You have a Ph.D. ... Who Cares?

The value of your Ph.D in industry and to the public

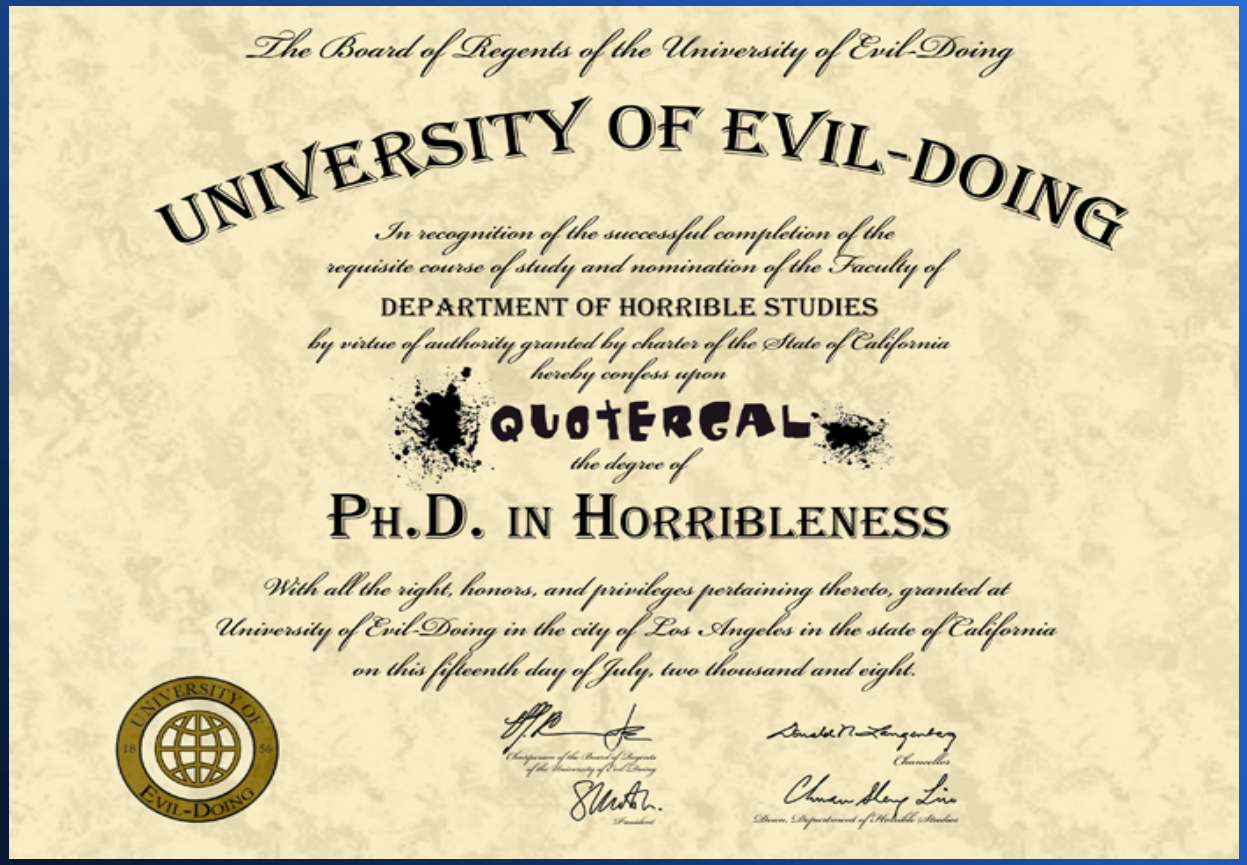

Image: http://whedonesque.com/comments/16952

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Graduate Student & Post-Doc Seminar, Universtiy of Texas at Austin

This talk

Consider some benefits of having a Ph.D.

Consider how the public views a Ph.D.

