Leading Effective Discussions in Science and Engineering
CTL TA Orientation, September 19th, 2014

2 Workshop leaders: Gabriel Ehrlich and Rachel Egger

[In advance, write each of the five categories: Know your students, establish and open climate, make connections, structure your section, get feedback on the whiteboard/post-its with sub-categories: Why? And How?]

(5 min): Welcome Everyone, Introduce Workshop

Poll participants for show of hands: how many are in the classic hard sciences, engineering, social sciences? Who has taught before, or not at all?

Introduce selves (Rachel and Gabriel) from physics and biology backgrounds.

Use this info about diversity to point out that teaching in a variety of science subjects all comes back to a few core principles.

Goal of this area is to spend some time brainstorming with your peers and with us (R&G) about what goes into good science discussions.

5 areas to address when brainstorming how to lead effective discussions:

1. Why do you need to know your students? How do you do this?
2. Why is an open climate important and how do you establish one?
3. Why is structuring your section part of being effective and what are some ways to add structure?
4. Why are connections important to effective sections? How best to incorporate them into your teaching?
5. Why is getting feedback valuable to you? How can you get feedback at Stanford?

(5 Minutes) Ask students to get together in small groups (size depends on total number of people in the room) and assign groups one area to begin brainstorming on for the next 5 minutes. They can move on to other areas if they have time. [Pass out Leading Effective Discussions in the Sciences and Engineering Handouts during discussions].

(30 minutes)
Go through the five topic areas one-by-one, with one consultant facilitating and the other at the whiteboard, alternating. Facilitator can first ask groups who brainstormed what they came up with for the “Why?” and “How?” questions of their topics, then ask if any other groups had things to add. Use these topics as launching points to talk about other classroom topics, and especially emphasize anything particularly relevant to the sciences. The recording consultant should write
these lists on the whiteboard as you go, and add any additional input as needed. Consultants then switch roles and move on to the next topic until all 5 have been completed.

Some Examples (many others could and will come from students in any one workshop):

Know your students:

Why? Student ability levels, backgrounds, learning styles, connections to other coursework, disabilities

How? Name tags, photo book, index cards with fun facts and course background, encourage students to come to office hours, other ice breakers, engage when students ask outside questions

Establish an Open Climate:

Why? Student participation, feedback to gauge your pace/style/content, makes section much more productive for student learning

How? Encourage questions, receive all questions with positive reinforcement, adopt a more casual tone and presentation style, share some of your personal history, be available to students outside of class hours

Structure your Section:

Why? Makes things run more smoothly, clear expectations and goals for students, allows you to relax for a better climate, better able to handle questions

How? Intro and Outro, summary points, check-in with students, ask for questions, incorporate other types of activities like think-pair-shares

Make Connections:

Why? Helps students learn, makes discussion seem relevant to entire course, connections often not made in other part of course effectively, keeps students interested

How? Reference lecture material or other course material, use homework or exam style problems, bring in science happening in the news or other outside resources

(5 minutes) Ask students to reflect on the session and write-down one goal that they want to follow-up on themselves this quarter based on this session.
(5 minutes) Ask students to fill-out an evaluation for the workshop presenters and emphasize that this is valued feedback for changes to TAO next year! Explain that we tried to set an example of some of these concepts in this session today, and would love feedback on how successful we were. Finally, thank students for coming and for participating.