Innovative Poster

MU Integrated STEM Internship Program (MU-ISIP)

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Introduction

Extension has access to cutting-edge scientific knowledge generated at land-grant universities (Seevers & Graham, 2012). Additionally, Extension's connections with local communities provide an avenue for undergraduate experiential learning opportunities (Condo & Martin, 2002). Building on these strengths, the MU Integrated STEM Internship Program (MU-ISIP) brings together faculty from University of Missouri Extension's Agricultural and Applied Economics, Animal Sciences, Plant Sciences, and Nutrition & Exercise Physiology to help address the problem of workforce development in the area of agriculture and food research. It also exposes university students to Extension work, which sometimes has limited visibility on college campuses.

Based on experiential learning, MU Extension's nine-week summer internship embeds undergraduate interns in research, Extension, and leadership and professional development experiences. This innovative poster addresses AAAE Research Priority 3.2: "What methods, models, and practices are effective in recruiting agricultural leadership, education, and communication practitioners and supporting their success at all stages of their careers?" (Roberts, Harder, and Brashears, 2016).

How it Works

Applications for the MU Integrated STEM Internship Program are available to any Missouri resident who has completed at least one year of at a public four-year institution, community college, or private college. Priority is given to first generation college students, women, and minority students. An attempt is made to select an equal number of University of Missouri and non-MU students. Based on applications, resumes, transcripts, and letters of recommendation, up to eight undergraduates are selected for the internship program each year. Students selected for the program are paid a stipend for their internship, and also receive a housing allowance and one hour of course credit.

The internship experience includes working on a research project alongside an Extension faculty research mentor at the University of University, as well as assisting regional Extension faculty members with programming and technical assistance around the state. By pairing interns with both a campus research mentor and field faculty mentor, they experience not only how research is conducted in an academic setting, but also how research is translated into educational programs and technical assistance. Research activities and regional involvement are determined based on faculty expertise, student interests and current project opportunities. Faculty mentors,

interns, and the program coordinator work together to make these decisions. Each intern receives a unique experience tailored to his or her interests, skills, experiences, and career aspirations.

Additionally, the program coordinator arranges leadership and professional development activities with campus faculty, staff, and industry professionals for the interns throughout the nine- week program. Time for individual reflection and processing through experiences with mentors is intentionally built into the internship program to help solidify learning. The 9-week internship concludes with interns presenting their research activities in poster format at the Summer Undergraduate Research Forum on the University of Missouri-Columbia campus.

Results to Date

- 37.5% of the 2019 interns indicated "large" or very "very large" gains in clarification of their career paths. Two of the eight interns from the summer of 2019 have expressed a desire to pursue an Extension career. Both of these individuals are first generation college students.

- 83% of the 2019 interns indicate that they are "likely" to pursue another research experience as an undergraduate student.

- 100% of 2019 interns indicate that their internship experience "exceeded their expectations".

- Nine students from four different colleges or universities applied for the 2019 internship program; 31 students from nine different colleges or universities applied for the 2020 internship program. This is a 344% increase in student applications over the inaugural 2019 program, and a 44% increase in institutions represented in the application pool.

To assess the longer-term impact of the project, an evaluation will be conducted annually to track all interns who complete the program (first will be sent in July of 2020). The email questionnaire will ask participants to report leadership involvement, STEM involvement, connection with Extension after the conclusion of the program, graduation status, and graduate school or career information.

Advice to others

- Be flexible

One of the reasons many Extension professionals enjoy their work is that no day is ever the same. Days often bring unexpected visits, events, or meetings. It is important for students to see this aspect of Extension work. We wanted to make sure that our interns were not so tied to a calendar that they could not "go along" with specialists to experience what life is like for Extension professionals. This approach gave them the opportunity to meet more citizens around the state and to network with industry leaders.

- Communicate regularly

Our intern cohort met with the program coordinator, the faculty research mentors, and a regional Extension faculty member each Monday morning. We talked through learning opportunities available to students and together planned a "tentative" weekly agenda for each student. However, there was a shared understanding that if other opportunities arose, the intern, mentor, and program coordinator could work together to amend the schedule.

- Be responsive to students' knowledge, interests, and experiences

We wanted our interns learn in a context that appealed to their interests and helped them advance in their field of study. Ideally, mentors and students should work together to determine research activities and field involvement. A successful example of this was Agricultural Economics and Rural Communities interns utilizing their knowledge and experiences with livestock production to conduct research on the feasibility of various methods of marketing calves. This strategy helped to further engage the interns, while also allowing them to connect prior livestock knowledge and experiences to new information about economics.

Costs/Resources Needed

Investing in an internship program of this nature is not inexpensive. Our work is made possible by a National Institute of Food and Agriculture, U.S. Department of Agriculture grant. Students in our program receive a $4,500 stipend for their internship. Additionally, they receive $3500 that can be used for housing and food, one academic credit, and parking on campus.

References

Condo, E. P., & Martin K. E. (2002). Health professions and Cooperative Extension: An emerging partnership. *Journal of Extension*, *40*(4), Article 4FEA2. Available at: https://joe.org/joe/2002august/a2.php

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