

QEM Network
HBCU-UP LDI

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INTEGRATING RESEARCH AND EDUCATION

What is Integrating Research and Education

- ⦿ Not a “tack on” to your research project
- ⦿ The best integration is mutually enhancing – research enhances the education activity, education activity enhances the research
- ⦿ Happens at different levels of education and different levels of formality

Issues to Consider

- ⦿ Where do most of your education activities take place?
 - Lower division courses for non-majors
 - Lower division courses for majors
 - Upper division courses
 - Graduate courses
- ⦿ Where COULD some of your education activities take place
 - Middle or high schools?
 - After-school or enrichment programs?
 - Teachers
 - The public

Standard Integration

- ⦿ Use graduate students on your research project to enhance the work and teach them how to conduct research in your field
- ⦿ Develop and teach a graduate or upper division elective course on your research topic
- ⦿ Not as standard, but becoming more common
 - Undergraduates work on your research project to enhance the work and teach them how to conduct research in your field

Non-Standard Integration

- ⦿ Prove a theorem in a different way to illuminate a particular aspect of mathematical proof
- ⦿ Train and use high school science students to collect field data in their neighborhoods for study
 - Develop a web-based data portal so they can see how their data contribute to the overall results
- ⦿ Creating a new software coding language that highlights particular aspects of writing code and is useful for your own work

What if your research is ON education?

- ⦿ That is not necessarily an integration of research and education
 - Easy for the education activity to advance the research, but not always the other way around
- ⦿ To be mutually enhancing, the research should inform the education and vice-versa
 - Using research results to inform the design of a module/unit/course, and studying its effects

Evaluating the Impact of Integrating Research and Education

- ◎ How do you evaluate the impacts of the research on education and education on research?
 - Must have a goal to evaluate whether the goal was reached
 - For example, increasing **interest** among high school students while increasing the **amount** of data you were able to collect

Questions?