

# Recommendations for Recruiting Tomorrow's Horticulture Students

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## Abstract

With an opportunity to update the factors that influence a student's decision to pursue a career in horticulture, this study provides insight into possibilities of creating a more effective recruiting strategy. Data collected through a survey of 230 post-secondary horticulture students, plus interviews with horticulture students and institutional staff, helped characterize the who, why and how of horticulture students. Demographic data such as that which identified that 40% of students are female and 48% of students attending two-year institutions are non-traditional (over 25 years old) offers better understanding about who are horticulture students. Likewise, knowing that prior gardening experience influenced 78% of horticulture students or that parents have an impact on students' academic major decision offers some explanation of how they came into horticulture. Recognizing that many students simply have a passion to work outdoors or make a difference in the world unveils why these students chose horticulture. These findings help provide a basis for effective recruitment strategies of new horticulture students. For example, the target audience of these recruiting efforts should not just be students, but also include their parents. Emphasizing the likelihood that job opportunities in horticulture allow the ability to work outdoors and/or help others will help meet current students' career aspirations.

## Introduction

It is important to understand and identify college recruitment strategies in order to attract appropriate students to an institution and specific major. Some studies have been conducted to identify factors related to a student's choice of a specific institution including both student characteristics and institutional characteristics (Chapman, 1981; Han, 2014; Hoyt and Brown, 2003; Pampaloni, 2010). Less research has been done concerning recruitment for a college of agriculture (Cole and Thompson, 1999; Herren et al., 2011; Robinson et al., 2007; Shrestha et al., 2011), and until recently few studies had been published regarding a particular major within agriculture such as horticulture (Bradley et al., 2000; Meyer et al., 2016; Rhodus, 1990).

Horticulture is a growing field of employment with a 14% increase in jobs expected by 2022 (U.S. Bureau of Labor Statistics, 2012). However, both academia and industry recognize there are challenges facing the horticulture industry such as declining enrollment in academic horticulture programs (Darnell, 2006; Lawell, 2011; Meyer et al., 2016), lack of skilled labor, and public misperception of the industry (Meyer et al., 2016). Such programs are open to assessing their recruitment efforts to determine how they might correct this negative trend.

To create an effective recruitment strategy, one must know the target audience. By understanding the characteristics of their current students, horticulture programs may be better positioned to effectively recruit future students. Rhodus (1990) found that horticulture

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departments with higher enrollment numbers used career days with K-12 students and interacted with guidance counselors. Very few of the schools surveyed incorporated horticulture-related industry professionals into recruiting efforts. A study by Bradley et al. (2000) focused on the factors that influenced a student's choice of horticulture as a major. They discovered that 74% of students selected horticulture as a major because they enjoyed it as a hobby. The study also showed that a large percentage of students made their decision on the major in high school (26.9%) or during the second year of college (26.3%).

More recently, a study by Meyer et al. (2016) examined the public perception of horticulture and careers in the industry. The public agreed or strongly agreed (94%) horticulture is essential. Low pay (59%) was the top reason respondents thought a student would not choose horticulture as a career and education and awareness (54%) are the biggest challenges for the industry. Positive reasons for working in horticulture included job availability (26%), working outside (25%), and impacting the world (21%). The study also found many people discovered horticulture as a career by gardening with family.

The current study sought to identify the characteristics of students currently enrolled in horticulture more thoroughly in order to provide recommendations to recruit future students. The findings help characterize horticulture students, how they were exposed to horticulture and why they chose it as a career.

**Materials and Methods**

This study was conducted in three phases, with both quantitative and qualitative methods. The University Institutional Review Board approved the study protocol and all participants provided written informed consent prior to participation in the study. The initial phase consisted of a survey distributed to willing students during the career fair of the Professional Landcare Network (PLANET) (now known as National Association of Landscape Professionals) Student Career Days in March of 2014 at Colorado State University, Fort Collins, CO (Table 1). Students took the survey online via Qualtrics, Version 2014, at a booth on computers provided by the researchers (Qualtrics, 2014). The fifteen-item survey requesting information concerning students' interest in horticulture and demographic information was completed by 230 students from institutions across the United States, representing a 29% response rate. Some key questions included: which of the following apply to your pursuit of horticulture as a career? (With an open-ended option available.) When did you decide to major in horticulture? If you were another major prior to horticulture, please list. What type of school do you attend? Are you a traditional or non-traditional student (18-24 years of age and 25 years and older, respectively)? Descriptive statistics were performed on the nominal data using IBM SPSS Statistics for Windows, Version 22.0 (IBM Corp., 2013).

