

How to Win a Postdoc Fellowship

Jon Trump

5-time Hubble Fellowship applicant

1-time Hubble Fellowship winner

Not Sure of Your Career Path?

Lots of info at:

aas.org/jobs

including profiles of astronomers in industry & academic jobs.

<50% of astro PhD's get postdocs, and <50% of postdocs get faculty jobs...

1. ***The Basics:*** Job types, Deadlines & Applications
2. ***Some Statistics:*** What Correlates with Winning Fellowships?
3. ***Advice from a Seasoned Applicant:*** Anecdotes, Thoughts, & Lessons Learned

The Basics: Definitions

- *Postdocs*

- 1-3 years, pay ~\$45k
- “soft money”: dependent on grants, but easily extended
- often specific projects, dictated by grant

- *Fellowships*

- 3+ years, best pay \$65k
- independence & prestige

The Basics: App Timeline

Starting ~11 months before you graduate:

Jun - Aug: Book Talk Tour

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Jan: Committees meet

Jan-Mar: Await future?!?!?!?!?

Feb 15: Fellowship decisions due

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The Basics: Job Lists

AAS Job register

jobregister.aas.org

Astronomy Rumor Mill

www.astrobetter.com/wiki/tiki-index.php?page=Rumor+Mill

Job Deadlines: my 2012 list

| Location | Type | Deadline | Applying? | Lindsay's Rank | Lindsay options |
|------------------------|---------------------|------------|-----------|----------------|---------------------|
| Carnegie (Pasadena) | NSF fellowship | 10/10/2012 | DONE | 2 | yes |
| McGill (Montreal) | fellowship | 11/1/2012 | DONE | 2 | |
| NASA Goddard (DC) | NASA fellowship | 11/5/2012 | DONE | ? | yes |
| Harvard/CfA | fellowshp | 11/5/2012 | DONE | 2 | yes |
| STScI (Baltimore) | Hubble fellowship | 11/5/2012 | DONE | ? | yes |
| Carnegie (Pasadena) | Einstein fellowship | 11/5/2012 | DONE | 2 | yes |
| STScI (Baltimore) | fellowship | 11/8/2012 | DONE | ? | yes |
| Princeton | fellowship | 11/15/2012 | DONE | ? | Montclair (1.5 hrs) |
| Carnegie (Pasadena) | fellowship | 11/15/2012 | DONE | 2 | yes |
| Yale | fellowship | 11/15/2012 | DONE | | |
| Texas | fellowship | 11/30/2012 | DONE | 2 | yes |
| Toronto | fellowship | 12/1/2012 | DONE | 1 | yes |
| Arizona | fellowship | 12/3/2012 | DONE | | yes |
| CIERA (Chicago) | fellowship | 12/14/2012 | DONE | | yes |
| Wisconsin | fellowship | 12/15/2012 | DONE | | yes |
| | | | | | |
| Penn State (Brandt) | postdoc | 11/15/2012 | DONE | 1 | yes |
| Penn State (Eracleous) | postdoc | 11/15/2012 | DONE | 1 | yes |
| UCSB (Treu) | postdoc | 11/30/2012 | DONE | | |
| | | | | | |
| UCSD | faculty | 11/10/2012 | DONE | 1 | yes |
| Toronto | faculty | 11/15/2012 | DONE | 1 | yes |
| Carnegie Mellon | faculty | 11/30/2012 | DONE | ? | yes |
| Hawaii | faculty | 11/30/2012 | DONE | 2 | |
| Lowell Observatory | faculty | 12/1/2012 | DONE | 3 | yes (ASU) |
| UNC | faculty | 12/17/2012 | DONE | | yes |
| Arizona | faculty | 1/7/2012 | DONE | | yes |

Parts of the Application

- 1) Cover letter / abstract
- 2) Letters (3+, famous sr. faculty if possible)
- 3) Proposal (2-5 pages)
- 4) Past Research statement (sometimes)
- 5) CV & Publications list

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Keys for a Good Proposal

Don't write like a journal paper!

- State what you're going to do up front
- Define the problem briefly and in an interesting way: include the big picture
- State how you are **uniquely** going to solve it, and how you are the best person to do so
- Be repetitive: give a concise summary at first, and details later

A Good Proposal

Reading proposals is BORING...people hate it. Reviewers will read over 100 proposals and may spend <5 min on yours!

First impressions count! Get the main message UP FRONT, in first sentence if possible, first paragraph at minimum.

