Is grad school right for me?
If so, how do I get there?

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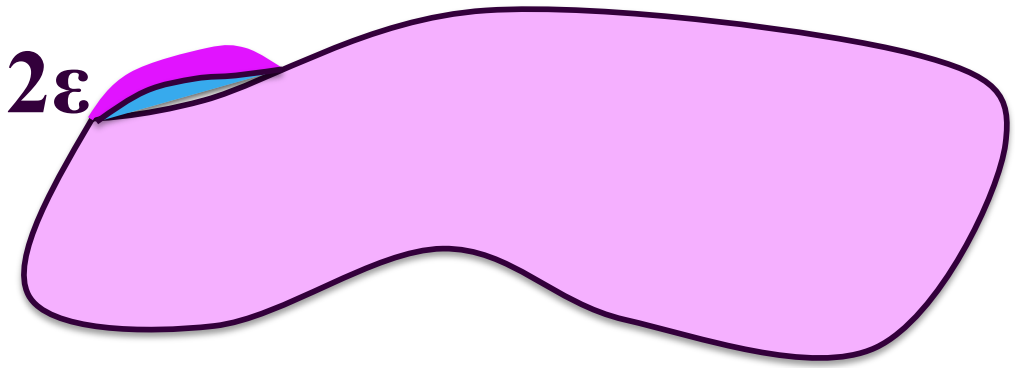
What is a PhD?

- Take some piece of knowledge about the universe from (frontier – ε) to (frontier + ε)



- Start out knowing nothing about a topic, and four years later you are the world expert

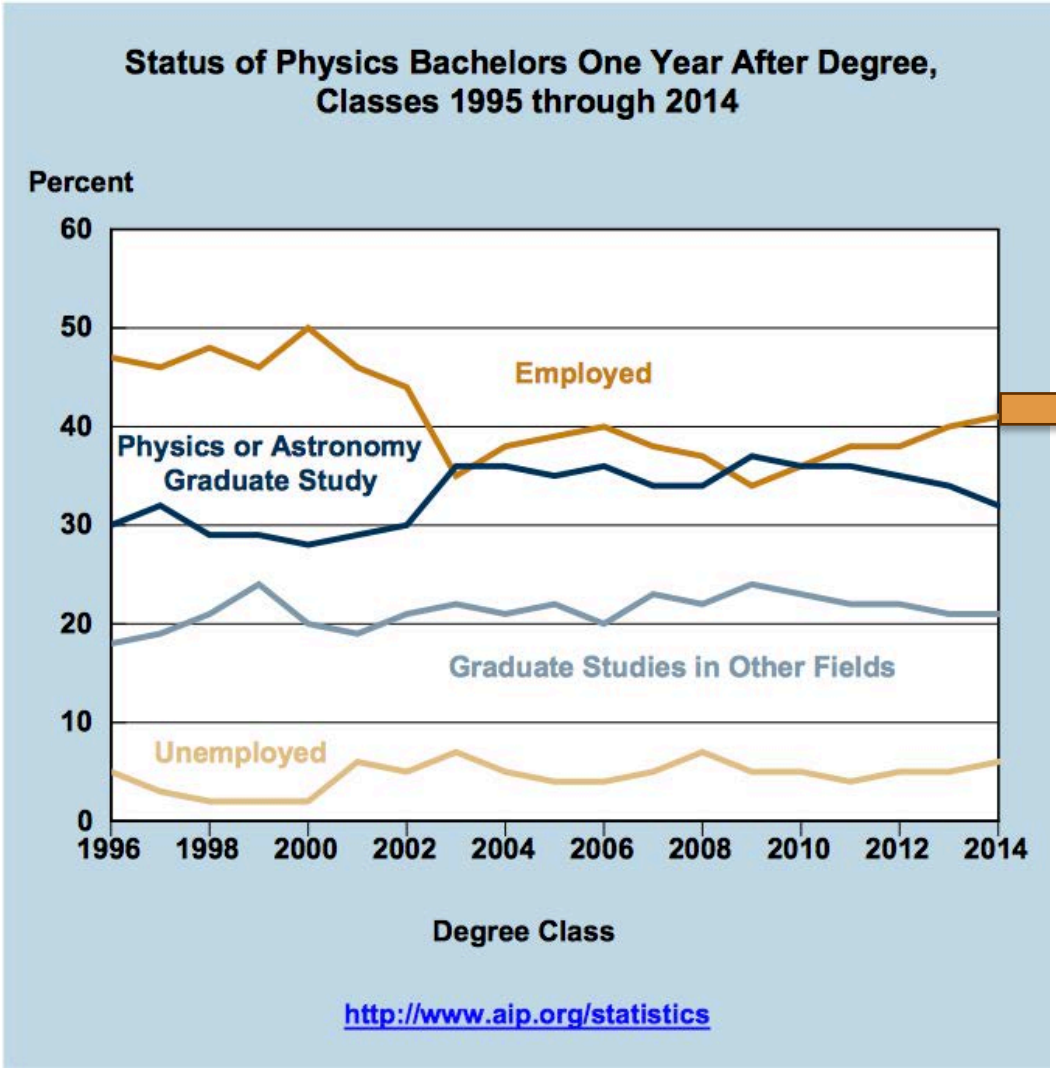
- "License to think" – allows you to direct research projects, teach @ college/univ, write grants

