Fall 2023 Phys 496 Grad School Q&A Session

Topics

"To be, or not to be" (a graduate student)

- Things to consider when deciding whether to go to graduate school
- What's life like as a grad student

Applying to graduate school

- Issues to consider: e.g., recommendation letters, statement of purpose

How to choose a graduate school

- Sources of information on schools, faculty, and research

Getting into graduate school

- Some ways to make yourself competitive

“To be or not to be” (a grad student)

Did you enjoy your undergraduate research experience?

Graduate school is (almost) all about research. You must be willing to invest the time (typically 5-7 years) and long hours to get a PhD.

Do the research areas you have been hearing about sound interesting?

It’s important for you to expose yourself to all the different research areas, to see if anything strikes your fancy!

Does the open-ended nature of research appeal to you?

You’ll have guides in your research, but no experts who’ll know the answer for sure!

Are you resilient and not easily distracted or deterred?

You’ll definitely run into road blocks in research, and you’ll need to pull yourself through

Timeline of a typical grad student

- First year
  - some courses (2 to 3 per semester); prep for qualifying exam
  - learn about research opportunities
  - Serve as a teaching assistant
- First summer
  - start up with research group
    - hopefully that is the start of a longer term relationship
- Second year
  - generally you take a ‘qualifying’ exam at beginning of year
  - 1 or 2 courses each semester, ramp up on research
  - Become a research assistant in this and (maybe) subsequent years
- Third year
  - 1 specialized course per year (maybe), mostly research
  - thesis proposal (“prelim” exam)
- Years 4-N
  - focus is entirely on research
  - you may take an occasional “seminar” course

What's Grad School Like?

Question: "Can we take some time off to [insert activity here] and then go to grad school…or would my chances lessen as a result?"

Answer: There is no rush to go to graduate school, particularly if you're unsure about your plans and interests. If you decide to take a year off before going to grad school, this probably won't hurt your chances with most admissions committees. Doing something productive certainly helps but is probably not essential.

You might not want to delay taking GRE exams and transitioning into graduate coursework can be challenging after a prolonged delay.

What's Grad School Like?

Question: "How is grad school paid for?"

Answer: In grad school you will generally be supported either by a TA or an RA, so you won't have to work another job to support yourself. Tuition is generally waived in PhD programs.

However, be on the lookout for "professional masters" physics and engineering programs that won't provide salaried jobs and waiver-generating appointments

Preparing for Grad School

Freshman/Sophomores

- Get good grades!
- Think about undergraduate research
- Don’t put off laboratory courses!

Juniors

- Undergraduate research!
- Get good grades!
- GRE in April?

Seniors

- Check test deadlines and applications deadlines early!
- Take GREs in **September** or **October**
- Research graduate schools, faculty, and research areas
- Line up recommendation letters early…think carefully about writers
- Polish the statement of purpose…have someone proofread it!
- Apply to schools starting in early December…check deadlines!

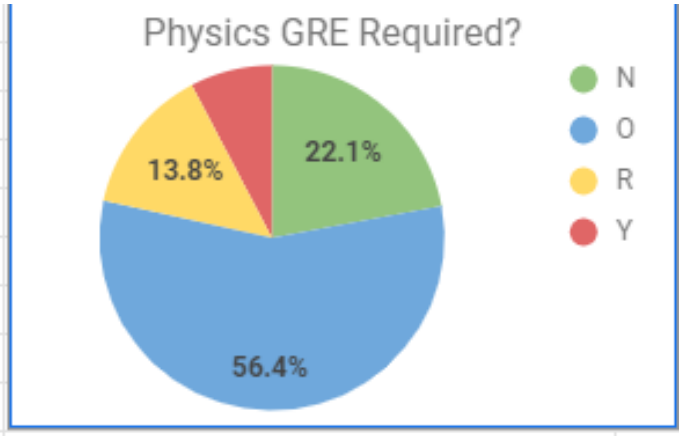
Preparing for Grad School

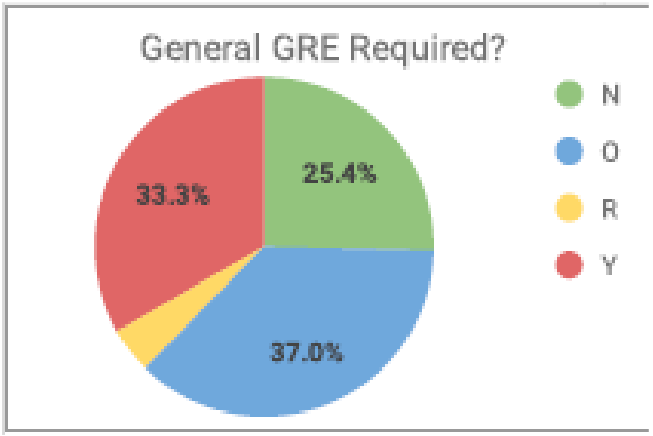
Question: "Should I take the GREs?"

