WELCOME TO THE 2016 CALTECH TEACHING CONFERENCE

Date: Wednesday, September 21, 2016
Time: 9:00 AM-4:00 PM

Enjoy concurrent sessions throughout the day, led by Caltech colleagues and invited guests. Sessions are designed for beginning TAs all the way through experienced instructors, and include discussions of effective strategies, student motivation, innovative technology, inclusive teaching, careers, and more.

First year-graduate students: G1s are automatically registered for the Teaching Conference as part of their orientation week.

Returning graduate students, undergraduates, postdocs, instructors, staff, and alumni may register here by September 19 in order to participate. See Schedule below for sessions, times, and locations.

Materials (distributed in print at the Conference; links coming soon):

- **2016 Teaching Conference Booklet**: a resource with materials from most sessions.
- Please visit the current Teaching Conference page for the latest resources.

**Check in and breakfast starting at 8:00am at Dabney Gardens.**

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<td>9-9:45am</td>
<td>Opening Session, Ramo Auditorium (New + Gen)</td>
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<td>Fair Grading &amp; Effective Feedback*</td>
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<td>BLOCK A</td>
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<td>Effective Recitations: Helping Your Students Learn*</td>
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<td>BLOCK C</td>
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<td>Motivating Yourself &amp; Your Students*</td>
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Guidance on choosing sessions:

- Caltech instructors and TAs with a wide variety of prior experience participate in the Teaching Conference. First and foremost, please choose sessions according to your interests and upcoming teaching.
- If you've never taught before or you're new to teaching formats at Caltech, choose mainly from the "New" track and "Gen" tracks, with "Sp" track sessions on topics that apply to you (e.g., Navigating the American Classroom for international TAs). Please be sure to come to the Opening Session as well.
- If you already have some teaching experience, the "Gen," "Exp," and "Sp" tracks are designed for you.

SESSION DESCRIPTIONS

Opening Session: Introduction to University Teaching

9:00 - 9:45 am, Ramo Auditorium

Cassandra Horii, Director, Center for Teaching, Learning, & Outreach
Jenn Weaver, Assistant Director, Center for Teaching, Learning, & Outreach
Kelsey Boyle, Graduate Student, Chemistry; Co-director of the Caltech Project for Effective Teaching
Rebekah Silva, Graduate Student, Chemistry; Co-director of the Caltech Project for Effective Teaching

Session Description: This session is for all new TAs and anyone interested in a brief primer on some of the most useful results from research on teaching and learning science, technology, engineering, and mathematics (STEM) at the college level. With these fundamental ideas at your disposal, you'll build your teaching and communication skills on a solid foundation and gain insights into common challenges—not just for teaching, but for your own learning as well. Opportunities for ongoing professional development at Caltech will also be discussed.

SESSIONS OF GENERAL INTEREST

Creating an Inclusive Classroom
10:00-11:00 am, Baxter 25
11:15-12:15 pm, Baxter 25

Erin-Kate Escobar, Assistant Director, Caltech Center for Diversity
Taso Dimitriadis, Assistant Director, Caltech Center for Diversity

Session Description: In this interactive workshop we will explore strategies for increasing the inclusion of identity groups and promoting a better learning environment for everyone. Through discussion based activities on the topics of identity, unconscious bias and allyship we will explore perspectives on supporting everyone to succeed in the STEM fields. In addition you will learn skills to be an ally, advocate and resource for your students.

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Motivating Yourself and Your Students...When You Would ALL Rather Be Sleeping

10:00-11:00 am, Baxter 127
1:30-2:30 pm, Baxter 127

Brendon McNicholas, Graduate Student, Chemistry
Annelise Thompson, Graduate Student, Chemistry

Session Description: In the grand scheme of things, what actually motivates students, beyond bribery and sweeping claims of future success? How do we use educational theory to motivate our students and help them feel like effective learners? We will take you through a chronological discussion of the major developments in the field of educational psychology and emphasize the application of motivational theory to instructional practice and to working against the effects of burnout. Examples of motivational theory in practice will be drawn from the movie Mean Girls and our experience as Caltech TAs.

