manages these volunteers?

Name _____

Title _____

Phone _____

Email _____

4. If your garden is selected for the next phase of research, would you (or the manager of volunteers) be willing to assist me in distributing the surveys to volunteers?

Yes ☐ No ☐

5. Would you like to receive my research findings? (They will be distributed via email.)

Yes ☐ No ☐

Email (if different from above) _____

APPENDIX B

POSTCARD SURVEY COVER LETTER, FIRST MAILING

May 5, 2003

Bxxxxxx Bxxxxxxxx
St. George Village Botanical Garden
127 Estate St. George
Frederiksted, USVI 00840

Dear Mr. Bxxxxxx,

I am a Longwood Graduate Fellow at The University of Delaware, conducting research on volunteers in public gardens. I am trying to discover what motivates volunteers to give their time and service to gardens. My hope is that the findings of my research will be helpful to you in managing your volunteers.

For my research to be successful, I need your help.

Enclosed is a postcard with five short questions about your volunteer program. I would appreciate it if you would pass this letter and postcard on to the staff person who manages your organization's volunteers and encourage him or her to take a minute to fill in the answers and drop the postcard in the mail. No postage stamp is necessary.

This postcard survey is the first step in my research. Next, I will select a sample of gardens across the country to participate in further research on the motivations of their volunteers. Once this research is complete, I will share my findings with you.

Thank you for your help.

Sincerely,

Christie Jones
Longwood Graduate Fellow

cjones@longwoodgardens.org
302-831-2517

APPENDIX C

POSTCARD SURVEY COVER LETTER, SECOND MAILING

May 27, 2002

Mxxxxx1 Mxxxxxx
Botanic Garden of Smith College
Lyman Conservatory
15 College Lane
Northampton, MA 01063

Dear Mr. Mxxxxxxxxx,

Earlier this month, I mailed a letter and postcard survey to each institutional member of AABGA, inquiring about their volunteer program. You may not have received that letter or may not have had time to respond. (We are all so busy!)

For your convenience, I have enclosed another postcard survey with this letter. I would appreciate it if you would pass this letter and postcard on to the staff person who manages your organization's volunteers and encourage him or her to take a minute to fill in the answers and drop the postcard in the mail. No postage stamp is necessary.

This survey is the first step of my research as a Longwood Graduate Fellow, and is designed to uncover the motivations of volunteers in public gardens. Next, I will select a sample of gardens across the country to participate in further research on the motivations of their volunteers. My hope is that the findings of my research will be helpful to you in managing your volunteers. Once this research is complete, I will be glad to share my findings with you.

Thank you for your help.

