How to join a research lab
Some thoughts*….  
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* The comments and opinions described here are only my person opinions and are not meant to suggest these are school policy.
What is Research?

• Can be in any field

• Involves making or discovering something new

• Involves making independent decisions
Activities Typically Required in Scientific Research

• Analysis of scientific papers

• Presentations of your research and the research of others

• Development of a hypothesis

• Running complex experiments that evaluate if a hypothesis is correct

• Analysis of sometimes ambiguous data

• Determine the next step and a new hypothesis
Advice on being successful in research

• You need to be happy: a good fit with advisor and group

• Management of group plays a HUGE role in your success

• Must have tenacity

• Recognize rejection is part of process, retreat and try again

• Not uncommon to have experiments fail (90% failure rate?)

• Should work with group that publishes and presents (ie. Is active)

• But it is not all about research topic or group productivity
What do you learn in research?

• TENACITY

• Think critically about complex problems

• Independence

• Analyze multifaceted situations

• Overcome fear of difficult situations

• Become comfortable learning new concepts

• Develop logical solutions

• Work with people under stressful situations
What is Success?

• Reaching career goals

• Job contentment

• Being challenged every day?

• Job security- they need you….
Connection between Success and Research

WHAT YOU LEARN IN RESEARCH

- TENACITY
- Think critically about complex problems
- Independence
- Analyze multifaceted situations
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WHAT YOU NEED TO BE SUCCESSFUL

- Tenacity allows you to eventually solve a problem
- Independence is required for successful job
- Becoming used to rejection leads to success
- Critical analysis of research environment leads to good choices
- Tackling hard problems is requested in any situation
- Developing logic skills is needed in any job
- Learning to work long hours with people is an important skill
How do I get involved in research?
Steps to Take for Joining a Lab

• look at web pages for academic staff in the med chem program (see your book)

• find ~3 academics that you think do interesting research based on web page/book

• Examine academics and think about do they:
  a) Have publications with titles that interest you
  b) Show student involvement in their lab (pictures etc)
  c) Discuss former students (where are they now jobs, grad schools…)

• Rank your criteria based on your goals ie. Job opportunities, research area, lab dynamic, students in lab, group size, and space available in lab
How do I get involved in research?
Steps to Take for Joining a Lab

• This is not like signing up for a class. Taking on a student costs the academics
  a) Money (~$5000-$15,000)
  b) Time (time to analyze your data, train you and help you through the program)
  c) Their student’s time…

Write up questions for academics, suggestions include:
  a) Does someone train me?
  b) Do I get my project? Or initially work with someone else
  c) What hours do you expect on a weekly basis?
  d) Can I continue to work with you for my Ph.D.
  e) Can I talk to your group members?
How do I get involved in research?
Steps to Take for Joining a Lab

• E-mail 3 academics (send individual e-mails and personalize them).

• Keep e-mails short, request an appointment to discuss research and tell them your availability.

• When you meet them be polite, let them ask you questions, then before you leave ask your questions.

• You should talk to their students- this can teach you the group dynamic

• You may want to ask if you can attend their group meeting (a meeting where the group discusses science)

• Sell yourself during the interview- make them want you in their lab

• Remember to have them sign the paper but be clear about your interest level (ie if it is low then don’t indicate you want to join, if it is high explain that)
How do I get involved in research?
Steps to Take for Joining a Lab

• If you have permission to talk to the group students here are some potential questions:
  
a) Why did you join this lab?
b) How long have you been in the group?
c) What other labs were you considering?
d) How many publications do you have?
e) What is the average publications from your lab for an undergraduate? A grad student?
f) Do you get to present your work at any meetings?
g) What are the pros/best things about your advisor
h) What are the worst things about the group?
i) How many hours/week do you typically see in the lab?
j) Is your group tight knit or independent?
k) Did you have someone train you?
l) Does your advisor support you in your career goals?
m) Are you happy?
How do I get involved in research?
Making the final decision

• Try to meet with 3 academics and their group members

• Decide which group meets your needs best by comparing your priorities with the lab priorities.
What do you do when you have made a Decision?

• Ask the academic if you can join their lab
• Ask them when you can start, be sure to CLEARLY spell out:
  a) Start date
  b) Work hours/week and schedule
  c) Expectations on holidays
  d) Christmas and summer work opportunities
  e) number of credits
  f) If and when you will have someone to train you
  g) Your desk/bench space
• Provide a written schedule to academic
• ALWAYS show up on your schedule times (like a job) regardless of whether you have anything to do
• Put in more time than you have on your schedule
• Watch your colleagues run experiments so you can learn
• Go to group meetings
• Be curious
How do you Survive in a Lab Setting?

DO’s

- Always show up at your scheduled time
- If someone is training you and you will be late (even 5 mins) CALL THEM!
- Ask questions/be curious
- Watch others
- Get involved in group activities (lunch, coffee etc)
- Watch the dynamic and give yourself time to settle in
- Admit when you made a mistake
- Put in overtime
- Be independent
**How do you Survive in a Lab Setting?**

DON’Ts

• Do not be late when someone is relying on you

• Do not be arrogant or over confident (be humble)

• Do not ask the advisor questions that can be answered by the group

• Do not wait to do something- if you are stuck ask a group member about the next step