Applying to Graduate School in Physics
Workshop and Faculty Panel
October 8, 2014

Special thanks to Lisa Manning
Which Schools Should I Apply To?

Think about what you want:
- Theory or experiment?
- Department: Physics, Applied Physics, Astronomy, Engineering, etc.
- Field: Astrophysics, High energy physics, Atomic and molecular, Biophysics, Condensed matter, etc.

Do some research!
- Look at department and research websites
- Look at grad school rankings (both overall and for your specific field of interest)
- TALK to students and professors who know the schools!
- Find a match for your interests
How many schools?

Different answer for everyone…
- 8–12 schools is a common range
- **Choose a mix of schools** you have a very good chance of getting into, more uncertain ones, and “reach” schools. Give yourself options!
- Check competitive scores & GPAs for your list of schools (department websites usually have these stats)
- Talk to an advisor / professor / TA!

For each school:
- Look at the research program carefully – make sure there is **more than one** professor whose research you find exciting!
Things to Think (and ask!) About

- **Funding**
  - Is funding guaranteed?
  - Will you be a TA?
  - Consider applying for fellowships!

- **What is the program like?**
  - What classes are required?
  - Qualifying exam?
  - Finding an advisor?

- **How about the university?**
  - Location, student population, and culture
  - Is the graduate program important?
THE APPLICATION

- Letters of recommendation
- Statement of purpose / personal statement
- GRE scores
- Transcripts (request them early!)
- Application fees (get waivers!)

Make sure you **plan ahead** to get all these taken care of by the deadlines!
Letters of Recommendation

- Who to ask?
  - Undergraduate advisor
  - REU advisor
  - Boss (if work related to physics)
  - **Someone who knows your work**
  - NOT a TA or large class instructor

- Provide them with the info they need!
  - Deadlines, submission details, personal info if desired

- **Follow instructions** and remember deadlines!
  - Some schools will ONLY read 3
  - Give your recommenders several weeks’ notice to write, and **send reminders**!
General Tips:
- Use **concise**, not overblown language
- Focus on **why you are excited about your field NOW**, not what inspired you to get into it in the first place
- Keep the focus on your research. Be **professional**!
- Have a professor or grad student proofread it
- Keep it under the page limit
- **DON’T** be afraid to **self-promote**!
5 Questions to Answer in the Statement

1. Why do you want a PhD?

- Possible answers:
  - You love research
  - You want to teach
  - You want to contribute new knowledge to the field

- List your goals and ambitions
  - Be ambitious, but reasonable
  - Explain WHY you have chosen these goals
5 Questions to Answer in the Statement

2. Do you have the drive/focus to get a PhD?

- Grad school is hard! Are you ready?
  - You *know* it will be difficult
  - You are up to the challenge: hard-working, focused, etc.
  - Provide evidence and examples!

- Show a **serious interest** in the major issues in your field
  - Share experiences reflecting this
  - Be professional!
3. Do you have the ability to do graduate-level research?

- **Research skills** (the past!)
  - Describe research experiences; list *specific* skills

- **Research interests** (the future!)
  - List a specific field; describe a specific research project
  - Be clear and show understanding of your field

- If you plan to switch fields in grad school:
  - Explain why you are choosing the new field
  - Explain how you are qualified to succeed in it
5 Questions to Answer in the Statement

4. Why are you applying to this particular school?

- With whom would you work and why?
  - List specific professors (more than one!)
  - Show that you have read about their research!

- What do you like about the department?
  - No empty accolades
  - Give REAL, honest reasons why you think the department is a good match for you.
5 Questions to Answer in the Statement

5. What can YOU offer the department?

(Your Strengths!)

- Why are YOU a good match for them?
  - e.g., you are good at forming partnerships in a collaborative setting, or you have a demonstrated interest in their specific research track/specialty/approach
  - Don’t be afraid to (honestly) self-promote!!

- Diversity and Outreach: How can you contribute?
  - Many grants require diversity and public outreach
  - List experiences that improved your communication skills
  - Being a woman in physics helps with diversity!
GRE Scores

- Must take general AND physics GRE

- Study a bit for general
  - Need a high score on math section
  - English section rarely a factor
  - GRE prep resources at UCSB:
  
  http://clas.sa.ucsb.edu/academic-skills/gre-prep

- Physics GRE requires lots of practice!
  - Take practice tests! GREphysics.net and others
  - Practice timed tests; work through common problem types
  - Score matters, but can be balanced out by other parts of application
Why you should consider applying:

- Deadlines are earlier, but process is almost the same as applying to grad schools
- Having your own funding gives you more research options and flexibility!
- Often pays better than TA or RA positions
- Get a huge head start on grad school apps!
- Even honorable mention is good for your CV
Some fellowships to consider:

- **National Science Foundation (NSF) Graduate Research Fellowship**: $32,000 stipend and grad school tuition for 3 years. ~2,000 new awards per year. Must be U.S. citizen, national, or permanent resident. Deadline: Oct. 30 (for Physics)

- **National Defense Science and Engineering Graduate Fellowship (NDSEG)**: $31,000 stipend and tuition for 3 years. Must be U.S. citizen or national. Deadline: Dec. 12

- **Hertz Foundation Graduate Fellowship**: $32,000 stipend and grad school tuition covered for 5 years. Must be U.S. citizen or permanent resident. Deadline: Oct. 31

For other resources, see:
- [http://web.physics.ucsb.edu/~women/resources](http://web.physics.ucsb.edu/~women/resources)
- [http://ogs.tamu.edu/funding-information/fellowships/externally-funded-fellowships/national-fellowship/](http://ogs.tamu.edu/funding-information/fellowships/externally-funded-fellowships/national-fellowship/)
Our faculty panel is here to give advice:

- Prof. Leon Balents – condensed matter theory
- Prof. Beth Gwinn – condensed matter experiment
- Prof. Ruth Murray-Clay – astrophysics
- Prof. Joe Polchinski – high energy theory
- Prof. Joan Shea – biophysics & chemistry

Have a snack and chat with grad students, too!

This presentation will be posted on the Women in Physics website for reference: http://www.physics.ucsb.edu/~women