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Improv Techniques for Better Teaching

1:30-2:30 pm, Dabney Lounge
2:45-3:45 pm, Dabney Lounge

Brian Brophy, Lecturer in Theatre & Performing Arts at Caltech

Session Description: Come learn and practice the foundations of "improv"--otherwise known as improvisation--to improve your teaching. Skills like listening, being in the moment, and constantly building off of others with "yes and" will help participants to learn to work with students and each other in creative and productive ways. The workshop will start with the foundations of improv, several warmup games,
and then to identify concerns, ideas/issues from the group and play them back in a collaborative and safe environment.

Copyright and Plagiarism Considerations for the Classroom

2:45-3:45 pm, Baxter 127

Gail Peretsman-Clement, Head of Research Services, Caltech Libraries
Donna Wrublewski, Chemistry Librarian and Information Specialist

Session Description: Instructors and students frequently reuse and redistribute other people’s work in their own presentations, lectures, assignments, and other projects. When is this okay and when does this require permission? Is there a difference in using copyrighted materials vs. those distributed under Creative Commons licenses? What is Fair Use and when does it apply in teaching? This session covers the most common misconceptions about copyright in the classroom and provides tips and tools for reusing others’ works effectively and appropriately.

SESSIONS FOR NEWER TAs

Fair Grading and Effective Feedback

10:00-11:00 am, Baxter Lecture Hall
1:30-2:30 pm, Beckman Behavioral Biology B180

Kelsey Boyle, Graduate Student, Chemistry
Eugenia Khorosheva, Postdoctoral Scholar, Chemistry and Chemical Engineering

Session Description: Whether you are a recitation, lab, or grading TA, feedback will be an essential element to your new teaching role. As a busy graduate student, it can be difficult to balance your research and your own courses with the responsibility of being a fair and effective TA for your students. In this session, we will try to address these issues by covering three main topics: grading efficiently, grading fairly, and providing effective feedback. Here, you will become familiar with grading rubrics, collaboration policies, handling student complaints, and FERPA.

Beyond the Lab Manual: Becoming an Effective Teacher in the Laboratory

10:00-11:00 am, Dabney Lounge

Emily Blythe, Graduate Student, Biochemistry & Molecular Biophysics
Paul Walton, Graduate Student, Chemistry

Session Description: This session aims to provide encouragement and advice for new laboratory TAs. Although often misrepresented as a bad thing, being a lab TA can be
fulfilling and intellectually engaging. Using our own experience from labs we taught, we will cover what to expect from the students and how to effectively communicate lab goals with them. We will focus on how to convey the purpose of each step in an experiment so that students leave the lab with an understanding of why things were done the way they are laid out in the manual. Specific examples of common problems encountered in the lab and possible solutions will be explored.

Effective Recitations: Helping Your Students Learn

10:00-11:00 am, Beckman Behavioral Biology B180
11:15-12:15 pm, Baxter Lecture Hall

Kevin Barraza, Graduate Student, Chemistry
Henry Ngo, Graduate Student, Geological and Planetary Sciences

Session Description: This session will help new and continuing TAs deliver effective recitations. First, concrete strategies will be presented, including planning, time management, and teaching philosophy. Next practical classroom issues will be discussed: what should you do if no one participates? Finally, a panel of experienced recitation TAs from different divisions will answer your questions on recitations.

Your First Class: Getting Off to a Great Start

10:00-11:00 am, Beckman Behavioral Biology B101

Jenn Weaver, Assistant Director, Center for Teaching, Learning, & Outreach

Session Description: The first day of class can be new and exciting but also a little nerve wracking. In this session, we’ll discuss some of the things that you can do to prepare! We’ll go through two checklists; one for preparing for your first class, and the second for things that you should do in your first class. Finally, we’ll touch on a few of those dreaded scenarios (e.g. problem students, what to say when you don’t know the answer) and how to plan for them such that they are no longer dreaded but welcome!

