

# Should I Go to Grad school?\*

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@GUILHERME.SUARES

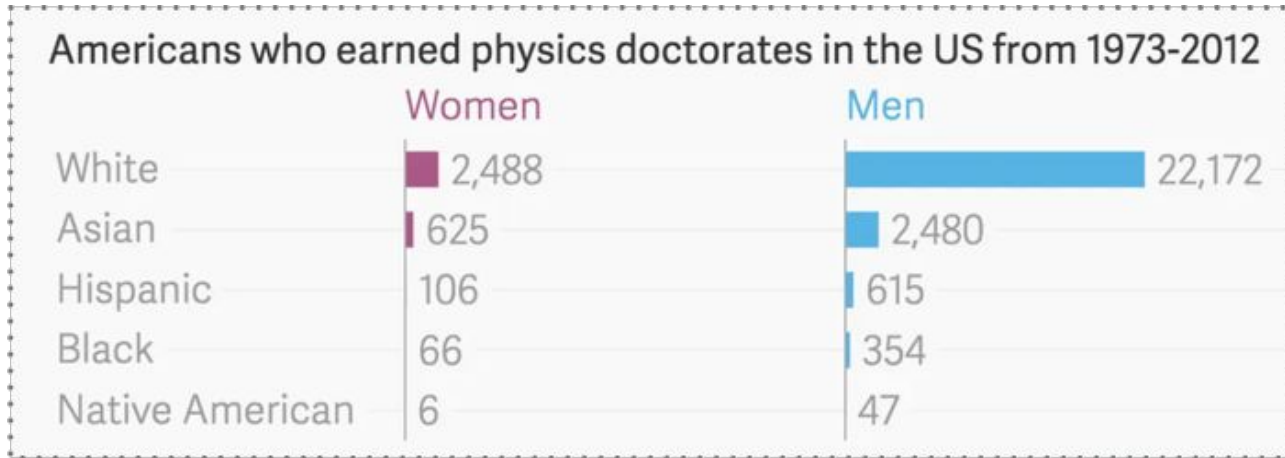
\* Opinions are my own

# Higher Ed Physics/Astronomy

In a nutshell: Advanced study with the goal of contributing original research to the field

Masters: < 3 years<sup>1</sup>

PhD: 5-7 years<sup>2</sup>



1. American Institute of Physics; [Source](#)

2. Ibid.

Figure: [National Science Foundation](#)

# Key Success Factors<sup>1</sup>

- ❖ Capacity for hard work
- ❖ Persistence
- ❖ Solid undergraduate background
- ❖ Intellectual curiosity

# Skills Gained

- ❖ Problem solving (using scientific method to create models, test, investigate, and adapt without bias; mathematical leverage)
- ❖ Communicating research (conference presentations, outreach)
- ❖ Teaching (teaching assistantships, mentoring)
- ❖ Computing (programming [e.g., python], software development, data analysis)
- ❖ Writing (publications, grant proposals)

# Career Prospects

Industry	Academia	Government	Other
<ul style="list-style-type: none"><li>- Data Science*</li><li>- Systems Developer</li><li>- <math>\infty</math></li></ul>	<ul style="list-style-type: none"><li>- Professor</li><li>- Staff Researcher</li><li>- Lecturer</li></ul>	<ul style="list-style-type: none"><li>- Science Policy</li><li>- Military Labs</li><li>- <math>\infty</math></li></ul>	<ul style="list-style-type: none"><li>- Education</li><li>- Writing</li><li>- Medical</li><li>- <math>\infty</math></li></ul>

