

RESEARCH SUMMARY

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Introduction and Objectives

Insects are readily available and easily manageable subjects for the study of biological principles and processes ranging from genetics and reproduction to behavior, ecology, and environmental and socioeconomic impacts in daily life. The use of insects provides an exceptionally broad array of opportunities to focus on the application of biology to solving real-world problems. A mutually beneficial relationship exists between institutions of higher education and their communities. Prioritizing multicultural literacy, citizenship, and education/experience through entomological service-learning could be of tremendous benefit to our students' futures. Service-learning, an experiential pedagogy, engages students and faculty to actively participate in their surrounding communities in educationally meaningful ways. Insects are ideal models for demonstrating a broad array of biological and ecological concepts while providing opportunities to focus on the application of biology to solve real-world problems in local communities, as well as those of the international community at large.

Critical components for creating an environment of increased academic engagement at UGA are service-learning and study-abroad opportunities for undergraduate students. A partnership between the Classic City High School Performance Learning Center (PLC) and the Consortium for Better Teaching and Learning (CBTL), a group of University of Georgia faculty, staff and students interested and engaged in service-learning, was established in order to cultivate dialogue and projects between Classic City and UGA. The first year of the partnership involved four projects between four disciplines; Political Science, Entomology, Business and Adult Education. The current service-learning project, "An Outdoor Classroom", involves Entomology, Landscape Architecture, Horticulture and Art Education. University students, faculty and staff in these subject areas at UGA work with teachers and students from Classic City in similar areas towards a set of mutually established objectives while actively engaged in service-learning.

There are several goals of entomology outreach & service-learning which include:

- Improve science experiences and content knowledge through entomological hands-on science programs.
- Increase awareness about career opportunities related to agricultural and environmental sciences.
- Provide experiences for students and teachers that bring about more positive attitudes about science and insects.
- Develop a sense of community involvement for UGA students.
- Enhance the communication and leadership skills of students.

The partnership with the PLC entomology and biology classes will provide inquiry-based education in biology. University students and faculty in collaboration with PLC science teachers will do on-site delivery of subject matter and project materials. A service learning component will be incorporated by involving the PLC and UGA students in entomologically-based community outreach programs as well as cooperatively creating the Outdoor Classroom. Entomology objectives for the partnership include: development of science resource materials and lesson plans with the PLC; enhancement of science, teaching, communication and civic skills not typical of students in science programs at research institutions; improved science content and teaching at the high school level; and entomologically- based civic engagement by PLC and UGA students through community outreach programs.

Research Questions

- Does participating in entomological service-learning affect student's intentions to become involved in further community service and outreach education in the future?
- Does participating in international service-learning affect student's civic and entomological learning outcomes?
- What is the status of service-learning in Entomology programs nationwide?

Methodology

Mixed Method Research

A qualitative phase and a quantitative phase are included in the overall research study.

Qualitative – Focus Groups, Case Studies, Student Reflections

Quantitative – Pre and Post Service-Learning Civic and Learning Outcomes Surveys

Entomology Service-Learning Courses

ENTO 3900 - Entomology Outreach & Service-Learning. This course provides an overview of entomology outreach and service-learning. Students participate in a guided study and practice in developing entomological educational programs for the public (mostly children) in the Athens/Atlanta area. This includes identifying needs, establishing objectives, designing programs, and evaluating entomological educational outreach activities.

Interdisciplinary collaboration across campus will be promoted by involving students from multiple science majors to effectively and efficiently incorporate the service-learning component into existing entomological community outreach programs, e.g., day-care centers, nature center special programs, museums, boys and girls clubs, scouts, etc. Course participants will be trained by and work directly with Department of Entomology graduate students in performing outreach service. Last year alone, the H.O. Lund Entomology Student Club interacted with nearly 11,000 pre-collegiate students through its outreach programs.

ENTO 3140 - Insect Natural History in Costa Rica, International Service-Learning. The purpose of this course is for students to enhance their global awareness of environmental and cultural issues through the use of insects as teaching tools, coupled with structured entomological public outreach experiences during and after the course. This course is designed as an interdisciplinary course involving the study of insects and discussion of their natural history in tropical terrestrial and aquatic ecosystems, combining intense lectures and field/lab work in Athens with direct field experience in Costa Rica.

The international portion of the course begins in Costa Rica's capital, San Jose. From there you will travel to La Selva Biological Station in Puerto Viejo. The course includes an insect taxonomy component dealing with rain forest and cloud forest species as well as extensive research field problems. You will hike around the UGA Ecolodge and Research Station in San Luis and see premontane moist tropical forest insects first-hand as well as teach San Luis elementary students about local insects. The trip includes site visits to INBioparque, Arenal Volcano, Monteverde Cloud Forest Reserve, Monteverde Canopy Tour, and San Luis Waterfall.

Discussion

Service-learning has the potential to enhance a student's interest in science, teaching, communication, and civic skills not typically developed in science students at research institutions. By successfully incorporating a service-learning component with entomologically-based community outreach programs, the Department of Entomology hopes to serve as a model to induce mutually beneficial permanent change in science programs at UGA and beyond.