

Teaching TAs To Teach: Strategies for TA Training

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ABSTRACT

“The only thing that scales with undergrads is undergrads”.

As Computer Science course enrollments have grown, there has been a necessary increase in the number of undergraduate and graduate teaching assistants (TAs, and UTAs). TA duties often extend far beyond grading, including designing and leading lab or recitation sections, holding office hours and creating assignments. Though advanced students, TAs need proper pedagogical training to be the most effective in their roles. Training strategies have widely varied from no training at all, to semester-long prep courses. We will explore the challenges of TA training across both large and small departments. While much of the effort has focused on teams of undergraduates, most presenters have used the same tools and strategies with their graduate students. Training for TAs should not just include the mechanics of managing a classroom, but culturally relevant pedagogy. The panel will focus on the challenges of providing “just in time”, and how we manage both intra-course training and department or campus led courses.

CCS CONCEPTS

- **Social and professional topics**–Computer science education

KEYWORDS: Teaching assistants; graduate student instructors; TA training; pedagogy; undergraduate student instructors

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1 Summary

This panel brings together faculty from two large and two small institutions to discuss practices for TA training. While many institutions only require limited orientations, we believe it’s important to give TAs ample opportunities to learn to teach.

While many institutions require some general TA training, it is often limited and not sufficient to properly prepare students to be effective TAs. We will discuss strategies at the department level to provide courses geared towards undergraduates, as well as how instructors can use just-in-time training of TAs during a course. These courses cover socially and culturally relevant pedagogy and are designed to help create a community amongst not only the teaching staff, but our departments as a whole. Panelists also address areas that we believe have room for improvement, and share recent work to revamp training programs. This panel will be relevant to anyone who teaches with undergraduate TAs, whether that’s undergrad-only programs or scaling introductory courses with dozens of TAs.

2 Panel Structure

The panel will start with approximately 10 minutes for each member to share their strategies for TA training. We’ll discuss TA training at each of the course, departmental, and institutional levels providing context for what works best, and what aspects of training deserve attention.

After initial presentations, the remaining will be allocated to audience questions. We expect audience members will ask about best practices ways to adapt these strategies to their institutions. Panelists will share links to resources and tools they have used, which will be available [as a document at the end of the panel](#) [1].

3 Position Statements

3.1 Justin Hsia

Graduate and undergraduate CSE TAs at the University of Washington are hired under different contracts and assume a combination of responsibilities from leading sections, holding office hours, grading assignments and exams, assisting in lecture,

participating on the discussion board, and course development. Course staff sizes can vary from a single TA to upwards of 50 TAs. TAs receive training, often very course-specific, at the discretion of their instructor (e.g. during staff meetings, being paired with other TAs), but our challenge is to provide an avenue for TAs to improve across the diverse set of roles, experiences, and courses.

We have compiled an [internal TA Handbook](#) to answer most administrative questions. There is a two-day ([general](#)) [TA Conference](#) for *grads only* offered just before the school year starts[2]. Our two-course Intro series has [mandatory 1-credit new TA training and grading party](#) in addition to a larger community meeting, while we offer [CSE General TA Training](#), an *optional* paid seminar to learn basic pedagogy, build community across courses, and get support, for all other first-time TAs [3][4].

Beyond training for first-time TAs, we also offer a quarterly opportunity to all TAs to participate in peer section observations for feedback and exposure to different teaching styles. We are also in the process of developing a separate CS pedagogy course for anyone to take (current, past, future TAs and others).

3.2 Heather Pon-Barry

The MaGE curriculum developed at Mount Holyoke College prepares students for the task of inclusive peer mentoring and teaching [6]. The curriculum raises awareness of the role of social identity in learning, emphasizes active learning within computer science, and provides preparation for technical code review. The curriculum provides research-based instruction on effective learning (motivation, strategic learning, self-efficacy, and growth mindset), enabling peer mentors to self-assess their own strengths, engage in group discussions, and adjust their personal perspectives [5].

The MaGE curriculum has been used to train eight cohorts of near-peer mentors at Mount Holyoke and has been adapted for use at several other institutions. Effectiveness is evidenced through increases in mentor self-efficacy, positive impact on student belongingness and continued enrollment, and reports of buffering the instructor workload. All [curricular materials](#) are available online [7]. They are organized as a collection of flexible modules, to enable easier adoption at other institutions. Example formats range from a half-day workshop to a half-semester course.

3.3 Andrew DeOrio

At the University of Michigan, a team of undergraduate and graduate teaching assistants play a big role in the student experience both in lower- and upper-level courses. TAs lead lab sections, hold office hours, help write and grade exams.

Our hiring process focuses on students who can explain concepts well and are passionate about teaching. We specifically do not select for grades. All TAs are required to attend a one day-long training put on by the College of Engineering.

Recently, the EECS department has been experimenting with an optional TAs training course for undergraduates. Many courses, especially the intro and foundational courses with large TA teams, do continuous course-specific TA training throughout the term.

3.4 Adam Blank

Caltech's CS courses primarily hire undergraduate TAs. Selection begins with students declaring interest on a central Google Form sent out by the department that asks basic questions about grades and what courses students are interested in TAing. Depending on the course, students are either directly hired or go through interviews held by the course instructors. Once hired, TAs go through two one hour sessions held by our [Center for Teaching and Learning](#) [8]. For TAs that will also be holding recitation, the instructor may optionally set up microteach sessions held by the CTLO as well. Some courses also have weekly staff meetings where microteaches sometimes happen.

The CTLO also selects and trains a "[TA Fellow](#)" for the department who is responsible for potentially doing additional training and being a liaison between the TAs and instructors [9].

Students interested in on-the-job training or a lower time commitment may choose to be "Dedicated Dean's Tutors" and hold office hours and go to a weekly staff meeting. The intention of this position is to have a lower stakes training period for new TAs.

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