Sample: read Nature Abstracts.

Put main goal as topic sentence of an early paragraph, not end sentence.

Express your advance quantitatively: “my sample is 10x larger”, etc

Good phrases:

- “major new advance”, “opens the way to”, “unique sample”,
- “the study of Z has been blocked for years because we lack...”

Avoid: “*This will help to constrain...*” / “*This will shed light on...*” / “*We plan to study...*”

credit: Sandy Faber

A Good Proposal

- The writing needs to be beautiful, interesting, fun, **EASY TO READ**
- Be exciting and forceful; use vivid words; exude confidence & energy
- Brag a little but not too much. Simple, colorful, well-labeled figures!
- *Key Text*: bold & italicized!
- Simple, colorful, well-labeled figures

Sample Proposal Opener

I propose to reveal the physics governing the coupled growth of galaxies and their supermassive black holes through the construction of a unique “AGN census” over $0 < z < 2.5$.

Recent observations have shown that the mass of a supermassive black hole (SMBH) and the mass of its host galaxy bulge are tightly correlated over several orders of magnitude (e.g. Magorrian et al. 1998). But the physical mechanism behind this intimate connection remains mysterious. How do galaxies and SMBHs “know” about one another in a long history of coupled growth in starburst and active galactic nuclei (AGN) phases?

I aim to solve the puzzle of AGN/galaxy coevolution using a combination of novel approaches on existing data and a new observing campaign.

