

A Comprehensive Strategy to Promote Undergraduate Research at the University of Central Arkansas

William J. Lammers

University of Central Arkansas

The University of Central Arkansas is a regional, comprehensive, public university situated about 30 miles north of Little Rock. The University is located in the city of Conway with a population of 55,000. The University enrolls approximately 10,500 undergraduate students and 1,500 graduate students. Most undergraduate students reside on or near campus and most are traditional college age. The six colleges offer bachelor's degrees in 56 different areas, master's degrees in 32 areas, and doctoral degrees in four areas. The university employs 450 full-time instructional faculty and 180 part-time instructional faculty. The Carnegie Foundation classifies the University as a Master's/L institution. The Department of Psychology & Counseling has 21 full-time faculty and 360 undergraduate majors. During the past 15 years or so we have engaged in strategic efforts to promote undergraduate research. Some of the strategies involve new initiatives and others involve revisions to current practices. The different areas in which we have mechanisms to promote undergraduate research include advising, curriculum, travel to conferences, recognition, financial support, and department atmosphere.

Advising

Psi Chi National Honor Society and Psychology Club

Our department maintains an active chapter of the Psi Chi National Honor Society that holds meetings in conjunction with the Psychology Club. The faculty advisor encourages officers to schedule several meeting topics that involve discussion of research. Topics include presentation of a faculty member's research, an overview of faculty research in the department, announcements regarding opportunities to assist faculty with their research, discussion of the value of undergraduate research for getting into and being successful in graduate school, and discussion of research-related careers in psychology. Although we have not done so yet,

having students who have conducted research present their findings at these meetings would be interesting.

Freudian S.L.I.P.S.

For about 15 years, our department has invited psychology majors with the highest academic credentials to join a special advising group called the Freudian S.L.I.P.S. (Searching for Life In a Ph.D. School) See Lammers (2001) for a detailed description. This informal seminar group of approximately 20 students meets with a faculty mentor twice a month during the spring and fall semesters to discuss all aspects of getting into quality graduate programs. Beginning in their freshman year, faculty encourage these students to get involved in research, attend conferences, present research at conferences, and submit research for publication. We clearly articulate the benefits of these actions. Having the best freshman majors work as research assistants for faculty is not unusual nor is students' attendance and presentation of research the following year at conferences.

The faculty in our department are very aware of this group of students and know that they are an excellent source of quality research assistants. When these students express an interest in getting involved in research, a faculty mentor e-mails all other faculty in search of a placement. When our faculty are looking for an undergraduate student to work as a research assistant or to direct a project, they will routinely contact the S.L.I.P.S. faculty mentor, who then arranges meetings between the faculty member and student candidates. Such a system provides the proverbial win-win situation for faculty and students.

Curriculum

General Psychology course

As do faculty in many psychology departments, we use our introductory course as a primary research participant pool. A syllabi for every section of the

General Psychology course contains a description similar to the following:

Enrichment Activities: To encourage you to experience psychology beyond the textbook and the classroom, 5% of your grade will be based on the completion of two “enrichment activities” (each worth 2.5%). You may choose which enrichment activities to complete from the following:

Participation in psychological research: Much of our knowledge of human behavior and mental processes is based on people who volunteer to participate in psychological research. Help a psychologist and experience what it is like to be a subject in a psychology experiment. All scheduling of psychology experiments is handled over the Internet. To sign up for a study, go to: <http://experimatrix.com/uca>. Psychology experiments are worth “credits.” Each credit is equal to 1 enrichment activity. **Important:** If you miss a scheduled experiment, you will receive a penalty equal to the credit value of the experiment. You must make up the penalty (by completing an equivalent enrichment activity) before completing the rest of your enrichment activity requirement. For example, if you have not completed any enrichment activities and receive 1 penalty, you must now complete 2 enrichment activities; the first will remove the penalty (but is worth no credit), whereas the second and third (worth 2.5% each) will complete the requirement. However, if you cancel at least one hour prior to the experiment, you will be removed from the schedule and not penalized. Also, if you show up but decide not to participate, you will not be penalized. All psychological research has been reviewed and approved by the UCA Institutional Review Board to ensure the rights of participants. Participation is voluntary. If at any time during a study you wish to discontinue participation, you may do so without penalty. All data you provide will be confidential. Before completing any study, you must consent to participate based on information regarding the procedures and risks of the study. All studies will involve little or no risk of psychological or physical harm. (*Note: Alternative activities are then described that can also be used to meet the enrichment activities requirement.*)

