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**Extended Abstract**

 Embedding inquiry driven research in undergraduate courses allows integration of core concepts and competencies necessary to developing scientific thinking and lab skills. These are critical skills for undergraduates to be successful in science careers and for admission into graduate school. However, there are only a handful of examples of collaborative CUREs in Biology where students have an opportunity to connect with a network of researchers outside of their own institution, and none in the field of parasitology. In Spring 2021, we piloted a mini-CURE where student groups from University of Mary Washington and Georgia State University collaboratively completed research projects as part of a research-intensive course on Molecular Parasitology. The benefits of this approach were immediately obvious as students interacted across institutions, learned from each other’s disciplinary expertise, and informed their own research with data collected by their collaborators. It provided enrichment to the course by adding networking opportunities as well as cross-disciplinary knowledge sharing. We present here our CURE model as a way for other educators to design and implement similar cross-institutional interdisciplinary CUREs that can be modified to align with their research expertise.

 The benefits of Course-based Undergraduate Research (CURE) are numerous and well documented. For students at Primarily Undergraduate Institutions (PUI), these provide high-impact research experiences that can culminate in retention in STEM careers and motivation to pursue graduate level education. They provide opportunities for students to make discoveries, collaborate, engage in meaningful research and develop a sense of ownership of their lab work. For faculty, especially at PUI, these provide tractable models of modern, collaborative science and move toward the complex, interdisciplinary nature of scientific investigation as an effective platform for integrating the goals of research and education. A wide variety of successful CUREs have been developed with different research themes, however only a handful of CUREs currently prioritize on the benefits of collaborative research across institutions. Two collaborative CUREs that are widely reported and highly successful are the malate dehydrogenase CURE (Bell et al. 2020) and the HHMI SEA- PHAGES CURE (Staub et al. 2016). Our CURE, Experiential Collaborative Parasite Research across institutions (ECoPaR) provided students an opportunity to engage in a cross-institutional, cross- disciplinary research experience and effectively contribute to ongoing Kinetoplastid research. This collaboration was between students and faculty of University of Mary Washington, Georgia State University and Albright University.

**Table 1. Number of aquatic insects in stream sample**

|  |  |  |
| --- | --- | --- |
| **Pollution-intolerant** | **Intermediate** | **Pollution-tolerant** |
| \_\_ caddisfly larvae | \_\_ beetle larvae | \_\_ blackfly larvae |
| \_\_ dobsonfly larvae | \_\_ crane flies | \_\_ midge larvae |
| \_\_ mayfly larvae | \_\_ damselflies |  |

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**Figure 1.** Typical results for simulated growth of catfish as a function of protein content of the diet. Growth was simulated in tanks with temperature set at 25˚C, oxygen set at 10 mg/liter, and with a feeding rate which was varied to match the feed consumption rate of the fish.

**CITED REFERENCES**

Banaji MR, Greenwald AG. 2013. Blindspot: hidden biases of good people. New York: Random House.

Bednarski AE, Elgin SCR, Pakrasi HB. 2003. An inquiry into protein structure and genetic disease: introducing undergraduates to bioinformatics in a large introductory course. Cell Biol Educ. 4:207-220.

Neumann M, Provart N. 2006. Using customized tools and databases for teaching bioinformatics in introductory biology courses. In: O'Donnell MA, editor. Tested studies for laboratory teaching. Volume 27. Proceedings of the 27th Workshop/Conference of the Association for Biology Laboratory Education (ABLE). p. 321-328. http://www.ableweb.org/volumes/vol-27/20\_Neumann.pdf

Schneider TL, Linton BR. 2008. Introduction to protein structure through genetic diseases. J Chem Educ. 85(5):662-665.

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**Link to Supplemental Materials:**

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