



Brought to you by the Caltech Center for Teaching, Learning, and Outreach



# 6th Annual Caltech Teaching Conference

*connecting through teaching*

Opening  
10:00 -  
10:45 AM

**Opening Session, Baxter Lecture Hall**

**Baxter  
Lecture Hall**

**Dabney  
Lounge**

**Beckman  
B180**

Block A  
11:00 -  
11:45 AM

*Fair  
Grading  
and  
Effective  
Feedback*

*Leading  
Successful  
and Popular  
Office  
Hours*

Block B  
12:00 -  
12:45 PM

*Effective  
Recitations:  
The Power  
of Being  
Prepared*

*Fair  
Grading  
and  
Effective  
Feedback*

Lunch  
12:45 -  
1:45 PM

**Dabney Gardens**

Block C  
1:45 -  
2:30 PM

*Your  
First Class*

*Giving Voice:  
Dealing with  
Unconscious  
Bias*

*Effective  
Recitations:  
The Power  
of Being  
Prepared*

Block D  
2:45 -  
3:30 PM

*Leading  
Successful  
and Popular  
Office  
Hours*

*Improvisation  
for TAs  
(ends at 4PM)*

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

## The Essential Toolkit for Teaching at Caltech

### Baxter B125

*Classroom  
Communication  
for  
International  
TAs and Others*

*Writing  
Problem Sets  
and Exams*

### Baxter 125

*Introduction  
to Chemistry  
TAing*

*ABCs of Course  
and  
Lesson Design*

### Baxter 127

*Starting Small  
with  
Active Learning*

*Classroom  
Choreography*

### Baxter 128

*Time  
Management:  
Focusing on  
Meaningful  
Activity*

*Responding to  
Student Writing  
in STEM*

### Table Talks

*1. Transparent Teaching 2. Copyright and Plagiarism 3. Honor Code  
4. Accessibility 5. Students in Crisis 6. Inclusivity in the Classroom*

*Motivating  
Yourself and  
Your Students*

*How Teaching  
Can Make You  
a Better  
Student*

*Inclusive  
Classrooms*

*Drafting a  
Teaching  
Portfolio*

*Fun and Games:  
Creating  
Memorable  
Learning  
Experiences in  
a Comfortable  
Setting*

*Life as a  
Lab TA*

*Teaching  
Outside the  
Classroom:  
Considerations  
for Effective  
Mentoring*

*Outreach: Good  
for the CV,  
Good for the  
Soul!*

## Guidance on Choosing a Session

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. Participation in the Opening Session is required for all G1s; experienced TAs and instructors are more than welcome to attend!

If you have never taught before or are new to teaching at Caltech, choose mainly from **Essential TA Skills** and **Teaching Development**.

If you already have some teaching experience, you may choose any track, but the **Teaching Development** and **Professional Development** tracks may be of special interest to you.

If you are not sure whether you are going to teach or not, the **Professional Development** track is for you! Also take a look at the **Teaching Development** choices, some of which are broadly applicable to a wide range of settings, now or later in your career.

## Download Today's Materials

All of the material from today's conference (as well as the TA Handbook) can be found online at:

**<http://www.teachlearn.caltech.edu/TAs/conferences>**

*Scan with  
your phone's  
QR Code  
Reader*



## The TA Handbook

The TA Handbook covers the following topics: Your New Role as a TA at Caltech, Teaching and Learning, Practical Advice for Specific TA Duties, Getting Feedback, Balancing Time Commitments for Teaching and Research, Teaching and Your CV, Caltech Honor Code, Institute Policies, and Campus Resources for TAs and Students.

Download the official TA handbook at the Teaching Conference website (use QR code above). Printed versions are available for pick up at the CTLO office in Room 359, Center for Student Services Building.

## Session Information

Sessions and summaries are presented in alphabetical order by session title.



# **ABCs of Course and Lesson Design**

*Jennifer Weaver, Associate Director, CTLO*

Are you interested in becoming a course instructor or designing a guest lecture? This session explores the fundamentals of designing a course or lesson (the pedagogical strategies and methods for both are essentially the same!). We'll discuss the process of Backwards Design, how to write learning outcomes, assessing your students and designing active learning activities to engage your students.

Baxter 125 | Teaching Development | 12:00 – 12:45 PM

## **Caltech 101: What You Need to Know if You're Going to Teach Undergrads**

*Valère Lambert, Geophysics*

*Erika Salzman, Chemical Engineering*

*Alejandro Lopez, Chemical Engineering*

In order to effectively teach students, it is crucial to understand your population and how they learn. In this session, we will provide an overview of key aspects of undergraduate life at Caltech and their relevance to being a teaching assistant for the undergraduate student body. The session format will be an open discussion, in which session facilitators will share their thoughts on what undergraduates hope for in terms of an effective TA.

