

Under/Grad Research: Establishing a Ph.D. Research Mentoring Program

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Introduction/Need for Innovation or Idea

Students who conduct an undergraduate research project can experience numerous benefits including increased faculty and student interactions, academic confidence, understanding and awareness of the subject area, understanding of and efficacy in the research process, and awareness of what graduate school is like (Adedokun et al., 2013; Bowman & Holmes, 2017; Russell et al., 2007). However, very few students in the Department of Agricultural Communication, Education, and Leadership (ACEL) at The Ohio State University pursue undergraduate research experiences.

Research can be a novel and complex concept for undergraduates and often the mentorship of undergraduate researchers falls to the academic/research faculty advisor. In their analysis of best practices for undergraduate-research mentors, Shanahan et al. (2015) identified developing the mentorship skills of graduate students as a key undertaking for faculty members engaged in the practice. Like faculty mentors, graduate students can create a sense of community within their research groups, model the characteristics of successful researchers, and help undergraduates make deeper connections through the research process (Shanahan et al., 2015). Additionally, Dolan and Johnson (2009) found that graduate/postdoctoral research mentors experienced an increase in research productivity, mentoring and/or communication skills, and in their understanding of being a scientist in academia. As potential future faculty members, doctoral students are ideal candidates to engage in undergraduate-research mentorship (Anekstein & Vereen, 2018).

To help increase the number of undergraduate students conducting research and lessen faculty workload when mentoring undergraduate researchers, the ACEL Ph.D. Research Mentoring Program was created. Through this program, undergraduate researchers were able to add another mentor to their research team. The mentorship program also provided ACEL Ph.D. students the opportunity to enhance their research skills through teaching and mentoring with the potential to reduce the workload of faculty advisors.

How It Works

The ACEL Ph.D. Research Mentoring Program was intended for Ph.D. students who did not have a paid research assistantship that might have included working with undergraduate students. Through this program doctoral students could mentor undergraduate students as they conceptualized, conducted, and disseminated a research project.

The doctoral student would mentor the undergraduate researcher in conjunction with the undergraduate student's faculty/research advisor. The faculty/research advisor and Ph.D. student would work together to determine what the mentor responsibilities would comprise based on the needs of the undergraduate student(s) and the research team dynamics. No formal guidelines were established through the program to dictate what the mentor responsibilities should consist of to allow for flexibility and autonomy of the research team.

The Ph.D. student was responsible for notifying the department's Undergraduate Research Coordinator when the research team was formed. The Ph.D. student also notified the coordinator, through a signed form, when the research was to be disseminated/completed. At the completion or dissemination point the Ph.D. was provided a \$200 stipend for their mentorship.

Results to Date/Implications

To date, three Ph.D. students mentored six undergraduate researchers through project completion. The mentored undergraduate research projects have resulted in one university-wide, three college-wide, one state-wide, one regional presentation, and one national conference accepted poster.

Taking an active role in the mentoring process provided experiential learning opportunities that supported and built upon the Ph.D. students' prior research knowledge and experiences. They were able to guide the undergraduates as they reviewed literature to form the research problem, aligned their research problem with theory, and designed methods to address the study's purpose. The Ph.D. students also trained and supervised their mentees through data collection and analysis to help the undergraduate students summarize their findings, implications, and recommendations. Additionally, the Ph.D. students gained a better understanding of the research advising and mentoring process, which might better prepare them for future careers in academia. The doctoral students were able to work through establishing rapport with undergraduate researchers, fulfilling a variety of roles including coach and motivator. Further, the Ph.D. students worked through setting individual and team expectations, managing project deadlines, coordinating research meetings, and providing feedback on research progress. The Ph.D. students gained a better appreciation for the advising process through the ACEL Ph.D. Research Mentoring Program as noted through reflective conversations between the Ph.D. students and their graduate advisers. Of note, one Ph.D. student said that "I feel like I was able to create expectations for myself as an advisor" when reflecting on the benefits they took away from serving as a mentor. Finally, the program helped reduce the workload of faculty advisers. Faculty advisers still provided guidance throughout the research process, but the time required of them was greatly reduced as the Ph.D. students took the lead on advising the undergraduate researchers.

Future Plans/Advice to Others

The ACEL department plans to continue supporting undergraduate researchers' mentorship through a team approach that includes both faculty and doctoral students. We currently have two Ph.D. students mentoring two undergraduate researchers on two separate projects. As departments consider providing research mentorship opportunities to Ph.D. students, we recommend developing a formal mentorship program to connect interested Ph.D. students to this opportunity to form a research team and mentor an undergraduate researcher while also being compensated. Further, early in the mentorship process, we recommend that the team establish a meeting schedule and the roles and responsibilities of all team members. In establishing the meeting schedule, we recommend that specific time be dedicated to discussing mentoring strategies, research methods and design, and the project progress between the faculty member and Ph.D. student.

Cost/Resources Needed

Ph.D. mentors were awarded a \$200 stipend at the dissemination point or completion of the research project as part of the ACEL Ph.D. Research Mentoring Program. While a monetary incentive is not necessary, we deemed it appropriate to compensate the doctoral students for their time and guidance.

References

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