



Camp T.U.R.F. Summer Academy: A Recruiting Tool

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INTRODUCTION

Camp T.U.R.F. (Tomorrow's Undergraduates Realizing the Future) is a two-week residential summer academy for Oklahoma residents entering their freshman or sophomore year in high school. Funded by the Oklahoma State Regents for Higher Education, Camp T.U.R.F.'s goal as a summer science academy is to provide a stimulating educational opportunity on a college campus (Oklahoma State University) and make success in college an expected and logical result for all participants, particularly those from groups most likely to be underrepresented in science, technology, engineering and math (STEM) fields. Hosted by the Department of Horticulture and Landscape Architecture, Camp T.U.R.F. is also a recruitment strategy to increase student awareness and interest in careers within the horticulture and landscape architecture fields.

Each summer, up to 25 participants are selected to stay on-campus in residential suites for two weeks. During the day, students participate in hands-on activities led by college professors and/or professionals in the field. Faculty from additional departments such as Biosystems and Agricultural Engineering, Entomology and Plant Pathology, and Plant and Soil Sciences provide opportunities to see the breadth of plant-related careers. Activities are designed to be engaging, relevant, and enjoyable for high school students. In addition to science-focused activities, the summer academy offers career interest inventories, and visits with admissions counselors, financial aid representatives, and the student success center. Evening activities include on- and off-campus recreation.

Typical Camp T.U.R.F. Activities

- Grafting herbaceous plants
- Micropropagation of African violets
- Creating dish gardens
- Making bonsai
- Landscape sketches
- Landscape models
- Soil and water testing
- Making and testing pervious concrete
- Assembling irrigation systems
- Extracting strawberry DNA
- Installing golf cups in a putting green
- Identifying different turfgrasses
- Tree identification and measurement
- Personal protective equipment demonstration
- Filming a segment of *Oklahoma Gardening*



Photo 1: Grasshopper dissection at OSU

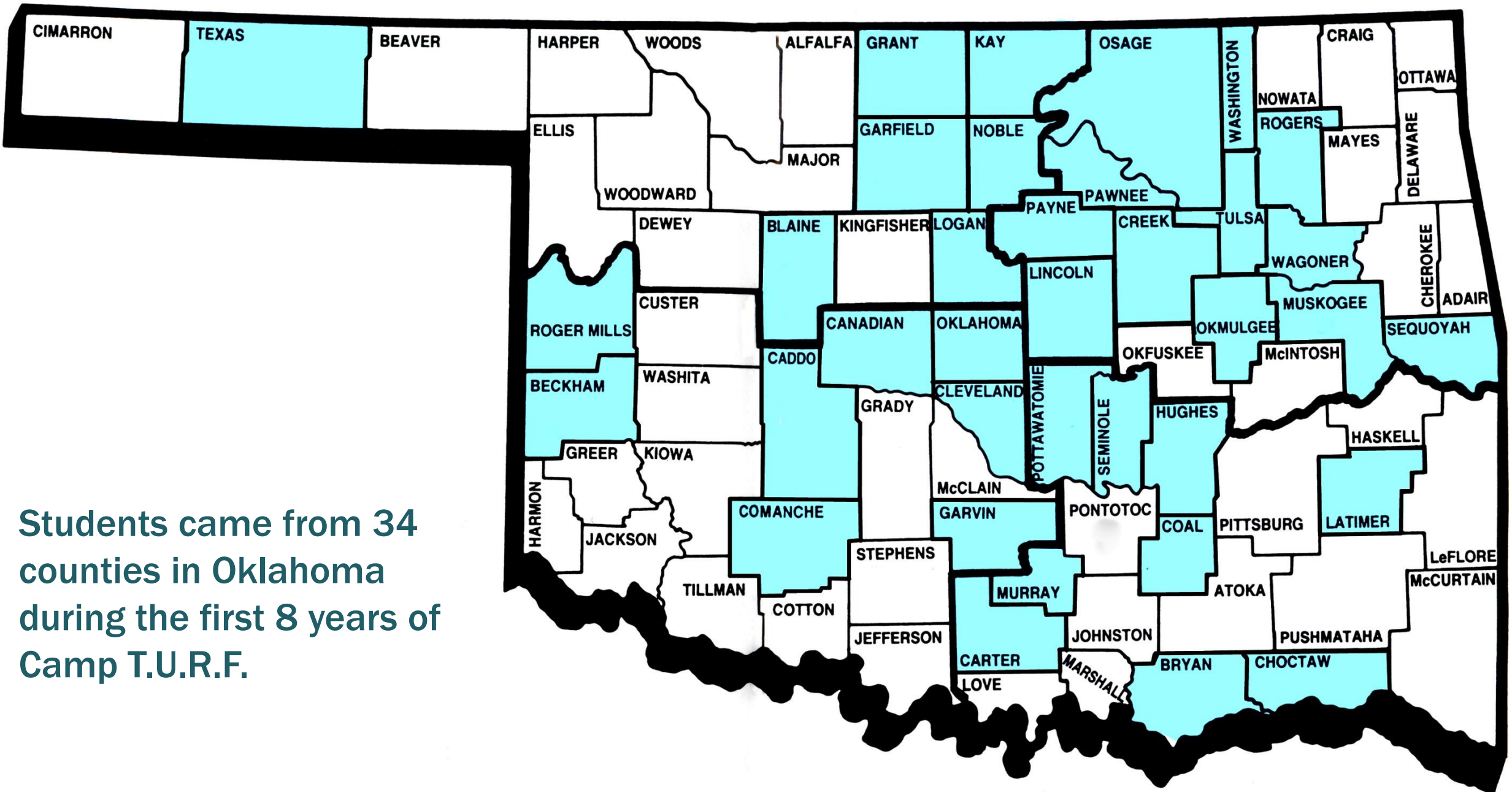
DEMOGRAPHICS

Typically, more applications were received than there were spots available in Camp T.U.R.F. Students were selected to create a mix of races and ethnicities, with the largest group of selected applicants representing those who would be the first in their family to attend college (first-generation), as well as students from low-income families (those who were enrolled in the Oklahoma Higher Learning Access Program (OHLAP), which provides college scholarships to students from families with a combined income of less than \$50k/year).