Beckman Behav Biol B180 | Essential TA Skills | 2:45 – 3:00 PM

## **Classroom Choreography**

*Cassandra Horii, Director, CTLO*

Teaching includes many practical challenges; some of them, like writing on the board while still connecting with students, figuring out where to position yourself in the classroom, and gracefully interrupting students to help or move the class along, are also physical skills we can learn and practice. In this session, we'll identify some of the most common "classroom choreography" challenges, learn solutions to help you teach with more confidence and skill, and do some drills to practice implementing them. Get ready for fun, supportive, and lighthearted environment where it's OK to try new teaching "moves".

Baxter 127 | Teaching Development | 12:00 – 12:45 PM

## **Classroom Communication For International TAs and Others**

*Voon Hui Lai, Geophysics*

*Nadia Volovich, Biochemistry and Molecular Biophysics*

In this session, we will introduce techniques for communicating your course material well and enhancing your spoken English efficiency. We will also discuss simple steps to create active participation in the classroom, enriching both your teaching experience and your students' learning experience.

Baxter Basement B125 | Teaching Development | 11:00 – 11:45 AM

# Drafting a Teaching Portfolio

*Olivia Wilkins, Chemistry*  
*Kelsey Boyle, Chemistry*

A teaching portfolio showcases your teaching experiences and ability, and it is a valuable tool whether you are applying for a faculty position or reflecting on your teaching skills and philosophies. In this session, we'll go over the different components of a teaching portfolio, discuss different approaches to preparing this document, and draft a plan for how to write or revise their portfolio by identifying strengths and weaknesses of your current set of teaching experiences. We will also introduce different teaching opportunities and resources and how you might incorporate effective teaching strategies that will in turn strengthen your portfolio.

Baxter 125 | Professional Development | 2:45 – 3:00 PM

## Effective Recitations: The Power of Being Prepared

*Tal Einav, Physics*  
*Paul Kempler, Chemical Engineering*

*“A wizard can do amazing things if they have time to prepare.”*  
*-Harry Dresden*

Teaching is simultaneously thrilling, rewarding, terrifying and enjoyable. One of the most intriguing aspects of teaching is that you can always get better, and this workshop will show some of the secret sauce that can transform you from a good to great recitation TA.

Baxter Lecture Hall | Essential TA Skills | 12:00 – 12:45 PM

Beckman Behav Biol B180 | Essential TA Skills | 1:45 – 2:30 PM

## **Fair Grading and Effective Feedback**

*Kelsey Boyle, Chemistry*

*Kevin Yang, Chemical Engineering*

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 address three main topics: communicating expectations to students about assignments, grading efficiently and fairly, and providing effective feedback. You will become familiar with best practices for grading and feedback that won't take up all of your time!

Baxter Lecture Hall | Essential TA Skills | 11:00 – 11:45 AM

Beckman Bahav Biol B180 | Essential TA Skills | 12:00 – 12:45 PM

## **Fun and Games: Creating Enjoyable and Memorable Learning Experiences**

*Dylan Freas, Chemistry*

We've all been in a classroom that was painfully boring at some point in our lives. However, as an instructor or a TA, you will have the unique opportunity to create an educational experience that is fun, personal, and memorable. In this session, we will discuss different ways that you can create a fun and enjoyable learning experience in a classroom setting. Specific topics will include how to establish a comfortable learning environment early on, how to employ games and other interactive teaching strategies throughout the quarter, and how your relationship with your students can impact their learning.

Baxter 127 | Teaching Development | 1:45 – 2:30 PM

## **Giving Voice: Dealing with Unconscious Bias**

*Brian Brophy, Director of Caltech Theatre*

*Professor Melany Hunt, Mechanical Engineering*

*Daniel Martin, Electrical Engineering*

If one of your students was being unfairly treated due to unconscious bias, would you be able to recognize it? If so, how would you handle that situation? In this session, the presenters will re-enact a common scenario in the classroom and attendees will learn to recognize examples of unconscious bias and their options in resolving it.

Dabney Lounge | Teaching Development | 1:45 – 2:30 PM

## **How Teaching Can Make You a Better Student**

*Annelise Thompson, Chemistry*

*Heidi Klumpe, Chemical Engineering*

Teaching can be hard work! Sometimes a teaching assistant just wants to know, “What’s in it for me?” At the end of the day, how can learning to be a good teacher make you a better student? Come to this session to find out how research-supported teaching techniques that can help you ace your graduate classes or just improve your ability to learn and retain information!

