

The CLIMB Curriculum – Fall 2012

- **Academics**
 - Adapting to new teaching and learning approaches in grad school: Study groups
- **Research**
 - Case Studies of Common Issues in Joining and Starting in Research Labs
- **Metacognitive Skills**
 - Succeed with your strengths: Assess and apply your unique strengths to improve your chances for success in grad school
 - Assess your communication strengths with the Myers-Briggs types and apply them to work effectively with others
 - Succeed beyond your failures: Learning from your mistakes and obstacles in your development as a scientist
- **Oral Presentation Skills**
 - An intro to oral presentations and posters

1

Case Studies of Common Issues in Joining and Starting in Research Labs

Steve Lee, PhD
CLIMB Program
Assistant Director
Fall 2012



What is “Integrated Mentoring”?

- 
 - Traditional mentoring
 - mentor to mentee
- 
 - Peer mentoring
 - community of peers
- 
 - “Mentoring up”
 - mentee asks questions
 - mentee communicates their goals and expectations

3



Case Studies of Common Issues in Joining and Starting in Research Labs

To help you excel in your research labs, we'll discuss a variety of case studies that address common issues arising from the early stages of working in research labs. These case studies are based upon real situations that past CLIMB and other grad students have encountered, and involve doing research rotations, finding a lab, and working with your labmates. (The names and a few details have been changed, to protect the confidentiality of the people involved.)

Discussing these case studies should help you prepare for your own situations for two reasons. You'll become more aware of the full range of possible issues that might arise, and you'll develop foresight to anticipate potential pitfalls and benefits from working with your PI. Thus you'll be more prepared to navigate the process of developing productive relationships with your PI and labmates.

- Ground Rules for small group discussions:
 - Break up into groups of 3-5 students. Introduce yourself to the others if you haven't met each other yet. Decide within your group which case studies that you'd like to address.
 - Reader: read the scenario out loud and facilitate the discussion
 - Reporter: record your group's discussion and report back to the larger group; other people can contribute to the larger discussion, but the reporter will record your group's initial responses
 - Read these case scenarios carefully. Some contain subtle hints indicating what's really occurring under the surface.
 - Provide specific and realistic suggestions, rather than superficial suggestions. In other words, don't simply suggest that the student should talk with the PI and ask for help. Determine who they might ask, what specific help they should ask for, how they might ask, etc.
 - *Feel free to bring up related, current issues or questions that you're dealing with now.*

Case #1 – PI with constantly changing projects

- Dan has recently joined a lab with a junior PI, and the PI seemed to have some new, exciting projects. He was grateful to join this lab, because he had been having trouble finding a lab to join. His program does not have research rotations, so he had talked with a lot of faculty before finding a lab that would accept him.
- Dan started working on his main project, but after a week, the PI came up with another exciting project for him. Dan dropped his work in the original project, and switched directions. After another week, the PI said he needed to switch directions again for another project.
 - Dan started to get concerned. He preferred to focus on one direction, and it didn't seem efficient to be constantly changing directions.
 - What would you do in this situation?
 - How might you determine in advance if a potential advisor constantly changes projects for his students?
 - How would you react in an opposite case? In this opposite case, the PI is very stubborn and unwilling to change directions, even when you believe you need to change directions.

Case #2 – PI with a disorganized lab

- When Dan initially visited the junior PI's lab, he noticed that equipment had not been properly maintained and that the lab was disorganized and messy. Dan suspected that the PI had not had time to properly set up the lab since the PI was new, so he was eager to help. Dan wanted to focus on organizing the lab first, but the PI said that his new project was urgent, because they were collaborating with other faculty who were expecting results soon. The PI told Dan to ignore the mess, and to focus on obtaining results ASAP.
- As Dan started working in the lab, he became frustrated because he couldn't work efficiently. He had trouble finding chemicals and equipment. He also couldn't rely on instruments working properly because they had not been properly maintained, so he wanted to restore them properly first.
 - What would you do in this situation?
 - How would you react in an opposite case? In this opposite case, the PI or lab manager is very rigid in the lab structure, while you tend towards having a more creative approach to organizing your lab bench and area.

Case #3 – the micromanaging PI

- As Dan started working in the lab, he noticed that the PI would work from a desk in the lab space, instead of using his own office space. He learned that the PI's office was a mess and filled with books. As the PI worked in the lab, he would interrupt Dan's work to ask questions and request updates. Dan found it difficult to focus on his lab work with all of the interruptions. In the past, he had been used to meeting with the PI only once per week, and had been allowed to work more independently. But with his current PI, even when he was traveling, he would constantly email or call him for daily updates.
 - What would you do in this situation?
 - How might you determine in advance if a potential advisor has this particular working and communication style?
 - How would you respond in an opposite case? In this opposite case, the PI is constantly traveling and unresponsive to emails, so that your research progress is significantly delayed. What would you do to get the PI's attention?