Such a policy has several benefits. First, undergraduate students who are conducting research have a readily available participant pool. Second, most of our psychology majors and minors get direct exposure to psychological research very early in their academic careers. As noted in the description above, our department subscribes to an online service for the recruitment of research participants. The service includes posting of research opportunities, easy sign-up procedures, and automated e-mail reminders prior

to testing sessions. This system facilitates several steps in the research process for everyone who conducts research in our department, including our undergraduate student researchers.

Research Methods course

Similar to many psychology programs, ours requires a research methods course subsequent to a statistics course. A substantial portion of the methods course requires that each student develop a formal research proposal in APA format. Near the end of this course, the instructor encourages students to consider taking the Independent Research course to conduct their study.

Research Methods Laboratory course

Psychology departments use different models to teach the statistics/methods/lab sequence, and there is significant variability in how departments incorporate the lab component into the curriculum. Various models include the lab component as part of the methods course, the lab component as a separate 1-hour course taken concurrently with the methods course, the lab component as a separate 1-hour course taken subsequent to the methods course, and the lab component as a separate 3-hour course taken subsequent to the methods course. Fifteen years ago, our department decided to enhance the research experience of our undergraduates by increasing the lab component from a 1-hour course subsequent to the methods course to a 3-hour course subsequent to the methods course. This change had a very positive impact on the quantity and quality of the research experience for our students. Because of the increase in contact time, lab students routinely conduct quality research that they present at state and regional conferences. We have had several students submit their manuscripts for publication, and a few of them have published in student research journals. Recently, we have made efforts to encourage more students to present and publish their work.

The specific format for our Research Methods Laboratory course varies to some degree across instructors, but I will describe my approach. The lab class meets in a classroom with 20 networked computers containing research design and statistical analysis software. This technology creates opportunities for students to conduct cutting-edge research with precise control. Students work in groups of three to undertake all steps in the research process, including topic development, literature gathering and review, formulation of hypotheses, research design, ethics approval, participant sign-up,

data collection, data entry, data analysis and interpretation, and dissemination of findings.

The dissemination takes three forms. Students prepare a complete APA research manuscript, present their study in a poster session, and make an oral presentation using PowerPoint. During spring semesters, I have also asked all of the students to present their research at a state conference for psychology students (ASPS-Arkansas Symposium for Psychology Students). Although this experience creates some degree of anxiety, students' sense of accomplishment after their presentations is very rewarding. Finally, I encourage those students with excellent research projects to present their research at a regional conference (SWPA-Southwestern Psychological Association) and to submit their manuscript for publication to a student journal (e.g., *Journal of Psychological Inquiry (JPI)* and the *Psi Chi Journal for Undergraduate Research (PCJUR)*).

Independent Readings course

The departmental curriculum includes an Independent Readings course that students can take for one, two, or three credit hours. Students identify a topic they would like to explore and seek a faculty member to serve as their mentors on the project. The mentor and student arrange a meeting schedule and develop a set of objectives. Sometimes the primary objective involves a comprehensive literature review manuscript. More often, the primary objective is a complete research proposal that will serve as a prelude to the student conducting independent research. The course provides a valuable opportunity for students to explore an area that fascinates them, to experience one-on-one mentoring relationships, and to prepare to conduct independent research.

Independent Research course

The Independent Research course often follows student completion of Independent Readings. Students can take the Independent Research course for one, two, or three credit hours, and the course is structured very similar to the Independent Readings course, including one-on-one mentoring. The course's primary objective is successful completion of a research project and associated research manuscript. As with other student research projects, faculty encourage students to present their research at conferences and, if appropriate, submit manuscripts for publication. As an alternative to the above format, students can take Independent Research to receive course credit for serving as a research assistant on a faculty research project. Student's degree of

involvement corresponds to the number of credit hours taken.

