Week 1: Instructors Outline
Graduate Study, Choosing a Research Advisor and Project.

Part I: Introduction and Panel Discussion:

2:00 pm
Brief introduction of the course by Scott Schaus and Nolan McDougal

Student Introductions (one thing about themselves that they'd like to tell the group)

2:15 – 3:00
Panel discussion:
The first part of the meeting is an opportunity for students to share views on graduate study. "How I got here" testimonials will be delivered from a panel of graduate students, post-docs, and faculty members with focus on their past perspective of graduate study, how they selected a research advisor, and how they choose a research project

1. What was your background as an undergraduate and did you feel prepared for your first year in graduate school? Did it matter?

2. What is the hardest thing you encountered in graduate school?

3. What is the easiest thing? The most exciting thing? The scariest thing? The most satisfying thing?

4. Did you ever feel overwhelmed by the pressures of graduate school/ workload? If so, how did you deal with the pressures?

5. How did you pick a research group? Why did you choose the one you work/worked with?

6. How did you go about choosing a research advisor? What were some of the things you considered? What were the things you thought were important in your first year verses your last year – did your view change over the years. In hindsight, were there things that you now wished you should have ask and/or considered but didn’t know or didn’t think was important?

7. Once you joined a lab, how did you choose your research project and did it change over the course of your graduate time?

8. Comment on students switching labs and/or projects, from either an advisor’s point of view or with peers during your graduate work. Also comment on students indecision and the potential of rotations.

9. Did you have clear career goals when you entered grad school? If not, how did they evolve throughout your training?
3:00: Break for refreshments (Faculty will leave the room)

**Part II: Choosing a Research Group/Advisor and Project**

*A discussion of what students should look for in a research advisor and group, and how to choose a research project* (Graduate students only!)

The second part of the meeting will be a round table discussion with current graduate students on what students should look for in a Research Advisor and group when making their selection, as well as a discussion about choosing a research project.

The student-led discussion will cover research saturdays, rotations, and a review of questions students should have answered before selecting a Research Advisor (funding expectations, teaching requirements and expectations, lab atmosphere, time requirements, time working each week, time to graduation, vacation leave, and support for travel to meetings). An emphasis will be placed on students recognizing their own goals and interest, and in finding the best match in a Research Advisor.

3:15-3:50

**Panel Discussion with Graduate Students**

Begin with each of us (Nolan, Lauren, Jian, Andrew, and myself) give a short introduction of ourselves and a discussion of how we chose a research group/advisor, include the following in your discussion- defining the differences of importance placed on issues back when you were a first year students verse what you now consider important.

♦ What questions did you asked then and in hindsight what question(s) would you ask now. (what questions did you feel were most important back then verse questions that you now feel would have been more important to ask – if your questions of importance are different from then and now explain why, what changed.)

♦ Was funding a strong influence or factor when choosing a particular project or group? How strong (ie more or less important than the particular group or project?). (this could also include your teaching experience if you were not funded)

♦ Teaching expectations (also goes along with funding as well) Was it more important to be in a lab where you would not be teaching verse a lab with the project you want but involves having to teach for your funding. (Jian you have a nice positive spin on this if you could mention it)

♦ Did you talk to the students of the lab before joining? If so, was it helpful? Did meeting with lab group help sway you to a particular lab? If you didn’t, do you wish that you had met with the group beforehand and what would you have liked to learn from them?
♦ If you did **meet with students** of particular labs, what were some of the **questions** you asked them.

♦ Talk about what **type of lab and research advisor was a good “Fit”** for you (including their level of involvement with you as an advisor, their work ethic, their requirements, the lab atmosphere - group activities and outings, the group cohesiveness, dynamics).

♦ **Switching Labs:** This would also be a good place to talk about the fact that once you chose an advisor, if by chance you find out that they are not a good fit for you, that all is not lost - you don’t have to quite or drop out... or live miserably with the decision - there are options and many people with to whom you can talk, including the **DAC committee**. (It would be good to explain the experience of people in the dept who have switched labs).

♦ Talk about how important or unimportant the work **time requirements** of your lab were towards your decision (and has that **opinion changed**).

♦ Also if you came **across limited lab slots** as a decision, please talk about that and the impact it had on your decisions.

♦ Was the amount of **lab space** an issue for you (ie do you have your own bench your hood of concern? Or it is now)

♦ Did you consider the **number of graduate students** a particular advisor has graduated?

