

LEARNING OUTCOMES

Undergraduate Research Learning Outcomes

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- Identify and utilize relevant previous work that supports their research
- Articulate a timely and important research question or creative objective
- Identify and utilize appropriate methodologies to address the research question or creative objective
- Meet the relevant field's standards for the responsible conduct of research, and effectively navigate challenges that arise in the research process
- Work collaboratively with other researchers, demonstrating effective communication and problem-solving skills
- Present the research effectively in a conference setting and a written publication
- Reflect constructively on their research experience, identifying what was learned, personal strengths and opportunities for growth, and how the experience informs their future educational and career goals

Learning Outcomes Assessment

Student Self-Report Data: As a condition of acceptance of the Undergraduate Research Opportunities program (UROP) award, a small grant, or a travel grant, students agree to complete an online 'final report' of the experience. They are asked to indicate the extent to which they agree that their undergraduate research experience has helped them to meet each of the learning outcomes. Response options are: Strongly Disagree, Disagree, Agree, Strongly Agree. In addition, students who apply for the Undergraduate Research Scholar Designation (usually in their final semester before graduation) are asked to indicate the extent to which they agree that their undergraduate research experience has helped them to meet each of the learning outcomes.

Faculty Mentor Report Data: Faculty mentors are also asked to complete a final report; they are asked to indicate the extent to which they agree that "through participation in UROP this semester under your mentorship", the student has met each of the learning outcomes.

We calculate proportion 'agree' scores for each of our learning outcomes.

Poster Presentation Evaluations: At the annual **Undergraduate Research Symposium**, poster presentations are evaluated by faculty, graduate student, and postdoctoral researcher raters using **this**

rubric.

We use learning outcomes data in our annual program review process to determine the extent to which students involved in these programs achieve our learning outcomes. To the extent that students do not meet the learning outcomes, we adjust our programs accordingly. By virtue of asking students and their faculty mentors to interact with our learning outcomes via the final reports detailed above, we enjoy the additional benefit of communicating our values and goals as an office to our stakeholders. Thus, the learning outcomes assessment process in and of itself has the ability to effect positive change.

Undergraduate Research Leaders Learning Outcomes

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- Identify and address existing gaps in education/experience for students (selves and peers)
- Work collaboratively with other student leaders, demonstrating effective communication and problem-solving skills
- Demonstrate high-quality advising skills - communicate effectively with a variety of audiences; identify and articulate effective approach to communication according to individual advisees' needs; articulate research/project/program specific knowledge clearly to advisees; be sensitive to advisees' personal information; support advisees in achieving OUR learning outcomes
- Demonstrate leadership and professional skills requisite for future academic and professional pursuits (e.g., peer review of grant/award applications)
- Develop/Increase confidence in academic, personal, and professional skills related to job duties

Self-report data: Each year the Leaders are asked to answer a brief survey at the end of the academic year that indicates the extent to which they agree that their Leaders experience has helped them to meet each of the learning outcomes. Response options are: Strongly Disagree, Disagree, Agree, Strongly Agree.

OUR Staff Report Data: The Undergraduate Research Advisor tracks the Leaders' contributions to the Undergraduate Research Education Series (in terms of the topic, timeliness, and execution of the addition), suggestions for and completion of professional development events, and holds regular meetings with the Leaders about their progress through the program. At the end of the academic year, the Advisor conducts a reflective interview with each Leader to gauge their progress and provide feedback to the Leader about that progress.

Undergraduate Research Advising Learning Outcomes

At the end of an Advising appointment, students will be able to:

- Identify the process, requirements, and deadlines for engaging in research and OUR & Capstone programs, and how to find this information on the website.
- Identify and access other relevant University resources.
- Identify a set of individualized next steps for their involvement in OUR/Capstone programs.
- Articulate the value of a research/capstone experience for their future academic, personal, and career goals.