Public Horticulture

Analysis of Arboreta Members and the Local Community Interests in Participating in Public Gardens and Arboreta Programs

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SUMMARY. Two studies were conducted to better understand arboreta and community members' attitudes toward programming and benefits offered at arboreta and public gardens. The first study, a mail survey sent to arboreta members, included questions regarding what encourage them to become members and the services they value pertaining to their paid membership. The second study, an Internet survey of consumers residing within a 30-mile radius of the arboreta, also focused on interest in leisure activities and interest in traditional, gardening-related programs offered at the arboreta in an effort to understand what might increase membership. Over half of the members (62.5%) responded that they were "completely satisfied," with only 3.4% selecting "neither dissatisfied nor satisfied" or some level of "dissatisfied." The top three reasons that motivated members to join the arboretum's association included "benefits offered" (28.2%), followed by providing the "arboretum with financial support" (22.9%), and "to attend horticultural educational programs at a discounted rate" (22.6%). Interest level in gardening appeared to be greater among arboreta members compared with community members, on the basis of the percentage of both groups who self-identified with phrases such as "skilled and knowledgeable" and "enjoys spending time gardening." Arboreta member interest in garden programming activities differed from those of local community respondents in all categories except "outdoor concerts and live performances," "wine tasting and tours," and "painting and drawing." The one program/activity that appeared to be more of interest to community members than arboreta members was "cooking and entertaining," with community members returning an average mean rating of 4.77 (1 = "very disinterested," 7 = "very interested") and arboreta members returning an average mean rating of 4.29. On the basis of the results of the survey and the strong interest expressed by both survey groups in program activities offered, arboreta staff should consider offering programming that appeals to both current members and community members at large and in an effort to assure a sustainable membership level.

Public gardens and arboreta rely on members to provide a stable source of funding and, in some cases, to volunteer their time and assist with facilitating functions and events (San Francisco Botanical Garden, 2010). As evident in several published budgets and reports (Houston, 2006), funds generated from membership

provide revenue for daily operations and decline in membership numbers, membership levels, or both negatively affect operating budgets (eMarketer, 2010; Raulston, 1981).

As with any association or organization, public gardens also promote the nontangible benefits they provide to the surrounding community and to

the membership base, such as improving the cultural and aesthetic value of the community and offering volunteer opportunities to members to support and participate in outreach efforts (Idaho Botanical Garden, 2010). With a marketing strategy designed to identify potential customers, increase member retention, and demonstrate the value of the gardens to both members and the surrounding community clientele and leaders, we suggest that program coordinators and management can offer diverse educational and experiential programming targeted to specific interests, ages, family structures, and community need (Benveniste, 2006). One of the simplest and passive approaches adding to member ranks is through consumer self-identification with membership information cards at kiosks and near registers at entries and gift shops. A more direct approach to recruiting new members and community supports is to use surveys, focus groups, and informational outreach to gauge user interests and needs.

A strong member base and supportive community built on active recruiting and program development, strong outreach, and audience-directed activities benefit not only the public garden or arboreta, but also the members. A consequence of members not receiving benefits they feel meet or exceed their expectations, and the exchange of what they pay in membership fees, is to cancel or not renew their membership (Laser, 1980). Hence, great care must be taken to provide an array of benefits and offerings that strongly appeals to the existing and potential members. In an attempt to encourage consumers to join the memberships at public gardens, arboreta, and conservatories, several benefits are offered: free admission for members (Longwood Gardens, 2010; The New York Botanical Garden, 2010), discounts at select garden centers (Atlanta Botanic Garden, 2006), newsletter subscription (Portland Japanese Garden, 2010), invitation to members-only events or extended hours (Chicago Botanic Garden, 2010), and reciprocal admission programs with discounts to participating gardens across the continent (American Horticultural Society, 2010; Morris Arboretum of the University of Pennsylvania, 2010). Various levels of benefits are offered at corresponding prices (Cheekwood Art and Garden, 2006), which may appeal to a

diverse audience and to consumers with limited time and financial resources.

Other tools for engaging and encouraging new members and promoting return visits include temporary exhibits that serve to “freshen and invigorate the visitor experience” (Tyler, 2009) (e.g., fall plant displays, prehistoric plant display), thought-provoking and hands-on educational seminars (e.g., timely topic gardening sessions), entertaining cultural activities and events (e.g., concerts), and related environmental awareness programming (e.g., organic gardening, bird watching). Some sources have proposed using public gardens as forums for educating the community about policy decisions such as the endangered species act and climate change (Benveniste, 2006). Beyond in-house exhibits, seminars, and events, members and community supporters receive newsletters, blogs, and supplemental mailings to promote upcoming events and solicit feedback on past experiences.

To determine impact and to obtain feedback, public gardens rely on informal assessments (e.g., gate receipts, comment cards, exit surveys) to evaluate consumer satisfaction and interest (Sutherland, 1997). This type of data and feedback can provide some numbers on attendance, level of satisfaction, and some direction on programming, but it can be difficult to quantify and use to build future programs. Ultimately, public garden programming should rely on clear direction and feedback. This aim can better be achieved through more structured survey methods.

Surveys have been conducted to determine consumer perceptions of botanical gardens and how they differ from urban parks. Data indicated that consumers who visit botanical gardens expect plants to be labeled and services such as plant identification and planting advice be offered (Sutherland, 1997). By coupling visitor demographics with

survey responses (e.g., activities of interest and visitation frequency), researchers can provide important information to educational program directors (Sutherland, 1997), rather than program directors relying on their own perceptions of what visitors want (Shine, 1979).

With the ability to have such an impact on visitors, public gardens and arboreta should continue to investigate consumer interest in current gardening topics and issues and learn how to best convey these topics to clientele. As with most institutions or organizations, funding for public gardens and arboreta is a topic of concern among administrators and affects not only current visitor programming, but also future direction and expansion. Strategic planning, including assessment of “visitors’ expectations and motivations,” can help identify where funds should be allocated during periods of restricted budgets (Sutherland, 1997).

Objectives of this study were to conduct an assessment of members’ interest in proposed programming, what encourage them to become members, and services they value. Additionally, since arboreta and public gardens are often interested in growing their membership, a comparison of survey responses between established arboreta members and community non-members was conducted. This comparison was done to find linkages in interest in programming and benefits that could aid in developing programming and in growing member numbers or repeat attendance by appealing to non-gardeners and casual gardeners in the community.

Materials and methods

STUDY 1. ARBORETUM MEMBER MAIL SURVEY. A mail survey was sent to all 1228 members of Scott Arboretum of Swarthmore College (Swarthmore, PA) during the last week of June 2008. This method for survey administration was chosen since current members have indicated postal mail as their preferred mode of receiving correspondence from the arboretum staff. Arboretum members received an envelope with a consent form, survey, and a stamped, addressed return envelope for mailing the completed survey to the arboretum staff. The estimated time for arboreta members to complete the survey was 10 min. Arboretum members were compensated with

their choice of either a poster or a set of greeting cards after their survey was received at the arboretum. To facilitate this compensation, arboretum members were instructed to mail their completed survey in the envelope provided along with a separate page on which they wrote their contact information and indicated their compensation choice. The compensation forms were immediately separated from the survey when received by arboretum staff, so that no association could be made between compensation and survey responses.