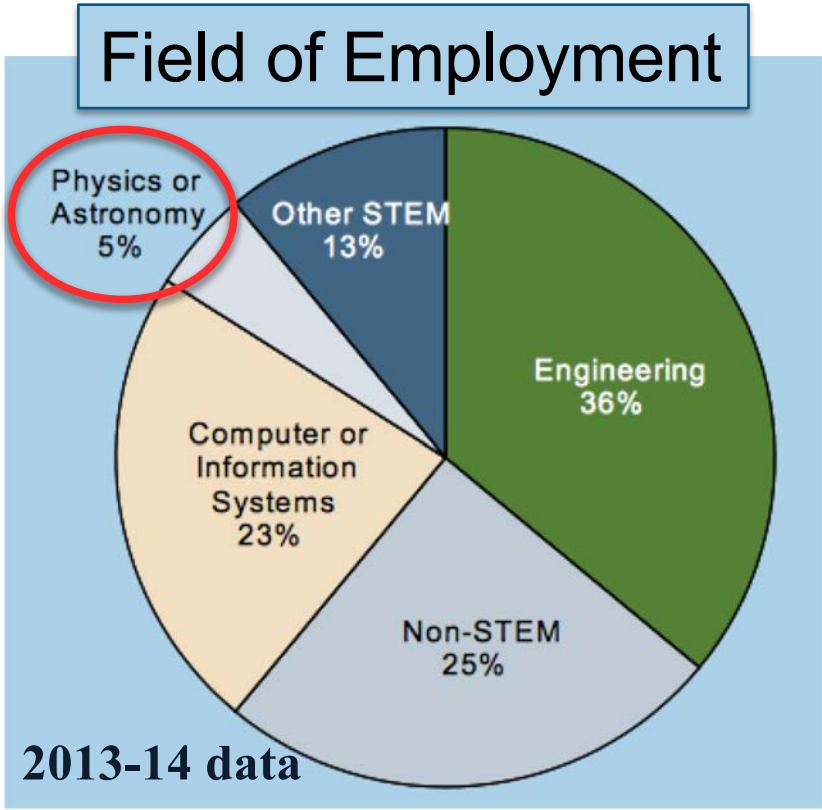
Why Go to Grad School?

- Participate in the excitement of the intellectual frontier
- Deeper understanding of a subject
- Better/different job prospects
- DON'T Drift into graduate school

What else could I do?

Trends in initial outcomes of physics bachelor's
Classes of 1995 to 2014 (1 year post degree)



