



Surveying Student Recruitment: a U.S. Perspective

Steven Frank, Las Cruces

Abstract

Surveying student recruitment is a key component to the success of any surveying program. Despite ongoing legislation in many states to require a university degree to become licensed as a professional surveyor, many universities face challenges when trying to recruit students into surveying programs. Recently, national organizations have stepped into the effort and there is now a multi-faceted approach to recruiting in the U.S.

1. Introduction

Surveying student recruitment has been a challenge for universities and colleges in the U.S. At times, recruitment has been so low that programs have been eliminated or undergone threat of elimination. This was particularly true during the early years of the new millennium. With new educational requirements in many states – requiring newly licensed surveyors to possess a 4 year university degree in surveying or a 4 year university degree with sufficient surveying course content – the supply of surveying graduates was not meeting the demands from employers. In the 5-6 years since the worst of the problem, things have improved due to a number of reasons. However, it appears that the biggest reason has been an active participation of the surveying profession in assisting surveying programs in student recruitment.

The influx of assistance from the professional sector came in stages: first at local level as surveyors visited schools and demonstrated surveying to elementary and secondary students; then at a state level as various state surveying associations began to produce visual aides to assist with student recruitment; finally the support went to national level as the National Society of Professional Surveyors teamed up with the National Council of Examiners for Engineers and Surveyors to produce a video with instructional materials to assist surveyors and others who go into elementary and secondary school classes to demonstrate surveying.

A second reason for a surge in students coming into surveying programs may be the rising income of surveyors in the US.

2. Historical Background

The problem begins with the change of surveying licensure requirements. Surveyors in the US are licensed by the individual states. To gain a license in a new state, one must meet the educational and experience requirements specific to that state. Each state also conducts a portion of the qualifying exams required to become licensed. Beginning in the 1980s states began to require that applicants for survey licensure possess a 4 year university or college degree with appropriate surveying coursework. Previously, a high school or trade school degree with technical surveying coursework and many years experience was sufficient to become licensed (it still is in several states). With the new requirement, several new surveying programs were started up – the number doubling over the last 20 years. While there was good initial recruitment into these programs, the students were primarily people working for survey companies or agencies who had a desire to become licensed. Over time that supply of students dwindled. Little effort was put into recruiting students directly from secondary schools as there were generally sufficient students to fill the programs. When the supply of students from surveying companies and agencies dried up, there were no strong recruitment programs in place to fill the void. Efforts to directly market to elementary and secondary school programs were primarily a reaction to falling enrollment in surveying programs. The survey profession became actively involved when educators stressed that time demands for academics did not allow the types of saturation marketing that would be needed to boost surveying student recruitment.

Added to the problem of dwindling supply of student was a problem of professional identity and

image. Many people do not understand what surveying is often confusing a land surveyor with someone who stands outside a store and asks what products shoppers have bought. The problem is further compounded by the lack of distinction between professional surveyors and surveying technicians. There is little distinction between an under-educated survey technician who performs menial surveying tasks and a professional surveyor who applies advanced knowledge and skill solve complex surveying problems. These distinctions needed to be carefully addressed within marketing approaches.

3. The Trig*Star Program

The Trig*Star program was started in 1984 by the National Society of Professional Surveyors (NSPS) under the umbrella organization American Congress on Surveying and Mapping (ACSM). It targets high school (secondary) students who are enrolled in trigonometry courses. Students at different high schools take an exam with practical problems of surveying solved by using trigonometry. Winners from each school then advance to a state competition. Winners from each state advance to a national competition. The winner of the national competition is given a cash prize of \$2,000 to attend college.

There was a problem that the winners of the national competition did not enter surveying programs when they went to college. Many were exceptionally bright students who chose other professions. During the late 1990s the program was changed to encourage winners to enter surveying programs. Top students were given 4 year scholarships to attend school if they chose to major in surveying.

Although the program did not produce expected results of getting Trig*Star winners to become surveyors, it did introduce trigonometry students to the advantages of knowing trigonometry. Several students who competed in Trig*-Star did go on to become surveying students. Recently a student was awarded the 4 year scholarship and is attending school.