**Table 1. Survey Distributed at the Professional Landcare Network (PLANET, now known as National Association of Landscape Professionals) Student Career Days, March 2014**

Question	Responses
Do you wish to participate in this study?	Yes; No
Check all of the following that apply to your pursuit of a horticulture career	Gardened with family
	Talked with parents or other relatives
	Talked with a friend
	High school or grade school teacher influenced me
	Guidance counselor told me about horticulture
	Participated in FFA and/or 4-H
	Gardened as a hobby
	Family owns a business in the Green Industry
	Previously worked in the Green Industry
	Talked with a professional in the Green Industry
	Searched the Internet for jobs/careers in the Green Industry
	Came to campus for a visit
	Attended an on-campus event hosted by the department/college
	Attended an off-campus event hosted by the department/college
	Talked with a recruiter from the college
	Talked with a faculty member from the department
	Talked with a current student in the department
	Talked with an alumnus of the department
Received a letter and/or phone call from the department	
Received brochures/promotional materials about the department/institution	
Visited the department/institutional website	
Program of interest was available at the institution	
Financial assistance/scholarships were provided to me	
Career opportunities were highlighted by the department	
Please describe any other circumstances that might have influenced your pursuit of horticulture.	(Open ended)
In what region of the country do you attend school? (Map provided to distinguish regions)	Northeast; Southeast; Midwest; West
When did you decided to major in horticulture?	Before high school; High school; First year of college; Second year of college; Third year of college; Fourth year of college; Second career
Who was your first contact in the field of horticulture?	Industry professional; Profession; Student Recruiter; Alumni; Student
If you were another major prior to horticulture, please list below.	(Open ended)
What are your plans after receiving your degree in horticulture?	Pursue and advanced degree (check all that apply: BS, MS, PhD); Find a job in the industry (check 'yes' or 'no'); Find a job in another industry (please list area of interest); Not sure at the moment
What type of school are you currently attending?	Two-year; Four-year
What is your current class standing?	Freshman; Sophomore; Junior; Senior; Graduate
What degree type are you currently pursuing?	Associates; Bachelors; Masters; Doctoral
Which best describes your current program?	Landscape design; Landscape management; Landscape architecture; Nursery/greenhouse; Fruit/vegetable; Turfgrass; Other
Which type of student best describes you? (Optional)	Traditional (18-24 years old); Non-traditional (25 or older)
Please indicate your gender. (Optional)	Male; Female
If you would be willing to provide further information for this research, please indicate below.	Yes (contact information captured); No

## Recommendations for Recruiting

The second phase of the study was conducted in the fall of 2014. During the initial survey, students were asked if they would be willing to answer follow-up questions. Students from Auburn University (AU), Kansas State University (KSU), Texas A&M University (TAMU), and the University of Kentucky (UK) were contacted for an informal, in person interview, allowing for additional questions to be asked and answered as they arose through discussion that were considered relevant to the study. The interviews were conducted to elicit greater insight pertaining to responses provided in the survey. Seven students participated with three females and four males representing KSU and UK. No students from AU or TAMU chose to participate. After the transcribed interviews were approved by the participants, responses were compared between interviews and the initial quantitative phase data.

The third and final phase was conducted during the fall of 2014 and spring of 2015. Department of horticulture faculty and staff at AU, KSU, TAMU and UK were asked to participate in an informal interview with six total participants representing all four institutions. The questions covered the respective department's enrollment status, its students' characteristics, and department recruitment efforts. After the transcribed interviews were approved by the participants, the responses were compared across interviews and the previous data collected. The last two phases were not extensive enough to draw independent conclusions but provided relevant data to add to the initial quantitative phase.

## Results and Discussion

Students participating in the survey represented a diverse population with demographics helping identify horticulture student composition. The sample population represented all four identified regions of the United States – Northeast, Southeast, Midwest, and West – and consisted of 60% males and 40% females (Table 2). While this supports thoughts that horticulture is a male dominated field, it is not male limited. The Southeast and West show more males than females in the major, but the Midwest is more even in the breakdown (52% males, 48% females) and females surpass males in the Northeast (44% males, 56% females).

The sample population also consisted of both traditional (70%) and non-traditional students (30%) (Table 3). Most non-traditional students were attending two-

**Table 3. Comparison of Student Demographic Characteristics of Institution and Student Type Based on the Professional Landcare Network (PLANET, now known as National Association of Landscape Professionals) Student Career Days Survey, March 2014 (N=221)**

Student Type	Institution		Overall
	2 Year	4 Year	
Traditional <sup>z</sup>	24.4%	45.2%	69.7%
Non-Traditionally	22.1%	8.1%	30.3%
All Students	46.6%	53.4%	

<sup>z</sup>18-24 years of age  
<sup>y</sup>25 years and older

year institutions (73%), while most traditional students were attending four-year institutions (65%). Almost half of the students at two-year institutions were non-traditional (48%). For 37% of the non-traditional students, horticulture was identified as a second career and selected the field beyond high school or post-secondary. This has the potential to be an area of outreach for horticulture recruitment, focusing on non-traditional students who would attend a two-year institution.