Case #4 – cross-cultural issues

- Harry has just joined a lab. All of the other members of the lab are international students, and usually speak their native language. They are friendly to Harry, but he's been feeling left out of informal conversations and at their social activities because they often speak their native language. The PI is also from the same country and often speaks their native language. Harry is a third culture kid (See definition below.) himself, and so understands the importance of being culturally sensitive, but wants to connect more with his PI and labmates.
 - The term of "third culture kid" is used by sociologists and anthropologists, referring to children who accompany their parents into a new culture and grow up in a culture that's different from their parents. They are sometimes also referred to as trans-culture kids.
 - What would you do in this situation, to connect more to your labmates and PI?

Case #5 – lack of honest feedback from the PI

- Richard is close to finishing a research rotation, and thinks that things are going well with his PI. The PI walks through the labs several times each week, making sure that his students are progressing in their research, but he doesn't have formal meetings with his students. Recently, Richard heard indirectly from another source that the PI has actually not been happy with his work, even though he has not criticized him directly.
 - What would you do in this situation?

Case #6 – juggling work from a previous project

- Bill was working towards a master's degree at another university, before entering his PhD program. He was hoping to finish his MS degree before starting the PhD program and he had completed the experimental work, but the move to a new city and getting married had complicated matters. He is busy with his new coursework and research in the new PhD program, so finding time to complete the MS has been extremely difficult. On top of this, his PI for his master's work is pushing him to write a paper based upon his research, and has not been providing timely feedback on his dissertation. Bill speculates that his old PI is more interested in getting another paper published because she is coming up for tenure soon. He has been reluctant to talk openly about this with his old PI, because he doesn't want to upset her and he still wants to finish his master's degree to show that he accomplished something for this time at the other university.
 - What would you do in this situation?

Case #7 – possibly switching labs

- April had an extremely strong start to her PhD program. She passed all of her coursework (mostly with A's) and joined a PI who encouraged her drive and enthusiasm for research. April also told her PI that she has a reoccurring chronic medical problem, but she always worked around her doctor's visits and made up for missed time in the lab. She recently passed her qualifying exam, and it looked like smooth sailing from there. However, April's medical condition has been getting worse, and her doctors have not been able to diagnose the problem, leading to additional frustration and stress.
- The PI said that it was important for April to take care of her health, but has started questioning her dedication and focus to research, because of her increased number of absences and recent lack of productivity. April's initial positive relationship with her PI has now become so strained that it was stressful to be alone in the same room together. April also suspects that the PI has been feeling stressed for her upcoming tenure review, and passing that pressure upon April.
- April spoke with the head of the program, who suggested that it would be difficult to jump ship and find another PI who would be willing to take her in their lab, given her medical issues and probable negative reference from her current PI.
 - What would you do in this situation? Would you find a new lab, which would increase your time in grad school, or stay in your current lab? Why or why not?
 - If you think that April should look for a new lab, how should she find a new lab? Should she tell her current PI first, or contact potential faculty first?

Case #8 – stuck between the PI and a postdoc

- Heather recently joined a lab, and was given a project that was started by a postdoc in the lab. She began by following protocols that were written by the postdoc, but noticed problems with the results. When she asked the postdoc to confirm the protocol, he would brush her off with quick answers, and sometimes said that he didn't follow the protocol exactly and that it contained errors. Heather was confused with his behavior, and began to suspect that the project was taken from him, and that he resents her work.
- In a joint meeting with her PI and postdoc, she made sure that the postdoc was given an opportunity to speak openly and confirm that he was OK with giving the project to Heather. However, Heather still suspected that the postdoc only agreed, because he was afraid to disagree with the PI.
- Heather is frustrated, because her work depends on past work and experiments that were started by the postdoc, but is unable to proceed at a sufficient pace. The postdoc has not been helpful, and seems to behave passive-aggressively towards her questions and requests for help.
- Furthermore, the postdoc has asked that he be given first authorship if a paper were to be published, which Heather believes is acceptable since he started the project. But he has also insisted that he be given first authorship on a second paper, even though Heather would have done most of the experimental work and writing of the paper.
 - What would you do in this situation?

Case #9 – romantic relationships in the lab

- Mary has always been a hard worker in her PhD program. She works 16-hr days for 6 days a week, and even puts in 8 hrs on Sundays. Recently, the relationship with one of her labmates has gotten sour. Her labmate has not been contributing her fair share of the group's responsibilities and has not been helpful when Mary asked her questions or asked for help.
- Mary also noticed that her labmate and the PI has been spending a lot of time together in the lab and outside in social activities. She hears rumors that the PI is dating her labmate.
 - What would you do in this situation?

Case #10 – co-thesis advisors

- Tom is thinking of working with two professors for his thesis work.
 - What are some benefits of working with two mentors? What can he do to make sure to take advantage of these benefits?
 - What are some potential pitfalls of working with two mentors? What are some things he should do to avoid these pitfalls?

Case #11 – research rotations

- Laura started grad school with a very focused and specific target for her research interests. After her second rotation, she decided that she wanted to stay in that lab for her thesis, and the PI was willing to accept her.
- She wondered if she should complete a 3rd rotation, as her program requires, because she thought she could get a jump start towards her thesis research. She also wondered if a 3rd rotation would be a waste of her time.
 - What would you do if you were in Laura's situation?
 - If Laura were to complete a 3rd rotation, how should she explain the situation as she spoke to faculty for her next rotation?