Identify possible career paths in industry

Caveat: this talk is largely anecdotal

Caveat to caveat: so is industry

My Background

12+ years in software industry

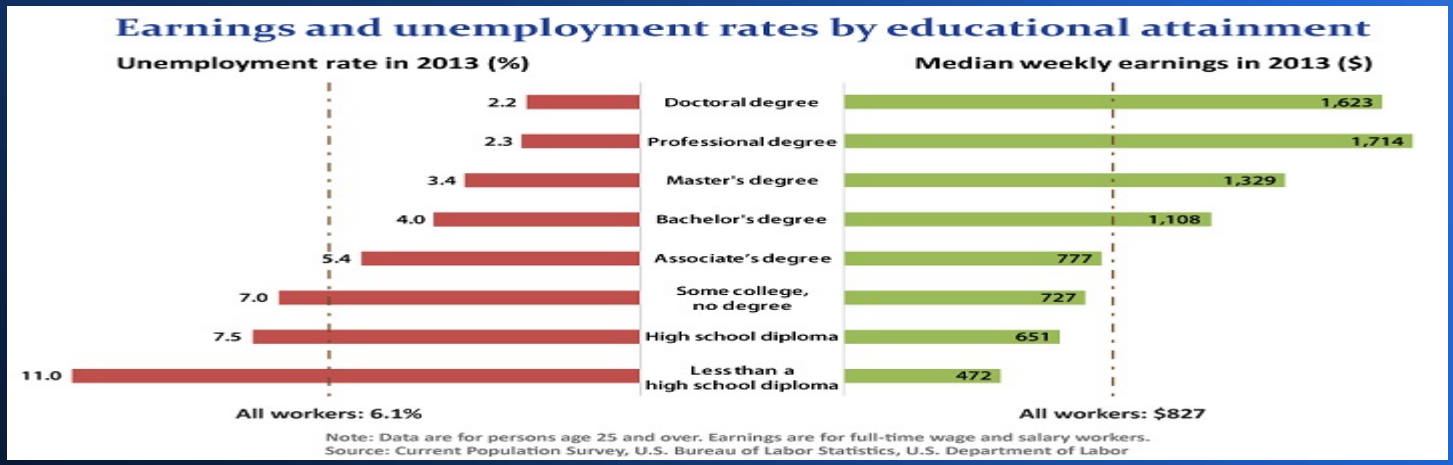
Friends from a variety of fields in industry with Ph.D (mostly Chem. Eng.)

Science Channel: How it's made - flight simulators

Why did I go back to grad school?

B.S. would have been sufficient

Better opportunities and higher pay



Opportunity to do research

Why might industry care?

- Proven research record
  - Understands not only how to pose a research question, but how to use a thorough process to answer it.
- Proven ambition
- Willing to follow a project through to completion.
- Collaboration
  - Can clearly work with a group of people

Why?

The public values a Ph.D. even if they don't value academics.

~2% of the population have a Ph.D. (U.S.)

~12% have Masters or higher

~32% have a Bachelor's degree

All they really know is that you are “smart” and were in school a long time.

Public perception of Ph.D.

Just as the public has a poor understanding of science, they also have a poor understanding of what a Ph.D. means.

Example: John Hagelin
http://en.wikipedia.org/wiki/John_Hagelin

Why is he given any credence?
He has a Ph.D. so he “must” understand what he is talking about.

Ethics isn't part of a Ph.D.
Please don't use your Ph.D. to manipulate people.

Why Not?

- ~~Overeducated / overexperienced~~
- Only if you are demanding pay far higher than they can afford, or don't fit culturally within the company.
- Do your research on the specific company before applying.
- College grads don't know anything about industry when they start, either.

How does industry value a Ph.D.?

Depends on the size of and type of company

Large manufacturing companies generally have a specific structure in place

Example: 3M

- High school: entry level (0)
- B.S.: Level 2
- M.S.: Level 4
- Ph.D.: Level 6
- CEO: Level ~10

Large manufacturing companies will probably have more stringent requirements for type of degree and thesis topic

How does industry value a Ph.D.? Consulting

Consulting will vary significantly

Technical consulting services may be better fit than business consulting, but also depends on your personal interests.

Having a Ph.D. on staff looks good for them. The actual type of Ph.D. may matter very little.

Government bidding

- Ex: Defense contractors in flight simulation
  - When bidding for contracts, contractors list all of their employees.
  - Each one is assigned points based on their experience and education.
  - Someone with years of experience and no B.S. = 0 points
  - Someone with B.S. and no experience = 2 points
  - Someone with Ph.D. in a “related technical field” and no experience ~ 10 points

Small – mid size firms

- Startups
  - May have more disposable income
  - May want your Ph.D. expertise without caring about field / thesis
  - Have an idea? Start your own!
    - Your business may have a competitive edge since you understand how to interpret data.
    - Most small business owners have little to no background in business
    - B.S. Business or MBA is really about understanding business data.

Small – mid size firms

- Small and mid-size established firms
  - Most likely to overlook Ph.D.
  - Most likely to actually read your cover letter even if you don't fit the listed job criteria.
  - Networking helps a lot.
  - May have more limited budget, but good growth potential and influence on the direction of the company.

What are some industries that may value an astronomy Ph.D.?

- Financial
  - Mathematical skills
  - Rachael?
  - BTW: Rachael is Awesome.
- “Big Data”
  - Talk to John J., Chris L.
  - Working with and reducing large data sets.