Sincerely,

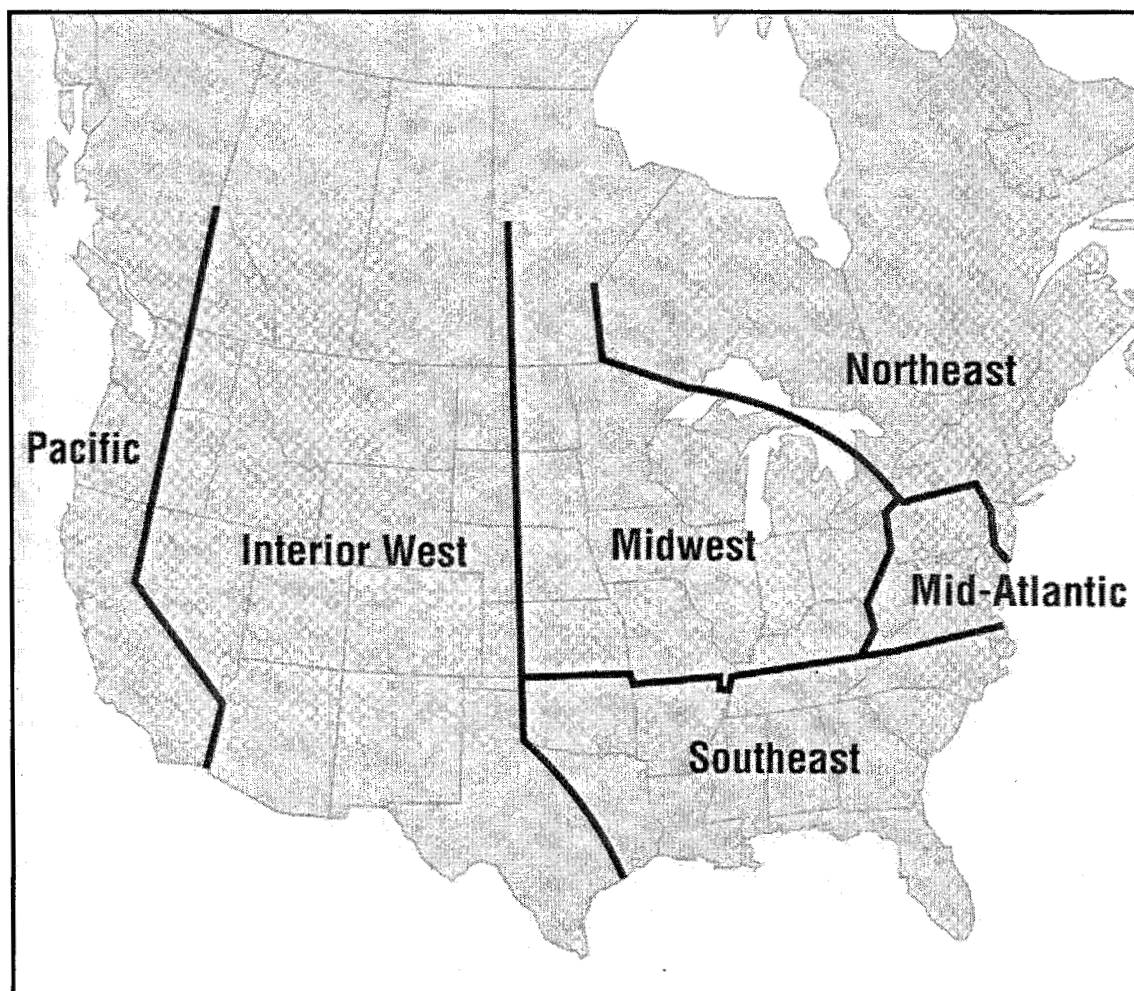
Christie Jones
Longwood Graduate Fellow

cjones@longwoodgardens.org
302-831-2517

P.S. If you have already returned the first postcard, please disregard this letter and thank you for your cooperation.

APPENDIX D

AABGA'S U.S. REGIONAL MAP



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APPENDIX E

PARTICIPATING GARDENS

Organization	Number of Surveys Distributed
Alfred B. Maclay State Gardens	30
Atlanta Botanical Garden	50
Birmingham Botanical Gardens	63
Botanica, The Wichita Gardens	50
Brookgreen Gardens	50
Brooklyn Botanic Garden	51
Callaway Gardens	98
Chicago Botanic Garden	100
Cincinnati Zoo and Botanical Garden	50
Civic Garden Center of Greater Cincinnati	50
Cleveland Botanical Garden	50
Cox Arboretum & Gardens MetroPark	56
Delaware Center for Horticulture	50
Denver Botanic Gardens	50
Des Moines Botanical Center	102
Desert Botanical Garden	52
Enid A. Haupt Glass Garden	30
Fairchild Tropical Garden	50
Florida Botanical Gardens	158
Frederik Meijer Gardens	50
Friends of the Horticulture Farm	20
Harold L. Lyon Arboretum	50
Hershey Gardens	50
Hidden Lake Gardens	30
Highline Botanical Garden	50
Hillwood Museum & Gardens	50