Of the 1228 arboretum members, 377 completed the survey and returned it to the arboretum. Responses began to arrive shortly after being mailed, with final surveys received by the first week of Aug. 2008. No surveys received after this date were included in the analysis.

STUDY 2. COMMUNITY MEMBER INTERNET SURVEY. An Internet survey of consumers residing within a 30-mile radius of Swarthmore, PA, was conducted from 28 May 2008 to 8 June 2008 to investigate consumer awareness and interest in attending programming offered at The Scott Arboretum. Focus of the survey was to determine what factors influence respondent decision to participate in leisure activities and events offered at the arboretum and to identify interest in existing and future programs and services offered by arboretum staff. The survey was a component of an assessment conducted by the American Association of Museums (2010). Survey questions were designed to elicit responses that would assist staff in developing programs and services that will appeal to community members to increase membership rolls.

The survey instrument was developed using SurveyMonkey (Palo Alto, CA), an online survey tool that allows researchers to design and implement online surveys. The survey was pretested on a subset of the target consumer population to refine and clarify misleading or misunderstood questions before full deployment of the survey. Survey participants were recruited within the target region as identified by arboretum staff on the basis of past traffic data as a reasonable distance to travel for leisure activities at the arboretum. The participants were selected at random from a recognized panel of participants in

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metropolitan Philadelphia as defined and managed by Survey Sampling International (Shelton, CT), a provider of sampling solutions for survey research. Panelists received a consent statement from a Survey Sampling International project manager, which was developed by the researchers and approved, along with the questionnaire, by the Office of Research Protections at The Pennsylvania State University, University Park. All potential participants were screened on the basis of age and asked to participate if they were age 21 years to ensure that independent adults participated and because questions concerning alcohol-related activities were asked. The panelists were informed of this criterion in the consent statement and of their compensation, both an entry into Survey Sampling International's quarterly \$25,000 sweepstakes and an instant win game, which is standard compensation for these panelists. To begin the survey, the panelists clicked on a hyperlink at the bottom of the consent statement, which then directed them to the survey welcome screen.

Of the total number of members who received the survey, 502 completed the survey, which took an average of 10 min to finish. The panelists responded as to whether they were familiar with the arboretum, if they had visited the arboretum, the college campus, or both in the past, barriers to attending leisure activities (e.g., time of day and day of week offered; associated costs; distance needed to travel; available child care at the event), if they were ever arboretum members, their interest in leisure activities and events (e.g., gardening, landscaping, and lawn care; wine tasting; nature hikes), perceived proficiency and interest in gardening, and demographic questions (e.g., age, gender, 2007 annual gross household income, household size). After the participants submitted their completed survey, they were directed to a thank you page.

STATISTICAL ANALYSIS. Data pertaining to consumer behavior and preference questions and to determine differences between associates and community members based on responses to select questions were analyzed with SPSS (version 17; SPSS, Chicago, IL) using Pearson's χ^2 statistic, Kruskal-Wallis one-way analysis of variance (ANOVA), and Mann-Whitney U test ($P \leq 0.05$). Pearson's

χ^2 tests were used to assess differences in the proportion of participants' responses to questions such as interest in leisure activities. Kruskal-Wallis one-way ANOVA was used to test mean differences among groups for questions such as membership satisfaction, followed by Mann-Whitney U test, which was used to test difference for means between two groups.

Results and discussion

DEMOGRAPHIC PROFILE. Three hundred seventy-seven members of the arboretum participated in the mail survey. Arboreta member respondents can be characterized as female (80.1%), age 49 years and older (44.6% between age 49 and 64 years and an additional 44.8% age 65 years and older), living in a household with one other adult (56.0%), with no children in the household (82.5%), having a post-secondary education (37.0% with a Bachelor's degree and 51.6% with a Master's degree or higher), and with an income of \$100,000 or greater (29.1% between \$100,000 and \$149,999 and 30.7% in the \$150,000 or higher category).

YEARS AS AN ARBORETA MEMBER. A majority of the respondents were arboreta members for 1 to 5 years (47.1%), followed by those who were arboreta members for 10 to 15 years (22.3%) and for 6 to 9 years (14.1). Less than 10% of the respondents (8.2%) reported arboreta membership for 21 years or more. A clear majority (85.1%) of arboreta members resided in Pennsylvania, with others residing in surrounding states (New York, 2.5%; New Jersey, 2.3%; and Delaware, 2.3%) and some in distant locations (California, 1.8%; Florida, Iowa, and Tennessee, each with less than 1%). Only 9.9% of arboreta members indicated that they were an alumnus of Swarthmore College.

ARBORETA MEMBERSHIP IMPRESSIONS. A majority (90.2%) of arboreta members stated that they had visited the arboretum at least once within the year before receiving the survey, with nearly 50% reporting multiple visits in 1 year's time. Visits between one to three times within the 1-year period were the most common (31.8%), with more than 10 visits being the next common (28.5%), followed by four to six visits within 1 year (22.2%). These data suggest that the arboretum has provided opportunities and events that

attract and motivate multiple visits during a year.

Questions were developed to learn member motivation for joining the arboretum's association and their satisfaction with their membership. Of the reasons presented, 28.2% stated that "benefits offered" to arboreta members was the "most important reasons" for becoming an arboreta member, followed by providing the "arboretum with financial support" (22.9%), and "to attend horticultural educational programs at a discounted rate" (22.6%). Fewer arboreta members stated "to help preserve a green space in the community" (12.9%) and "as a way to provide funding that will help beautify the college campus" (12.2%). The responses indicate that for most, membership is attractive because of the direct benefits and interest in supporting the arboretum rather than the indirect community-based benefits of green space and campus beauty. However, the motivation to support the community by helping to preserve green space was more attractive consideration among respondents who were members of other associations (19.5%) compared with those who were not members of other associations (8.3%).

When asked to indicate their satisfaction with the membership on a scale of 1 to 7 (1 = "completely dissatisfied," 7 = "completely satisfied"), 62.5% selected "completely satisfied," with only 3.4% selecting "neither dissatisfied nor satisfied" and some selecting "dissatisfied." When responses were segmented by number of years as an arboreta member, means for all year categories (e.g., less than 1 year to 30 years or more) were within the "moderately satisfied" to "completely satisfied" range, between 6 and 7. Similar ratings were observed when responses were segmented by demographic characteristics.

Certain membership benefits (e.g., quarterly newsletters and other communications) are distributed to arboreta members through postal mail. To evaluate satisfaction with this delivery system, questions were constructed to determine arboreta member's preference for receiving these communications electronically through e-mail or by visiting the arboretum's website. On the basis of the responses, "hard copies" appear to be preferred over "electronic" resources, with a

majority of arboreta members (78.9%) preferring communications through postal mail. Responses were significantly different based only on age range. A greater percentage (83.3%) of arboreta members age 21 to 36 years (1.9% of survey respondents) preferred to receive communications electronically compared with arboreta members in the other age ranges (Table 1). This divergence in response suggests that two communication methods may be necessary to meet the needs of a diverse member pool. One option may be to define member contribution levels based on mailing costs for those interested in receiving postal delivery of communications. This research supports the observation that age corresponds with Internet experience and may affect willingness to adopt different methods for receiving information. According to trends in web usage for 2008, the year that the survey was conducted, 89.0% and 84.0% of consumers age 18 to 24 years and 25 to 34 years, respectively, were Internet users; however, usage appeared to decrease with age. Reportedly, 79.6% of individuals age 35 to 44 years had Internet access, with fewer individuals (36.0%) age 65 years and older accessing the web (eMarketer, 2010). Based on this trend, an e-mail newsletter would not be as attractive a benefit for older members.