Baxter Basement B125 | Teaching Development | 2:45 – 3:30 PM

## **Improvisation for TAs**

*Brian Brophy, Director of Caltech Theatre*

By the end of this session, participants will be able to improvise with a deeper awareness of non-verbal behavior; practice acting learning strategies, and recognize how the flow of teaching depends on the ability to stay in the moment, flexible in the power of not knowing all the answers. The session includes game playing while learning essential skills within the social dynamic of their TA community.

Dabney Lounge | Professional Development | 2:45 – 4:00 PM

## **Inclusive Classrooms**

*Erin-Kate Escobar, Assistant Director,  
Caltech Center for Diversity*

This session will introduce you to the key concepts of stereotype threat, unconscious bias and microaggressions, and how they manifest in the classroom. Through the use of common classroom scenarios, we will identify pedagogical practices for creating inclusive classrooms. By the end of this session, participants will be able to: define, understand, and mitigate the presence of stereotype threat, unconscious bias and microaggressions in their classroom and implement creative solutions to common challenges in creating equitable and inclusive classrooms.

Baxter 125 | Teaching Development | 1:45 – 2:30 PM

## **Intro to Chemistry TAing**

*Karli Holman, Chemistry*

*Ellen Yan, Chemistry*

*Michael Mazza, Chemistry*

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 a recitation, and being a grader, or lab TA. Our panel consists of experienced and passionate TAs, and we are eager to hear your questions and share our experiences.

Baxter 125 | Teaching Development | 11:00 – 11:45 AM

## **Leading Successful (and Popular!) Office Hours**

*Joshua Brake, Electrical Engineering*

*Daniel Martin, Electrical Engineering*

Office hours are a great opportunity for students to enhance their learning and thus are a major responsibility for every TA. In this session, we will explore how to prepare for office hours, guide students through problems, and address questions. Lastly, and most importantly, we will discuss strategies to inspire students to attend and use office hours effectively.

Beckman Behav Biol B180 | Essential TA Skills | 11:00 – 11:45 AM

Baxter Lecture Hall | Essential TA Skills | 2:45 – 3:30 PM

## **Life as a Lab TA**

*Karli Holman, Chemistry*  
*Rebekah Silva, Chemistry*

This session will be an introduction to the various duties of being a lab TA, which can be one of the most fulfilling and intellectually engaging teaching opportunities. We will cover the major responsibilities of a lab TA, with emphasis on in-class duties and interactions with students. We will also discuss how to communicate effectively in lab, how to facilitate lab sessions, and how to handle tricky situations with your students, including examples of common, challenging situations and strategies on how to handle them.

Baxter 127 | Essential TA Skills | 2:45 – 3:30 PM

## **Motivating Yourself and Your Students**

*Annelise Thompson, Chemistry*  
*Brendon McNicholas, Chemistry*

What actually motivates students beyond bribery and sweeping claims of future success? How do we motivate our students and help them feel like effective learners? We will take you through several strategies on how to motivate your students (and yourself) from day one in the classroom! Examples of motivational theory in practice will be drawn from the movies *Star Wars* and *Mean Girls* and our experience as teaching assistants at Caltech.

Baxter Basement B125 | Teaching Development | 1:45 – 2:30 PM

## **Outreach: Good for the CV, Good for the Soul!**

*Alex Phillips, Geochemistry*

*Mitch Aiken, Associate Director, CTLO*

*Kitty Cahalan, Outreach Program Coordinator, CTLO*

What is outreach, and how can participating in outreach activities improve one's teaching ability or understanding? How do we effectively reach different audiences, from new to a topic to the well-informed looking to deepen their understanding? And what role does outreach play in the broader community? Attendees of this workshop will learn about outreach opportunities at Caltech and the LA area and practice creating an activity that communicates a specific scientific principle to various audiences.

Baxter 128 | Professional Development | 2:45 – 3:30 PM

## **Responding to Student Writing in STEM**

*Susanne Hall, Lecturer and Campus Writing Coordinator,  
Hixon Writing Center*

One of the most important ways we learn to write is by getting feedback on our work from thoughtful readers. As instructors in STEM, responding to the many kinds of writing students produce 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 discuss about how to implement response strategies in the real world, where our time and energy for responding to student writers is not limitless.

Baxter 128 | Teaching Development | 12:00 – 12:45 PM

# Starting Small with Active Learning

*Olivia Wilkins, Chemistry*  
*Cassandra Horii, Director, CTLO*

Research has shown that “active learning” techniques improve student learning and retention compared to lecture alone. But how can you get started with these methods, especially if you have limited experience with them yourself? In this session, you’ll gain experience with active learning techniques that are relatively easy to incorporate in recitations and labs, explore what makes them work well, and plan for how you can start using them in your teaching.