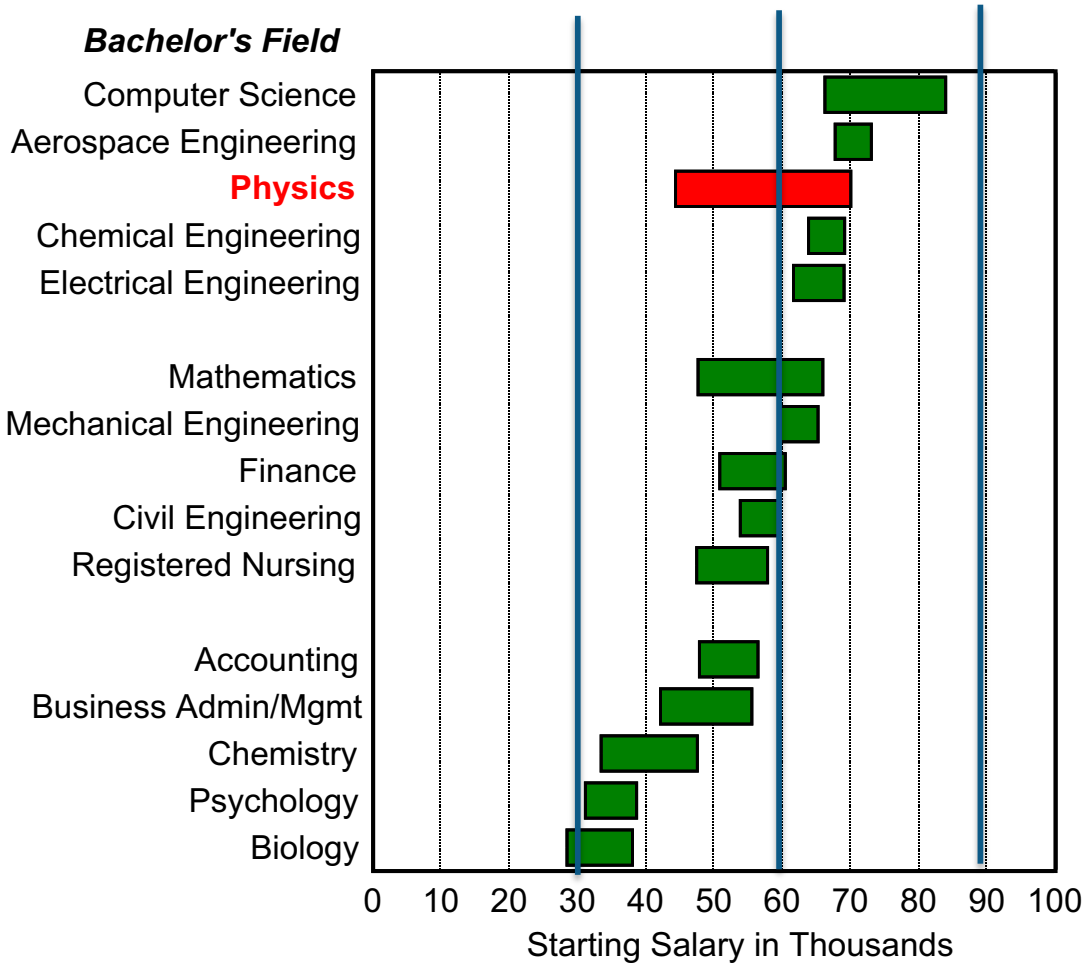


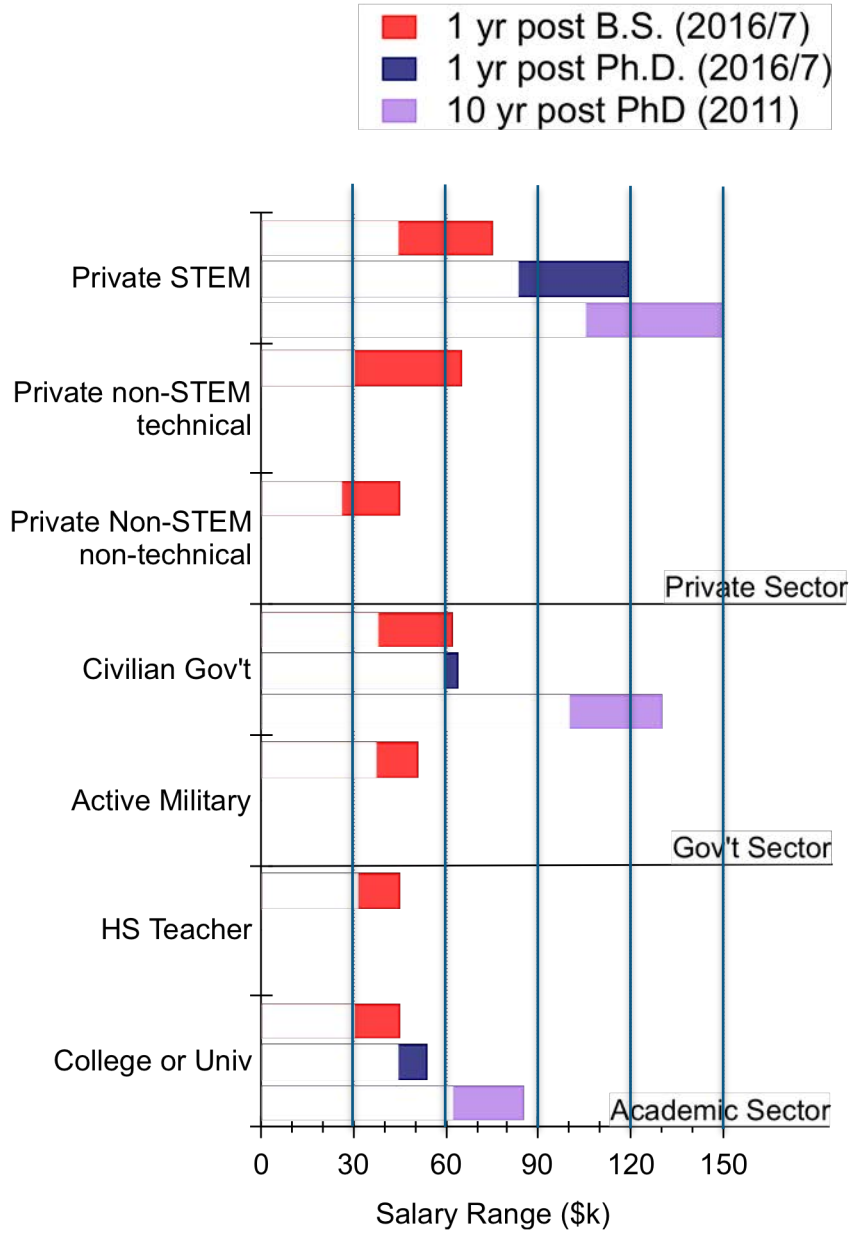
http://www.aip.org/statistics

What might I earn?

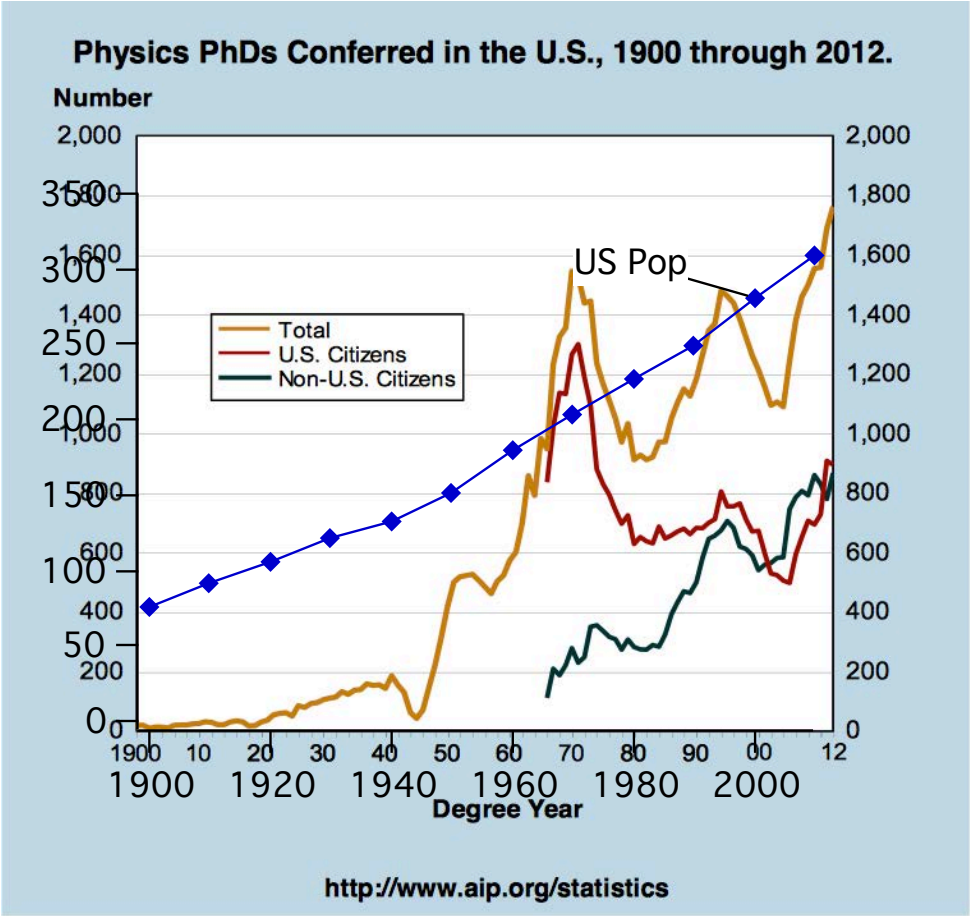
What's a Bachelor's Degree Worth?