Organization	Number of Surveys Distributed
Historic Bok Sanctuary	50
Holden Arboretum	50
Houston Arboretum & Nature Center	50
Huntington Botanical Gardens	63
Huntsville Botanical Garden	157
Indianapolis Zoological Society, Inc.	94
Inniswood Metro Gardens	50
JC Raulston Arboretum	50
Longwood Gardens, Inc.	50
Luther Burbank Home & Gardens	50
Marie Selby Botanical Gardens	78
Moody Gardens	50
Morton Arboretum	50
Mounts Botanical Garden	50
New York Botanical Garden	110
Olbrich Botanical Gardens	50
Queens Botanical Garden	50
Red Butte Garden and Arboretum	50
Reiman Gardens	50
Scott Arboretum of Swarthmore College	45
Strybing Arboretum & Botanical Gardens	50
Tucson Botanical Gardens	50
U.S. Botanic Garden	50
University of Kentucky Arboretum	50

APPENDIX F
VOLUNTEER SURVEY

Volunteer Survey

Using the 7-point scale below, please circle the number that indicates how important or accurate each of the following possible reasons are for your volunteer work at this organization. Circling 1 indicates not at all important or accurate. Circling 7 indicates extremely important and accurate.

	Not at all important or accurate						Extremely important and accurate
1 Volunteering can help me get my foot in the door at a place where I'd like to work.	1	2	3	4	5	6	7
2 My friends volunteer.	1	2	3	4	5	6	7
3 I am concerned about those less fortunate than myself.	1	2	3	4	5	6	7
4 People I'm close to want me to volunteer.	1	2	3	4	5	6	7
5 Volunteering makes me feel important.	1	2	3	4	5	6	7
6 People I know share an interest in community service.	1	2	3	4	5	6	7
7 No matter how bad I've been feeling, volunteering helps me to forget about it.	1	2	3	4	5	6	7
8 I am genuinely concerned about the particular group I am serving.	1	2	3	4	5	6	7
9 By volunteering, I feel less lonely.	1	2	3	4	5	6	7
10 I can make new contacts that might help my business career.	1	2	3	4	5	6	7
11 Doing volunteer work relieves me of some of the guilt over being more fortunate than others.	1	2	3	4	5	6	7
12 I can learn more about the cause for which I am working.	1	2	3	4	5	6	7
13 Volunteering increases my self-esteem.	1	2	3	4	5	6	7
14 Volunteering allows me to gain a new perspective on things.	1	2	3	4	5	6	7
15 Volunteering allows me to explore different career options.	1	2	3	4	5	6	7
16 I feel compassion toward people in need.	1	2	3	4	5	6	7
17 Others with whom I am close place a high value on community service.	1	2	3	4	5	6	7
18 Volunteering lets me learn through direct "hands on" experience.	1	2	3	4	5	6	7
19 I feel it is important to help others.	1	2	3	4	5	6	7
20 Volunteering helps me work through my own personal problems.	1	2	3	4	5	6	7
21 Volunteering will help me succeed in my chosen profession.	1	2	3	4	5	6	7
22 I can do something for a cause that is important to me.	1	2	3	4	5	6	7
23 Volunteering is an important activity to the people I know best.	1	2	3	4	5	6	7
24 Volunteering is a good escape from my own troubles.	1	2	3	4	5	6	7
25 I can learn how to deal with a variety of people.	1	2	3	4	5	6	7
26 Volunteering makes me feel needed.	1	2	3	4	5	6	7

(OVER)

APPENDIX G

VOLUNTEER SURVEY COVER LETTER

September 12, 2003

Dear Alfred B. Maclay Volunteer:

I am a Longwood Graduate Fellow at The University of Delaware, conducting research on volunteers in public gardens. The purpose of this study is to find out what motivates volunteers, like you, to give time and service to gardens. My hope is my findings will be helpful to your organization in managing its volunteers.

For my research to be successful, I need your help.

Please take about 5 minutes to answer this short, anonymous survey. You may return the form directly to me in the envelope provided (no postage is necessary). Please do not put your name on the survey. No one from Alfred B. Maclay State Gardens will have access to your individual response. In any report I publish, it will not be possible to identify individual participants.

Because only a select number of volunteers are being surveyed, your response is important. I appreciate your cooperation and thank you for your participation in this study.