The Honor Code: Preventing Problems, Handling Issues

10:00-11:00 am, Baxter 125
2:45-3:45 pm, Baxter 125

Sarah A. Del Ciello, Graduate Student, Chemistry and Chemical Engineering
Denise Schmitz, Graduate Student, Astronomy

Session Description: This session will provide a more detailed honor code training for TAs. It will include proactive tips to help avoid honor code issues, instruction on
proper reporting procedures, and a run-through of what to expect (both as a reporter and for your student) if you make a report. Leadership from both the GHC and BoC will be present for an ample Q&A and discussion session.

Adding Value in Office Hours: Attracting and Retaining Students

11:15-12:15 pm, Beckman Behavioral Biology B180
1:30-2:20 pm, Baxter Lecture Hall

Emily Wyatt, Graduate Student, Chemical Engineering
Abhinav Agarwal, Graduate Student, Electrical Engineering

Session Description: Office hours are a crucial resource for students, providing them with a chance to clarify concepts and work through challenging problems. In fact, office hour attendance is often an excellent predictor of student engagement, motivation, and high final grades. However, students can often be nervous about attending office hours or may not see them as valuable. Come discuss effective methods to establish a welcoming environment and facilitate learning in your own office hours!

Caltech 101: What You Need to Know if You're Going to Teach Undergraduates

2:45-3:35 pm, Baxter Lecture Hall

Tim Liu, Chair, Undergraduate Academics and Research Committee (ARC); ASCIT VP of Academic Affairs
Akshay Srivastava, Ruddock House ARC Representative; BoC Representative
Kavya Sreedhar, Rep-at-Large, ARC; Avery House BoC Representative

Session Description: In order to effectively teach students, it is crucial to understand your population and how they learn. In this session, we will present the "need to know" facts about undergraduate students at Caltech. We will profile the typical life of Caltech students based on student experiences shared by current undergraduates. Session facilitators will also share their thoughts of what makes a good TA and emphasize the key points that will help make you a successful mentor and effective TA. This session will be interactive - groups will be paired with undergraduates to learn about undergraduate life and brainstorm techniques to connect with students in the classroom.

SESSIONS FOR EXPERIENCED TAs & INSTRUCTORS

Introduction to Lesson and Course Design

11:15-12:15 pm, Beckman Behavioral Biology B101
Jenn Weaver, Assistant Director, Caltech Center for Teaching, Learning, & Outreach
**Session Description:** A session for advanced TAs and interested beginner TAs on how to design a lesson or a course (the pedagogical strategies and methods for both are fundamentally the same!). I'll walk you through the process of Backwards Design, how to write learning outcomes, determining assessments and designing active learning activities. We'll also discuss the tricky questions of: how to weigh breadth vs. depth, content vs. comprehension, what to do when you don't cover everything you wanted to and pacing your lesson or course.

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**Teaching with Technology**

*11:15-12:15 pm, Baxter 125*
Cassandra Horii, Director, Caltech Center for Teaching, Learning, & Outreach

**Session Description:** Nowadays, instructors have an ever-changing and large array of choices when it comes to educational technology. In this session, we’ll get acquainted with some technologies that are readily available to Caltech faculty and TAs and see how they can help with common teaching challenges and advanced applications like "flipped" classes. Participants will leave with a framework they can use now and for future technology choices in teaching—even when the gadgets, apps, and techniques continue to evolve.

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**Authoring Problem Sets and Exams**

*11:15-12:15 pm, Baxter 127*
Eugenia Khorosheva, Postdoctoral Scholar, Chemistry and Chemical Engineering
Bekah Silva, Graduate Student, Chemistry

**Session Description:** This session will focus on how to approach authoring homework and exam problems in order to use assessment as a teaching tool and maximize student learning. We will present general guidelines for designing effective problems as well as demonstrate application of those guidelines. Finally, we will discuss practical issues associated with authoring problem sets, including time constraints during authoring and grading and varying problem difficulty within a set.

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**Large Course Organization & Communication**

*1:30-2:30 pm, Baxter 125*
Cassandra Horii, Director, Caltech Center for Teaching, Learning, & Outreach

**Session Description:** Caltech's largest courses enroll around 200 students, but even a course of 40-60 needs some extra tricks to run smoothly. In this session, we will develop
a toolkit of practices that make large courses into well-oiled machines of learning, so that instructors, TAs, and students alike are able to focus on the content, rather than on logistics. Recommended for instructors, "head" or "lead" TAs, TAs on large course teaching teams, and anyone interested in learning how to manage groups of people more effectively.