Undergraduate Scholar Program

Our students have the opportunity to receive the distinction of Undergraduate Scholar in Psychology by completing an undergraduate honors thesis. The usual sequence of events involves students taking Independent Readings to develop a research proposal, presenting their proposal to a departmental committee for approval, taking Independent Research to conduct the study, and presenting their final research manuscript to a departmental committee for approval. The faculty designate students who are successful as an Undergraduate Scholar in Psychology in the graduation booklet and on their diploma. We encourage these students, in particular, to present their research at conferences and to submit their manuscripts for publication.

Travel to Conferences

For about 15 years, department faculty have encouraged and coordinated student travel to at least two conferences a year, most notably the ASPS and SWPA conferences. We notify students about these conferences and encourage them to attend and make presentations. Faculty help coordinate travel arrangements for students, and the department provides financial assistance. Our department is committed to providing at least some financial assistance to each student and often pays all expenses for students who present their research at conferences. Faculty who accompany the students make an effort to introduce students to the events and opportunities available. Students who attend these conferences often become motivated to conduct their own research and to make conference presentations the following year.

Recognition

Our department is developing strategies to provide more public recognition of our undergraduates who conduct and present research. At the end of each semester, students display their research posters in hallways near the department office and classrooms. We are making efforts to take photos of students at conferences, students with their posters, and students making oral presentations. There will be displays of these photos on a bulletin board and on the department Website. We currently display student publications in a wall case in the

department and plan to highlight such accomplishments on the department website.

Financial Support

The University of Central Arkansas provides financial support for undergraduate research at three levels. At the university level, the Sponsored Programs Office maintains a student research fund to which students can apply for money to support their research. This office also encourages and coordinates student proposals for state undergraduate research fellowships. The Arkansas SURF (Student Undergraduate Research Fellowship) awards support both students and faculty mentors for their research efforts.

At the college level, the dean maintains a pool of money to support undergraduate research. The dean provides a percentage of matching funds for students who apply to the university's student research fund. In addition, the dean recently provided support for the ASPS conference that our department sponsored.

At the department level, faculty in general and the department chairperson in particular continue to support the use of departmental funds for undergraduate research. As already noted, the department provides significant funds for students to travel to conferences and is extremely supportive of students who present their research at the regional conference. In addition, students can request funds from the department to support research projects that may involve modest expenses. For student projects that are more expensive, the department supports a percentage of matching funds for students who apply to the university's student research fund. Like our dean, the department chairperson recently provided support for the ASPS that we sponsored.

Department Atmosphere

Clearly, our department encourages and supports undergraduate research. However, this achievement did not happen by accident and requires a certain level of vigilance to maintain. The department chairperson provides leadership and incentives, and a core group of dedicated faculty continue to extol the values of undergraduate research to students and other faculty. This process occurs even before hiring

faculty. We ask applicants for full-time faculty positions about their attitude toward involvement of undergraduates in research and their willingness to mentor such students. We remind current faculty that high quality undergraduates are ready and willing to be research assistants. We encourage faculty to mentor undergraduates in Independent Readings and Independent Research and to promote the undergraduate scholar program. The department chairperson supports such mentoring when scheduling teaching loads.

Faculty involvement in undergraduate research extends beyond the walls of the department. Faculty serve in such roles as Associate Editor for *JPI*, reviewer for *JPI*, Associate Editor for the *PCJUR*, President of SWPA, State Representative of SWPA, and host for the ASPS conference. An atmosphere that includes faculty who value, encourage, and promote undergraduate research is critical to student engagement in research. Student research will simply not happen without it.

Summary

Where there are dedicated and proactive faculty, there will be student research. However, for student research to extend beyond the relatively few students who work with those faculty, a more comprehensive departmental strategy is crucial. As with our department, the strategy may include creative advising practices, a system for mentoring relationships, curricular opportunities and incentives, availability of research participants, organization and financial support for travel to conferences, mechanisms for recognition of student research, financial support for student research, and support for faculty who mentor students. Efforts to implement such a strategy are rewarded by the students' enhanced educational experiences and accomplishments.

Reference

Lammers, W. J. (2001). An informal seminar to prepare the best undergraduates for doctoral programs in psychology. *Teaching of Psychology*, 28, 58-59.