The Trig*Star program is still affiliated with NSPS but for tax reasons incorporated as a separate organization. This allows Trig*Star, which runs entirely on donations from surveyors and others, the opportunity to allow donors to file tax exemptions on their donations. The Trig*Star program is active in most states in the U.S.

4. The PSLS Coloring Book

The first effort at surveying student mass recruitment at the elementary school level was a coloring book about surveying produced by the Pennsylvania Society of Land Surveyors (PSLS). The book came out in the late 1990s. This book, of line drawings which children could fill in with color crayons, told a brief but simple history and explanation of surveying (see Figure 1). The final page of the book mentioned the educational opportunity at Penn State University – Wilkes-Barre. The Pennsylvania society allowed other states to copy the book with changes to the last page to reflect local universities and colleges.

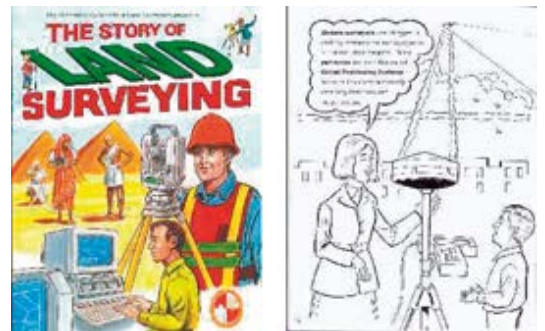


Fig. 1: The Pennsylvania Society of Land Surveyors (PSLS) coloring book

This program is still active however the level of promotion using the coloring book seems to have declined significantly since 2000.

5. The LSRP Recruitment Webpage

The Land Surveyor's Reference Page (LSRP) is an Internet website dedicated to surveying. It contains a plethora of information of interest to both surveyors and those curious about surveying. One of the pages on the site is titled "Promoting Land Surveying in Our Schools." This presentation was originally created by Dr. Charles (Chuck) Ghilani in 2003 as an activity under the ACSM Education Committee. Many university surveying programs link to this page as a part of their online recruitment efforts. The site gives a detailed description of surveying from a professional perspective, examples of survey plats, and links to many professional societies associated with surveying. This is a passive approach designed to let potential students "discover" surveying. The information is relatively simple and is designed to let primary and secondary school teachers incorporate the materials into their classroom.

Teacher Guide

FOR LANDS' SAKE: GEORGE WASHINGTON AS LAND SURVEYOR

Objectives:

- To discuss the importance of land ownership and the purpose of land surveying in the eighteenth century
- To read and interpret a transcript of an eighteenth-century land survey
- To reflect on the significance of George Washington's early surveying career and how it contributed to his personal development
- To survey an area of land and create a written or visual description of it
- To construct a piece of historical fiction (for example, a journal entry, newspaper article, or letter) that demonstrates an understanding of Washington's qualifications for and interest in becoming a land surveyor
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Fig. 2: Sample teacher's guide for integrating surveying lessons into K-12 education

6. The CLSA Recruitment Webpage

The California Land Surveyors Association has also developed a website entitled "Choose Your Path – Make Your Mark." This page has links and problems that elementary and high school educators can introduce into their classrooms. Several of the links go to the National Oceanic and Atmospheric Administration website where lessons on geodesy and GPS suitable for high school students can be found. A sample of one of the other links is given in Figure 2.

7. The NSPS/NCEES Recruitment Video

The National Council of Examiners for Engineers and Surveyors (NCEES) is an organization made up of members of the Engineering and Surveying licensing boards for the various U.S. states and territories. NCEES develops and administers national examinations in engineering and surveying for the individual states.