An effort was made to draw participants from smaller and more rural schools, and to have as many school districts as possible represented. Generally, applicants and participants consisted of more females than males. Few applicants listed gardening or horticulture as an interest on their application, with many applicants stating they were interested in attending the academy to see what college was like, to meet new friends, or as a break from their families. Location of the academy and timing of the academy (compared to other opportunities such as church camps, sports camps, etc.) also impacted the applicant pool.

Table 1. Demographics of Camp T.U.R.F. Attendees for Year 2010 Through 2017

Demographic	High School Students (no.)								Totals
	2010	2011	2012	2013	2014	2015	2016	2017	
Applicants	25	31	25	28	18	59	60	43	289
Participants	18	24	20	21	18	24	23	24	172
Sex									
Female	11	14	13	16	9	14	10	14	101
Male	7	10	7	5	9	10	13	10	71
Grade Level									
9th	0	0	13	7	11	17	11	10	69
10th	0	9	7	13	7	7	12	14	69
11th	14	9	0	1	0	0	0	0	24
12th	4	6	0	0	0	0	0	0	10
School Type									
Public	15	16	19	17	16	20	19	21	143
Charter	2	7	0	1	0	0	0	1	11
Private	0	0	0	1	1	2	4	1	9
Home	1	1	1	2	1	2	0	1	9
OHLAP	13	9	3	7	3	6	6	6	53
1 st Generation	9	10	7	6	5	4	7	9	57
Race/Ethnicity									
African-American	5	1	1	1	2	5	3	3	21
American-Indian	4	5	2	1	1	2	0	3	18
Asian	0	2	6	2	3	3	4	0	20
Hispanic / Latino	2	6	2	0	0	1	2	0	13
White	6	9	7	13	10	7	11	13	76
Multiracial	1	1	2	3	2	5	3	5	22
Not specified	0	0	0	1	0	1	0	0	2



Students came from 34 counties in Oklahoma during the first 8 years of Camp T.U.R.F.



Photo 2: Creating dish gardens at TLC Greenhouses in Oklahoma City, OK

MATERIALS AND METHODS

To determine the effects of Camp T.U.R.F. participation on student perception of college readiness and knowledge of and interest in horticulture careers, all participants were given identical pre- and post-assessments. Students took the pre-assessment before attending the summer academy, up to a month beforehand. The post-assessment occurred on the afternoon of the last day of the academy. Attendees were asked to circle their level of agreement for each statement on 5-point Likert-type scale where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Quantitative data were analyzed with SAS using PROC CORR, PROC FACTOR, and PROC GLM. Survey reliability was determined using Cronbach's alpha (0.9 for pre-assessment, 0.77 for post-assessment).



Photo 3: Investigating the composting process at the Regional Food Bank of Oklahoma City



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RESULTS

Table 2. Response Means of Pre- and Post-Assessments for Years 2010 Through 2017

Pre- and Post-Assessment Statements	Response Means	
	Pre- (N = 166)	Post- (N = 131)
1. I would like to go to college.	4.80	4.85
2. I would feel comfortable around other students at college.	4.23	4.38
3. I know how to find answers to my questions about college.	3.68	4.02***
4. I know how to apply to college.	2.99	3.60***
5. I know how to apply for financial aid.	2.58	3.15***
6. I know what classes to take to get ready for college.	3.49	4.02***
7. I have the skills I need to be successful in college.	3.88	4.08*
8. Horticulture careers are important to society.	4.08	4.41***
9. Landscape design involves creativity.	4.47	4.66**
10. Horticulture and landscaping careers can be fun.	4.22	4.36
11. Landscape architects can make landscaping eco-friendly.	4.27	4.42
12. There are a lot of different careers in horticulture.	4.01	4.58***
13. Science is something that only happens in a laboratory.	1.65	1.47
14. I feel comfortable doing science.	4.11	4.11
15. I am interested in a career in horticulture.	3.27	3.29
16. I am interested in a landscape contracting career.	3.09	3.04
17. I am interested in becoming a landscape architect.	3.18	3.13
18. I am interested in running a greenhouse.	3.16	3.11
19. I am interested in turf management.	3.11	3.03

*, **, *** Significant at $P \leq 0.05$, 0.01, and 0.001, respectively.



Photo 4: Making Landscape Architecture Models at OSU

CONCLUSIONS

The participants of Camp T.U.R.F. are on track to meet the goal of OSRHE - sponsored summer academies: to make success in college a logical and expected result for all attendees, especially those from groups underrepresented in STEM fields. Camp T.U.R.F.'s current college attendance rate is 76.6%, 20.6% higher than Oklahoma's state average (56%) among high school graduates. Currently there is one former Camp T.U.R.F. student majoring in Landscape Architecture at OSU; hopefully more will choose to follow their lead and fill the horticulture employment gap that currently exists worldwide.



Photo 5: Constructing a hoop house at Noble Research Institute, Ardmore, OK