Answer: This depends on where you're applying. More and more schools are either not requiring the GREs or are making the GREs optional…but you need to check with the specific schools you're interested in.

*For an updated list of schools that do and do not accept GREs, see:

https://docs.google.com/spreadsheets/d/19UhYToXOPZkZ3CM469ru3Uwk4584CmzZyAVVwQJJcyc/edit#gid=0





Preparing for Grad School

Question: "How much research experience is needed to be competitive for a top grad program?"

Answer: You're not competitive if you have NO research experience, but it isn't necessary to have long experience or multiple experiences.

At least one quality research experience – leading to a satisfied supervisor and a strong recommendation letter – is probably better than several short research activities in which you're unable to make much research progress or form much of an impression on your advisor.

If you do have an opportunity to explore more than one research opportunity, try sampling different research sub-fields, if possible.

Preparing for Grad School

Other issues:

Grades vs GRE?

At Illinois – and indeed at most places, I think -- grades are weighted more than GRE scores. Math and Physics grades are most important, as are grades in upper level courses

Don't slack off your senior year!

If you're on the borderline for admission, admissions committees often ask for updates of grades and look at course deficiencies.

Interested in theory?

Take more math!

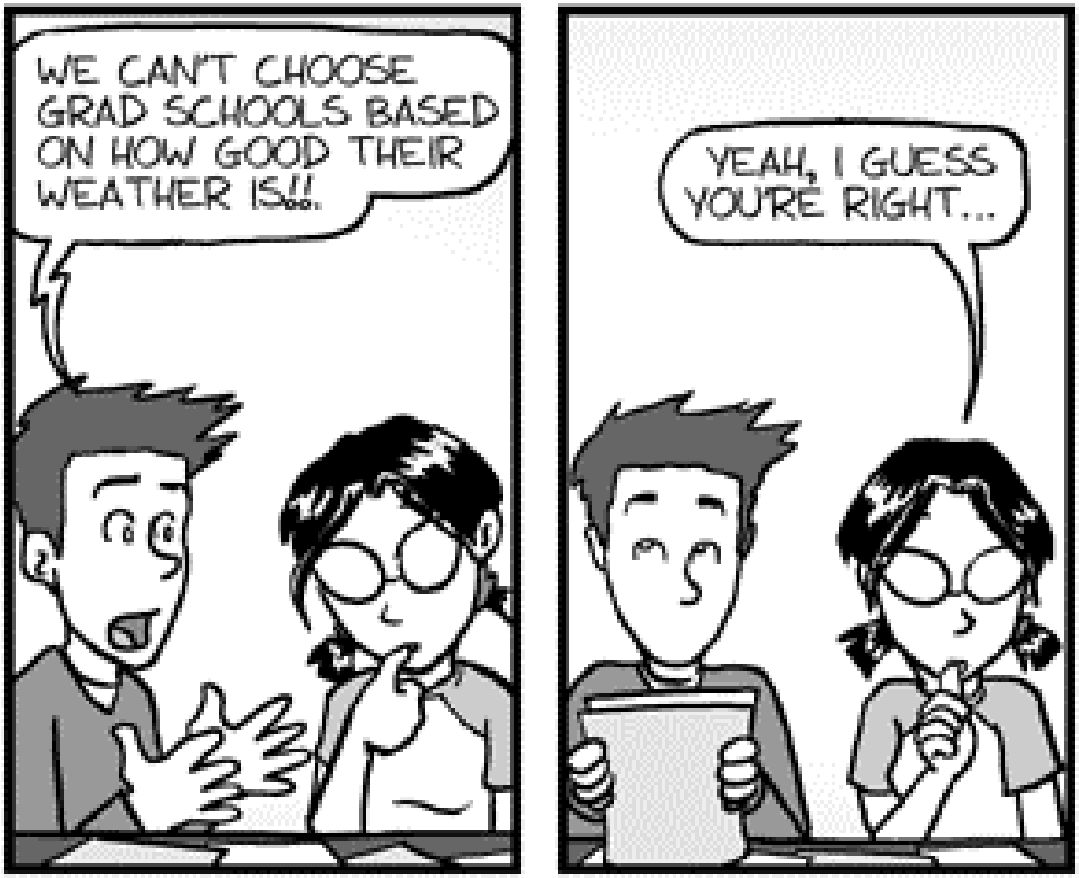
Interested in experimental physics?

Take more labs! Take labs earlier rather than later!

Not sure about your research interests?

Sample different research areas, if possible.

Applying to Grad School



Applying to Grad School

Question: "What should be included in the statement of purpose?"

Answer: The statement of purpose is very important, as it is one of the only places to put information about your research abilities in your application.

