WELCOME TO THE 2015 CALTECH TEACHING CONFERENCE

Date: Thursday, September 24, 2015
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.

RSVP is now closed. Please check in at Beckman Institute Courtyard.

Materials (distributed in print at the Conference): The Teaching Conference Booklet: a resource with reference materials from most sessions. The TA Handbook: an official guide. Please visit the current Teaching Conference page for the latest resources.

Check in and breakfast starting at 8:00am at Beckman Institute Courtyard.

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Opening Session for New Teaching Assistants

9:00 am, Beckman Institute Auditorium

Especially for new TAs, this short introduction to teaching at Caltech will give you a unique glimpse into the Caltech environment, answer your most pressing questions, and offer some tips for navigating the rest of your Teaching Conference schedule.

Sessions for Beginning Teachers

Fair Grading and Effective Feedback

9:45am, Beckman Institute Auditorium

1:15pm, Broad 100

• Henry Ngo, Graduate Student, Geological and Planetary Sciences

• Emily Blythe, Graduate Student, Biochemistry and Molecular Biophysics

This session for beginning TAs will cover three main topics: grading fairly, providing effective feedback, and maximizing efficiency while grading. Get some practice creating grading rubrics and collaboration policies and handling student complaints. We’ll also cover how FERPA applies to you as a grading TA.

Thinking on Your Feet: Teaching Lab Classes Well

9:45am, Broad 100

• Ethan Simonoff, Graduate Student, Chemistry and Chemical Engineering

• Brendon McNicholas, Graduate Student, Chemistry and Chemical Engineering

This session will focus on advice for incoming laboratory TAs. The biggest problem typically encountered by graduate students in this setting is the ability to juggle mastery of the material you are teaching with the uncertainty of the questions and problems students will have. We will use specific examples from our experiences as TAs for an inorganic chemistry laboratory to provide helpful tips on how to handle the various duties assigned to a laboratory TA. Warning: Witty banter will be used throughout the talk!
The Honor Code: Preventing Problems, Handling Issues

9:45am, Annenberg 107
2:30pm, Beckman Institute Auditorium

- Sarah Del Ciello, Graduate Student, Chemistry and Chemical Engineering
- Matt Smarte, Graduate Student, Chemistry and Chemical Engineering
- Paul Dieterle, Undergraduate

More detailed honor code training for TAs. This session 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 to answer questions.

Effective Recitations: Helping Your Students Learn

9:45am, Moore 070

11:00am, Beckman Institute Auditorium

- Chengyun Hua, Graduate Student, Mechanical Engineering
- Scott Saunders, Graduate Student, Biology, Biological Engineering

This session will focus on advice for giving 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? Then, TA’s from different divisions will give some specific examples from their own experiences.

Fostering Student Engagement through Office Hours

11:00am, Broad 100

1:15pm, Beckman Institute Auditorium

- Daniel Thomas, Graduate Student, Chemistry, Chemical Engineering
- Kelsey Boyle, Graduate Student, Chemistry, Chemical Engineering
- Tony Bartolotta, Graduate Student, Physics, Mathematics, Astronomy

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!

**Introduction to Chemistry TA-ing**

*2:30pm, Beckman Institute 115*

- Christine Morrison, Graduate Student, Chemistry, Chemical Engineering
- Bryan Hunter, Graduate Student, Chemistry, Chemical Engineering
- Justin Rolando, Graduate Student, Chemistry
- Kelly Kim, Graduate Student, Chemistry

A session geared specifically toward chemistry TAs led by experienced Caltech TAs. The first part of the session includes a demonstration of a shared website that facilitates TAing by providing a place to create, share, and archive documents and grades. The second part focuses on the three types of chemistry TA responsibilities: grading, leading recitation sections, and teaching labs. A TA representing each type will be present to answer questions and pass on useful information for Caltech chemistry TAs.

**International TAs and the American Classroom**

*2:30pm, Broad 100*

- Laura Flower Kim, Associate Director International Student Programs
- Peter Gao, Graduate Student, Planetary Science
- Navaneeth Ravichandran, Graduate Student, Mechanical Engineering
- Chengyun Hua, Graduate Student, Mechanical Engineering

International T.A.s often experience some culture shock when teaching in the United States. U.S. teaching styles and classroom expectations on an American college campus can be quite different from other countries, plus Caltech has some extra special characteristics. Knowing what to expect and understanding some of these differences can help improve the overall T.A. experience and prevent misunderstandings in the classroom. Caltech international T.A.s will share their stories and tips for a successful first year in the classroom.

