

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, year-long 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 learned about the goals and accomplishments of BioTAP 2.0 to date, including data from a national survey on GTA TPD efforts, the first Research Development Session (RDS) and Virtual Learning Communities (VLC) for BioTAP Scholars Cohort 1, and topics of current Scholars' research projects (Table 1). BioTAP Scholars were present to share their experiences with the Scholars program and engaged in dialogue about their research project plans and progress. This mini-workshop created a platform for networking with individuals who share common interests in GTA TPD.

Keywords: biology, teaching assistant, teaching, professional development

Table 1. Cohort 2 of BioTAP scholars, their contact information, and their research interests.

BioTAP Scholar & Contact Information	Research Interests
Larry Bowman larry.bowman@yale.edu	<ul style="list-style-type: none"> • How can we assess the practical use of pedagogical strategies that GTAs learn through TPD? • How often do GTAs need refreshing of pedagogical strategies to maintain fluency and not become complacent in their active assessment of their teaching? How do we get GTAs to see TPD interventions as a continual process for the duration of their career, not a one-time intervention?
Ryan Coker rcc08e@my.fsu.edu	<ul style="list-style-type: none"> • How does carefully designed professional development improve TAs' understanding and implementation of productive science classroom discourse?
Melody Danley mlda227@uky.edu	<ul style="list-style-type: none"> • Does reflection improve GTA written feedback skill set, awareness, and effectiveness? • Does minimal marking feedback improve GTA reviewing time and still result in improvements of undergraduate writing?
Stephanie Gutzler sgutzler1@gsu.edu	<ul style="list-style-type: none"> • Do students taught by a GTA participating in training on how to teach guided-inquiry laboratories show greater improvements in science writing compared to students taught by a non-participating GTA? • What is the most practical model to develop a scholar's program or to create a more intensive training program for GTAs within an existing graduate program?
Rachael Hannah rmhannah@alaska.edu	<ul style="list-style-type: none"> • Does the University of Anchorage Alaska's (UAA) Bio GTA Training increase GTAs' ability to use the Socratic method of discussion leading during undergraduate inquiry based labs at UAA? • If prompted by specific reflection questions that ask GTAs to link their teaching experiences in inquiry based labs to their ability to use the scientific method in their own research lead to a more positive post-reflection of their teaching experience?
Kaleb Heinrich kheinrich@ua.edu	<ul style="list-style-type: none"> • Does improv training advance communication and confidence for GTAs? Are improv techniques beneficial for GTA TPD? • What do GTAs, who are members of the Society for Freshwater Science, know about teaching and what are their attitudes toward teaching?
Samantha Herrmann herrmann.74@osu.edu	<ul style="list-style-type: none"> • Does participation in CURE Teaching Assistant Learning Community (CURETALC) improve GTA confidence in implementing a CURE compared to GTAs who don't participate in CURETALC? • Does participating in CURETALC result in a change in student attitude (self-efficacy) towards

	CUREs as opposed to students' GTAs that did not participate in CURETALC?
Amy Keagy amy.keagy@unf.edu	<ul style="list-style-type: none"> • What effect does metacognitive training (monitoring) intervention have on the confidence of new and experienced GTAs during a semester of teaching? • What effect does confidence have on the implementation of various teaching strategies?
Rachel Kennison rkennison@ceils.ucla.edu	<ul style="list-style-type: none"> • How effective is the train-the-trainer model at preparing graduate student instructors to teach GTAs to become self-reflective practitioners or can peer feedback be as effective as this model in increasing metacognition? • Does becoming a self-reflective practitioner change attitudes about teaching? In the train the trainer model, does incorporating career related professional development benefits (ie. transferable skills, more competitive in job market, improved ability to communicate research, and science in general to a broad audience) into their training for their GTAs improve the attitudes of their GTAs? What is the level of TAC's comfort in teaching TA's about these benefits?
Harini Krishnan hk12b@fsu.edu	<ul style="list-style-type: none"> • What effect does modeling a lesson structure using the Learning Cycle have on GTA learning of pedagogical knowledge and GTA instruction in an introductory biology lab? • What are the factors that facilitate and impede implementation of student-centered instructional strategies by GTAs?
Shannon Mallison mallissm@wfu.edu	<ul style="list-style-type: none"> • How does GTA preparedness (MS vs PhD and training) affect undergrad outcomes in Course Based Undergraduate Research Experience (CURE) labs? • How do the types of training and experience prepare GTAs for teaching?
Michelle Nugent mlnugent@ncsu.edu	<ul style="list-style-type: none"> • Do GTAs for corresponding labs serve the same purpose from the student perception for those enrolled in traditional lecture sections compared to those in interactive, student centered environments? Student need, reliance, perceptions based on the lecture they attend? • What kind of discrepancies exist between GTA perception of and planning for classroom practice and their actual classroom practice?
Cheryl Pinzone cheryl.pinzone@colorado.edu	<ul style="list-style-type: none"> • Does taking this seminar influence student attitudes about teaching or motivation to teach? • Does long-term participation in a community with positive teaching narratives influence how students view teaching?
Katherine Price katherine.e.price@dartmouth.edu	<ul style="list-style-type: none"> • Does participation in teaching huddle increase GTA confidence/self-efficacy as reported by GTAs themselves?

	<ul style="list-style-type: none"> • Does participation in teaching huddles increase GTA motivation?
<p>Joshua Reid jwr4k@mtmail.mtsu.edu</p>	<ul style="list-style-type: none"> • How do teaching community networks compare to research community networks for biology GTAs? (what are their structural similarities and differences?) • What is the relationship between teaching community networks and biology GTA professional identity development?
<p>Seema Rivera riveras@clarkson.edu</p>	<ul style="list-style-type: none"> • Does reflective journaling help STEM GTAs increase their interest and self-efficacy in teaching? When GTAs learn active learning strategies, can this impact their teaching self-efficacy? What are GTAs' attitudes toward active learning strategies? • What are the teaching experiences of STEM GTAs who are international students and/or students of color at a Predominantly White Institution (PWI)?
<p>Erin Sanders erins@ceils.ucla.edu</p>	<ul style="list-style-type: none"> • Depending on the instructor for their GTA training course, will GTAs increase their knowledge of and interest in using various teaching techniques? incorporate the teaching techniques they learn about into the courses they teach? improve their attitudes toward teaching? change their beliefs (address possible misconceptions) about teaching development and its benefits (in terms of translatable skills) to their research and careers? value their learning experience as much as or more than their other experiences as a graduate student? aspire for a career that involves teaching? (or related issues to professional identity) • How effective is the train the trainer model at preparing graduate student instructors to teach the following components of a GTA training course?
<p>Katrina Stewart Katrina.Stewart@mail.wvu.edu</p>	<ul style="list-style-type: none"> • Does training improve the quality of comments GTAs leave on student submissions? Is experience more important than training when it comes to quality of comments GTAs leave on student submissions? • Is the quality of feedback GTAs leave on student papers related to improvement in student writing?

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