INTEREST IN GARDENING. Understanding arboreta members' interest in gardening can assist in designing programs based on level of perceived gardening skill, knowledge, and desire to increase these levels. Overall, 29.7% of arboreta members indicated that they were a "skilled and knowledgeable gardener," with differences detected based on household income. Nearly half (48.7%) with an income level of \$50,000 to \$75,999 responded that they were a "skilled and knowledgeable gardener" (Table 2). This was significantly different from arboreta members who had a household income of \$24,999 or less (0.0%), \$100,000 to \$149,999 (26.7%), and \$150,000 and greater (27.5%). Arboreta members with a household income between \$50,000 and \$75,999 did not respond differently than those with an income of \$25,000 to \$49,999 (39.5%) and between \$76,000 and \$99,999 (27.8%). On the basis of the responses among income levels, a garden may consider targeting novice gardeners with specific

basic topics to build skills and confidence while offering self-identified skilled gardeners with advanced training opportunities.

A slightly higher percent (34.8%) of all arboreta members selected "passionate about gardening and very interested in learning more about gardening." Several differences were apparent when responses were analyzed on the basis of the demographic status, including age range, household income, and number of children in the household. A greater percentage of arboreta members between age 37 and 48 years (58.8%) were in this category than those age 49 to 64 years (38.1%) and age 65 years and older (27.8%) (Table 1). None of these groups, however, were significantly different from the percentage of arboreta members age 21 to 36 years who selected "passionate about gardening" (16.7%). Arboreta members in the "middle" of the income categories were less likely to be "passionate about gardening," 12.8% for \$50,000 to \$75,999 and 22.2% for \$76,000 to \$99,999, compared with arboreta members with a lower or higher income level. Finally, arboreta members in a household with no children were less likely to be "passionate about gardening," (31.8%) than those in a household with one child (58.1%). No differences were detected between arboreta members with no children and two or more children (45.5%).

Fewer arboreta members responded that they "enjoy spending time gardening" and want to have an attractive property, but devote as much time and money to other activities and hobbies (21.7%). Even fewer claimed that they were "not considered a gardener," with more of their money being spent on other activities and hobbies (6.5%). Significant differences detected for these categories included "enjoy spending time gardening" and "none of these categories apply." Arboreta members with an income of \$76,000 to \$99,999 were more likely to select "enjoy spending time gardening" (44.4%) compared with those with a lower household income of \$50,000 to \$75,999 (20.5%) and higher incomes of \$100,000 to \$149,999 (17.4%) and \$150,000 or greater (14.3%). Differences were detected on the basis of the number of adults in the household, with more single-adult household arboreta

members (8.1%) selecting "none of these categories apply" than arboreta members residing in households with one other adult (1.4%).

A greater percentage of arboreta members who held a paid membership in another association responded that they were "skilled and knowledgeable" and "passionate about gardening" (37.2% and 38.9%, respectively) than arboreta members who did not hold another paid membership (13.4% and 28.3%, respectively) (Table 2). The inverse was detected for "enjoy spending time gardening" and "not considered a gardener," with a greater percentage of arboreta members without an additional paid membership (36.2% and 14.2%, respectively) selecting these categories compared with their counterpart (15.9% and 3.3%, respectively).

PROGRAMMING AND SERVICES TO INCREASE GARDENING EXPERTISE. Survey questions were designed to investigate what additional programs and/or services the arboretum could offer to enhance members' gardening experiences and increase their enjoyment of this hobby. When asked to indicate what educational programs would help them achieve their gardening goal, the following programs were considered to be of greater interest: "hands-on workshops" (56.1% selecting this response), "lectures" (55.6%), "field trips to private gardens" (53.8%), and "fact sheets, instructional bulletins, and other how-to guides" (48.3%). Fewer than half of the arboreta members indicated that "field trips to other public gardens and arboreta" (46.5%), "guided tours of the arboretum" (43.4%), "diagnostic clinic where plant, insect, and disease samples can be identified" (37.9%), "electronic resources, for example, e-mail newsletters, blogs, online how-to videos" (30.4%), and "appointments with arboretum staff to discuss individual problems and issues" (29.1%) would assist them with achieving the level of gardening that they desired.

Differences for "hands-on workshops" were detected for gender, with more females (59.5%) selecting this response than males (44.2%). Respondents' age affected interest in "hands-on workshops," with 100.0% of arboreta members between 21 and 36 years being interested, whereas significantly fewer arboreta members age 49 to 64 years (57.2%) and age 65 years and older (49.4%) were

Table 1. Responses of the members of the Scott Arboretum of Swarthmore College (Swarthmore, PA) to survey questions, segmented by demographic characteristic (e.g., gender, age range, adults in household), asked during a mail survey conducted in June 2008 as a method for identifying programming, services, and benefits that greatly appeal.

Variable	Gender		Age range (years)				Adults in household (no.)			Children in household ≤17 years old (no.)		
	Female	Male	21–36	37–48	49–64	65≤	1	2	3≤	0	1	2≤
Responses (no.)	257	64	6	27	144	136	136	218	35	302	31	33
Proportion within each demographic (%)	80.1	19.9	1.9	8.6	46.0	45.5	35.0	56.0	9.0	82.5	9.5	9.0
Primary reason for becoming an associate of the Scott Arboretum (%)												
To attend horticultural educational programs at a discounted rate	22.1	24.4	0	20.8	18.3	30.3	22.5	24.2	17.4	25.1	12.5	13.0
Benefits offered to associates of the Scott Arboretum	27.8	31.6	33.3	25.9	33.3	21.8	25.7	27.6	36.7	27.1	34.5	32.1
To provide the Scott Arboretum with financial support	20.3	28.6	50.0	32.0	22.0	20.3	24.2	23.0	20.0	21.5	30.0	40.0
To help preserve a “green” space	13.0	11.9	20.0	9.5	14.7	10.9	13.3	12.8	12.5	12.0	15.8	18.2
To provide funding to help beautify the college campus	12.7	8.3	0	4.5	10.8	16.3	11.9	12.8	5.6	12.4	7.1	4.8
Interest and participation in gardening (%)												
Is skilled and knowledgeable about gardening and shares knowledge with others	28.4	35.1	50.0	14.7	31.0	30.2	28.7	29.8	28.6	30.8	22.6	30.3
Passionate about gardening, very interested in learning more about gardening topics, takes great pride in home landscape garden appearance	36.1	28.6	16.7 abc ^z	58.8 a	38.1b	27.8 c	27.9	37.6	45.7	31.8 b	58.1 a	45.5 ab
Enjoys spending time gardening and wants property to look attractive; however, devotes as much time and money to gardening as other activities and hobbies	22.9	18.2	16.7	11.8	20.8	24.3	23.5	20.6	22.9	22.8	12.9	15.2
Not considered gardeners; however, lawn is maintained and plants are placed in the garden. More money is spent on other activities and hobbies	5.8	9.1	16.7	5.9	6.0	7.1	7.4	7.3	0	7.0	6.5	3.0
Little or no interest in gardening and spend the least amount of time possible maintaining the property	1.0	1.3	0	2.9	1.2	0.6	2.2	0.9	0	1.3	0	0
None of these categories apply	3.5	6.5	0	5.9	2.4	5.9	8.1 a	1.4 b	2.9 ab	3.6	0	6.1
Information or educational programs that would help responders achieve their gardener goal (%)												
Lectures	56.2	53.2	83.3	51.5	57.8	52.5	54.6	56.8	52.9	59.0 a	35.5 b	54.5 ab
Hands-on workshops	59.5 a	44.2 b	100.0 a	66.7 ab	57.2 b	49.4 b	58.5	53.1	64.7	57.0	45.2	66.7
Arboretum guided tours	43.5	42.9	66.7	36.4	48.8	38.9	40.0	43.7	52.9	43.3	38.7	48.5
Field trips to other public gardens and arboreta	48.2	42.9	50.0	39.4	41.6	51.2	48.5	45.1	44.1	47.4	32.3	39.4