If you have any questions about the survey, you may contact me by telephone at (302) 893-3855 or by e-mail at cjones@longwoodgardens.org.

Sincerely,

Christie Jones
Longwood Graduate Fellow

APPENDIX H

GARDEN VOLUNTEER DEMOGRAPHICS

Demographic variable		N	%
Age			
	19 or younger	9	0.6
	20 to 29	18	1.2
	30 to 39	44	2.9
	40 to 49	127	8.3
	50 to 59	307	20.0
	60 to 69	488	31.7
	70 or older	524	34.1
	not indicated	21	1.4
Education			
	Elementary	3	0.2
	Jr. High	5	0.3
	Sr. High	124	8.1
	Some College	335	21.8
	College Graduate	488	31.7
	Post Graduate	564	36.7
	not indicated	19	1.2
Income			
	less than \$25,000	77	5.0
	\$25,000 to \$49,999	351	22.8
	\$50,000 to \$ 74,999	323	21.0
	\$75,000 to \$100,000	248	16.1
	\$100,000 and greater	312	20.3
	not indicated	227	14.8
Profession			
	retired	812	52.8
	professional/medical/educator	154	10.0
	trade/technical	90	5.9
	homemaker	151	9.8
	business/sales/service	116	7.5
	other	124	8.1
	not indicated	91	5.9
Tenure at the garden			
	up to 1 year	239	15.5
	up to 2 years	170	11.1
	up to 3 years	171	11.1
	up to 4 years	109	7.1

Demographic Variable		N	%
Tenure (continued)			
	up to 5 years	145	9.4
	up to 6 years	83	5.4
	up to 7 years	71	4.6
	up to 8 years	58	3.8
	up to 9 years	48	3.1
	up to 10 years	110	7.2
	up to 15 years	174	11.3
	up to 20 years	69	4.5
	more than 20 years	33	2.1
	not indicated	58	3.8
Work Assignment			
	garden guide	196	12.7
	education/classes	69	4.5
	horticulture/gardening	421	27.4
	administrative/clerical	51	3.3
	fundraising/special events	82	5.3
	retail	55	3.6
	visitor services/programs	146	9.5
	garden guide & education/classes	21	1.4
	garden guide & horticulture/gardening	17	1.1
	garden guide & fundraising/special events	17	1.1
	horticulture/gardening & fundraising/special events	46	3.0
	library	27	1.8
	generalist	315	20.5
	other	49	3.2
	none indicated	26	1.7
U.S. Region			
	Northeast	127	8.3
	Mid Atlantic	185	12.0
	Southeast	418	27.2
	Mid West	576	37.5
	Interior West	139	9.0
	Pacific	92	6.0

