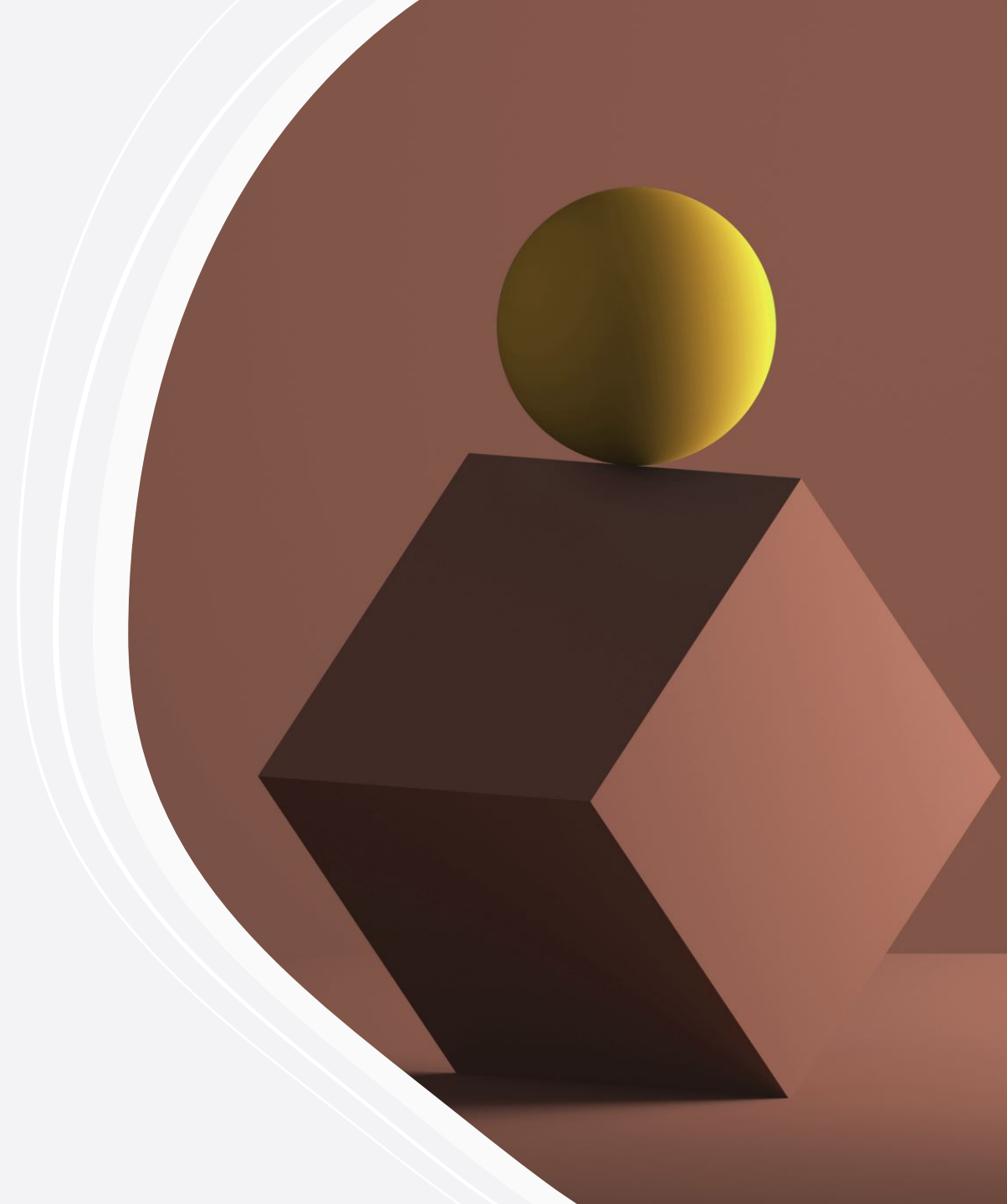


**So, you've decided  
to do more of this:  
graduate school in  
physics**



# What is it?

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1. 1-2 years of classes (physics), teaching assistantship
2. Move into research (means preparing before this)
3. Research full time, supported by grants
4. Research, write papers, go to conferences
5. 4-7 years. Experiment 5-6; theory 4-5.

