

Tips for First-Time Laboratory Teaching Assistants

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I started serving as a laboratory section TA my very first quarter at UCR. I was transitioning from being an undergraduate from a different university to becoming a graduate student, a Riverside resident, and a teacher all at once. And to make things more intimidating, my first TA assignment was for *laboratory* sections. Of course, discussion sections can be challenging as well, but lab sections are 2 hours and 50 minutes long. I remember nervously thinking, “How am I going to keep these students’ attention for 3 whole hours?” And more frightening was the thought – *what if they ask me something I don’t know?*

While the prospect of teaching lab sections for the first time might seem daunting, there are several preparatory actions you can take that will make you a more confident and collected laboratory instructor, and in turn, a better teacher for your students.

First and foremost, **thoroughly review each lab exercise on your own before teaching it.** Do not attempt to “wing it” – it won’t go well, no matter how well-versed you think you are with the subject material. I can’t emphasize this point enough – if you have not familiarized yourself with the lab beforehand, the students will know, and it will make you look disorganized and ill-

prepared. Worse than that is how disorganized it will make you *feel*, and feeling anxious and frustrated is a terrible state of mind to be in while trying to teach. There is an easy solution for this: simply visit the lab classroom with a pencil and a blank copy of the students’ lab exercise a couple of days before each new laboratory session. Bring a folder with you with the answer key in it for reference, but first try to execute each page of the lab exercise on your own before checking your answers. This will help you understand what the students will be working through and in what order, and can help you predict what sorts of questions they might have. Jot these questions down in the margins as you work and keep them in mind while you teach. When reviewing the answers to each part of the lab, try to think of at least 2 ways to explain each answer to your students. Students have different modes of learning, and sometimes simply using a different analogy can get your point across to a stumped student. But be sure to understand every single part of the lab exercise before you leave the classroom for the day. If you do not completely understand even a small aspect of the lab, make sure you contact the professor or lead TA about your confusion as soon as possible.

In reference to the common worry of being asked a question that you don’t know the answer to, try to follow this piece of advice that I learned from a fellow graduate student during my first quarter, “**Remember, you will always know more than the students**

will!” And if you’ve done your homework (as described in the previous paragraph), you most certainly will! Consider yourself the authority and don’t doubt yourself. You’ve done your homework, you’re prepared, and you’ve got this. You should go into each lab knowing that you can explain all of the procedures and conclusions *related to the lab itself*. Now, that’s not to say you won’t be asked a challenging question that is unrelated to the lab exercise but that is related to the class overall – but that’s a good thing! Thoughtful questions from students mean that you have piqued their interests and that they are engaged in the subject material, and these questions are to be encouraged. But they can sometimes leave you feeling like you’re put on the spot. There are a few ways to approach this situation.

Don’t be afraid to admit you’re unsure on something – students truly do appreciate the honesty! When asked a tough question, you can respond by saying, “That’s an excellent question, and I’m actually not 100% sure of the answer.” You can say what you believe the answer would be, but that you’ll check your facts and report back next week. Another option is to utilize some brilliant advice that I received from a UCR Chemistry professor, Dr. Sharon Walker, on this very topic. She suggested that if you find yourself stumped on a tough question from a student, you should commend them for asking an excellent question and tell them that you’ll award a little extra credit if they come back the following week with the answer to their own question. This way, the student is engaged in their own learning, and it additionally removes the responsibility of

having to look up the answer to every student question on your own time. When the student returns the following week to explain the answer to you, it’s a win-win situation: you learn something new, the student has done some real work on their own and is engaged in class material outside of what is required, and you have some great student-to-teacher interaction.

Facing laboratory sections for the first time as a TA can be a scary idea, but it can also be an extremely rewarding and fun experience as long as you do your homework ahead of time. Remember these simple tips:

1. Always, always, ALWAYS complete the entire lab exercise on your own before leading a class through it.
2. Remember – you will always know more than the students do about the lab tasks at hand!
3. Don’t be afraid to admit you don’t know the answer to every single question. Be honest.

Employ these tips and you will likely gain confidence as an instructor over the course of the 10-week quarter. Putting this much preparation into your lab section does take a considerable time investment, but it pays off in the classroom – benefiting both your students and your mental health! If you continue to teach the same lab class year after year (as many TAs do), this initial time investment will pay off each additional quarter that you teach that course. You’ll find that significantly less preparation is needed each subsequent year. But for you first-time lab TAs, I hope these tips help you

feel more confident and prepared to do your
very best in the classroom this quarter.
Good luck!