APPENDIX I

RESULTS OF EIGHT FACTOR ANALYSIS

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Commun
1	0.103	-0.754	0.123	0.095	0.015	0.035	0.099	-0.099	0.625
2	0.108	-0.105	0.086	0.724	0.020	-0.033	0.055	-0.082	0.565
3	0.086	-0.119	0.107	0.206	0.057	0.131	0.091	-0.830	0.793
4	0.026	-0.118	0.065	0.670	-0.124	-0.027	0.266	-0.116	0.569
5	0.083	-0.226	0.172	0.235	0.099	0.107	0.751	-0.036	0.729
6	0.124	-0.014	0.055	0.735	0.208	0.238	0.070	-0.138	0.683
7	0.268	-0.010	0.621	0.154	0.281	0.160	0.109	-0.208	0.641
8	0.125	-0.031	0.121	0.139	0.058	0.741	0.121	-0.186	0.653
9	0.174	-0.132	0.676	0.128	0.097	0.078	0.354	-0.059	0.666
10	0.040	-0.844	0.062	0.068	0.031	0.047	0.072	-0.045	0.733
11	0.089	-0.280	0.260	0.170	-0.179	0.051	0.400	-0.283	0.457
12	0.164	-0.170	0.060	0.089	0.271	0.693	0.089	-0.055	0.632
13	0.145	-0.139	0.281	0.108	0.295	0.176	0.733	-0.059	0.790
14	0.245	-0.087	0.201	0.060	0.535	0.387	0.216	-0.223	0.644
15	0.109	-0.816	0.106	-0.017	0.142	0.051	0.071	-0.061	0.721
16	0.123	-0.127	0.143	0.197	0.132	0.158	0.038	-0.825	0.815
17	0.126	-0.046	0.117	0.755	0.238	0.128	0.053	-0.183	0.711
18	0.337	-0.090	0.047	0.111	0.479	0.429	0.017	-0.089	0.558
19	0.140	-0.023	0.068	0.123	0.296	0.323	0.132	-0.601	0.610
20	0.166	-0.238	0.772	0.105	0.112	0.038	0.146	-0.130	0.744
21	0.051	-0.845	0.124	0.056	0.075	0.082	0.013	-0.041	0.750
22	0.190	-0.027	0.041	0.075	0.053	0.783	0.077	-0.166	0.694
23	0.114	-0.016	0.157	0.778	0.206	0.155	0.085	-0.045	0.719
24	0.192	-0.143	0.831	0.109	0.084	0.047	0.202	-0.012	0.809
25	0.157	-0.138	0.406	0.199	0.599	0.107	0.095	-0.189	0.663
26	0.140	-0.034	0.431	0.207	0.373	0.108	0.549	-0.103	0.712
27	0.199	-0.019	0.396	0.089	0.358	0.127	0.574	-0.150	0.701
28	0.069	-0.845	0.028	0.078	0.104	0.032	0.134	-0.030	0.757
29	0.229	-0.139	0.155	0.264	0.630	0.065	0.260	-0.046	0.636
30	0.320	-0.181	0.109	0.119	0.630	0.192	0.184	-0.130	0.646
31	0.657	-0.126	0.153	0.075	0.243	0.029	0.076	-0.190	0.579
32	0.746	-0.026	0.212	0.113	0.261	0.114	0.070	-0.164	0.727
33	0.811	-0.119	0.029	0.094	0.076	0.122	0.081	-0.009	0.709
34	0.811	-0.056	0.126	0.086	0.094	0.134	0.058	-0.118	0.729
35	0.798	-0.042	0.069	0.090	0.031	0.195	0.086	0.050	0.701
36	0.697	-0.088	0.339	0.105	0.151	0.086	0.095	-0.041	0.660
CVar	4.250	3.841	3.252	3.244	2.721	2.489	2.468	2.264	24.528
Var	0.118	0.107	0.090	0.090	0.076	0.069	0.069	0.063	0.681

