

Graduate School

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Based on a 2022 talk by Anthony Aportela & Noah Paladino

Disclaimer

Much of the advice given is based on our personal experience with the physics PhD program application process. Some of our advice is anecdotal and will not necessarily apply.



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- Works on CMS & SpinQuest with Phil Harris
- Serves on the Graduates Advising Graduate Admissions for MIT Physics



Malina Desai

- First year Physics PhD Student at MIT
- Works on ML methods for LIGO
- Volunteering as a mentor for the Physics Graduate Application Assistance Program

Questions to ask yourself before applying

01

Do I enjoy research?

02

Will this help me pursue my career goals?

03

Do I want to continue taking classes?

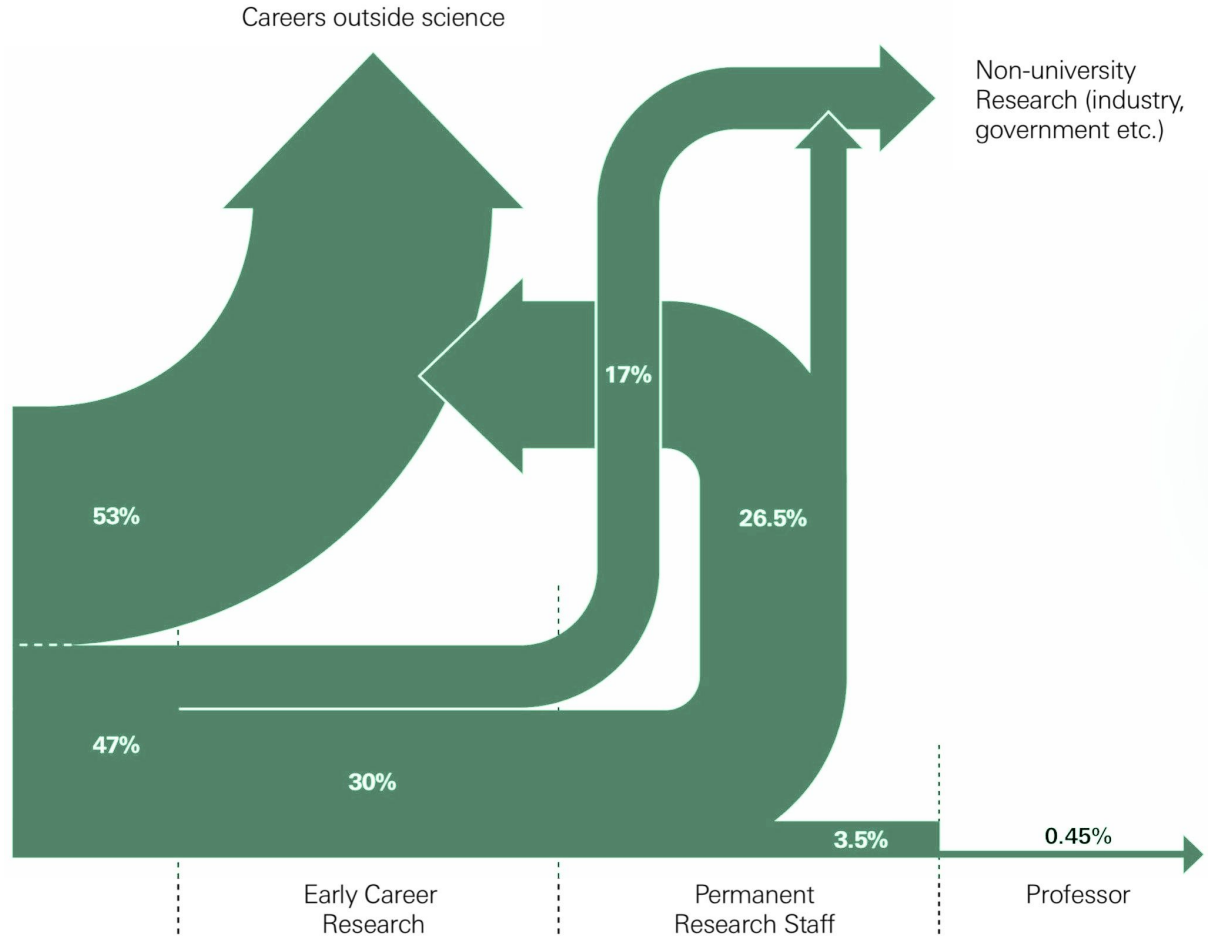
Opportunities After Grad School

Postdocs

- Established Pipeline
- Path to Faculty
- Great for those wanting to pursue research

Industry

- Still viable even after a PhD
 - Many skills will be transferable
 - Might be less research oriented
-



What is Graduate School Like?