Baxter 127 | Teaching Development | 11:00 – 11:45 AM

## Teaching Outside the Classroom: Considerations for Effective Mentoring

*Alex Barth, Chemistry*  
*Valère Lambert, Geophysics*

The strategies and techniques used for teaching are typically identical to those used for great mentoring. In this session, we will discuss what makes for effective mentoring, from working with undergraduate students to advising graduate students and beyond, whether for 10 weeks, 10 months, or a lifetime. This session will discuss strategies for evaluating students’ prior knowledge, effective communication with your mentee, establishing research and learning goals, and adapting goals throughout the term of your mentorship. Throughout this session, we will also highlight how mentoring mirrors teaching in the classroom and how you can adapt your teaching skills to working with your mentees.

Baxter 128 | Professional Development | 1:45 – 2:30 PM

## **Time Management – Focusing on Meaningful Activity**

*Grace Ho, Occupational Therapist,  
Student Wellness Services*

Get off to a good start to the term with our time management workshop! With an approach tailored to Caltech graduate students and postdocs, we'll take time in this session to define success and holistic well-being, plan an ideal week, and begin setting goals for success. Participants will also learn strategies for reducing barriers to productivity and will leave the session with goals set for the month.

Baxter 128 | Professional Development | 11:00 – 11:45 AM

## **Writing Problem Sets and Exams**

*Heidi Klumpe, Chemical Engineering  
Voon Hui Lai, Geophysics*

This session will focus on how to write homework and exam problems so that we can use these assessments as a teaching tool to maximize student learning. We will present step-by-step guidelines for designing effective problems, and discuss practical issues associated with authoring problem sets, including scaffolding and logistics.

Baxter Basement B125 | Teaching Development | 12:00 – 12:45 PM

# **Your First Class**

*Jennifer Weaver, Associate Director, CTLO*

The first day of class can be new and exciting but also a little nervewracking! In this session, we'll discuss two checklists: 1) what you can do to prepare for your first class, and 2) what to do during your first class to set you up for a great quarter with your students. Finally, we'll discuss strategies for dealing with some common dreaded scenarios (e.g. problem students and what to say when you don't know the answer).

Baxter Lecture Hall | Essential TA Skills | 1:45 – 2:30 PM

## Lunchtime Table Talks

### **Table 1: Transparent Teaching**

*Olivia Wilkins, Chemistry*

Keep the conversation going over lunch with a chat about what transparent teaching is, how it can benefit your students, and how you can start implementing transparent methods in your classroom.

### **Table 2: Copyright and Plagiarism: Considerations for the Classroom**

*Kathy Johnson, Author Services Librarian*

*Donna Wrublewski, Chemistry and Biology Librarian*

When can you reuse and redistribute other people's work in your own presentations and lectures? Is there a difference in using copyrighted materials vs. those distributed under Creative Commons licenses? What is Fair Use? Come chat about the most common misconceptions about copyright in the classroom and get tips and tools for reusing others' work effectively and appropriately.

### **Table 3: The Honor Code at Caltech**

*Denise Schmitz, Astronomy*

*Julie Hofstra, Chemistry*

What is the honor code and how does it affect TAs? We'll give you proactive tips to help avoid honor code issues, discuss proper reporting procedures, and let you know what to expect if you make a report.

## **Table 4: Caltech Accessibility Services for Students (CASS)**

*Kate McAnulty, Associate Dean for Graduate Studies*

Join the round table to learn about CASS (also referred to as Disability Services), and discuss the support that's available to you and the students you will teach.

## **Table 5: Connecting Student in Crisis to CARE Support**

*Charisma Bartlett, Staff Psychologist, Counseling Center*

TAs are often in a position to encounter students that are struggling for various reasons. Learn more about the Caltech Care team which helps TAs refer and connect student to appropriate resources.

## **Table 6: Ask Anything: Caltech Center for Diversity**

*Erin-Kate Escobar, Assistant Director,  
Caltech Center for Diversity*

Ask anything! Join the Center for Diversity to discuss any topic you would like about student and TA diversity at Caltech.

## ***Get Involved with the Caltech Project for Effective Teaching (CPET)***

CPET is a group of graduate students and post-docs dedicated to improving their own teaching skills and helping others to do the same.