APPENDIX J

RESULTS OF SEVEN FACTOR ANALYSIS

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Commun.
1	0.159	0.103	-0.754	0.096	0.036	0.009	-0.097	0.625
2	0.101	0.115	-0.102	0.720	-0.045	0.023	-0.090	0.563
3	0.152	0.071	-0.124	0.220	0.172	0.038	-0.800	0.763
4	0.212	0.005	-0.123	0.690	0.024	-0.137	-0.072	0.561
5	0.615	0.010	-0.242	0.292	0.271	0.045	0.098	0.607
6	0.093	0.131	-0.010	0.729	0.224	0.212	-0.148	0.675
7	0.563	0.313	0.002	0.117	0.067	0.263	-0.286	0.584
8	0.163	0.141	-0.027	0.130	0.712	0.056	-0.206	0.616
9	0.750	0.197	-0.125	0.111	0.033	0.063	-0.095	0.644
10	0.095	0.040	-0.844	0.070	0.048	0.029	-0.043	0.733
11	0.447	0.062	-0.287	0.194	0.116	-0.213	-0.228	0.435
12	0.107	0.178	-0.165	0.079	0.665	0.273	-0.073	0.599
13	0.698	0.084	-0.151	0.155	0.316	0.238	0.054	0.701
14	0.320	0.240	-0.087	0.060	0.401	0.516	-0.214	0.644
15	0.136	0.111	-0.815	-0.018	0.047	0.137	-0.063	0.721
16	0.149	0.118	-0.129	0.202	0.175	0.117	-0.814	0.801
17	0.135	0.137	-0.041	0.746	0.106	0.241	-0.199	0.704
18	0.070	0.346	-0.086	0.101	0.410	0.480	-0.104	0.552
19	0.156	0.124	-0.027	0.135	0.363	0.279	-0.571	0.594
20	0.694	0.223	-0.224	0.062	-0.078	0.091	-0.225	0.650
21	0.107	0.066	-0.842	0.046	0.051	0.077	-0.064	0.739
22	0.072	0.204	-0.023	0.067	0.758	0.055	-0.182	0.662
23	0.182	0.130	-0.009	0.765	0.122	0.209	-0.070	0.699
24	0.771	0.250	-0.128	0.065	-0.073	0.060	-0.110	0.698
25	0.408	0.183	-0.130	0.175	0.055	0.585	-0.236	0.648
26	0.702	0.114	-0.037	0.225	0.170	0.327	-0.055	0.697
27	0.691	0.164	-0.026	0.115	0.210	0.308	-0.085	0.664
28	0.113	0.057	-0.847	0.089	0.058	0.098	-0.007	0.755
29	0.321	0.210	-0.141	0.273	0.107	0.610	-0.015	0.625
30	0.237	0.305	-0.183	0.125	0.224	0.614	-0.107	0.637
31	0.186	0.650	-0.127	0.077	0.045	0.230	-0.178	0.566
32	0.226	0.748	-0.025	0.108	0.111	0.249	-0.167	0.724
33	0.079	0.797	-0.123	0.104	0.151	0.069	0.017	0.695
34	0.142	0.808	-0.057	0.087	0.143	0.085	-0.109	0.723
35	0.109	0.792	-0.043	0.094	0.209	0.025	0.065	0.698
36	0.331	0.712	-0.084	0.092	0.055	0.138	-0.065	0.659
CVar	4.961	4.277	3.836	3.259	2.581	2.501	2.240	23.656
Var	0.138	0.119	0.107	0.091	0.072	0.069	0.062	0.657