- Experiences can be very advisor/group/location dependent
- Challenging but can be very rewarding
- Relatively low pay but relatively high job security
- Potential for travel
- First year classes are generally considered difficult
- A lot of schools require some amount of time as a teaching assistant

What is in a Typical Graduate School Application?

01

Statement of
purpose

- Describe your experience and goals
- Explain why the school is a good fit for your research interests
- Mention specific groups that interest you
- More on this later!

02

Letters of
Recommendation

- Most schools require 3 letters
- Research-related letters (from the PI) are often more important than academic ones
- ***Make sure you waive your right to see them!***

What is in a Typical Graduate School Application?

03

Personal Essay

- Gives context to your application
- Can include cultural background, personal history, outreach, and leadership

04

Transcript

- Check unofficial or official requirements
- Might need to list in-progress classes in the portal

05

Standardized Test Scores

- Check requirements for general and subject GRE's
- If optional, only submit if your score improves your overall applicaiton

Other things to consider:

- Consider getting into contact with advisors you are interested in to learn more about their research and see if they have openings
- Think about school location and culture - will you be happy there for several years?
- Apply for application fee waivers early
- Check for early submission deadlines for internal fellowships

01

Statement of Purpose

- Tell the story of your research journey
 - Focus on what **you** contributed and what **you** learned
- Emphasize how this specific graduate program will be a good fit
 - Indicate particular groups and their projects that interest you
- Cut the fluff!
- Let your voice shine through

1

Who are you as a researcher?
What drives you?
What do you want to research and accomplish?

Experience + Meaning + Match

What have you learned and accomplished?
Why does it matter?
How does it make you a good fit for the institution?

2

Which professors do you want to work with?
Projects or research directions?

Career goals

<https://mitcommlab.mit.edu/eecs/commkit/graduate-school-personal-statement/>

03 Personal Essay

- Sometimes required, sometimes optional, sometimes not allowed
- Information in the Personal Statement and Statement of Purpose should largely not overlap

[mit personal statement](#)

	Statement of Purpose	Personal Statement
Focus	Share why you are applying to graduate school/specific programs, and how graduate school contributes to your future goals.	Share your personal background and how your past shaped you into who you are today to make you a good fit for your program of interest, independent of the statement of purpose.
Purpose	Primary document in your application package for graduate school that may determine your admission.	Complements the Statement of Purpose in your application package and may be applied towards internal scholarships or fellowships relevant to your program of interest.
Audience	Show the admissions committee your credentials/qualifications as to why you are a perfect fit for this graduate program.	Show the admissions committee your personality and give greater insight into your background, perspective, and work ethic.
Content	Example topics include: <ul style="list-style-type: none"> • Previous education • Relevant work, research, and/or extracurricular experiences • Specific program/research interests • Future career goals 	Example topics include: <ul style="list-style-type: none"> • Social, educational, familial economic and cultural background • Challenges and opportunities relevant to your academic journey • Leadership contributions to social, intellectual, and/or cultural diversity in your field • Motivations for applying to grad school • Personal goals and career dreams
Reflection	How your future will be affected by your decision to go grad school.	How your past affected your decision to go to grad school, and how your past defines your future now.

Graduate Fellowships

- Good idea to apply when applying for graduate school
 - Usually due before applications
 - Often require similar documents, essays, and letters - helps you prepare
- Examples:
 - NSF Graduate Research Fellowships Program (GRFP)
 - DoD National Defense Science and Engineering Graduate Fellowship Program (NDSEG)
 - Hertz Fellowship
 - Other field-specific fellowships

Typical Applicant Fall Calendar

September:

- Start asking people to be letter writers (especially for fellowships)
- Take the physics GRE
- Start planning the list of schools to apply for (target 8-10, more isn't always better) (expensive)
- Start fellowship applications
- Start emailing professors

Typical Applicant Fall Calendar

October:

- Finalize and submit fellowship applications
- Finalize list of schools to apply for
- Start your graduate school applications
- Take the physics GRE (again)

November-December:

- Finalize and submit graduate school applications
-

After Acceptance

- If you are accepted to more than one school, wait until closer to the acceptance deadlines to make a decision
- If you get any advanced offers, like guaranteed housing, extra fellowships, etc, you can use this to your advantage to negotiate a better offer at other schools where you are in contact with advisors who want you there
- If the school offers a visitation, use that as an opportunity to grill the program
- They are trying to convince you to go there instead of going to another school or into industry

Picking a School and a Group

- You don't just apply to the grad school, you apply to the groups
- Don't just apply to "good" research but places you think you might be happy
- Vet your potential advisors at your potential schools
- Talk to students
- Ask hard questions
 - What's the culture like?
 - Why did they choose to go there?
 - Is there collective representation?
 - Is housing affordable?
 - Is there anything you wished you knew before going to this school?
 - Is there a GRE/qualification/thesis dissertation requirement?
- Be sure where you go has a plan B for you

Questions?



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