(Continued on next page)

Table 1. (*Continued*) Responses of the members of the Scott Arboretum of Swarthmore College (Swarthmore, PA) to survey questions, segmented by demographic characteristic (e.g., gender, age range, adults in household), asked during a mail survey conducted in June 2008 as a method for identifying programming, services, and benefits that greatly appeal.

Variable	Gender		Age range (years)				Adults in household (no.)			Children in household ≤17 years old (no.)		
	Female	Male	21–36	37–48	49–64	65≤	1	2	3≤	0	1	2≤
Field trips to homeowners' private gardens	56.5	44.2	66.7	45.5	51.2	55.6	55.4	52.6	52.9	54.3	45.2	51.5
Fact sheets, instruction bulletins, and how-to guides	48.5	48.1	83.3a	63.6 a	50.6 ab	41.4 b	43.8	48.8	64.7	47.4	45.2	66.7
Appointments with arboretum staff to discuss individual problems and issues	29.4	28.6	33.3	39.4	29.5	23.5	26.9	29.1	35.3	28.7 a	16.1 a	45.5 b
Pest diagnostic clinic to send samples to	38.1	39.0	66.7	36.4	44.0	31.5	33.1	39.4	50.0	35.8	32.3	51.5
Electronic resources (e-newsletters, blogs, online how-to videos)	30.7	31.2	50.0	39.4	35.4	23.6	27.9	32.1	33.3	29.5	36.7	36.4
Would like to receive quarterly newsletter and communications electronically	20.5	26.0	83.3 a	32.4 bc	27.1 c	11.0 d	20.1	22.0	20.6	19.3	33.3	33.3
Mean satisfaction with associate of the Scott Arboretum membership (1 = completely dissatisfied, 7 = completely satisfied) ^y	6.5	6.53	6.50	6.55	6.44	6.55	6.50	6.52	6.41	6.49	6.48	6.63
Mean response that Scott Arboretum benefits consumer in the Greater Philadelphia region (1 = strongly disagree, 7 = strongly agree) ^y	4.25	4.35	3.20 a	4.48 b	4.24 b	4.29 b	4.30	4.24	4.34	4.28	4.11	4.14
Mean response that programs or activities are of interest (1 = very disinterested, 7 = very interested) ^y	6.13	6.14	6.33	6.30	6.11	6.11	6.00	6.17	6.23	6.13	5.94	6.40
Gardening, landscaping, and lawn care	5.08	4.77	4.67	5.00	5.10	4.90	4.82	5.05	5.40	4.97	5.40	4.97
Birding	5.41	5.14	5.67	5.48	5.51	5.16	5.20	5.37	5.63	5.30	5.67	5.39
Nature walks and hikes	4.40	4.49	5.50 a	4.68 a	4.71 a	3.97 b	4.61	4.19	5.00	4.36	5.13	4.35
Wine tasting and tours	5.36	4.99	5.67	5.50	5.35	5.13	5.32	5.25	5.26	5.25	5.45	5.55
Outdoor concerts and live performances	4.38	4.04	5.33 a	4.39 ab	4.61 a	3.86 b	4.15 b	4.27 b	4.91 a	4.21 a	4.93 b	4.65 ab
Cooking and entertaining	4.62	4.31	5.00	4.55	4.74	4.31	4.61	4.47	4.79	4.48	5.00	4.55
Garden books and book clubs	4.78	4.54	5.33 ab	4.65 ab	5.00 a	4.45 b	4.62	4.71	5.26	4.66	4.94	5.10
Vegetable gardening	4.68	4.58	5.33	4.35	4.61	4.73	4.77	4.56	4.65	4.62	4.33	4.87
Indoor gardening	3.68	3.46	5.33 a	3.94 abc	3.70 b	3.29 c	3.75	3.48	3.82	3.50	4.30	3.84
Painting and drawing	4.67 a	3.61 b	5.50	4.58	4.56	4.18	4.30	4.46	4.65	4.34 a	5.10 b	4.68 ab
Garden crafts (e.g., flower arranging, garden ornaments)	4.30	4.46	5.33	4.29	4.46	4.10	4.35	4.31	4.24	4.28	4.40	4.55
Landscape photograph												

^yMeans and percentages with different letters within demographic categories are significantly different ($P \leq 0.05$) on the basis of Pearson's χ^2 statistic, Kruskal–Wallis test, and Mann–Whitney U test. Analysis conducted using SPSS (version 17; SPSS, Chicago).

^x7 = completely satisfied, 6 = somewhat satisfied, 5 = somewhat dissatisfied, 4 = neither satisfied nor dissatisfied, 3 = somewhat disagree, 2 = disagree, 1 = completely dissatisfied.

^y7 = strongly agree, 6 = agree, 5 = somewhat agree, 4 = neither agree nor disagree, 3 = somewhat disagree, 2 = disagree, 1 = strongly disagree.

^z7 = very interested, 6 = interested, 5 = somewhat interested, 4 = neither interested nor disinterested, 3 = somewhat disinterested, 2 = disinterested, 1 = very disinterested.

Table 2. Responses of the members of the Scott Arboretum of Swarthmore College (Swarthmore, PA) to survey questions, segmented by demographic characteristic (e.g., 2007 gross household income, education level), asked during a mail survey conducted in June 2008 as a method for identifying programming, services, and benefits that greatly appeal.