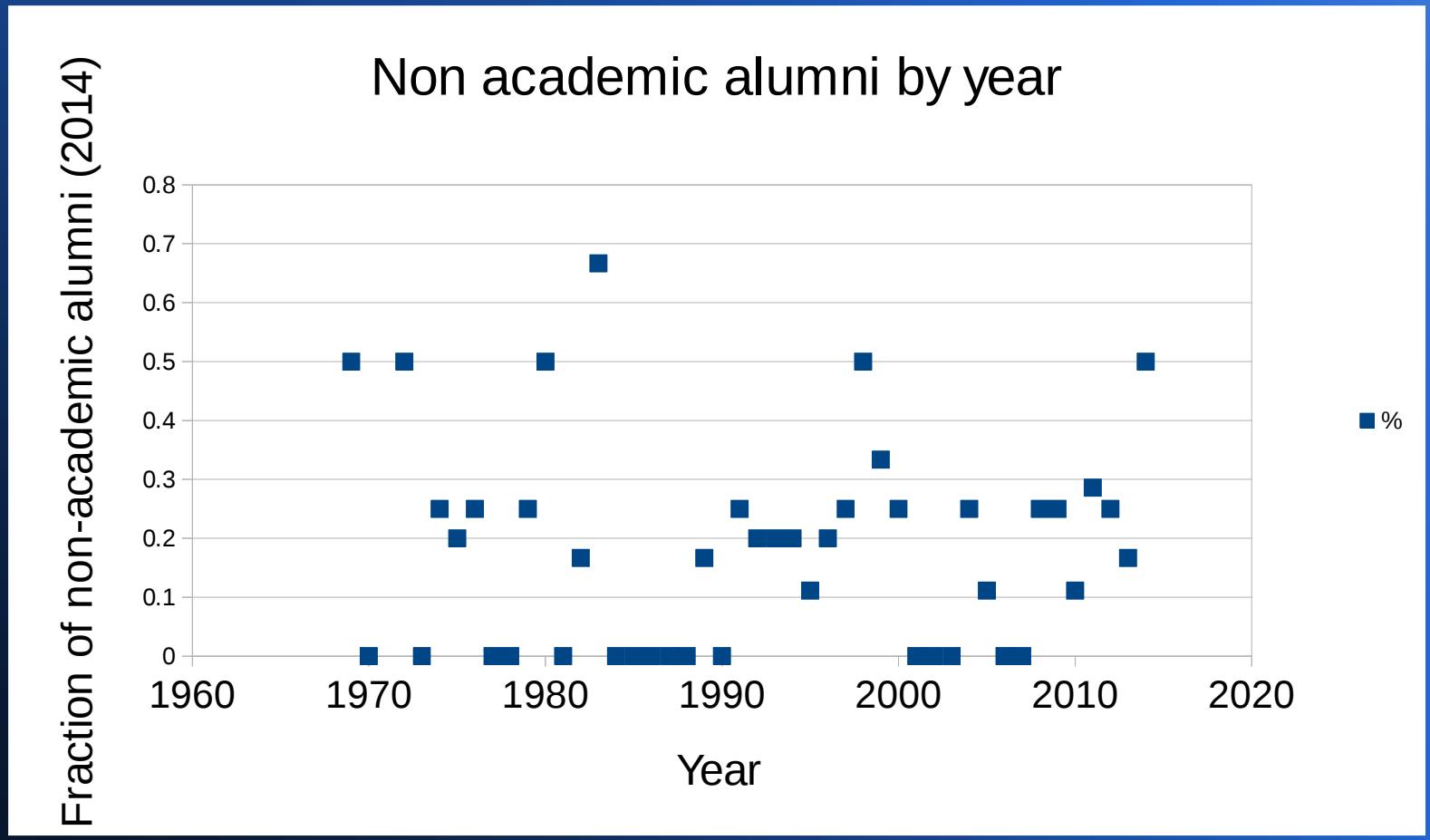
What are some industries that may value an astronomy Ph.D.?

- (Medical) imaging
  - Understanding how light propagates and interacts with material, and how those interactions can affect the image.
- Aerospace
  - Satellite control and design. Engineers do much of this stuff, but they may want a scientist on staff – recall Gov't bidding process.

What are some industries that may value an astronomy Ph.D.?

- High end computing (e.g. TACC)
  - Need people who understand how scientists do their work.
  - May still get research time!
- Latter point may be true of other industry jobs as well!
  - Many large company jobs at Ph.D. level have some sort of personal research time available. May be 10-15% of job time.

Statistics for UT



The academic climate may not be as bad as we think it is.

Data courtesy Rachael Walker /UT Astronomy

Summary

- Public values a Ph.D. even if they don't know what it is.
- Research ability, ambition, and collaboration are proven skills.
- Some segments of industry value any Ph.D., not necessarily just specific Ph.D.
- ~25% of UT graduates are currently in industry. [Have list available – will make available soon]