NCEES is primarily interested in promoting professional licensure for engineers and surveyors. Looking at the declining numbers of licensed land surveyors across the US, they were interested in the causes for this. Studies showed that most surveyors still aspired to become licensed but the number of potential surveyors was dwindling. NCEES worked with ACSM and NSPS to produce a surveying student recruiting video with a PowerPoint slide presentation. The project included scripts to be read by those presenting to students. There is an audio mode so that the presentation can be put on a computer in a continuous loop when presenters are in a mass setting such as an exhibit hall. This is an active

presentation meant to allow survey practitioners and academics to enter secondary school classrooms and promote surveying as a career. Figure 3 shows the cover of the NCEES presentation.

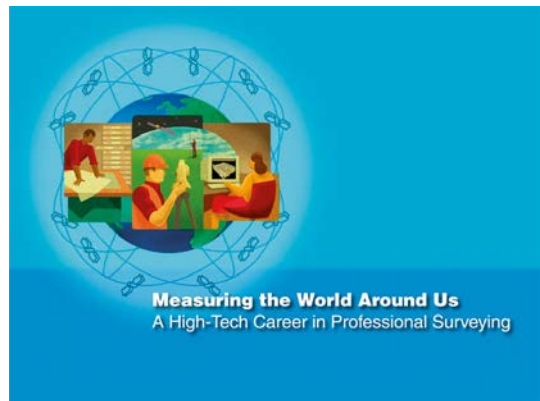


Fig. 3: The NCEES Surveying student recruitment PowerPoint presentation

The presentation is slanted towards the professional side of surveying. It includes relevant bits of information on job opportunities and salaries. It is especially successful when presented by a professional surveyor who can also recount his or her experiences in surveying and present local examples, such as plats and maps, of surveys.

8. Boy Scout Merit Badge in Surveying

The Boy Scouts of America have included a surveying merit badge for many years. The

requirements for earning a badge including the reading of topographic maps and the use of a compass and pacing to orient oneself on the map. This badge could be earned without the involvement of professional surveyors, however many scout authorities do look to include surveyors when working on this badge.

The California Land Surveyors Association (CLSA) has promoted the use of another Boy Scouts of America merit badge for surveying. To earn the badge, boy scouts must: 1) know the first aid procedures for various injuries that could occur when surveying; 2) mark and measure a tract of land; and 3) draw a plat of their field survey. This badge is meant for field and office interaction between professional surveyors and boy scouts. So far as is known, no similar program is available for girl scouts.

9. Discussion on Surveying Student Recruitment in the U.S.

The author, having spent many days at student recruitment centers and events, would like to note some personal observations about trying to recruit students into surveying. First, there is a problem of perception and identity for surveyors. I have had several parents of potential students who believe that surveyors only work as field technicians for civil engineers therefore they will have more money and prestige as civil engineers. This is not true and the NCEES presentation points out surveyors, on average, make more money than civil engineers in the U.S. This will be a problem that will take much more work to overcome.

The various approaches described above are used in combination but there is no unified plan for

recruitment. There are several instances of people and organizations duplicating work and egos often clash. While the surveying profession has now decided to assist in student recruitment, the assistance is limited to a few motivated individuals within the profession and does not, yet, represent a wide professional involvement.

10. Summary and Conclusions

Surveying student recruitment in the U.S. has been problematic. New requirements for 4 year degrees to enter the profession have changed the way that new professionals come into the field. The surveying profession had long left student recruitment up to the various universities until serious shortages in the profession appeared imminent. Professional involvement in student recruitment is now available in many forms, but it is an ad hoc approach that has no long-term strategy nor unified plan. Much more work is needed in the U.S. to bring more young people into the surveying profession.

References

- [1] *CLSA Boy Scout Merit Badge*: <http://www.california-surveyors.org/files/meritbadge.html>
- [2] *CLSA recruitment webpage*: <http://www.surveypath.org/>
- [3] *LSRP*: <http://www.lsrp.com/lseducation.html>
- [4] *NSPS/NCEES Recruitment video*: <http://www.nspsmo.org/>
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Contact

Dr. Steven Frank, Incoming Chair of FIG Commission 2, New Mexico State University, Las Cruces, New Mexico, USA
E-mail: sfrank@nmsu.edu