Using Course-based Undergraduate Research Experiences to Diversify STEM

AAAS-IUSE Workshop | October 17th, 2023

Takeaways, Citations, and Discussion Questions

1. Why should we incorporate CUREs into undergraduate curriculum?

*CUREs can increase the number of students who can get involved in research and make access to research opportunities more equitable. CUREs can support student’s content knowledge, research skills, motivation and interest in science, and persistence in science majors and careers.*


2. What makes a CURE “real research”? 

*Key elements of a CURE include: Scientific Practices, Collaboration, Iteration, Novel Discovery, and Broader Relevance and/or Impact. Discovery and Relevance are the elements that make a CURE a “real” research experience, and distinguishes CUREs from other lab curriculum.*


3. Things to consider when teaching a CURE

*Instructors need to balance roles as a teacher and a research mentor, supporting students as they develop independent research skills. If you are working with teaching assistants to teach your CURE, you will need to consider how you can help them develop these instructional skills.*

Papers on Faculty CURE Instructors:


Papers on Teaching Assistant CURE Instructors:


Goodwin, E. C., Cary, J. R., & Shortlidge, E. E. (2022). Not the same CURE: Student experiences in course-based undergraduate research experiences vary by graduate teaching assistant. *PLOS ONE*, 17(9), e0275313. [https://doi.org/10.1371/journal.pone.0275313](https://doi.org/10.1371/journal.pone.0275313)

4. Things to consider when designing a CURE

*Balancing pedagogical goals and research goals is key to developing a strong CURE.*


5. Do we know if CUREs actually provide equitable research experiences for students?

*We need more education research to improve our understanding of whether CUREs fully meet the goals of diversifying participation in undergraduate research!*


Discussion Questions:

1. If you develop or teach a CURE at your institution, what barriers would/do you face? What would be necessary to address those barriers?

2. In your CURE, how would/do students engage in novel and broadly relevant research? Does the CURE research project leverage or complement your own research interests?

3. What are the research goals of your CURE? What are the teaching goals of your CURE? How do they influence each other?

4. How could you adapt your CURE so that the research leads to a product that students have some ownership of? *e.g.,* publications, database contributions, community reports.