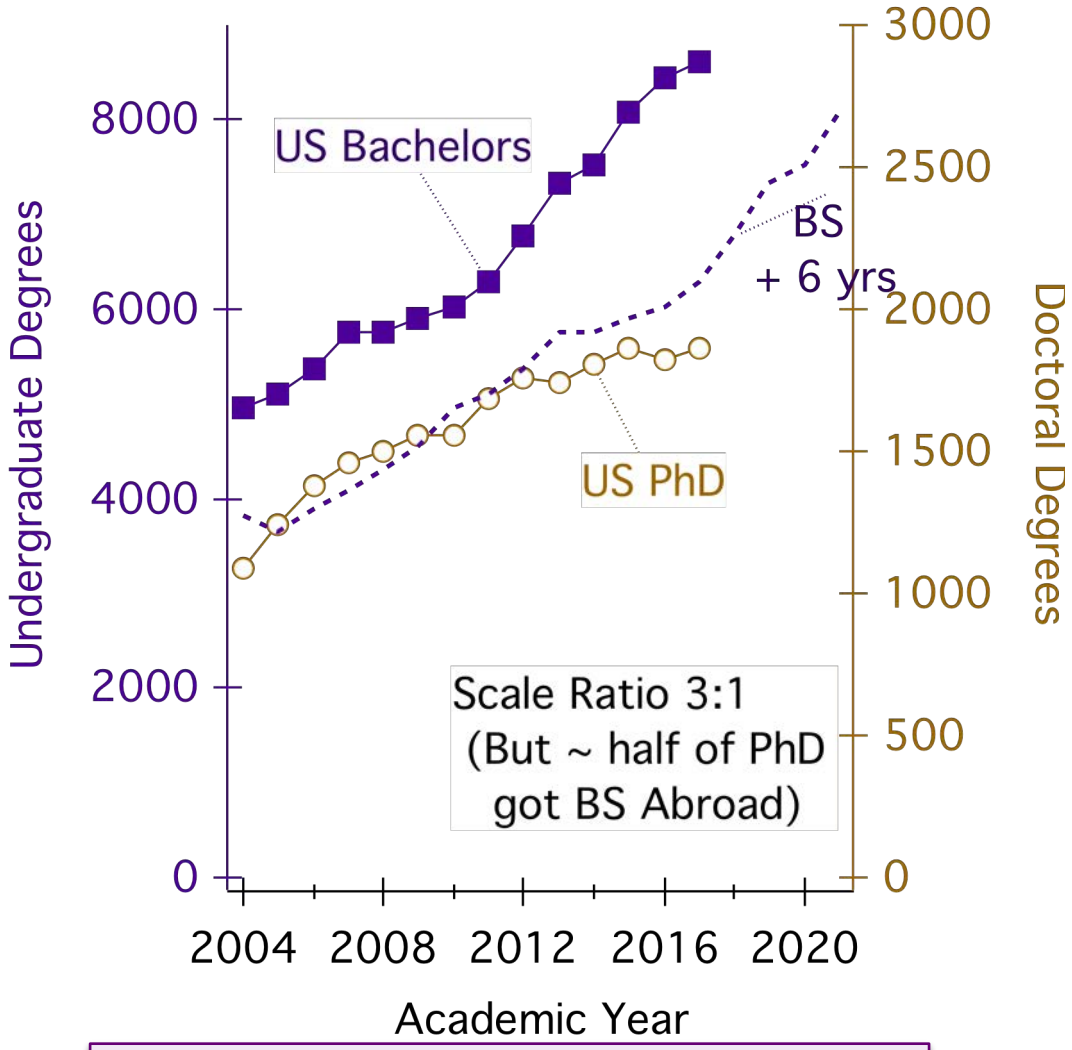
Typical Salaries for Bachelor's Degree Recipients, Class of 2015





Who gets a physics PhD?



