

ESA2019

LOUISVILLE

4: A model for providing intense and meaningful ecological research experiences to 1st and 2nd year undergraduates at an urban Massachusetts community college

Tuesday, August 13, 2019

09:00 AM - 09:20 AM

📍 *Kentucky International Convention Center - L006*

Background/Question/Methods

Substantial published work supports the premise that undergraduate research experiences are beneficial to students in a variety of ways. However, there is little evaluative information available to guide the design and implementation of such programs. Undergraduates often do not have research opportunities until late in their academic careers and even then, they may be relegated to menial tasks that do little to promote intellectual or professional growth. Some institutions promote projects that are not held to the standards expected in the workplace, and thus do not prepare the student for professional success. Furthermore, employer surveys suggest that college graduates are lacking in so-called “soft skills,” including communication, problem solving, and critical thinking. The present work describes a plan for providing early undergraduate research experiences in ecology. This model achieves the dual benefit of increasing students’ functional abilities, while also providing insight into the core concepts of ecology and environmental science, regardless of students’ ultimate choice of degree or career. This model differs from most undergraduate research opportunities in that it centers on a permanent research project that is not dependent upon any one faculty member at the college.

Results/Conclusions

In this example, Massasoit Community College in Brockton, MA, maintains a research program that focuses on urban and suburban land-use practices effects on local ecosystems with a focus on native pollinator communities. The flexibility of having a group of 3 to 5 full- and part-time faculty mentors allows a variety of mentoring styles and sharing of the workload to fit individual faculty schedules. The consistent participation of between 15 and 20 student researchers allows completion of sufficient field work to allow meaningful scientific progress, while also targeting improvement in scientific literacy, critical thinking and other key soft skills. Specific training on data management, public speaking, and scientific writing is embedded into the process of producing quality work. Consistency is maintained by a permanent administrative team member who serves as the students’ supervisor and helps maintain constancy of the project and appropriately high standards. Each member of the paid student research group has an individual performance review each semester and is aware of the possibility of discipline (rare) or dismissal (extremely rare) for poor performance. Indicators of success include robust increases in students’ skills and abilities and an almost 100% retention and transfer rate.

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