Teaching What You Don't Know (Well)

2:45-3:45 pm, Beckman Behavioral Biology B180
Natalie Higgins, Graduate Student, Mechanical and Civil Engineering
Sophia Dai, Postdoctoral Scholar, Astrophysics

Session Description: As a TA, you will sometimes get into situations that you don't feel prepared for, but with the right approach you can use these opportunities to win your students' trust and involve them in the learning process. In this interactive session, we will practice: fielding questions that you don't know how to answer, breaking down large questions into smaller pieces, and dealing with a classroom full of unresponsive/uninterested students. We will also discuss the advantages to "teaching what you don't know" - how you can use what you don't know to make the students better learners, and yourself a better teacher.

Facilitating Student Discussion

2:45-3:25 pm, Beckman Behavioral Biology B101
Emily Blythe, Graduate Student, Biology & Molecular Biophysics
Voon Hui Lai, Graduate Student, Geophysics

Session Description: Creating active participation in your classroom is rewarding, and it is an effective way to reach the learning goals of the course. It may be challenging, and in this session, our goal is to provide you the tips and strategies to lead discussions such as recitations and literature reading groups. Specifically, we will focus on exploring different discussion structures, learning how to prep well, and getting hands-on experience on being an engaging facilitator.

SESSIONS WITH A SPECIAL FOCUS

Helping Students Write in STEM

11:15-12:15 pm, Dabney Lounge
Susanne Hall, Campus Writing Coordinator in the Hixon Writing Center and Lecturer in Writing
Session Description: One of the most important ways we learn to write is by getting feedback on our work from thoughtful readers. As instructors in STEM (Science, Technology, Engineering, and Mathematics), though, responding to the many kinds of writing students produce (e.g. papers, proposals, abstracts, reports, lit reviews, response papers, proofs) can be time-consuming and draining. This session will introduce you to research-based findings about the kinds of feedback that are most likely to help students improve as writers and thinkers. Some of these findings are likely to surprise you, as they contradict some very common teaching practices. We will talk together about how to implement response strategies in the real world, where our time and energy for responding to student writers is not limitless.

Navigating the American Classroom

1:30-2:30 pm, Beckman Behavioral Biology B101

Arundhati Nag, Postdoctoral Scholar, Chemistry and Chemical Engineering
VoonHui Lai, Graduate Student, Geophysics

Session Description: Geared specifically towards international TA's, in this session, we will introduce the key characteristics of U.S. higher education, and expectations in an American classroom and a Caltech classroom. In addition, we will work on useful skills such as effective communication, incorporating your background to enrich both your teaching experience and students' learning experience.

Careers in the Classroom

1:30-2:30 pm, Baxter 25

Bekah Silva, Graduate Student, Chemistry
Panelists

Session Description: Anyone curious about traditional and emerging careers in the classroom is welcome to attend the Careers in the Classroom session! In this session, you will hear from a panel of educators who have applied their graduate work to careers in K-12 teaching, university teaching, and beyond. Panelists will describe their academic backgrounds and current positions, followed by a moderated discussion covering topics including strategies to prepare for a career in teaching during graduate school, advice on searching for teaching-focused positions, and challenges associated with transitioning from a research setting to a teaching setting. Audience members are encouraged to bring questions to the session and to participate in discussion!

Introduction to Chemistry TA-ing
2:45-3:45 pm, Baxter 25

Bryan Hunter, Graduate Student, Chemistry
Christine Morrison, Graduate Student, Chemistry
Sara Weaver, Graduate Student, Chemistry

**Session Description:** Join us if you are a TA for a chemistry class this year. We will introduce the Chemistry TA Sharepoint site as well as hold a panel discussion on preparing for and being a recitation, grader, or lab TA. Our panel consists of experienced and passionate TAs, and we are eager to hear your questions and share our experiences.