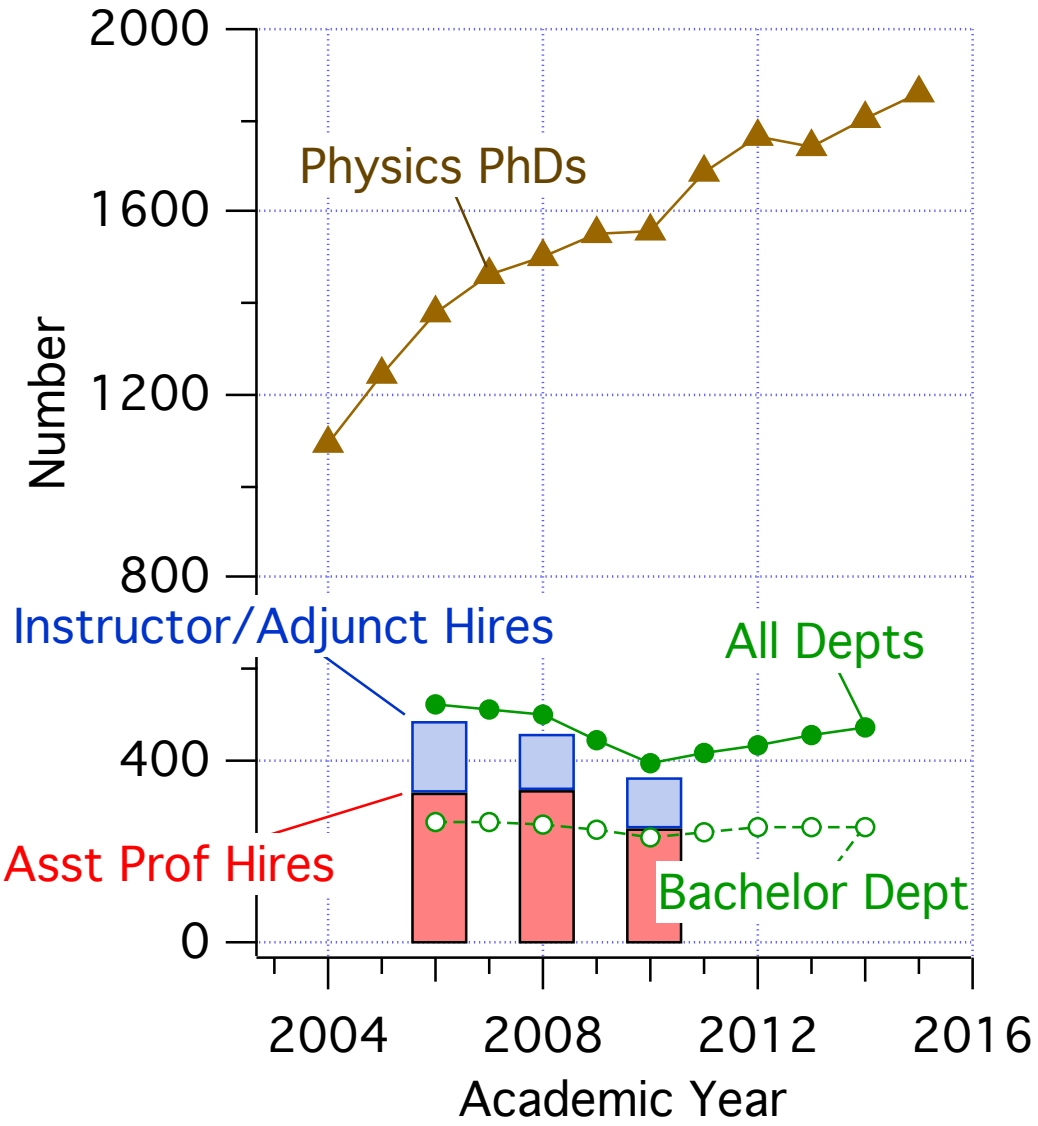


Physics PhD's– 2012 data N=1762

- **51% US Citizens**
- **19% Female**
- **10% Age ≥ 35**
- **12% of US citizens are non-white**

Will PhD Programs expand with rise in B.S.?