♦ Did you consider **where the past graduates of the lab have gone** (ie # going to academia verse industry or other fields? – did this play a role in your decision? Do you think it should have)

♦ Did you consider or place high value on the **background of your advisor** (ie where they received their degrees from)? Or their connections or collaborations with other labs and groups? Were these a factor? Or should they have been?

♦ **Talk about an advisor's flexibility.** Was this of high importance? Especially about vacation times, attending research conferences, or the number of hours or times in the day/night that you come into the lab and work. (this would be good to talk about how some advisors are flexible towards theirs students traveling home for a month each year and that the time is made up by working the weekends – both sat and sun). Also if any of you work odd hours or over the night this would be good to talk about that flexibility.

♦ **Was being able to attend conferences and meetings** of high priority with you were selecting an advisor? Did your advisor cover the cost? Have you gone to meetings
were the advisor didn’t cover the cost because they didn’t have the funding – was this a big issue for you?

♦ Also if you know of alternative funding (like using Katinka) this would be good to mention it.

♦ How important towards your final decision was the project in which you were interested? And if not important, should it have been more of a priority? Has your project changed or evolved from what you originally thought it would be?

♦ Also mention whether having a post doc in the lab was of importance to you initially? And is it something now? Or something you later found out was importance? (also undergraduates)

Talk about the environment of your lab. Does your group do outing or activities together? Is/was this important?

NOTES****

Make sure when you are talking to be very careful as to not “trash” a particular lab or “air out your own laundry” about your lab…but at the same time try to be frank and honest with your responses and answers.

Also be careful not to sound condescending. Be aware of how the audience is receiving what your are saying and be prepared to adjust or modifying what you want to say if it seems that they might be taking it negatively.

Besides encouraging the students to recognize their own abilities and expectations towards finding the best match in a research advisor and research group, also stress the importance that students change and evolve over the course of their graduate lives……and that one needs to make sure they really like and enjoy the project because they will be struggling with it for a very long time.

Also let them know that a lot of advisors tailor themselves towards the students and adjust to what each particular student needs… so when talking to group members one might get different opinions about a particular advisor from the different group members…. so it is important to talk to more than one group member to get a good idea about the lab group.

Also, be careful not to cause them to limit their possibilities when they are considering their expectations and own abilities…. Don’t let a weakness in a particular area of their background prevent them from choosing a project that is of interest to them…in which they might have a weak background (good examples here are my lab and Amy in Sean’s lab). This would also be a good place to talk about switching or changing your field of interest from when you initially applied to graduate school (Erin and I can talk about the fact we came in as org students switching to biochem…and then genetics for Erin).
want them to feel that they can join any lab or do any project of interest even if their background is weak.

Research Saturday Schedule:
Sept 18th: Grinstaff, Mohr, Snyder, Tullius
Sept 25th: Caradonna, Coker, Jones, Panek
October 2nd: Keyes, Mullin, Schaus
Oct 9th: Porco, Straub, Ziegler

There is a separate handout available to the students that has a list of potential questions that they can use when interviewing advisors and groups (it can be found on the outline page on the website in the reference materials section)

Choosing a research problem:

The following information will be available to the students on the outline web page in the “reference materials” section.

1) Choosing a research problem discussion Topics
   a) Your starting project and your thesis project: what are your expectations?
      i) Is the project worth doing (desirable science).
      ii) It is exciting. Can it be enthusiastically pursued?
      iii) Can interest be sustained
      iv) What is the potential for making original contributions to the science field and literature.
      v) Will it lead to future projects or other research problems
      vi) Is it manageable in size
      vii) If/when the problem is solved, will it be received well by scholars in the field?
      viii) Time Range:
            (1) Choosing a plan for six months and six years. Manageable size goals.
    b) The scientific method: What is hypothesis driven research? Is there any other kind?
    c) Progress in graduate research: What is to be expected and acceptable, and how to recognize it.
       i) Changes:
          (1) What if something goes wrong with the project
          (2) My or my research director’s focus changes, interest change, funding changes?
          (3) What if I decide I don’t want to work in a particular group?
    d) A PDF Hand-out title “Choosing a Research Projects (see reference materials section of outline page)
e) Ethical questions:
   i) What is acceptable behavior in independent research and competition in
      science?
   ii) What constitutes fair competition with a respect for the “ownership” of ideas?
   iii) Ownership (intellectual property): graduate work in patents compatible or
        not? Collaborations, Interdisciplinary