Variable	2007 Gross annual household income (\$1000)						Education level					Membership in other associations	
							High school graduate or less	Some college or technical school	Associate degree	B.S. or B.A.	Masters or greater	Yes	No
	≥24	25-49	50-75	76-99	100-149	≤150							
Responses (no.)	6	38	39	36	86	91	9	25	11	146	204	239	127
Proportion within each demographic (%)	2.0	12.8	13.2	12.2	29.1	30.7	2.3	6.3	2.8	37.0	51.6	65.3	34.7
Primary reason for becoming an associate of the Scott Arboretum (%)													
To attend horticultural educational programs at a discounted rate	0	31.8	14.3	10.0	20.3	34.0	0	14.3	50.0	21.9	22.4	26.1	18.1
Benefits offered to associates of the Scott Arboretum	0	24.1	32.1	44.8	29.2	25.7	16.7	45.0	12.5	28.0	27.4	26.9	31.9
To provide the Scott Arboretum with financial support	20.0	12.0	42.9	16.0	22.2	24.6	25.0 ab ^z	18.8 ab	0 a	18.5 b	27.6 ab	24.3	18.7
To help preserve a “green” space	40.0	11.5	7.7	13.0	20.4	10.7	0	8.3	11.1	11.6	14.5	8.3 b	19.5 a
To provide funding to help beautify the college campus	0	11.8	0	20.8	13.0	6.8	0	30.0	0	8.2	14.0	11.7	15.3
Interest and participation in gardening (%)													
Is skilled and knowledgeable about gardening and shares knowledge with others	0 b	39.5 ab	48.7 a	27.8 ab	26.7 b	27.5 b	22.2	28.0	18.2	34.9	26.5	37.2 a	13.4 b
Passionate about gardening, very interested in learning more about gardening topics, takes great pride in home landscape garden appearance	66.7 ab	26.3 ad	12.8 cd	22.2 cd	44.2 ab	46.2 b	11.1	40.0	45.5	37.0	33.3	38.9 a	28.3 b
Enjoys spending time gardening and wants property to look attractive; however, devotes as much time and money to gardening as other activities and hobbies	33.3 ab	23.7 ab	20.5 b	44.4 a	17.4 b	14.3 b	33.3	16.0	36.4	17.1	24.5	15.9 b	36.2 a
Not considered gardeners; however, lawn is maintained and plants are placed in the garden. More money is spent on other activities and hobbies	0	2.6	12.8	0	4.7	4.4	11.1	4.0	0	4.1	8.8	3.3 b	14.2 a
Little or no interest in gardening and spend the least amount of time possible maintaining the property	0	0	0	0	2.3	2.2	0	0	0	0.7	2.0	0.4	2.4

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Table 2. (*Continued*) Responses of the members of the Scott Arboretum of Swarthmore College (Swarthmore, PA) to survey questions, segmented by demographic characteristic (e.g., 2007 gross household income, education level), asked during a mail survey conducted in June 2008 as a method for identifying programming, services, and benefits that greatly appeal.

Variable	2007 Gross annual household income (\$1000)						Education level					Membership in other associations	
							High school graduate or less	Some college or technical school	Associate degree	B.S. or B.A.	Masters or greater	Yes	No
	≥24	25-49	50-75	76-99	100-149	≤150							
None of these categories apply	0	7.9	5.1	0	2.3	2.2	22.2	8.0	0	3.4	3.4	2.9	5.5
Information or educational programs that would help responders achieve their gardener goal (%)													
Lectures	50.0	62.2	56.8	50.0	65.5	48.3	33.3	64.0	63.6	54.2	56.1	62.3a	47.6 b
Hands-on workshops	66.7	48.6	62.2	47.2	63.1	55.2	11.1 b	60.0 a	72.7 a	53.5 a	58.7 a	58.4	52.4
Arboretum guided tours	66.7	43.2	51.4	30.6	41.7	50.6	44.4	36.0	36.4	40.1	46.9	43.3	41.9
Field trips to other public gardens and arboreta	16.7	56.8	43.2	36.1	41.7	46.0	11.1	44.0	63.6	43.7	49.5	51.5 a	37.1 b
Field trips to homeowners' private gardens	16.7	56.8	62.2	52.8	50.0	55.2	22.2	52.0	54.5	50.7	57.7	58.9 a	45.2 b
Fact sheets, instruction bulletins, and how-to guides	50.0	37.8	56.8	41.7	48.8	51.7	22.2	52.0	27.3	43.0	54.6	46.3	52.4
Appointments with arboretum staff to discuss individual problems and issues	50.0	29.7	21.6	22.2	34.5	23.0	11.1	20.0	9.1	24.6	35.2	25.1	34.7
Pest diagnostic clinic to send samples to	33.3	27.0	43.2	38.9	44.0	39.1	11.1	24.0	45.5	35.9	41.8	37.2	42.7
Electronic resources (e-newsletters, blogs, online how-to videos)	50.0	29.7	27.8	30.6	36.1	32.6	11.1	40.0	27.3	25.7	33.8	31.4	29.3
Would like to receive quarterly newsletter and communications electronically	50.0	13.2	18.4	26.5	26.7	22.7	33.3	28.0	10.0	19.7	21.4	20.8	20.6
Mean satisfaction with associate of the Scott Arboretum membership (1 = completely dissatisfied, 7 = completely satisfied) ^y	6.17	6.55	6.55	6.44	6.45	6.52	6.56	6.57	6.82	6.55	6.45	6.55	6.40
Mean response that Scott Arboretum benefits consumer in the Greater Philadelphia region (1 = strongly disagree, 7 = strongly agree) ^x	4.50	4.35	4.19	4.23	4.35	4.20	4.00	4.36	4.36	4.42	4.17	4.33	4.37
Mean response that programs or activities are of interest (1 = very disinterested, 7 = very interested) ^w													
Gardening, landscaping, and lawn care	6.33	6.11	6.19	6.09	6.21	5.98	6.13	6.48	6.73	6.21	5.98	6.19	6.02
Birding	5.33	4.36	5.31	4.56	5.12	4.96	5.25 a	5.25 a	5.27 a	5.27 a	4.75 b	5.09	4.79
Nature walks and hikes	5.00	5.08	5.76	5.09	5.46	5.31	5.25	5.18	5.64	5.50	5.24	5.29	5.38
Wine tasting and tours	3.17	4.03	4.68	4.44	4.66	4.20	3.75	4.20	4.55	4.58	4.34	4.31b	4.70 a

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Table 2. (*Continued*) Responses of the members of the Scott Arboretum of Swarthmore College (Swarthmore, PA) to survey questions, segmented by demographic characteristic (e.g., 2007 gross household income, education level), asked during a mail survey conducted in June 2008 as a method for identifying programming, services, and benefits that greatly appeal.

Variable	2007 Gross annual household income (\$1000)						Education level				Membership in other associations		
	≤150						High school graduate or less	Some college or technical school	Associate degree	B.S. or B.A.	Masters or greater	Yes	No
	≥24	25-49	50-75	76-99	100-149	≤150							
Outdoor concerts and live performances	6.17	5.14	5.35	5.24	5.35	5.05	6.00	5.10	5.82	5.39	5.16	4.97	5.84
Cooking and entertaining	4.33	3.94	4.22	4.06	4.59	4.08	5.00	4.57	4.64	4.37	4.13	4.21	4.49
Garden books and book clubs	5.00	4.37	4.61	4.49	4.70	4.54	4.38 ab	4.59 ab	5.36 ac	4.77 ac	4.33 b	4.59	4.52
Vegetable gardening	5.00	4.54	5.31	4.83	4.80	4.45	4.75	4.64	5.18	4.99	4.52	4.74	4.63
Indoor gardening	4.50	4.29	4.92	5.00	4.78	4.36	4.75	4.64	5.45	4.70	4.57	4.62	4.77
Painting and drawing	4.33 ab	3.37 b	4.59 a	3.62 b	3.53 b	3.49 b	4.63 ac	4.27 ac	4.64 ab	3.49 c	3.52 c	3.54	3.65
Garden crafts (e.g., flower arranging, garden ornaments)	4.33	4.26	4.49	4.37	4.47	4.33	4.25 abc	5.10 ab	5.64 a	4.53 bc	4.20 c	4.43	4.40
Landscape photograph	5.83	4.17	4.56	4.39	4.49	4.18	4.50	4.10	4.55	4.44	4.24	4.37	4.29

^aMeans and percentages with different letters within demographic categories (e.g., gender, age range, education) are significantly different ($P \leq 0.05$) on the basis of Pearson's χ^2 statistic, Kruskal-Wallis test, and Mann-Whitney U test. Analysis was conducted using SPSS (version 17).