Sample Figure

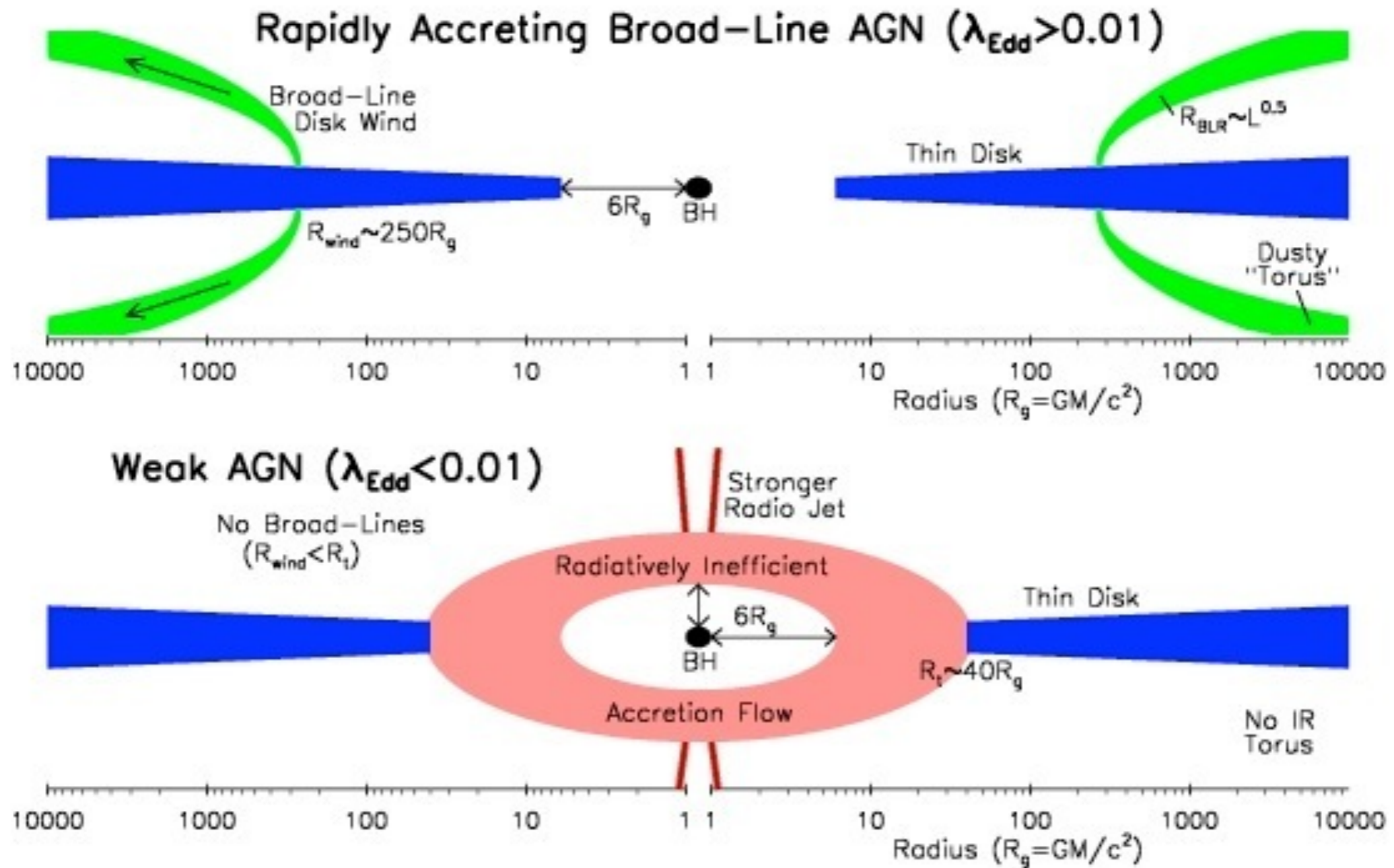


Figure 1: A simple model (from Trump et al. 2011b) demonstrating the importance of accretion rate as an axis in the AGN unified model. The emergence of a radiatively inefficient accretion flow explains the dramatic observed differences between rapidly accreting broad-line quasars (top panel) and weakly accreting AGNs (bottom panel).

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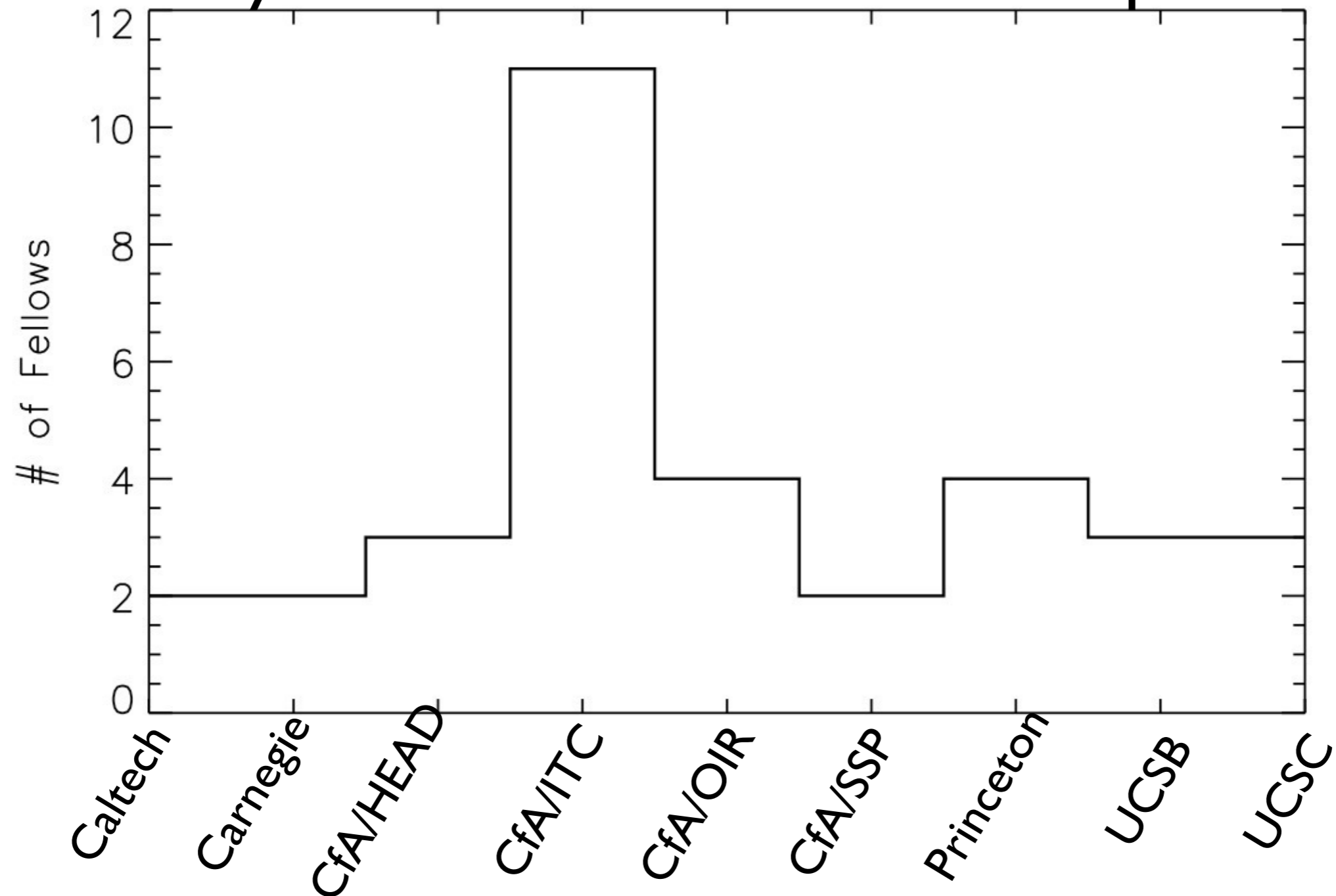
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The Talk Tour