For many traditional students, a career in horticulture was determined in high school (41%) or the second year of college (26%). This represents an increase from the data collected by Bradley et al. (2000) of 27% in high school and 26% in second year of college. Students that decided upon horticulture as a major while in college (N=97) came from a variety of majors including business (N=14), liberal arts (N=14), medical (N=12), or architecture (N=11). Faculty and staff representatives from each institution indicated that their students transfer from business, engineering, or liberal arts, which closely resembled student survey responses previously discussed. Upon learning that many students chose horticulture in the second year of college, it was concluded by many of the representatives that a more active approach to seek out students on campus could prove effective. Therefore, recruitment of traditional students could be most effective during their time in high school or early years of college.

Results from the survey resembled those of the study by Bradley et al. (2000) and Meyer et al. (2016) with respect to influences and exposure to horticulture. Seventy-one percent of participants indicated that gardening with a family member and 57% indicated that gardening as a hobby were factors that influenced them to choose horticulture as a major, demonstrating prior gardening experience plays a key role in exposure to horticulture. During the interviews, gardening was also mentioned as influential by four of the seven students. The third greatest factor was talking to a parent or relative (52%). This could be the most insightful influence considering students participating in the interviews expressed that parents' negative perception of the horticulture industry created resistance to students selecting the major. Two students discussed the challenge of convincing their parents that their decision to major in horticulture was a good one. Students also stated that their parents questioned the salary potential of a horticulture career. The idea of low pay is one of the challenges posed by Meyer et al. (2016).

**Table 2. Gender Distribution of Students in Horticulture by U. S. Regions Based on the Professional Landcare Network (PLANET, now known as National Association of Landscape Professionals) Student Career Days Survey, March 2014**

Gender	Region				Overall
	Northeast <sup>z</sup>	Southeast <sup>y</sup>	Midwest <sup>x</sup>	West <sup>w</sup>	
	N = 16	N = 79	N = 88	N = 41	N = 224
Male	43.8%	65.8%	52.3%	73.2%	60.3%
Female	56.2%	34.2%	47.7%	26.8%	39.7%

<sup>z</sup>Northeast states include: CT, DE, MA, ME, NH, NJ, NY, PA, RI, VT

<sup>y</sup>Southeast states include: AL, AR, GA, FL, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

<sup>x</sup>Midwest states include: IA, IL, IN, KS, MI, MN, MO, ND, OK, SD, WI

<sup>w</sup>West states include: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

Influences of industry and industry professionals on students' selection of horticulture as a major should not be overlooked. According to the survey, 24% of the students commented that one of their first contacts in horticulture included an industry professional. Of 86 responses to an open-ended survey question about influences on the decision to major in horticulture, 20% of students indicated they had prior experience in the industry. None of the institutions utilized the industry in recruiting efforts in any formal effort, but all mentioned providing opportunities for current students to meet and network with industry professionals. Meyer et al. (2016) addressed the question of what role industry should play in helping promote student interest in horticulture; responses indicated internships and scholarships along with providing hands-on opportunities would be the most fruitful. With a greater industry presence in recruiting efforts, the field of horticulture might not be as uncertain to either students or parents.

An open-ended question on the survey revealed why students pursued horticulture. Two themes that were often mentioned included enjoyment of the outdoors (21%) and seeking to make a difference (15%). These themes emerged during the student interviews as well with responses such as "being outside is something I love" and "help[ing] others understand what plants do." This coincides with the responses Meyer et al. (2016) described regarding what makes horticulture an appealing profession. Those responses included "work[ing] outside... the work could impact the world." Institutional representatives said they highlight the abundance of jobs in the field when talking to prospective students, which Meyer et al. (2016) found to be another reason to recommend horticulture as a career. In the survey, 138 students (62%) responded that they would pursue a career in the field after graduating and 98% of those students were confident they would find a job in the industry.

Recognizing what draws a student into horticulture poses opportunity for recruitment strategies to be tailored toward specific interests. Students with interest in outdoor jobs or careers that have a bigger impact on others and the world could be persuaded to study horticulture, especially with an added benefit of job availability.

## **Summary**

Acquiring current students' insight into their selection of horticulture as a major field of study offers the potential to create effective recruiting efforts, leading to an increase in enrollment numbers and supply of skilled labor, two challenges facing the horticulture industry (Meyer et al., 2016). Students' characteristics and background were considered during this research such as age, academic standing, and influential factors, and future studies could include assessing how geographical status, rural or urban, affects horticulture interests. Multiple recommendations are offered from this study. First, focus on specific student types. With traditional students, recruitment activities would be most effective

during high school and the second year of college since those are points in which many choose to pursue horticulture as a major. For non-traditional students, a more effective approach would be from a two-year institution seeking prospective students interested in a second career. Second, it is important to recognize the influence both prior exposure to gardening and family, especially parents, have on a student's decision to major in horticulture. By including parents of prospective students as a target audience and by increasing industry involvement in the recruiting efforts, both students and parents may come to see the field of horticulture in a more favorable light than they do presently. Third, recruiting efforts should highlight the ability to work outdoors and help others, two strong interests of horticulture students.

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