^b7 = completely satisfied, 6 = satisfied, 5 = somewhat satisfied, 4 = neither satisfied nor dissatisfied, 3 = somewhat dissatisfied, 2 = dissatisfied, 1 = completely dissatisfied.

^c7 = strongly agree, 6 = agree, 5 = somewhat agree, 4 = neither agree nor disagree, 3 = somewhat disagree, 2 = disagree, 1 = strongly disagree.

^d7 = very interested, 6 = interested, 5 = somewhat interested, 4 = neither interested nor disinterested, 3 = somewhat disinterested, 2 = disinterested, 1 = very disinterested.

interested in hands-on workshops (Table 1). Similarly, differences in education level affected interest in hands-on workshops, with only 11.1% of arboreta members with a high-school degree or less selecting this option compared with a greater percentage of arboreta members in all other education categories. Significant differences were detected for responses to "lectures" on the basis of the number of children in the household, with arboreta members residing in households without children being more likely to select this response as an option (59.0%) than those residing in households with one child (35.3%).

Other differences included "fact sheets, instructional bulletins, and how-to guides," with fewer arboreta members age 65 years and older selecting this option (41.4%) compared with arboreta members between age 21 and 36 years and between age 37 and 48 years (83.3% and 63.6%, respectively). Finally, arboreta members living in households without children and with one child were less likely to select "appointments with arboretum staff" (28.7% and 16.1%, respectively) than those living in households with two or more children (45.5%).

Arboretum members with paid memberships to another association were more likely to select "lectures" (62.3%), "field trips to other public gardens and arboreta" (51.5%), and "field trips to homeowners' private gardens" (58.9%) than those with no additional paid membership (47.6%, 37.1%, and 45.2%, respectively) (Table 2).

COMPLEMENTARY PROGRAMS AND SERVICES OF INTEREST. As a method for encouraging greater attendance and participation in arboretum-held or sponsored events, arboreta members were asked to indicate their level of interest on a seven-point Likert-type scale (1 = "very disinterested," 7 = "very interested") pertaining to gardening and related programming or activities. Understanding whether additional programming would appeal could assist arboretum staff with developing offerings that could increase arboreta members' attendance and attract interested community members. Overall, "gardening, landscaping, and lawn care" programming appeared to garner the most interest from arboreta members, with 92.7% rating their interest in this category as "somewhat interested" to "very interested." Other

programming or activities that were of “interest” (combination of “somewhat interested” to “very interested”) to a majority of arboreta members included “outdoor concerts and live performances” (78.4%), “nature walks and hikes” (77%), “birding” (69.7%), “vegetable gardening” (63.5%), and “indoor gardening” (60.9%). About half of those who responded indicated that “garden crafts,” for example, flower arranging and garden ornaments (57.3%), “gardening books and book clubs” (56.5%), “wine tasting and tours” (56.3%), “landscape photography” (51.3%), and “cooking and entertaining” (50.0%) were at least “somewhat” of an interest, while “painting and drawing” was of interest only to 33.3% respondents.

When responses to these programs and activities were analyzed on the basis of demographic characteristics, no significant differences were detected for “gardening, landscaping, and lawn care,” “outdoor concerts and live performances,” “nature walks and hikes,” and “landscape photography”; however, differences were detected for other topics. On the basis of the level of education, arboreta members with a Master’s degree or higher were less interested in “birding” (average mean rating of 4.75 between “neither disinterested nor interested” and “somewhat interested”) compared with those with a lower level of education (average mean of 5.25 and 5.27 between “somewhat interested” and “interested,” respectively) (Table 2). The higher-educated arboreta members were less “interested” in “garden books and book clubs,” “painting and drawing,” and “garden crafts” than some of their less-educated counterparts. Similarities were seen for “painting and drawing,” with arboreta members having a Master’s degree or higher having an average mean of 3.52 between “somewhat disinterested” and “neither disinterested nor interested” and those with an Associate’s degree having an average mean interest of 4.64. Arboreta members with a Master’s degree also showed a lower mean interest for “garden crafts” (average mean of 4.20) than those with at least some level of college or technical school education and Associate’s degree (average mean of 5.10 and 5.64, respectively).

“Interest” in “garden crafts” also differed based on gender (average mean of 4.67 for females and 3.61 for males) (Table 1). Similarly, interest in

garden craft programs differed among “interested” households with children compared with those without children (average mean of 4.34 households without children) and those with one child (average mean of 5.10). Arboreta members living in households without children were also less “interested” in “cooking and entertaining” programs and activities (average mean of 4.21) than those with one child (average mean of 4.93) and those with two or more children (average mean of 4.87).

Arboreta member’s age range had a great impact on responses to survey questions. Respondents between age 21 and 36 years rated their “interest” in “wine tasting and tours” (average mean of 5.50), “cooking and entertaining” (5.33), “vegetable gardening” (5.33), and “painting and drawing” (5.33) higher than some of their counterparts in other age ranges. In particular, arboreta members age 21 to 36 years were more “interested” than those age 65 years and older, pertaining to “wine tasting and tours” (average mean of 3.9), “cooking and entertaining” (3.86), and “painting and drawing” (3.29) (Table 1). Responses to “painting and drawing” also yielded differences based on annual gross household income, with arboreta members having an income between \$50,000 and \$75,999 being more “interested” (average mean of 4.59) than those having incomes between \$25,000 and \$49,999 (3.37), \$76,000 and \$99,999 (3.62), \$100,000 and \$149,999 (3.53), and \$150,000 and greater (3.59).

Comparison of participant responses to common survey questions

COMMUNITY MEMBER DEMOGRAPHIC PROFILE. Of the 502 participants, respondents can be characterized as female (59.8%), member of a two-adult household (49.7%), with no children (70.1%), between age 49 and 64 years (44.5%), had either obtained some level of high school education, were high school graduates, or had obtained some level of college/technical school education or associates degree (54.0%), with a household income of \$75,999 or lower (59.4%).

RESPONSE COMPARISON. Data were analyzed to determine if differences existed between arboretum members and community members as to

how they responded to survey questions. With arboretum and public gardens potentially seeing membership numbers decline, fewer consumers becoming members, and membership being skewed toward one demographic group, there is an interest in learning whether representatives of the community have similar interests and hobbies as members. This view by arboretum staff is supported by Benfield’s (2006) observation that the “garden audience” is probably not best described based on demographics, but psychographics (interests) and behaviors. This approach warrants further investigation in “defining the garden visitor.” This information may be useful in that it can help arboreta and public garden staffs understand what interests and hobbies are similar and where more emphasis needs to be placed on promoting these programs among the community. Conversely, the difference in responses about interests and hobbies can alert staff as to where programming and services can be adjusted or enhanced to attract new members with passions other than for gardening.

