

How to Succeed in Your Rotation

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Before you start: choose your rotation laboratories wisely. Rotations offer the chance to learn techniques outside of your immediate area of interest as well as to test the working experience in different laboratories in your area of interest. In addition there are several non-scientific considerations in choosing a laboratory. Does your mentor have a history of productive research, as evidenced from the publication record (search PubMed)? Is the funding level good? (search CRISP). Have previous students and postdocs gone on to successful careers? Is the teaching style of the mentor compatible with your learning style and your expectations? What do the current and past students say about their experience? You have only three (or four depending on the length of your rotations; this is something you should discuss with each faculty member before starting) chances to pick the laboratory you will work in for four to five years – so choosing rotations is a VERY important decision.

1. Most important item: Be there. Professors do expect that you will be in the laboratory when you are not actually in class. While most will have some sympathy for exam deadlines, it is not possible to focus solely on your coursework during your rotation and expect to get anything out of it. If you cannot commit 15-20 hours a week to a rotation – and during the same daytime hours in which others are available to assist you- you will not learn any biochemistry, or much about the lab.

2. Be proactive with your mentor. Some professors will assign you to a postdoc, others will work directly with you. Make sure that you know what you are expected to do the day before you have to do it. Write a starting protocol for your experiments and ask for approval and or suggestions. Aggressively seek out the information and the reagents you need to be able to do experiments ahead of time. Calculate, graph or plot your data promptly and seek out your mentor to ask when you can discuss the results with them. Do not wait for them to ask YOU about your experiment.

Whether you get positive or negative results, it is important that you carry out LOTS of experiments, because only in actually doing experiments can you learn experimental biochemistry.

3. Ask lots of questions. No one expects a beginning student to be able to understand all of the rationales for experiments and techniques; to design experiments right off the bat; and to know how to use all equipment. We would much rather you asked questions than to have you repeat a technique four times because you made assumptions about what to do or to use that were incorrect. You need to ask questions, and we expect you to ask questions. (On the other hand, asking how to perform a whole technique that you were already shown once or twice within the recent past gives the impression that you have not really paid attention- or taken any notes- while learning the technique.) **DON'T TAKE IRREVOCABLE STEPS-** throwing out any materials, thawing labile or irreplaceable reagents- without checking with your mentor!

4. Keep a good notebook. Always write why you did what you did, and after the experiment, what happened. It should be legible to others! Make sure you also take notes on where reagents you need are, and how to use the equipment. Use common sense with your notebook and around the lab- date and cap everything that goes into the freezer, be a good lab citizen in cleaning up after yourself, and make sure commonly used materials get replenished. Beginning students should write all of their calculations in the notebook since this is a common source of experimental failure for beginners in the lab.

5. Try to impress. The choice of a laboratory is a mutual decision between you and your professor. Your professor is judging you even while you are judging whether or not you would be happy in that laboratory. Even if you are pretty sure you don't want to stay in a given laboratory, that professor may well wind up being on your thesis committee. If you impress this person, you could have a letter of recommendation in 4 years that states "I certainly wish that XX had opted to stay in my laboratory for his thesis; I highly recommend him/her." Your mentors will be asked for an evaluation of your work during the rotation period; this information will go into your file.

So do some background reading without being asked. Watch what others in the lab are doing and ask questions. Work hard at the bench. Think deeply about what you are doing, what is new about it compared to previous work (both yours and in the literature), and how you could improve or extend your previous results each time you set up an experiment.