

High-Impact Educational Practices Undergraduate Research

Description of Undergraduate Research from AAC&U: “Many colleges and universities are now providing research experiences for students in all disciplines. Undergraduate research, however, has been most prominently used in science disciplines. With strong support from the National Science Foundation and the research community, scientists are reshaping their courses to connect key concepts and questions with students’ early and active involvement in systematic investigation and research. The goal is to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions.”

Definition of Undergraduate Research: KSU uses the definition from the [Council on Undergraduate Research \(CUR\)](#): “An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline.” In other words, the students participate in co-creating knowledge in the discipline, and their scholarship has the potential to make a contribution to the field by being disseminated to the academic community.

The word “research” can mean different things under different circumstances (Healy & Jenkins, 2009). For example, students can learn about research in their field in survey courses, such as Introduction to Sociology or Biological Principles. Students can develop research skills – such as using the library to locate primary source material, designing experiments, and analyzing data – in courses on methodology or statistics. They can practice conducting experiments in laboratory courses. These experiences are important for building a research foundation for students, often called “[scaffolding](#)” in the literature. However, in order to be considered a true undergraduate research experience, the course must involve students doing original research projects with a plan for dissemination (such as a publication or conference presentation).

Characteristics of an Engaged Learning Undergraduate Research Experience

1. The research is supervised by a faculty member who has the necessary skill set to effectively mentor research projects in this course.
2. The research projects meet the ethical guidelines for responsible conduct of research. Projects involving animal or human subjects must undergo IRB approval, and the faculty member and students are (or will be) certified through the appropriate CITI training. For more information, visit <http://research.kennesaw.edu/our/faculty/ethics-and-undergraduate-research.php>
3. The undergraduate research experience is appropriately scaffolded. In other words, students have learned foundational information in previous courses or research experiences (for example, research design in this discipline, statistics, lab techniques, scientific vocabulary). If they have not, there is a plan regarding how to develop these skills in the context of this course.

4. The syllabus contains a list of measurable learning outcomes geared toward undergraduate research in this discipline. A possible list of outcomes can be found here: <http://research.kennesaw.edu/our/faculty/learning-outcomes.php> (note that this list is not exhaustive, and it is unlikely that all of these would be appropriate for any given research project).
5. The syllabus contains an assignment in which students reflect on their undergraduate research experiences. More information on reflection can be found at the “It’s About Engagement” [website](#).
6. There are frequent opportunities for students to receive feedback (by [peers](#) and/or the instructor) at different phases of the research.
7. If the undergraduate research is a group, rather than individual, project, then the project is structured according to [best practices for collaborative projects](#).
8. The research projects have the potential to make an original contribution to the literature in this discipline.
9. There is a tangible product at the end of the experience (paper, poster, oral presentation, etc.). There is a plan to disseminate this product publicly (peer-reviewed publication, presentation at a professional conference or on-campus symposia, etc.). It is possible that the dissemination will occur the following semester; this may preclude some students from participating. However, all students should have the opportunity for presenting or publishing their undergraduate research work.

For more information on integrating an undergraduate research experience into a course, please visit <http://research.kennesaw.edu/our/faculty/intergrating-research-projects-into-a-course.php>