Several differences were found to exist between arboretum members and community participants. A greater percentage of arboretum members selected “skilled and knowledgeable” (29.7%) and “enjoys spending time gardening” (34.8%) than the community members (15.7% and 17.7%, respectively), indicating a perceived higher skill and enjoyment level of this hobby (Table 3). Arboretum members also responded more favorably to information or educational programs that the arboretum could offer to help them achieve their gardening goals compared with community members. In every case except “electronic resources,” a greater percentage of arboretum members responded that the suggested information or educational program would assist them in achieving their goals. Differences in interest ranged widely regarding “lectures,” with 55.6% interest for arboreta members compared with 9.6% interest for community members. In contrast, little difference was found for topics such as “arboretum guided tours,” with 56.1% interest for arboreta member compared with 35.7% interest among community members.

Interest in programs or activities, as determined by mean ratings on a seven-point scale (1 = “very

Table 3. Comparison of responses asked during a mail survey involving members of Scott Arboretum of Swarthmore College (Swarthmore, PA) and an Internet survey involving community members residing within a 30-mile radius of the arboreta, both conducted in June 2008, to select survey questions about interest in gardening and appeal of potential programming and resources.

Variable	Survey participant	
	Arboreta member	Community member
Responses (no.)	377	502
Proportion within each segment (%)	42.9	57.1
Is skilled and knowledgeable about gardening and shares knowledge with others (%)	29.7 a ^z	15.7 b
Passionate about gardening, very interested in learning more about gardening topics, takes great pride in home landscape garden appearance (%)	34.8 a	17.7 b
Enjoys spending time gardening and wants property to look attractive; however, devotes as much time and money to gardening as other activities and hobbies (%)	21.7 b	32.1 a
Not considered gardeners; however, lawn is maintained and plants are placed in the garden. More money is spent on other activities and hobbies (%)	6.5 b	22.3 a
Little or no interest in gardening and spend the least amount of time possible maintaining the property (%)	1.3 b	7.8 a
None of these categories apply (%)	22.2 a	3.4 b
Information or educational programs that would help responders achieve their gardener goal (%)		
Lectures	55.6 a	9.6 b
Hands-on workshops	56.1 a	35.7 b
Arboretum guided tours	43.4 a	17.1 b
Field trips to other public gardens and arboreta	46.5 a	16.5 b
Field trips to homeowners' private gardens	53.8 a	14.7 b
Fact sheets, instruction bulletins, and how-to guides	48.3 a	32.7 b
Appointments with arboretum staff to discuss individual problems and issues	29.1 a	4.0 b
Pest diagnostic clinic to send samples to	37.9 a	15.5 b
Electronic resources (e-newsletters, blogs, online how-to videos)	30.4	28.3
Mean response that programs or activities are of interest (1 = very disinterested, 7 = very interested) ^y		
Gardening, landscaping, and lawn care	6.12 a	4.30 b
Birding	5.00 a	3.36 b
Nature walks and hikes	5.34 a	4.62 b
Wine tasting and tours	4.41	4.41
Outdoor concerts and live performances	5.28	5.22
Cooking and entertaining	4.29 b	4.77 a
Garden books and book clubs	4.53 a	3.60 b
Vegetable gardening	4.73 a	4.21 b
Indoor gardening	4.65 a	4.09 b
Painting and drawing	3.61	3.51
Garden crafts (e.g., flower arranging, garden ornaments)	4.43 a	3.73 b
Landscape photograph	4.32 a	3.86 b

^zPercentages and means with different letters between arboreta and community member responses are significantly different ($P \leq 0.05$) on the basis of Pearson's χ^2 statistic, Kruskal-Wallis one-way ANOVA, and Mann-Whitney U test. Analysis was conducted using SPSS (version 17).

^y7 = very interested, 6 = interested, 5 = somewhat interested, 4 = neither interested nor disinterested, 3 = somewhat disinterested, 2 = disinterested, 1 = very disinterested.

disinterested," 7 = "very interested") also differed on the basis of whether the respondent was a member of the arboretum. For all but "outdoor concerts and live performances," "wine tasting and tours," and "painting and drawing," mean ratings of arboreta members differed from those of community members. The one program/activity that appeared to be more of interest to community members than to arboreta members was "cooking and entertaining," with community members returning an average mean rating

of 4.77 and arboreta members returning an average mean rating of 4.29. All other programs and activities' mean ratings were higher, or of more "interest," for arboreta members than for community members. In some cases, for example, "gardening, landscaping, and lawn care," mean ratings differed by almost 2 points, 6.12 for arboretum members (between "interested" and "very interested") and 4.30 for community members (between "neither disinterested nor interested" and "somewhat interested").

Conclusion

Concerns voiced among arboretum staff were that membership is inclined toward a more mature audience; hence, strategies are being developed to appeal and recruit community members, members of the college community, and student population to increase arboreta membership and to balance the demographics of members and visitors. This viewpoint and strategies to attract younger (Flanagan, 2006) and more diverse audiences (Steinhauer et al., 2007) have been

suggested by various authors. In this study, even though only one-third of arboreta members completed and returned the survey, membership profiles and observations indicate that demographics reported for the respondents mirror the demographics of the membership at large, particularly in regards to age range.

With arboreta membership satisfaction being relatively high and with a majority of arboreta members reporting that they had visited the arboretum at least once the previous year, it is possible that current programs and benefits remain appealing to arboreta members. As with any business or organization, continual improvement and innovation in products, education, and activities, and appropriate reduction or elimination of offerings, remain warranted as user and arboreta member interests change (Shine, 1979). In addition, to maintain appeal and attract new arboreta members, regular program evaluation and new programming should be a part of seasonal and annual planning cycles.

One issue in particular, which should be discussed further, is current arboreta members' preference for receiving hard copies of communications rather than electronic copies. Although the smallest of all the age groups present, arboreta members between age 21 and 36 years preferred electronic delivery. Perhaps, as more arboreta members are recruited who fall within this range, a shift in preference may occur both in sentiment and mode of access to information. Additionally, as the number of consumers who are of the "baby boomer" generation gain Internet access [an estimated 96 million consumers age 45 years and older by 2014 (eMarketer, 2010)], there may also be a shift in preference for obtaining information. Publications specifically targeting public garden and arboreta program coordinators and managers suggest that technology provides the ability to "deliver their messages more effectively" and "offers exciting possibilities for enhancing educational programming" (Klemmer and Skelly, 2006). This suggests that portable technology (such as personal digital assistants) will serve a useful purpose for recording and displaying data in gardens (Youngstrom et al., 2006). Some arboreta are already incorporating mobile technology by developing podcasting tours that visitors

can download and listen to as they explore the space (Scott Arboretum of Swarthmore College, 2010).