- Opportunity to expose potential reviewers to your research, often for the first time
- Book talks early! Many fall slots gone by August.
- Conferences good, but these are the same people you've probably seen before
- Department talks better: senior faculty outside your field
- Be prepared to network during dept. visits...

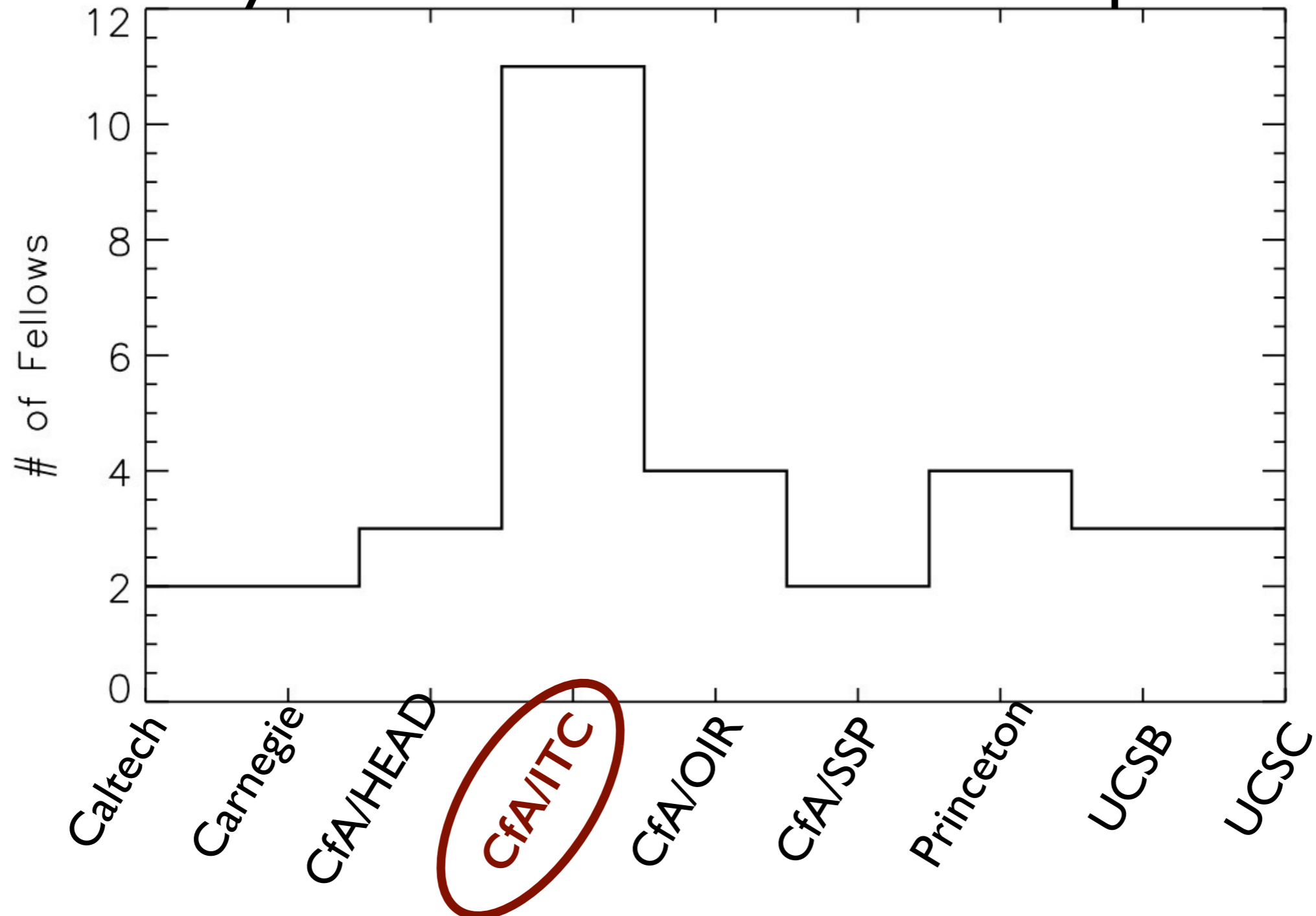
Which talks are most useful?