### *Certificate of Interest in University Teaching*

The Certificate of Interest in University Teaching provides an introduction to various facets of teaching and learning through topical seminars and workshops. The journal entries written for each event are intended to assist participants in the development of their teaching philosophy. Please contact us at [cpet@caltech.edu](mailto:cpet@caltech.edu) if you are interested in participating in the Certificate of Interest program.

### *Certificate of Practice in University Teaching*

The Certificate of Practice is designed to assist participants in their evolution as instructors by providing a framework for their professional development. The Certificate of Practice program seeks three major outcomes for participants:

1. synthesis and application of effective methods for teaching and learning
2. assessment and implementation of a teaching philosophy
3. refinement of pedagogy through feedback and self-evaluation

## ***E110 - Principles of University Teaching and Learning in STEM (3 unit course)***

Research on university-level teaching and learning in Science, Technology, Engineering, and Mathematics (STEM) disciplines has progressed rapidly in recent years; a well-established body of evidence-based principles now exists to inform instructors and students at the undergraduate and graduate levels. Increasingly, future PIs and faculty are called upon to demonstrate knowledge of and ability to apply established pedagogical and assessment practices, as well as to analyze the efficacy of new approaches. In this course, weekly interactive meetings will provide focused overviews and guided application of key pedagogical research, such as prior knowledge and misconceptions, novice-expert differences, and cognitive development as applied to university teaching. We will also explore emerging higher education teaching and learning practices and their theoretical basis (e.g., the flipped classroom, online learning). Readings will inform in-class work and students will apply principles to a project of their choice.

### ***Course Offerings***

***Winter 2019 with Dr. Jenn Weaver***

***Thank You to the Teaching Conference  
Planning Committee and Session Facilitators!***

Alex Barth, Graduate Student, Chemistry  
Charisma Bartlett, Staff Psychologist, Counseling Center  
Kelsey Boyle, Graduate Student, Chemistry  
Joshua Brake, Graduate Student, Electrical Engineering  
Brian Brophy, Director, Theatre Arts, Performing and Visual Arts  
Tal Einav, Graduate Student, Physics  
Erin-Kate Escobar, Assistant Director, Caltech Center for Diversity  
Dylan Freas, Graduate Student, Chemistry  
Susanne Hall, Lecturer and Campus Writing Coordinator, Hixon Writing Center  
Grace Ho, Occupational Therapist, Student Wellness Services  
Julie Hofstra, Graduate Student, Chemistry and Graduate Honor Council Co-Chair  
Karli Holman, Graduate Student, Chemistry  
Melany Hunt, Professor of Mechanical Engineering, Engineering and Applied Science  
Kathy Johnson, Author Services Librarian, Caltech Library  
Paul Kempler, Graduate Student, Chemical Engineering  
Heidi Klumpe, Graduate Student, Chemical Engineering  
Voon Hui Lai, Graduate Student, Geophysics  
Valère Lambert, Graduate Student, Geophysics  
Alejandro Lopez, Undergraduate Student, Chemical Engineering  
Daniel Martin, Graduate Student, Electrical Engineering and CPET Co-Director  
Michael Mazza, Graduate Student, Chemistry  
Kate McAnulty, Associate Dean for Graduate Studies  
Brendon McNicholas, Graduate Student, Chemistry  
James Ousey, Graduate Student, Biochemistry and Molecular Biophysics  
Alex Phillips, Graduate Student, Geochemistry  
Harsha Reddy, Graduate Student, Aeronautics  
Erika Salzman, Undergraduate Student, Chemical Engineering  
Denise Schmitz, Graduate Student, Astronomy and Graduate Honor Council Co-Chair  
Rebekah Silva, Graduate Student, Chemistry  
Annelise Thompson, Graduate Student, Chemistry  
Nadia Volovich, Graduate Student, Biochemistry and Molecular Biophysics  
Olivia Wilkins, Graduate Student, Chemistry and CPET Co-Director  
Donna Wrublewski, Chemistry and Biology Librarian, Caltech Library  
Ellen Yan, Graduate Student, Chemistry  
Kevin Yang, Graduate Student, Chemical Engineering

# Conference Map



## Restrooms

- Dabney:** Binary Single Stalls (Women and Men): Lounge Southeast Corner, Basement, 1<sup>st</sup> Floor
- Baxter:** All Gender Single Stall, 1st Floor; Binary Single Stall (Women), Basement
- Baxter Lecture Hall:** Binary Multi-stall (Men and Women)
- Beckman Behavioral Bio:** Binary Single Stalls (Women and Men), 3rd Floor

## Elevators

- Baxter Central Hallway:** Enter from Beckman Mall; exit 2nd Floor for Baxter Lecture Hall
- BBB Central Hallway:** Enter from Beckman Mall; exit basement for B180 and B101