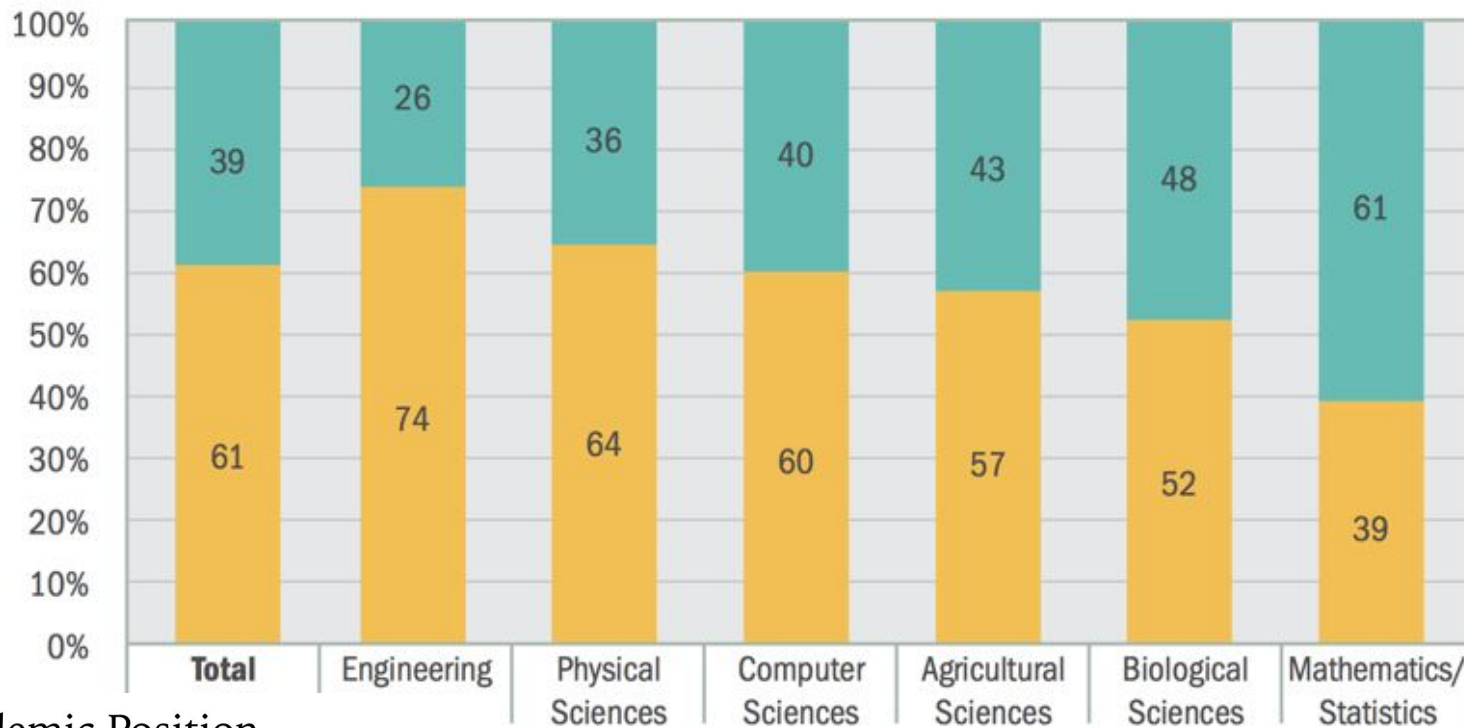
Increased demand for physics/astronomy PhDs<sup>1</sup>

\*See discussion [here](#)

1. Bureau of Labor; [Source](#)

# Career Prospects

## Percentage Distribution of Employed STEM PhD Holders



Academic Position

Non-Academic Position

# Academic Career Prospects

Preferred Future Employment of First Year Astronomy Graduate Students in the US, Academic Years 2014-15 and 2015-16 Combined

<u>Employment Goals</u>	
Unsure	22%
University	49%
2- or 4-Year College	11%
Private Sector	10%
National Lab or Gov't	7%
Medical & Hospital	-
Other	1%

“<17% of new PhDs in science, engineering and health-related fields find tenure-track positions within 3 years after graduation.”<sup>1</sup>