Newly Hired Faculty Growth < PhD

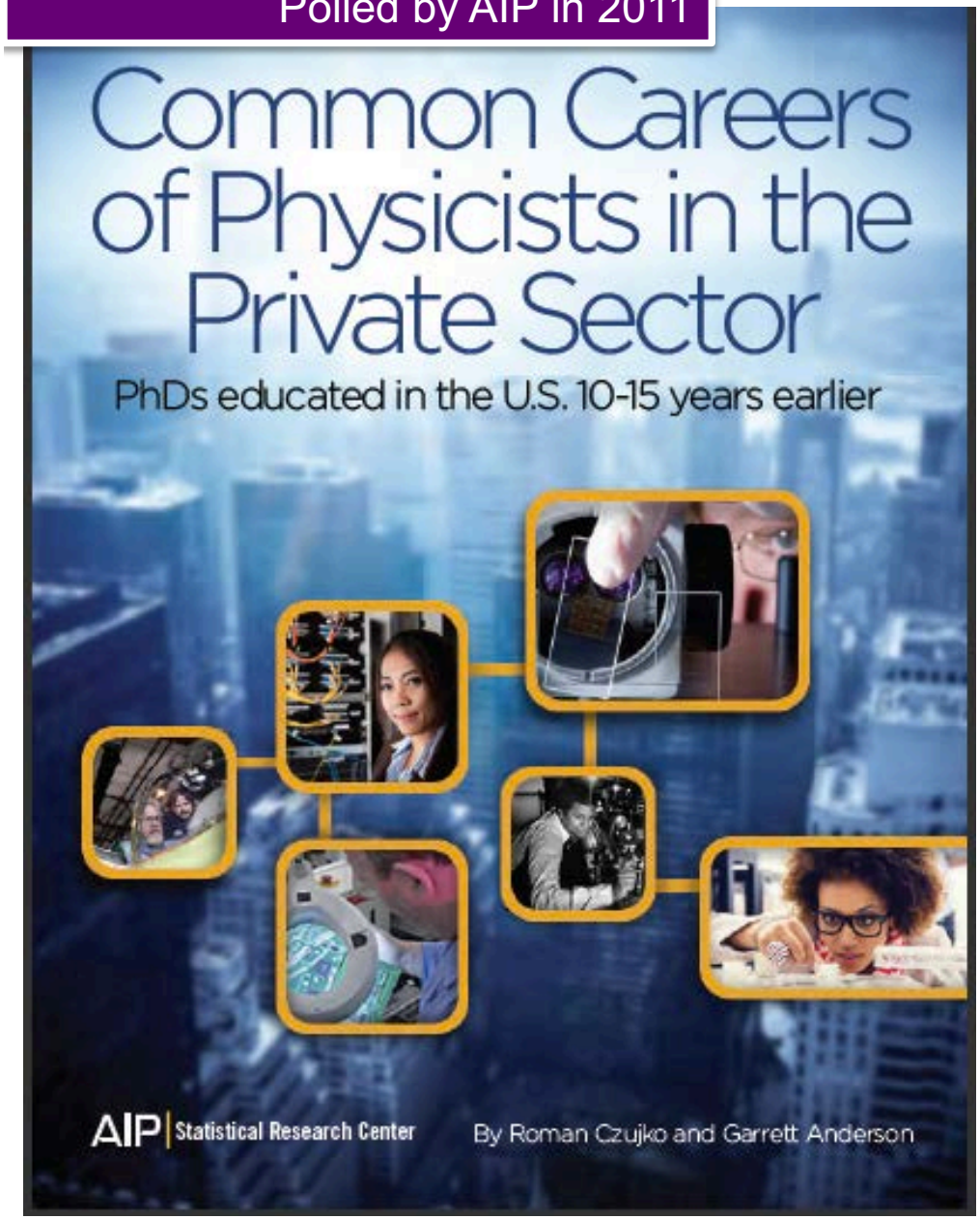


2008 Hire /2004 PhD = 40%
2010 Hire /2006 PhD = 26%
2014 Hire /2010 PhD = 30%

Jobs like mine: ➔10%
General Academic: <30%

What else can I do with a PhD?

Classes of 1996-7 and 2000-2001
Polled by AIP in 2011



- Self-employed
- Finance
- Gov't Contractors
- Health & Medicine
- Industry
  - Engineering
  - Computer Science
  - Physics
  - Other STEM
  - Non-STEM

Most Common Activities:

- solving complex problems
- managing projects
- writing for a technical audience

So if I do go to grad school …

- What happens?
- How long does it take?
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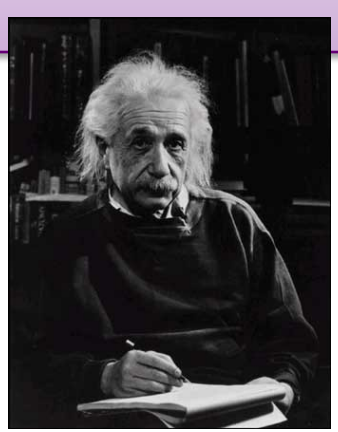
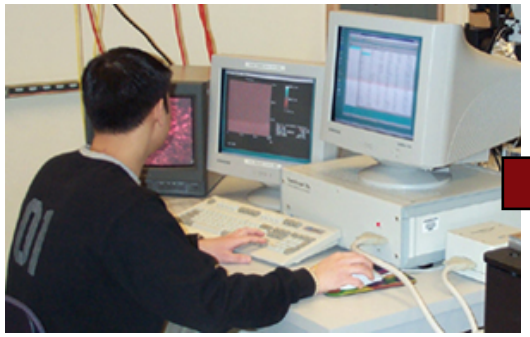
“Standard Path” to the Ph.D.

Take Classes



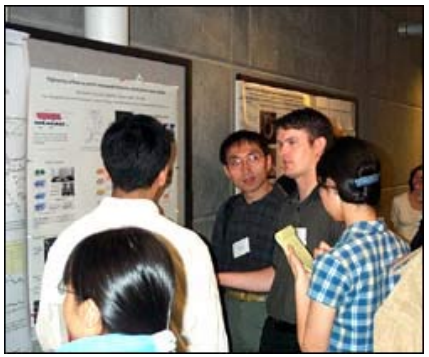
Dream New Ideas



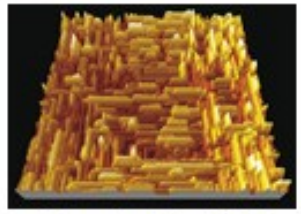
Analyze Results

Read other people’s ideas, get trained

Take Data/Calculate



Present work

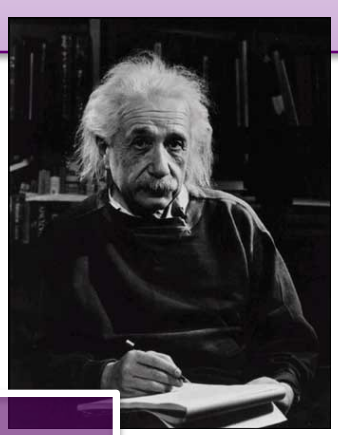


Publish results

GRADUATE

“Standard Path” to the Ph.D.