- Emphasize your research experience and enthusiasm for research…describe what got you "hooked" on scientific research
- Explain your interests: don't be too vague or broad in your descriptions
- Tailor part of the statement to the institution: explain why the institution you're applying to is ideal for fulfilling your goals…name specific faculty in whom you're interested
- Have someone edit your SOP…avoid typos and grammatical mistakes!

Applying to Grad School

Question: "Who should I consider for recommendation letters?"

Answer: Recommendation letters are of crucial importance, and they should emphasize your research abilities, if possible

- You should have **at least** 1 letter writer who can describe your research abilities
- If you use a letter writer from a course, choose someone who can comment on special qualifications you have, not just what grade you received
- Give your letter writers plenty of notice…do not wait until the last minute to ask them to write letters
- Provide your letter writers with a copy of your CV and, if possible, a draft of your SOP

Some Graduate school application deadlines*:

Deadline	Schools
Dec. 1–21, ’23	Berkeley, Cal Tech, Chicago, Columbia, Cornell (Physics) , Cornell (App. Physics) , Florida, Harvard, Johns Hopkins, Maryland, Michigan, Minnesota, MIT, Ohio State, Princeton , Purdue, Rochester, San Diego, Santa Barbara, Stanford (Physics), Stanford (App. Phys), Texas, UCLA, Wisconsin, Yale (Phys & App. Phys)
Dec. 26–31, ’23	Northwestern, Rutgers
Jan. 14-21, ’24	Illinois

*Often significantly earlier for fellowship/international applicants

Choosing Grad Schools

Question: "What schools are considered safety schools? How many schools should I apply to?"

Answer: Tough question -- the answer to this of course depends on your grades, test scores, and specific research experience. The top 10 programs aren't sure bets for anyone. You should NOT apply just to 2-3 top programs. You should probably apply to 6-10 programs, with a good distribution between "top" and "mid-level" schools. Try going on-line to see qualifications of different classes.

Check out Gradschoolshopper.com and look for schools with good programs in your field of interest ***and*** high acceptance rates.

Sort by: Acceptance Rate

Total: 134 Results

Note: Click on column header to sort.

	School name	Department	Acceptance rate	Number applied	Number admitted	Number enrolled
1	University of Chicago	Astronomy & Astrophysics	6.59%	273	18	4
2	New Mexico State University	Astronomy	7.95%	151	12	5
3	Wesleyan University	Physics	8.89%	45	4	3
4	Vanderbilt University	Physics & Astronomy	8.94%	179	16	11
5	Clark University	Physics	9.52%	21	2	1
6	University of Oklahoma	Physics & Astronomy	9.79%	143	14	14
7	University of Wyoming	Physics & Astronomy	10%	90	9	6
8	University of Maryland, College Park	Astronomy	10.74%	149	16	9
9	University of Pennsylvania	Physics	11.99%	467	56	19
10	Kent State University	Chemical Physics	12%	50	6	6
11	Indiana University, Bloomington	Astronomy	12.28%	57	7	3
12	University of California, Santa Cruz	Physics	12.45%	265	33	9
13	Brown University	Physics	12.54%	319	40	15
14	Columbia University	Physics	12.62%	523	66	28
15	University of Denver	Physics	12.77%	47	6	4
16	Wayne State University	Physics and Astronomy	13.16%	76	10	7
17	University of Chicago	Physics	13.54%	886	120	45
18	Central Michigan University	Physics	14.29%	28	4	4
19	Case Western Reserve University	Physics	14.53%	117	17	11
20	University of California, Irvine	Physics	14.69%	490	72	29
21	North Dakota State University	Physics	15%	20	3	3
22	Duke University	Physics	15.86%	290	46	17
23	University of Mississippi	Physics & Astronomy	16.13%	62	10	10
24	Georgia State University	Physics & Astronomy	16.36%	110	18	18