APPENDIX K

RESPONSES TO VOLUNTEER SURVEY, ITEMS 1 THROUGH 36

			Frequency and percent for each possible score														not indicated	
Item #.	Mean	Std. Dev.	1		2		3		4		5		6		7			
			N	%	N	%	N	%	N	%	N	%	N	%	N	%		
1	1.81	1.59	1093	71.1	124	8.1	70	4.6	81	5.3	53	3.4	43	2.8	48	3.1	26	1.7
2	2.63	1.85	666	43.3	209	13.6	143	9.3	217	14.1	126	8.2	90	5.9	62	4.0	25	1.6
3	3.98	2.15	345	22.4	105	6.8	116	7.5	243	15.8	216	14.0	217	14.1	229	14.9	67	4.4
4	2.19	1.78	889	57.8	187	12.2	112	7.3	130	8.5	65	4.2	74	4.8	63	4.1	18	1.2
5	3.21	2.00	480	31.2	180	11.7	165	10.7	258	16.8	179	11.6	130	8.5	113	7.3	33	2.1
6	4.15	1.92	242	15.7	101	6.6	166	10.8	309	20.1	268	17.4	261	17.0	175	11.4	16	1.0
7	4.35	2.00	228	14.8	113	7.3	125	8.1	251	16.3	270	17.6	287	18.7	243	15.8	21	1.4
8	5.48	1.78	103	6.7	41	2.7	65	4.2	140	9.1	227	14.8	342	22.2	595	38.7	25	1.6
9	3.28	2.12	501	32.6	187	12.2	139	9.0	217	14.1	170	11.1	139	9.0	159	10.3	26	1.7
10	1.69	1.46	1142	74.3	116	7.5	64	4.2	64	4.2	52	3.4	40	2.6	32	2.1	28	1.8
11	1.88	1.50	977	63.5	188	12.2	107	7.0	103	6.7	63	4.1	37	2.4	29	1.9	34	2.2
12	4.85	1.96	186	12.1	65	4.2	72	4.7	205	13.3	284	18.5	339	22.0	362	23.5	25	1.6
13	4.12	2.00	267	17.4	122	7.9	138	9.0	274	17.8	266	17.3	256	16.6	198	12.9	17	1.1
14	5.08	1.72	97	6.3	66	4.3	87	5.7	207	13.5	324	21.1	393	25.6	345	22.4	19	1.2
15	2.04	1.75	987	64.2	148	9.6	66	4.3	100	6.5	90	5.9	54	3.5	59	3.8	34	2.2
16	4.26	2.11	294	19.1	85	5.5	106	6.9	248	16.1	238	15.5	263	17.1	260	16.9	44	2.9
17	3.73	2.04	354	23.0	151	9.8	152	9.9	274	17.8	210	13.7	222	14.4	150	9.8	25	1.6
18	5.62	1.69	82	5.3	40	2.6	57	3.7	132	8.6	198	12.9	389	25.3	622	40.4	18	1.2
19	5.68	1.60	65	4.2	33	2.1	52	3.4	147	9.6	214	13.9	377	24.5	631	41.0	19	1.2
20	2.53	1.86	701	45.6	237	15.4	131	8.5	175	11.4	112	7.3	81	5.3	72	4.7	29	1.9
21	1.67	1.46	1136	73.9	124	8.1	50	3.3	73	4.7	40	2.6	37	2.4	36	2.3	42	2.7
22	5.64	1.65	76	4.9	30	2.0	63	4.1	121	7.9	225	14.6	372	24.2	616	40.1	35	2.3
23	3.40	2.02	427	27.8	171	11.1	156	10.1	253	16.4	195	12.7	165	10.7	121	7.9	50	3.3

APPENDIX L

HUMAN SUBJECTS REVIEW BOARD APPROVAL



OFFICE OF THE VICE PROVOST
FOR RESEARCH

210 HULLIHEN HALL
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

April 22, 2003

Ms. Christie Jones
The Longwood Graduate Program

Dear Ms. Jones:

Subject: Human Subjects Review Board approval for research project "Motivation of Public Garden Volunteers"

The above-referenced proposal, which you submitted for Human Subjects Review Board approval, will qualify as research exempt from full Human Subjects Review Board review under the following category:

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless (1) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects, and (2) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please be sure to submit the survey information on the next phase of research for review and approval prior to its distribution.

Please note that under university and federal policy, all research, even if exempt, must be conducted in accordance with the Belmont Report, copies of which are available from this office or on our website under history and background of human subjects policy. Changes in this project must be approved in advance by the Human Subjects Review Board.

Sincerely,

Richard D. Holsten
Associate Provost for Research
Chair, Human Subjects Review Board

/md
cc: James Swasey



OFFICE OF THE VICE PROVOST
FOR RESEARCH

210 HULLIHEN HALL
UNIVERSITY OF DELAWARE
NEWARK, DELAWARE 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

August 13, 2003

Ms. Christie Jones
The Longwood Graduate Program

Dear Ms. Jones:

Subject: Human Subjects Review Board approval for a project "Motivation of Public Garden Volunteers"

The above-referenced proposal, which you submitted for Human Subjects Review Board approval, will qualify as research exempt from full Human Subjects Review Board review under the following category:

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless (1) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects, and (2) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that under university and federal policy, all research, even if exempt, must be conducted in accordance with the Belmont Report, copies of which are available from this office or on our website under history and background of human subjects policy. Changes in this project must be approved in advance by the Human Subjects Review Board.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard D. Holsten".