**Everything Else You Want to Know about Teaching at Caltech**

*2:30pm, Annenberg 107*

- Cassandra Horii, Director of Center for Teaching, Learning, & Outreach
- Peter Hung, Graduate Student, Applied Physics
With experienced Caltech TAs and instructors

This session is like Office Hours, but for teaching! The Director of the Caltech Center for Teaching, Learning, and Outreach, along with experienced TAs, will be there to answer your questions and talk further about your interests--from beginning to teach all the way through advanced professional development opportunities. This is an informal session that is all about YOU.

Sessions for All Teachers

Creating an Inclusive Classroom

9:45am, Beckman Institute 115

11:00am, Beckman Institute 115

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

In this interactive workshop we will explore strategies for increasing the inclusion of different identity groups and promoting a better learning environment. Through discussion based activities and a Caltech student panel we will explore perspectives on diversity in the STEM fields. In addition you will learn skills to be an ally, advocate and resource for your students.

Motivating Students: Beyond the Carrot and Stick (Or the Rise and Fall of Anakin Skywalker)

11:00am, Annenberg 107

1:15pm, Annenberg 107

- Annelise Thompson, Graduate Student, Chemistry, Chemical Engineering
- Brendon McNicholas, Graduate Student, Chemistry, Chemical Engineering

Anakin Skywalker was shaped by his mentors, both Obi-Wan Kenobi and the emperor. Unfortunately, the emperor’s negative influence was stronger than Obi-Wan’s, leading to the rise of Darth Vader as a force for evil in the galaxy. Learn more about how Star Wars parallels our work as mentors and teaching assistants in this session on motivating your students and promoting active learning in the classroom. How do we prevent the development of new Vaders?

Managing Large Courses

9:45am, Moore 080

- Healther Curtis, Graduate Student, Biology and Biological Engineering
Large classes at Caltech often have 40 to 60 students aided by 2-6 TAs. This session will discuss the variety of responsibilities a TA in a large class can be given as well as provide communication and organization tactics that will help TAs running a large class be more efficient.

**Promoting Positive Student-Teacher Interactions**

*9:45am, Moore 139*

- Kelsey Boyle, Graduate Student, Chemistry, Chemical Engineering
- Rebekah Silva, Graduate Student, Chemistry, Chemical Engineering

Positive interactions between TAs and students are crucial for a healthy classroom. For a first time or newer TA, knowing how to foster these positive interactions can be a difficult and daunting task. In this session, we will discuss some ways that you, as a TA, can help create supportive relationships with students and ultimately help foster student learning.

**Teaching with Technology**

*11:00am, Moore 080*

- Cassandra Horii, Director of Center for Teaching Learning and Outreach

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.

**Helping Students Write in STEM**

*1:15pm, Beckman Institute 115*

- Elizabeth Trembath-Reichert, Graduate Student, Geological and Planetary Sciences
- Susanne Hall, Hixon Writing Center Coordinator

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.

**Improv Techniques for Better Teaching**

1:15pm Avery Library

2:30pm, Avery Library

- David Bittick, Actor and Director; recent roles in Sharknado and Days of Our Lives, regular performer at the Comedy Store on Sunset Blvd
- Miikhael Stotkin, Actor; graduate of the Upright Citizens Brigade LA, performer at the UCB Theatre
- Norbert Radacsi, Postdoctoral Scholar in Chemical Engineering

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 roll into a suggestion to get the improv going. Along the way, participants will be asked to use their imagination and their newly acquired knowledge to create and expand an idea.

**Teaching What You Don't Know (Well)**

2:30pm, Moore 070

- Natalie Higgins, Graduate Student, Mechanical Engineering
- Jackie Villadsen, Graduate Student, Astronomy

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: dealing with a classroom full of unresponsive/uninterested students, and fielding questions that you don't know how to answer. We will also discuss advantages to "teaching what you don't know" - how you can use what you don't know to make yourself a better teacher.