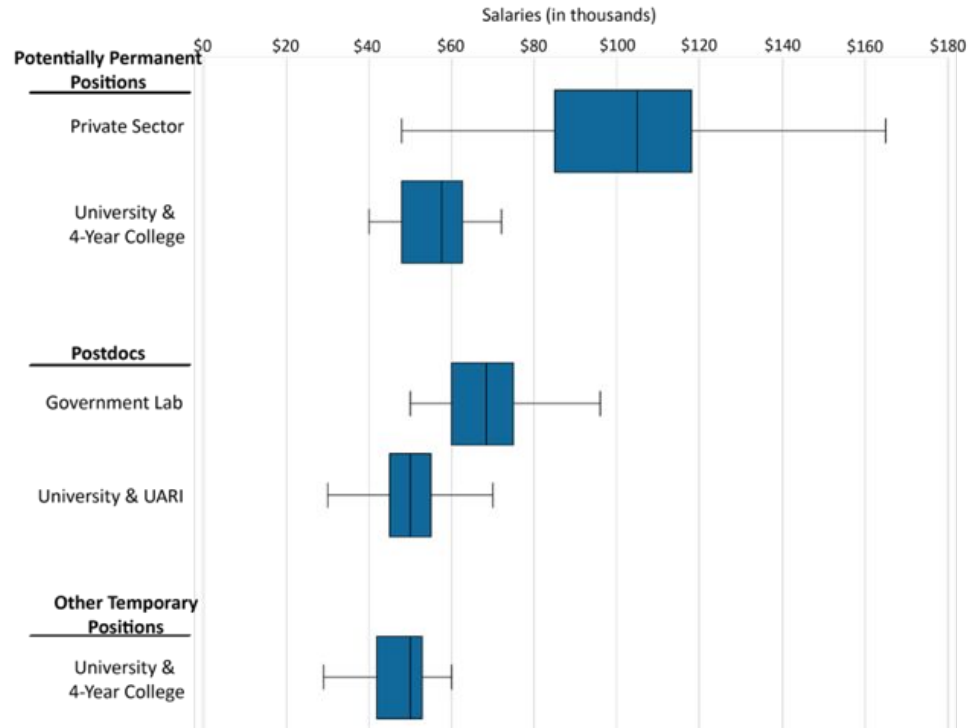
2019 survey of particle physics and astrophysics PhDs concludes: “Don’t get a physics PhD because you want to be a physicist; get a physics PhD because you want the experience of earning a physics PhD.”<sup>2</sup>

1. [Discover](#), 2015

2. [Symmetry](#), 2019

# Career Prospects

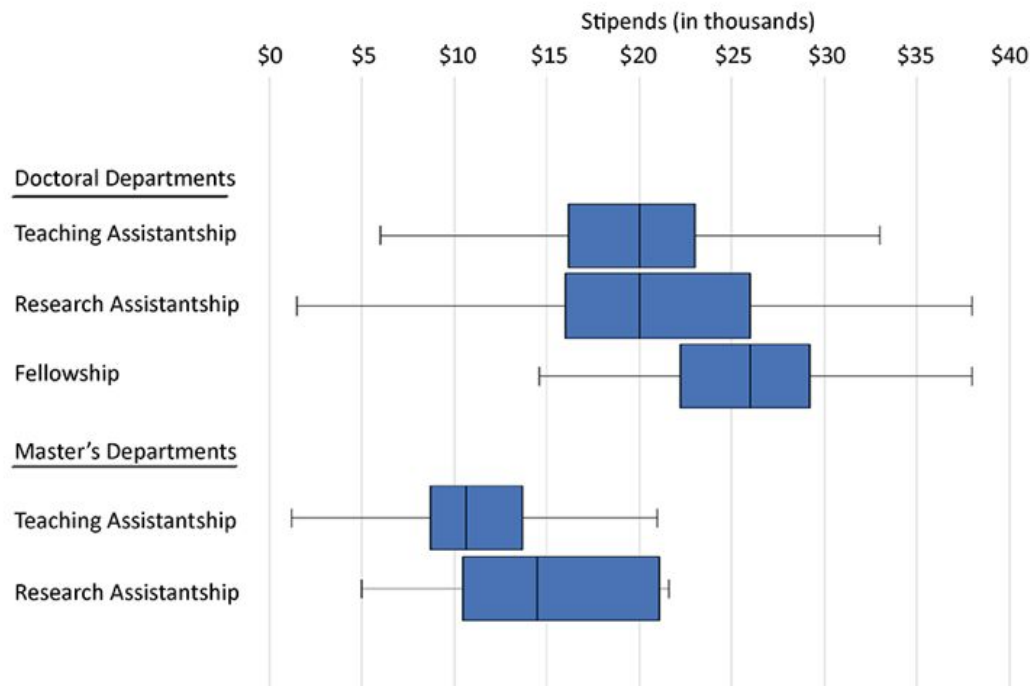
Starting Salaries for New Physics PhDs, Classes of 2015 & 2016 Combined