Richard D. Holsten
Associate Provost for Research
Chair, Human Subjects Review Board

/md
cc: James Swasey

LITERATURE CITED

- Allison, L.D., Okun, M.A., & Dutridge, K.S. (2002). Assessing volunteer motives: A comparison of open-ended probe and likert rating scales. *Journal of Community and Applied Social Psychology*, 12, 243-255.
- American Association of Botanical Gardens and Arboreta (1997). *Volunteer directory*.
- Anderson, J. C., & Moore, L. F. (1978). The motivation to volunteer. *Journal of Voluntary Action Research*, 7(3/4), 120-129.
- Bennett, E.S., & Swasey, J.E. (1996). Perceived stress reduction in urban public gardens. *HortTechnology*, 6, 125-128.
- Clary, E. G., Snyder, M., Ridge, D., Copeland, J., Stukas, A. A., Haugen, J., et al. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, 74, 1516-1530.
- Clary, E.G., & Snyder, M. (1999). The motivations to volunteer: Theoretical and practical considerations. *Current Directions in Psychological Science*, 8(5), 156-159.
- Cnaan, R. A., & Goldberg-Glen, R. S. (1991). Measuring motivation to volunteer in human services. *Journal of Applied Behavioral Science*, 27(3), 269-284.

- Correll, M.R., & Knetson, J.L. (1978). The effects of greenbelts on residential property values: Some findings on the political economy of open space. *Land Economics*, 54, 207-217.
- Grese, R.E., Kaplan, R., Ryan, R.L., & Buxton, J. (2000) Psychological benefits of volunteering in stewardship programs. In P. H. Gobster & R. B. Hull (Eds.), *Restoring nature: Perspectives from the social sciences and humanities* (pp. 265-280). Washington, D.C.: Island Press.
- Ilvento, T. (1986). *Sampling issues for evaluations in the cooperative extension service*. USDA-Extension Service, project number 84-ESPN-1-5053).
- Independent Sector (1999). Giving and volunteering in the United States: Executive summary: 1999. Retrieved February 5, 2004 from <http://www.independentsector.org/GandV/default.htm>.
- Independent Sector (2001). Giving and volunteering in the United States: 2001. Retrieved November 1, 2002, from <http://www.independentsector.org/PDFs/GV01keyfind.pdf>.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. New York: Cambridge University Press.
- Katz, D. (1960). The functional approach to the study of attitudes. *Public Opinion Quarterly*, 24, 163-204.
- Lewis, C.A. (1996). *Green nature, human nature: The meaning of plants in our lives*. Urbana: University of Illinois Press.

Piliavin, J.A., & Charng, H. (1990). Altruism: A review of recent theory and research. *Annual Review of Sociology*, 16, 27-65.

Relf, D. (1992). Human issues in horticulture. *HortTechnology*, 2, 159-171.

Schrock, D. S. (1998). A functional approach to understanding and assessing the motivation and retention of university extension master gardener volunteers.

Dissertation Abstracts International, 59 (12B), 6508. (UMI No. 9913378)

Schroeder, H.W., & Cannon, W.N. (1987). Visual quality of residential streets: Both street and yard trees make a difference. *Journal of Arboriculture*, 13, 236-239.

Smith, M., Bruner, J., & White, R. (1956). *Opinions and personality*. New York: Wiley.

Snyder, M. (1993). Basic research and practical problems: The promise of a "functional" personality and social psychology. *Personality and Social Psychology Bulletin*, 19, 251-264.

Tinsley, H.E., & Tinsley, D.J. (1987). Uses of factor analysis in counseling psychology research. *Journal of Counseling Psychology*, 34, 414-424.

Ulrich, R.S. (1979). Visual landscapes and psychological well-being. *Landscape Research*, 4, 17-23.

Ulrich, R.S., & Simons, R. F. (1986). Recovery from stress during exposure to everyday outdoor environments. In: J. Wineman, R. Barnes, and C. Zimring (eds.). *The costs of not knowing: Proceedings of the Seventeenth Annual*

Conference of the Environmental Design Research Association. Washington,
DC: Environmental Design Research Association.

Unger, L. S. (1991). Altruism as a motivation to volunteer. *Journal of Economic Psychology, 12*, 71-100.