Take Classes



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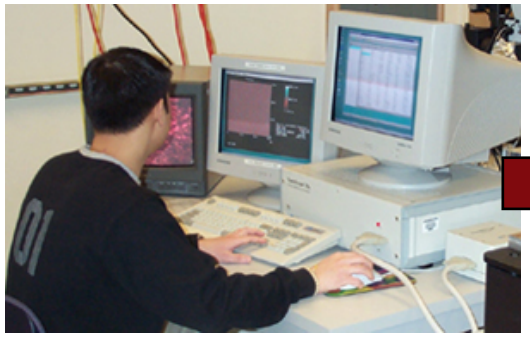
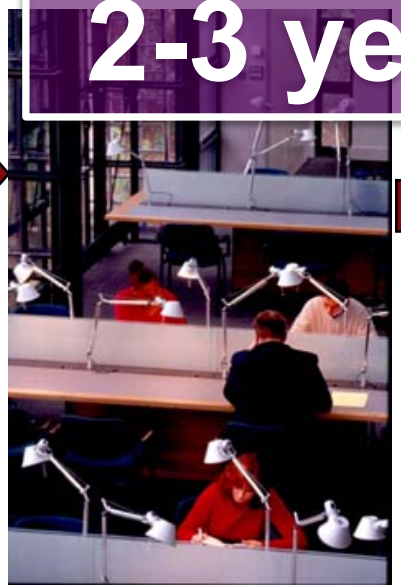


Analyze Data

2-3 years



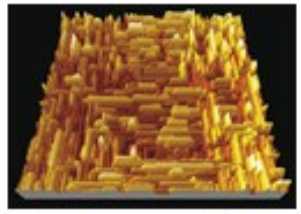
Read other people’s ideas, get trained

GRADUATE

2-4 years

Take Data

Present work



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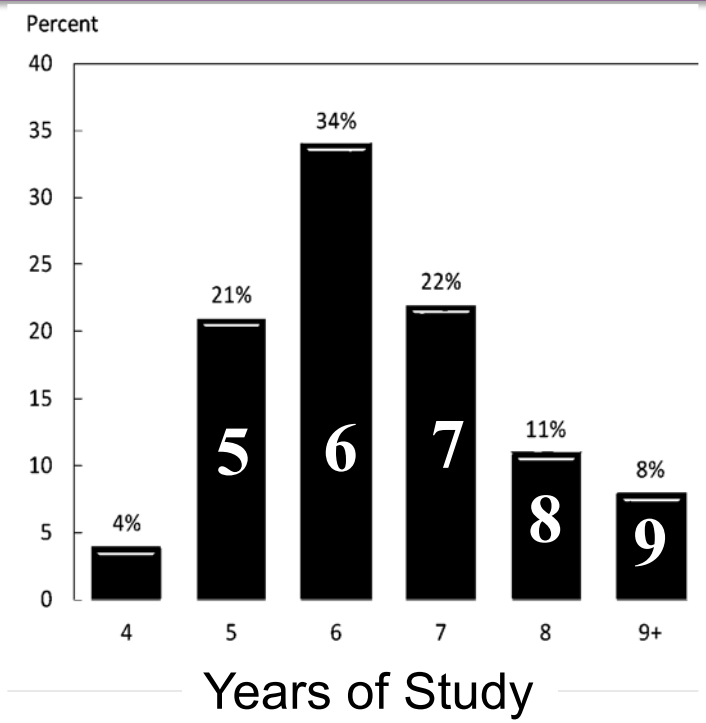
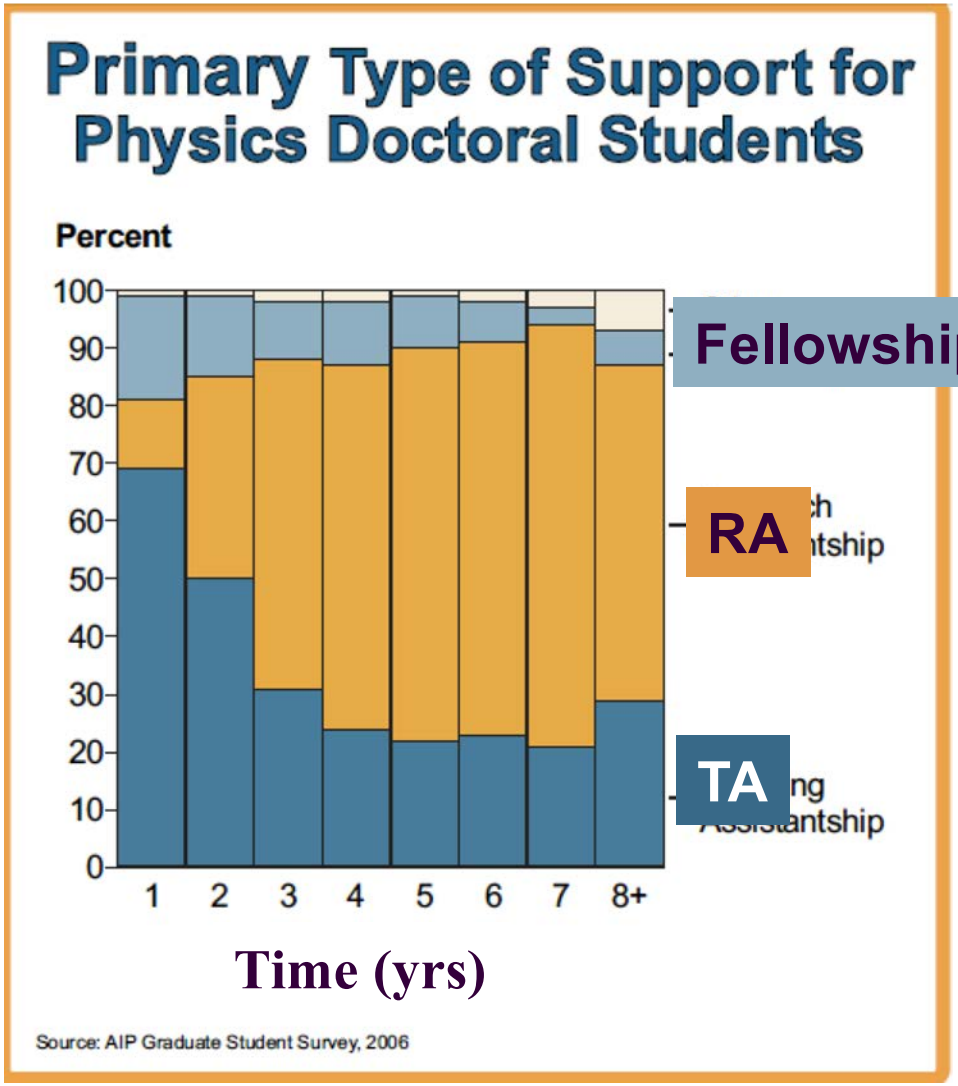