**Sessions for Experienced Teachers**

**Careers in the Classroom**

11:00am, Moore 070
Organized and Facilitated by: David Case, Kevin Shen, Yoke Peng Leong, Sonja Francis, and Chengyun Hua

Panelists:

- Justin Bois, Lecturer, Caltech Division of Biology and Biological Engineering
- Tzu-Yi Chen, Dept. Chair and Professor of Computer Science, Pomona College
- Jennifer Krestow, Asst Professor of Astronomy, Department Head, & Planetarium Director, Glendale Community College
- Claire Thomas, Science Faculty, Flintridge Preparatory School
- Jennifer Krestow, Asst Professor of Astronomy, Department Head, & Planetarium Director, Glendale Community College

If you are a PhD student or Postdoctoral Fellow and would like to know more about careers with significant teaching components, then this session is for you. We will hear from a panel of experts who have applied their graduate educations to careers in K-12 through university settings. In this one-hour session, panelists will describe their academic background and current job, followed by a moderated discussion covering topics such as: What can I do in grad school to prepare to be an effective teacher? How do I go about finding a teaching-focused position? What aspects of your job benefit from graduate training, and what aspects are challenging coming from a research background? The audience will be able and encouraged to ask questions.

**Mentoring and Teaching**

**11:00am Moore 139**

- Organized and Facilitated by: Yoke Peng Leong, Graduate Student, Control & Dynamical Systems

- Panelists
  - Matthew Burkhardt, Graduate Student, Mechanical & Civil Engineering
  - Hannalore J Gerling-Dunsmore, Graduate Student, Physics
  - Brandon Henderson, Postdoc, Biology

Mentoring best case: My students finish everything before I have something new for them. My students are learning so quickly that I don’t know what I can teach them anymore.

Mentoring worst case: My students do not learn what I want them to learn. My students are demotivated. My students are not doing the experiments right.
What do I do as a mentor in these best and worst cases? How is mentoring similar to and different from teaching? In this session, you'll hear from experienced mentors who are graduate students and postdocs and have a chance to reflect on your own mentoring experiences and goals in the context of becoming an expert mentor, teacher, and researcher.

**Demystifying the Early Career Teaching Portfolio**

*1:15pm, Moore 070*

- Sonja Francis, Postdoctoral Scholar in Chemistry
- Kevin Shen, Graduate Student, Chemistry, Chemical Engineering
- David Case, Graduate Student, Geological and Planetary Sciences
- Cassandra Horii, Director of Center for Teaching, Learning, & Outreach

Typically, the content of an outstanding Teaching Portfolio is focused on Teaching, Research and Service. At Caltech, we have the Research down but how do we find and use opportunities for Teaching and Service on campus and how can these experiences be translated into an outstanding Teaching Portfolio. This session, tailored for Early Career Academics (Graduate students and Post Docs), outlines the tools required to prepare your Teaching Portfolio in the context of the Caltech campus.

**Designing Problem Sets and Exams**

*1:15pm, Moore 080*

- Jackie Villadsen, Graduate Student, Astronomy
- Chengyun Hua, Graduate Student, Mechanical Engineering

This session will focus on how to write new problems for homework, exams, and recitations. Starting with examples of good and bad problems, we will review some tips for designing problem sets and exams that help students learn and evaluate their understanding. We will also address practical issues such as how to create problems with reasonable grading time and differences between writing homework and exams. We will provide examples of effective problem sets from a range of disciplines and ask participants to analyze one to identify what makes it effective.

**An App for the Te(a)cher: Active & Collaborative Learning at Caltech**

*2:30pm, Moore 080*

- Julius Su, Program Manager of Community Science Academy
- James Maloney, Program Manager of Community Science Academy
Good learning is a contact sport. When students are asked to go beyond listening and to think, decide, analyze, solve, and write, their performance in classes improves. When students are asked to share their knowledge and work together, their performance improves further. In our hands-on session we demonstrate an interactive learning app, SKIES, developed by Caltech alums, and used by over one quarter of our undergraduates in biology, chemistry, and computer science classes. SKIES enables students and teachers to use mobile devices to create and contribute knowledge in real-time. We show examples of practical active and collaborative learning strategies that have been implemented at Caltech and discuss impacts on student learning and faculty instructional practice.