# What does it do for you?

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1. Pays for terminal degree, pays you to do physics.
2. Training for advanced physics work.
3. Sophisticated project and problem solving on a timescale measured in months or years.
4. Teamwork and leadership training.

# Should you go?

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1. A job requires it.
2. If you love physics research  
research, not physics classes  
why research experience is so important
3. Graduate school is not an extension of undergraduate education.
4. Graduate school in physics isn't something you want to "try."
5. What do you want to do with your life? Make those decisions now. If it involves graduate school, pursue it with 100% of your life and energy and dedication.

# Meta-analysis part 1: narrow interests

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1. The finer you can narrow your interests the more advantageous it is:  
Exp/Theory, discipline, sub-discipline.
  - *Guide where you apply to school.*
  - *Help tailor your application.*
  - *Guide courses to take.*
2. Don't narrow randomly just because I said it was a good idea!
  - *Work on narrowing interests consciously, think about it, make decisions.*

# Meta-analysis part 2: You are responsible

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1. In high school, you may have had parents/guidance councilors
2. Finding places to apply, finding application requirements, registering for exams, showing up for exams, getting applications, filling out applications, sending applications on time.
3. Changes due to COVID
4. Departments changing requirements every year.
5. Letters of recommendations

# Meta-analysis part 3: small world

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1. In undergraduate education, about 3 million students send about 10 million applications each year.
2. For graduate school in physics, that becomes thousands. The number each school gets is in the hundreds (OU: 100-200).

# Where to apply?

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1. Depends on interests.
2. Don't know -> larger departments.
3. Talk to faculty who are in the field you want to study.
4. Can research departments themselves.
5. Best departments aren't obvious.
6. Best research within departments aren't always obvious.
7. Rankings are garbage.
8. Apply to 5-9 places.



# Timeline

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1. End of Summer: register GRE(s), research, make decisions, talk to faculty, decide on letters.
2. Sept-Oct: GRE(s)
3. Dec-Feb: applications due.
4. Mar: acceptances, visits.
5. April 15: deadline to accept. Key, they cannot force a decision earlier.

# GRE

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1. Fewer require them every year.
2. How to approach the physics GRE is its own talk, and beyond the scope of this class.
3. Practice official exams under test conditions, practice time management. 100/170. Memorize important equations. Your goal is not to learn physics you don't know but be able to produce physics you do know under extreme time pressure.
4. General is given all the time. Physics at specific times/locations
5. Scout your location, prepare for your time.

# What are graduate schools looking for? How can I give my application the wow factor?

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1. Graduate recruitment committees will look at your application, trying to answer one question, "*Will this student succeed at research?*"
2. They will rank and match incoming classes with research needs of department.

# Application: forms

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1. Lists and spaces for awards, extra-curricular activities, skills, service activities.
2. Sure, put shit down. Doesn't matter. No one cares.\*
3. Don't give any indication that any activity or hobby competes with physics for your attention.

# Application: things that matter

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1. Transcript
2. Physics GRE (for those that require it)
3. General GRE (just kidding)
4. Remember small numbers, they are going to look at the detail.  
One dimension can make up for something else.

# Application: things that *really* matter

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1. Letters of recommendation

# Application: the statement of purpose

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1. Like, have one. Actually having a purpose is a good thing.
2. Don't be corny/melodramatic. Convey **realistic enthusiasm**. Convey professionalism.
3. You did physics research. You found you enjoyed research (specific example). You want to pursue research as a career. You think [insert specific about school] is a reason you would be a good fit.
4. 1-2 two pages. Don't brag too much here.
5. Never forget, you want to pursue a career in research.
6. It should be written coherently. Have a writing center look at it.

# Deciding on where to go

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1. Visit.
2. Talk to graduate students there.
3. Who is taking students? Who isn't?
4. What are barriers to success? Hurdles?
5. Money doesn't matter
6. Trust your gut.



# Afterword

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1. Still positions floating around if you strike out.
2. Sometimes can slip in off semester.
3. It is possible (but not guaranteed) to defer a year.
4. You can go somewhere else.
5. But, if you continue, the real difficulty begins: choosing an advisor, the most important decision of all.