Growing Interest in the Workforce: Using Grant-Based High School Internship Opportunities to Recruit for the Agriculture Industry

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Introduction

The agriculture industry consistently needs knowledgeable and skilled employees to enter the workforce. In agriculture and related fields, 59,400 jobs open to college graduates annually; however, workplace demand exceeds the number of graduates (Fernandez et al., 2020; Truscott, 2021). According to the U.S. Bureau of Labor Statistics, job opportunities for agriculture graduates with expertise in science and engineering has increased from 27% to 31% between 2020 and 2025 (Fernandez et al., 2020). Internships model authentic workplace experiences providing students insight into potential career opportunities (Branco, 2022; Binder et al., 2015; Papadimitriou, 2014). Exposing high school students to different career paths helps them better navigate post-secondary education and the workplace. Furthermore, hands-on learning allows students to make better connections between curriculum and real-life applications, increasing motivation and academic rigor (Papadimitriou, 2014; Levine, 2010). Research also indicates laboratory internships aid students in communication and interpersonal skills while concurrently improving their attitudes towards science and increasing the likelihood they will enter scientific careers (Roth et al., 2009). Many grant initiatives include undergraduate internships. Favorable job prospects and the potential for personal and professional growth highlight the need to provide high school students with quality agriscience research opportunities.

How it Works

As part of the educational initiative for a Sustainable Agriculture Systems Grant, the Soil to Society (S2S) team created a summer research internship and course aligned to the different segments of the grant for high school students. The S2S grant specifically focuses on developing new varieties of crops with increased nutritional values, creating nutritionally enhanced meals attractive to consumers, determining population nutrition needs, and educating secondary students, producers, and the public about the advantages of nutritionally diverse crops.

The internship process began with S2S grant members indicating their desire to mentor a summer intern and submitting a project description. The application was open to interested candidates. Interns could participate at various university laboratories across Washington State. The internship opportunity focused on agriscience and family and consumer science career areas including projects on increasing iron and zinc concentration in wheat through biofortification, determining crude fiber of quinoa, comparing organic versus conventional treatments of soil, and investigating the influence of alternative grain flours on pancake quality. Candidates submitted the application, resume, letter of support from an agriculture or science teacher, and answers to essay questions about research experience and why they wanted to be an intern. Candidates also submitted a signed parent permission form and photographic consent. Interns were required to spend 20 hours on the course and 220 hours working on their research for a total of 240 hours.

Students selected for the summer internship applied to be non-degree seeking students at Washington State University and were enrolled in a 1-3 credit course focused best practices in responsible research, research writing, data collection, and communicating research. The grant covered the cost for one credit and interns paid the remainder if they wanted the additional two credits. Prior to the intern's summer research, they completed a Responsible Conduct of Research training course. The interns began the research course after public schools released for

summer. They participated in seven course session between June 26th and July 26th. Interns continued their work through the end of summer then participated in a poster symposium the last weekend in September. Family members, mentors, teachers, WSU faculty, and grant members were invited to attend the symposium. At the completion of the internship and course, the grant provided interns with a stipend of $1,500. Mentors and interns submitted feedback.

Costs and Resources Needed

The S2S grant funded by the United States Department of Agriculture Sustainable Agricultural Systems program covered the direct internship costs. Table 1 shows the cost breakdown.

Table 1

Resources and Costs for the S2S Summer Internship

Resources	Quantity/ Unit	Unit Cost (US Dollars)	Total Cost (US Dollars)
Graduate Student Stipend	1	4,500.00	4,500.00
Intern Stipend	5	1,500.00	7,500.00
Non-Degree Seeking Student Application Fee	5	35.00	175.00
Non-Degree Seeking Student Credit Fee	5	563.35	2,816.50
Internship Poster Prints	4	66.00	264.00
Poster Symposium Refreshments	various		100.00
Total			**15,335.50**

Results to Date

The S2S High School Summer Internship had five interns at two WSU locations across Washington State. The interns provided positive feedback about the course and internship experience in a follow-up survey. Many shared they were interested in similar research careers in the future. One intern who investigated the influence of different flours on pancake quality was asked to stay on the project after the internship concluded and was able to be a co-author on a paper submitted for peer review.

Future Plans and Advice

Increasing exposure of high school students to various agriculture professions, especially those in research, can provide a positive, educational way to recruit students to the agriculture industry (Beyl et al., 2016). High school internship experiences should be integrated into more grant-based educational initiatives. Based upon the feedback from mentors and interns, the following recommendations were created. Communication with the mentors should begin two months prior to the application opening. When communicating with mentors include an interest meeting with training resources and email communication through the experience. The mentors should provide a description of their project and a general list of responsibilities of the interns. Projects should involve interns in as many aspects of data collection, analysis, and communication as possible. The internship coordinator should begin advertising six months prior to the internship through educational listservs, websites, grant members and local schools. The duration of the course should be no shorter than six weeks with one or two course sessions per week.

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