As with data collected during an Internet survey conducted with community members, segmented by demographics, and analyzed based on interest in gardening (K.M. Kelley, J.C. Sellmer, and R.H. Robert, unpublished data), a majority of arboretum members had an interest in gardening, which could be expected, with arboreta members with lower income levels reporting that they were more likely to be "skilled and knowledgeable gardener" than their wealthier counterparts. Since a positive relationship existed between arboreta members who held paid memberships in another association and who reported that they were skilled/knowledgeable or passionate about gardening, a strategy that may benefit the arboretum in question and other arboreta and public gardens is to offer a joint membership at a discounted rate. Such an offer may appeal to these consumers as their interest in gardening is high and they may find that the additional opportunities presented greatly outweigh the extra costs.

It is evident from responses that hands-on workshops would appeal to arboreta members, particularly women and those with a higher level of education. To determine if this information would have an impact on participation, sample programming should be developed. Drafts could then be circulated among sample audiences to determine if seminars and demonstrations offered appeal to both genders and all income levels or if there truly is a division on the basis of these characteristics. The same strategy should be implemented for lectures and field trips to private gardens, as they were the second and third most popular choices presented. Primary topics of interests could be tested, including "outdoor concerts and live performances," "landscape photography," topics that yielded the greatest interest in addition to "gardening, landscaping, and lawn care" and did not produce any significant differences based on demographic status, but seemed to be of interest to at least half of the participants. Although some topics were more preferred by certain segments than others, this is not necessarily a disadvantage. Rather, arboreta and public garden staff may have great difficulty with identifying and offering topics that appeal to the

majority of their members. Smaller classes, which may correspond to very selective topics, could allow for more hands-on applications and more manageable trips and tours. Certainly, demographic status and response to topics of interest can assist staff with planning events and activities. With limited time, resources, funding, and topics that may require paid instructors to lead sessions, careful selection should be made to help ensure high enrollment rates and satisfactory responses.

To meet one of the objectives regarding a sustainable membership program, arboretum staff should consider offering programming that not only appeals to current arboreta members but also appeals to the community at large. Topics and methods that appeal to both audiences could conserve staff and arboretum resources. Interest level in gardening appeared to be greater among arboreta members compared with community members, based on response to categories "skilled and knowledgeable" and "enjoys spending time gardening"; thus, staff should ensure that the level and content of a program is appropriate for the target audience. More preferred topics may require separate classes for beginners and to those considering themselves experts. How the content is delivered is equally important. As a greater percentage of community members responded favorably to receiving information through "electronic resources," this mode could serve as an outlet for select material. Offering content online or through an e-mail newsletter could increase the reach of arboretum staff and be cost-effective with several prerecorded video demonstrations and pod casts available for multiple viewings.

It is promising that interest in activities and programs were similar for a few of the offerings receiving at least a neutral or positive response from both groups, particularly outdoor concerts and live performances and wine tasting and tours. These two activities, in addition to other choices, rated at least "somewhat" of an interest to both groups, but exhibiting significant differences between groups, gardening, landscaping, and lawn care; nature walks and hikes; and wine tasting and tours, could be the subject of initial programming efforts. As with any effort administered at the arboretum, trialing new programming, along

with appropriate promotional activities, should be conducted to determine projected response. On the basis of the response, staff can further build in new programming and alter selections to continue to appeal to current and potential visitors and arboreta members. It is hoped that by providing appealing programs, activities, and events along with advertising arboreta membership benefits that could include reduced rates and special members' only events, membership will indeed grow. In regard to the current situation where arboreta and public gardens are experiencing flat enrollment or a more mature membership, strategies such as those presented in this paper may be helpful in remaining sustainable and possibly increasing profitability.

Literature cited

- American Association of Museums. 2010. Museum Assessment Program. 14 May 2010. <<http://www.aam-us.org/museumresources/map/index.cfm>>.
- American Horticultural Society. 2010. Membership in the American Horticultural Society. 14 May 2010. <<https://npo.networkforgood.org/Donate/Donate.aspx?npoSubscriptionId=1001573&code=09NETM>>.
- Atlanta Botanic Garden. 2006. Membership. 14 May 2010. <http://www.atlantabotanicalgarden.org/site/get_involved/membership>.
- Benfield, R. 2006. Who are our visitors...and what do they like? *Public Garden* 21:7.
- Benveniste, P. 2006. What we do well, and what we need to do better. *Public Garden* 21:14–15.
- Cheekwood Art and Garden. 2006. Member benefits and levels. 14 May 2010. <<http://www.cheekwood.org/Membership.aspx>>.
- Chicago Botanic Garden. 2010. Support us: Membership. 14 May 2010. <<http://www.chicagobotanic.org/member/circle>>.
- eMarketer. 2010. U.S. web usage landscape is shifting. 17 Feb. 2010. <<http://www.emarketer.com/Article.aspx?R=1007519>>.
- Flanagan, C. 2006. Children, plants and our future. *Public Garden* 21:13–16.
- Houston, S. (ed.). 2006. Annual Report to the community -2006. Royal Botanical Gardens. 4 Mar. 2010. <<http://www.rb.gc.ca/pdf/RBG2006AR.pdf>>.
- Idaho Botanical Garden. 2010. Volunteer educators. 14 May 2010. <http://www.idahobotanicalgarden.org/index.cfm?fuseaction=category.display&category_id=47>.
- Klemmer, C.D. and S. Skelly. 2006. The changing face of education. *Public Garden* 21:8–12.
- Laser, S. 1980. Customize your education programs to meet members' needs. *Assn. Mgt.* 32:46–48,50.
- Longwood Gardens. 2010. Volunteering. 14 May 2010. <http://www.longwoodgardens.org/Volunteering_1_2_6_2.html>.
- Morris Arboretum of the University of Pennsylvania. 2010. Membership information. 14 May 2010. <<http://www.business-services.upenn.edu/arboretum/membership.shtml>>.
- The New York Botanical Garden. 2010. Membership to the garden. 14 May 2010. <http://www.nybg.org/support_the_garden/membership/>.
- Portland Japanese Garden. 2010. Member benefits. 14 May 2010. <<http://www.japanesegarden.com/membership/>>.
- Raulston, J.C. 1981. Friends of the Arboretum Newsletter, Number 2, Mar. 1981. 4 Mar. 2010. <http://www.ncsu.edu/jcraulstonarboretum/publications/newsletters/ncsu_arboretum_newsletters/News02_81-03.html>.
- San Francisco Botanical Garden. 2010. Becoming a member. 14 May 2010. <<http://www.sfbotanicalgarden.org/membership/index.html>>.
- Scott Arboretum of Swarthmore College. 2010. Take a tour. 14 May 2010. <<http://www.scottarboretum.org/special/taketour.html>>.
- Shine, J.M., Jr. 1979. No longer flying blind, we know what our members want us to do for them. *Assn. Mgt.* 31:79–82.
- Steinhauer, M., M.A. Brennan, D. McConnell, C. Reinhardt-Adams, and D. Sandroek. 2007. Visitor responses to an ethnic garden display in a botanical garden. *HortTechnology* 17:537–543.
- Sutherland, L. 1997. Evaluation and research: The key to support. 12 Aug. 2009. <<http://www.bghi.org/resources/article/0337/>>.
- Tyler, C. 2009. Icing the cake: Planning for exhibits in your garden. *Public Garden* 24:35–37.
- Youngstrom, J., E. Dawson, and J. Dickey. 2006. Cracking technology, one nut at a time. *Public Garden* 21:25–37.