https://www.gradschoolshopper.com/gradschool/rankby.jsp?q=2&cid=3

51	University of Illinois, Urbana-Champaign	Physics	24.88%	852	212	83
52	Texas Christian University	Physics and Astronomy	25%	20	5	3
53	University of South Florida	Physics	25%	92	23	15
54	University of Notre Dame	Physics	25.13%	191	48	17
55	University of Texas at Austin	Physics	25.99%	354	92	26
56	University of North Carolina, Chapel Hill	Physics & Astronomy	26.23%	183	48	9
57	Oregon State University	Physics	26.32%	133	35	13
58	University of South Dakota	Physics	26.32%	19	5	3
59	Missouri University of Science & Technology	Physics	26.67%	45	12	12
60	University of Missouri, St. Louis	Physics & Astronomy	26.67%	15	4	4
61	Columbia University	Department of Applied Physics and Applied Mathematics	27.23%	606	165	
62	University of Iowa	Physics & Astronomy	27.54%	138	38	12
63	Lehigh University	Physics	27.97%	118	33	12
64	University of California, Riverside	Physics & Astronomy	28.23%	294	83	34
65	University of Alaska Fairbanks	Physics	28.57%	28	8	4
66	University of Minnesota	Physics	28.88%	322	93	36
67	University of Texas, Arlington	Physics	28.99%	69	20	10
68	Northeastern University	Physics	29.02%	224	65	30
69	University of South Carolina	Physics & Astronomy	29.11%	79	23	11
70	University of Nevada, Las Vegas	Physics	29.63%	27	8	7
71	Carnegie Mellon University	Physics	29.93%	274	82	23
72	University of Nebraska, Lincoln	Physics & Astronomy	30.24%	205	62	25
73	Purdue Universty	Physics	30.31%	320	97	28
74	The Graduate Center - The City University of New York	Ph.D. Program in Physics	30.6%	134	41	20
75	Ohio State University	Physics	30.71%	394	121	39
76	University of Illinois, Chicago	Physics	31.45%	124	39	13

https://www.gradschoolshopper.com/gradschool/rankby.jsp?q=2&cid=3

Choosing Grad Schools

Other issues to consider:

Don't be too selective: Apply to all the programs in which you have a strong interest

Aim high! Don't be too quick to convince yourself that there are schools you simply can't get into—but also apply to a "safe" school

Don't put your 'eggs' in one research 'basket': Make sure there is more than one research project you're interested in at a particular school

Don't assume you're sure about what research area you're interested in: Allow yourself the opportunity to shop around

Fellowships! Remember, it's not just about admission. If your application is in top shape, you can also have a shot at a fellowship…these may have an earlier application deadline

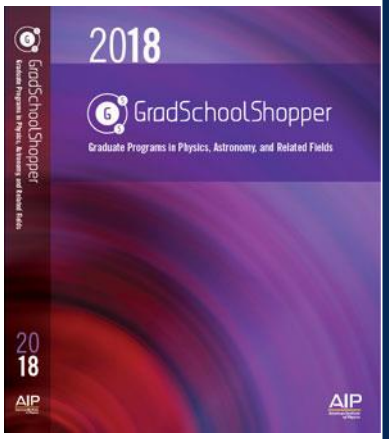
Choosing Grad Schools

Where to get information on departments:

(1) Departmental websites

http://www.google.com: Search: "school" + physics

(2) Talk to faculty in your departments



(3) Graduate Programs in Physics, Astronomy, and Related Fields: http://www.GradschoolShopper.com

(4) Rankings:

PhD.org: http://www.phds.org/rankings/physics

National Doctoral Program Survey: http://sites.nationalacademies.org/PGA/Resdoc/

U.S. News: http://www.usnews.com/usnews/edu/grad/rankings/rankindex_brief.php

Caveat emptor!

Fellowship Deadlines

- NSF: October 20, 2023 (for Physics & Astronomy)
  http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201
- Hertz Foundation: ~ October 27, 2023
  http://www.hertzfoundation.org
- National Physical Science Consortium: December 29, 2023
  http://www.npsc.org
- American Assoc. Univ. Women Fellowships: November 15, 2023
  http://www.aauw.org/what-we-do/educational-funding-and-awards/
- Gates: October 11, 2023 (US citizens); December 5, 2023 or January 4, 2024 (non-US, depending on course)
  https://www.gatescambridge.org/

Choosing a Graduate School

Other issues to consider:

If you haven't settled on a research area, think big: Larger schools generally have more diversity of opportunities and research areas

Go on as many visits as possible: This is a great way to see the true level of activity in a department, to get a feel for the style of the department and of the different research groups, and to get a feel for the community

Talk to graduate students in the department and research groups you're interested in: They can provide real insight into the character of the group or department…but consider only first-hand information

Talk to faculty at Illinois about up-and-coming programs: Illinois faculty in your research area of interest will likely have the most updated information on strong programs you might consider

Quality of life issues are important!: You're going to be in grad school for 5-6 years, and so to do your best work, it's important that you're comfortable in the environment and with the people you're working with

Choosing a Grad School

Question: “How do you find a group/advisor once you’re admitted?”

Issues to consider:

Is your “top choice” faculty member taking students?
Call or e-mail him/her and ask (after admission), ask during visit days

What is the “style” of the group in which you’re interested? (find out from current grad students, by calling or asking during visits)

- Does the faculty member maintain close oversight of students, or does he/she let students work for long periods of time by themselves?
- Are the research projects collaborative (multiple students), or does every student have his/her own project?
- Will you be expected to build a new apparatus (or write new code), or will you be jumping in the middle of a well-developed project?
- Is it likely you’ll be constantly funded during your tenure, or will you be expected to TA periodically?

OTHER QUESTIONS?