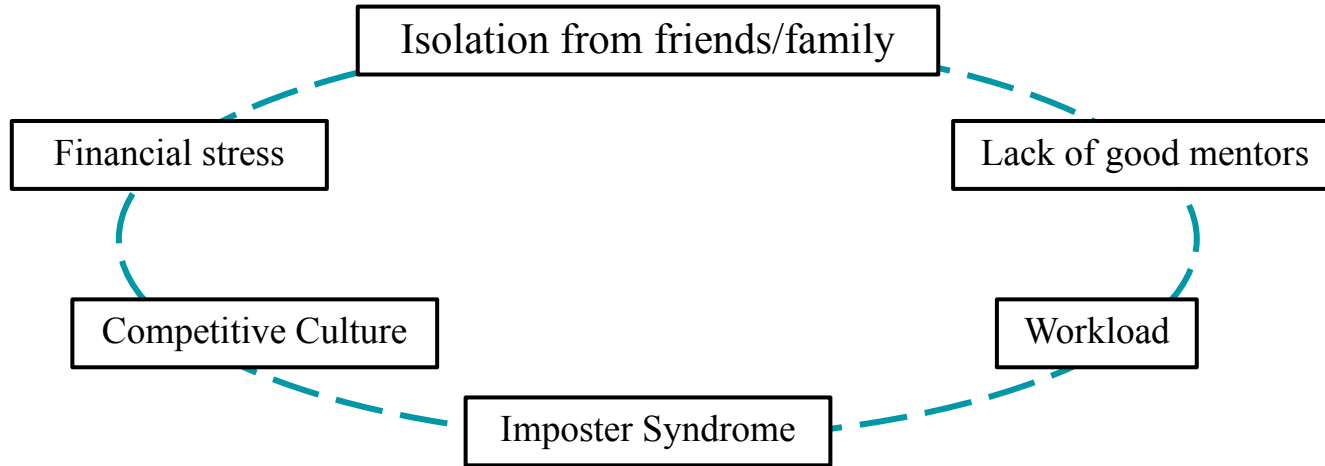


# Stipends

Stipends for First-Year Physics Graduate Students,  
Academic Years 2014-15 and 2015-16 Combined



# Mental Health



Confluence of stressors  
increases chances for  
developing/exacerbating  
depression, anxiety, etc.



Studies indicate doctoral students  
are ~3-6 times more likely  
than average American to suffer<sup>1,2</sup>

1. [Barrera et al.](#), 2018

2. [Evans et al.](#), 2019

# Remember...

- ❖ Grad school gives you many employable skills
- ❖ PhD is helpful, but not necessary for lucrative, fulfilling career
- ❖ Anticipate stress - seek grad programs with happy students
- ❖ Always have a plan B