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BioTAP 2.0 (Biology Teaching Assistant Project): Engaging Individuals in Scholarly Research about Biology

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Extended Abstract

BioTAP 2.0 is a National Science Foundation funded Research Coordination Network grant whose aim is to build capacity within the network for collaborative research on biology graduate teaching assistant teaching professional development (GTA TPD). By helping practitioners assess their own programs, and by working with others to compare assessments across institutions, the network can build the empirical data necessary to make data-driven decisions about programmatic practices. The BioTAP Scholars program leads selected cohorts of individuals through an intensive, yearlong program in how to design and engage in a scholarly research project on some aspect of a biology GTA TPD program. Participants in this mini-workshop will learn about the goals and accomplishments of BioTAP 2.0 to date, including data from a national survey on GTA TPD efforts, as well as the Research Development Sessions (RDS) and Virtual Learning Communities (VLC) for BioTAP Scholars. Members of the first BioTAP Scholars cohort will be present to share their experiences with the Scholars program and engage in dialogue about their research project plans and progress. This is an excellent time to network with individuals who share common interests in GTA TPD.

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Table 1. Cohort 1 of BioTAP scholars, their contact information, and their research interests are as follows

BioTAP Scholar & Contact Information	Research Interests
Nancy Abney University of Alabama - Birmingham nabney@uab.edu	• How does reflection on the teaching and learning process impact GTA conceptualization of teaching and learning?
Adam Chouinard, Oregon State University chouinad@oregonstate.edu	• How can I incorporate better direct measures of teaching improvement? • How much metacognition do GTAs actively engage in with regard to their choice of teaching methods? Are GTAs able to independently identify and apply strategies used in TPD training sessions without explicit attention drawn to the method being used?

Jeanetta Floyd Georgia State University jholley2@gsu.edu	• Does TPD in student-centered teaching and learning approaches increase self-efficacy in implementation of student-centered, inquiry/research-based instruction in a laboratory course? • Does TPD effect GTAs' teaching philosophies?
Linda Fuselier University of Louisville lcfuse01@louisville.edu	• What are the epistemological beliefs of GTAs, and how do these beliefs inform attitudes toward teaching in academia? (Is there a connection between GTA beliefs about knowledge and their attitudes toward teaching?) • How do GTAs' attitudes toward teaching change in association with GTA PD?
Star Lee University of California – Riverside star.lee@ucr.edu	• Are the teaching concerns of GTAs alleviated by taking a pedagogy course? • Do GTAs have increased self-efficacy in teaching (or better developed teacher identity) after taking a pedagogy course?
Amy Marion New Mexico State University amarion@nmsu.edu	• Can the professional development provided to GTAs improve their students' understanding of the scientific process? • What is the most effective way to teach students how science is done?
Kari Nelson University of Nebraska - Omaha karinelson@unomaha.edu	• Are GTA workshops associated with an increase in GTA knowledge of teaching practices? • Do GTAs' attitudes/perceptions about teaching change after receiving pedagogical training?
Jeffrey Olimpo University of Texas - El Paso jtolimpo@utep.edu	• What instructional behaviors do GTAs exhibit during teaching episodes focused on the process of science? Do these instructional behaviors differ between traditional vs. CURE (course-based undergraduate research experiences) laboratory environments? If so, for what reasons? • To what extent does participation in a semester-long Statistics Education and Experimental Design (SEED) professional development program impact GTAs' beliefs about the nature of science, scientific process skills development, and ability and confidence in facilitating scientific inquiry in their classroom?
Alp Oran University of Ottawa aoran@uottawa.ca	• Is one day really enough time to provide the necessary training to sufficiently prepare and produce meaningful learning by GTAs in-training? • Does the timing and/or type of training benefit students of specific disciplines more so than others?
Iglika Pavlova University of North Carolina - Greensboro ivpavlov@uncg.edu	• What is the existing ability of GTAs in experimental design, e.g., are they able to describe components of a controlled experiment, clearly and specifically provide justification for each component, and design an experimental procedure for one of our current inquiry labs? • How are GTAs grading student lab write-ups? What are difficulties that they encounter, and how do they respond to them?

Sami Raut University of Alabama - Birmingham, sraut@uab.edu	• Perceptions in the minds of undergraduate students: Does it matter if you are an International GTA? • Determining the effectiveness of GTA professional development program in the light of CUREs (course-based undergraduate research experiences).
Michelle Serreyn Wayne State University ac3042@wayne.edu	• Will providing pre-service/pre-term online TPD (with the establishment of a Learning Community/mentorship program of new and experienced GTAs) increase GTA confidence/self-efficacy? • Will providing pre-service/pre-term online TPD (with the establishment of a Learning Community/mentorship program of new and experienced GTAs) increase GTA implementation and effective use of specific pedagogical practices?
Erin Shortlidge Portland State University eshortlidge@pdx.edu	• What is life science graduate student level of awareness of, training in, and use of evidence-based teaching practices? • What are the outcomes for graduate students who teach course-based undergraduate research experiences (CUREs)?
Erica Szeyller The Ohio State University szeyller.1@osu.edu	• Are particular TPD activities within our TPD course (e.g. book group, workshops, observe other TAs, teachable tidbit) associated with greater changes in approaches to teaching? • Does a Graduate Student CURE (course-based undergraduate research experiences) Learning Community increase CURE student learning?
Christopher Trimby, University of Delaware trimby@udel.edu	• Does the Teaching Fellows Program increase Teaching Fellow teaching self-efficacy and the adoption and use of Scientific Teaching principles? • Does cohort community development influence program outcomes?
Heather Vance-Chalcraft East Carolina University vancechalcrafth@ecu.edu	• After participating in a summer training workshop, do GTAs have increased understanding of, improved attitudes about, and increased confidence in their ability to execute active learning and inquiry than they did before the summer workshop? • After participating in a summer training workshop, do GTAs 1) have increased confidence in their ability to act as a facilitator instead of an instructor, and 2) allow students "struggle" with information instead of providing instant answers than they did before the summer workshop?

Keywords: BioTAP, GTA TPD, graduate teaching assistant teaching professional development Scholar Program

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