You get PAID to go to grad school!!

PLUS: Your tuition gets paid
& you don't have to pay off student loans until you graduate



You don't add to your savings, but you don't deplete them, either.

Current UW Rates: $27-31k/yr
Current NSF Fellowship: $34 k/yr

Roommates
Used Car, New Computer

*** NSF deadline is late October**

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- Save and compare schools
- Create a free account and save schools that match your interests and requirements.

Download User Guide

Top Tier? Big? Close to home?

- Ranking
  - Rankings are out of date – new hires make a big difference
  - Top tier hire each other's grads
  - Next tier = schools like UW
  - Lower tiers often have pockets of top-ranked subfields
- Size
  - Large comprehensive department lets you change sub-fields
  - Small lets you be a bigger fish in a smaller pond
  - Your professional network = your grad school contacts
- Interdisciplinary Connections
- Geography
- Department Climate – Visit!!

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Selection Criteria

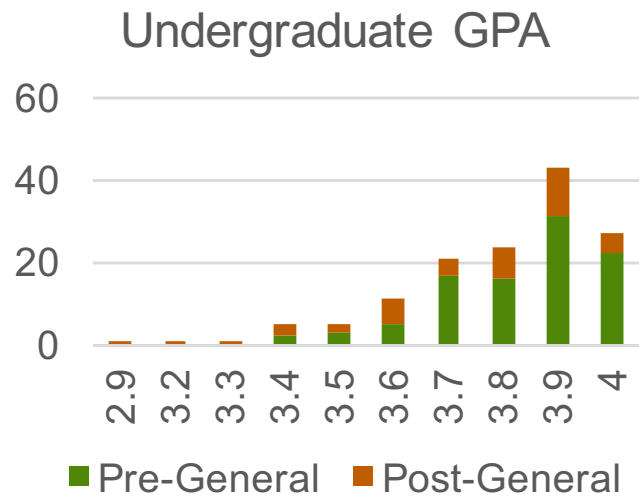
- Probable success depends on traits such as:
  - *Commitment*
  - *Creativity*
  - *Maturity*
  - *Confidence*
  - *Leadership*
  - *Communication Skills*

Letters and Personal Statement

- Good match between your goals and research in the department (and not too many in one area)
- Successful research (or independent) experience
- Your UG academic performance and GRE
- Meet all deadlines; essay spelling and grammar

UW Admission Statistics

- 700 Apply ⇒ 90 – 100 Admit ⇒ 25 Enroll
- Physics GRE of US Admits:
  - Average in the low 800's (out of 990)
  - Admission rare below the mid 600's
- Undergrad GPA:
  - Average 3.8 for last two years
  - Admission rare below ~ 3.4
- Research Experience
  - Expected: Almost everyone has some



UW's current US News ranking is about 20

What do they know about me?

GRADES

Letter of Rec 1

Letter of Rec 2

Letter of Rec 3

GRE
Physics + General

Personal Statement +
Cover Letter

Study for the GRE!

- Very different from classroom exams
- Balance Speed vs. Silly Mistakes

Personal Statement

- Be honest and sincere
  - Show, don't tell
- Speak to your strengths and goals
  - OK not to know your specialty, but don't sound wishy-washy
- Tailor and connect to the target department
  - Mention specific research areas, faculty
- Address any irregularities in your record
  - OK for this to be in letters of reference
- EDIT for grammar, spelling, coherence
  - Have someone read your essay
- Give a copy to your references

Letters of Recommendation

- You need 3 letters from people who know you well outside the classroom
  - Thank them if they say you should find someone else
- At least one should be from someone with whom you have done research (either at UW or elsewhere)
  - Summer REU, Local project with results by Autumn Sr Year
- Provide background information
  - Aspects you want them to cover in their letter
- Give plenty of time
  - Send email with a list, including deadlines and links
  - Gently verify/remind as deadline approaches

Overall Advice

- Do research summer after junior year
  - Form a GRE study group wherever you are
- Don't overload your schedule senior year
  - Applications and visiting weekends = extra half class
- Apply to 7-10 places
  - 2-3 "Reach", 2-3 "Safety"
  - Don't apply anywhere you aren't willing to go
- Stand out from the rest
  - Apply WELL BEFORE the deadline
  - Visit, call and/or email someone you want to work with
    - (but don't bug them too much….)
- Check that file is complete
  - Contact Grad Assistant by email
  - Follow up on late letters, transcripts, etc.

It's not for everyone, but ...

- Grad study in Physics can be a grand adventure.
- A Physics PhD prepares you for a wide variety of careers and life experiences.
- If this is what you want, and you are willing to work towards it at subsistence wages for 6 years,

GO FOR IT!