- Past 3 years for institutes which list past talks



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The Waiting Game

- 2+ months between app submission & committee response
- Update on Rumor Mill... but never good news
- Don't want to wait? Have a backup!
- Write your own grant: HST/Chandra archive, big NSF, etc
- Talk to your collaborators

Some Statistics

What correlates with winning fellowships?

- Writing papers?
- Number of citations?
- Ph.D. Institution?
- Visibility? (having a website?)
- Doing a talk tour?
- Letter writers?
- Perceived reputation?

Past 3 years of Hubble / Einstein / Sagan Fellows...

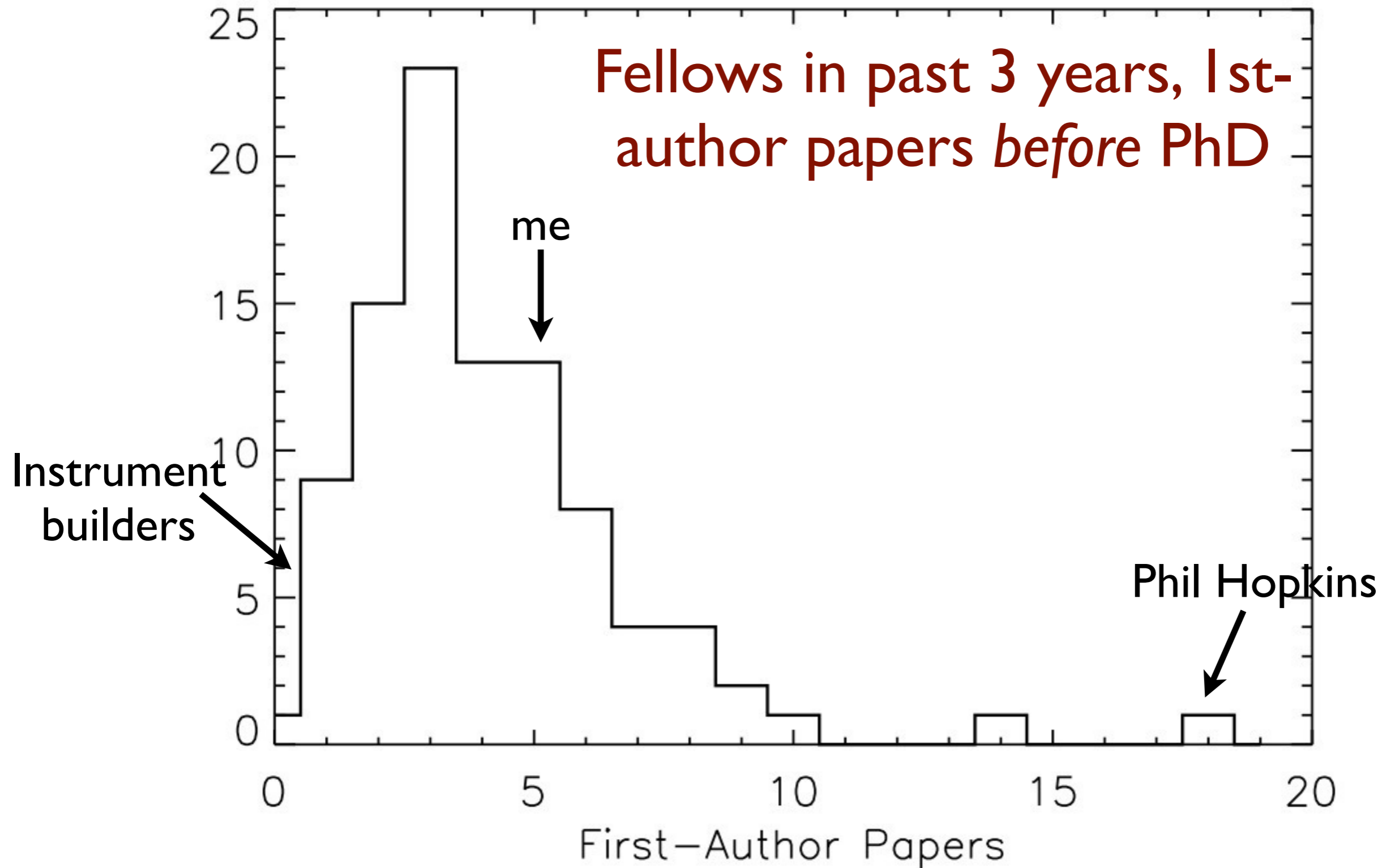
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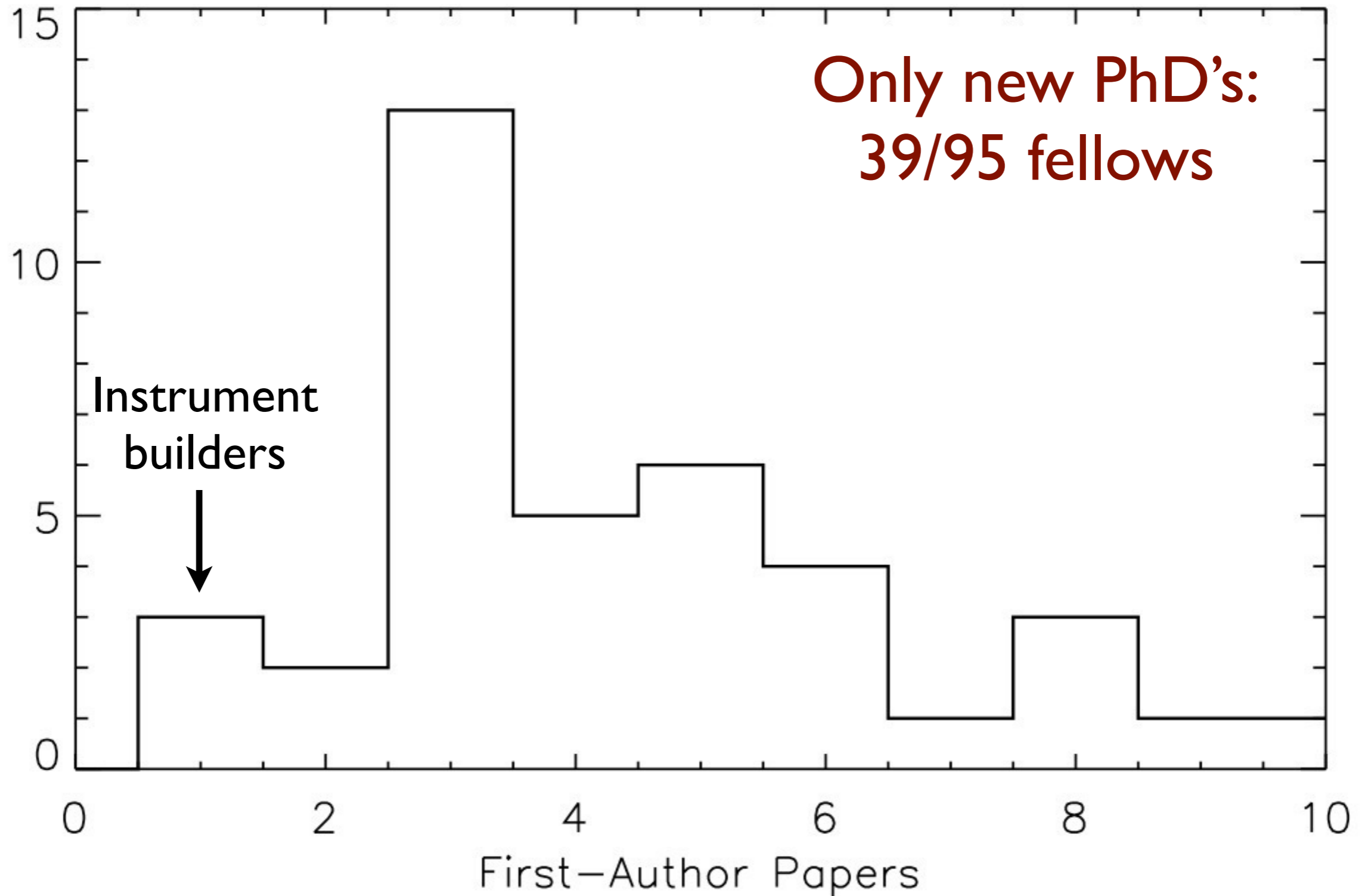
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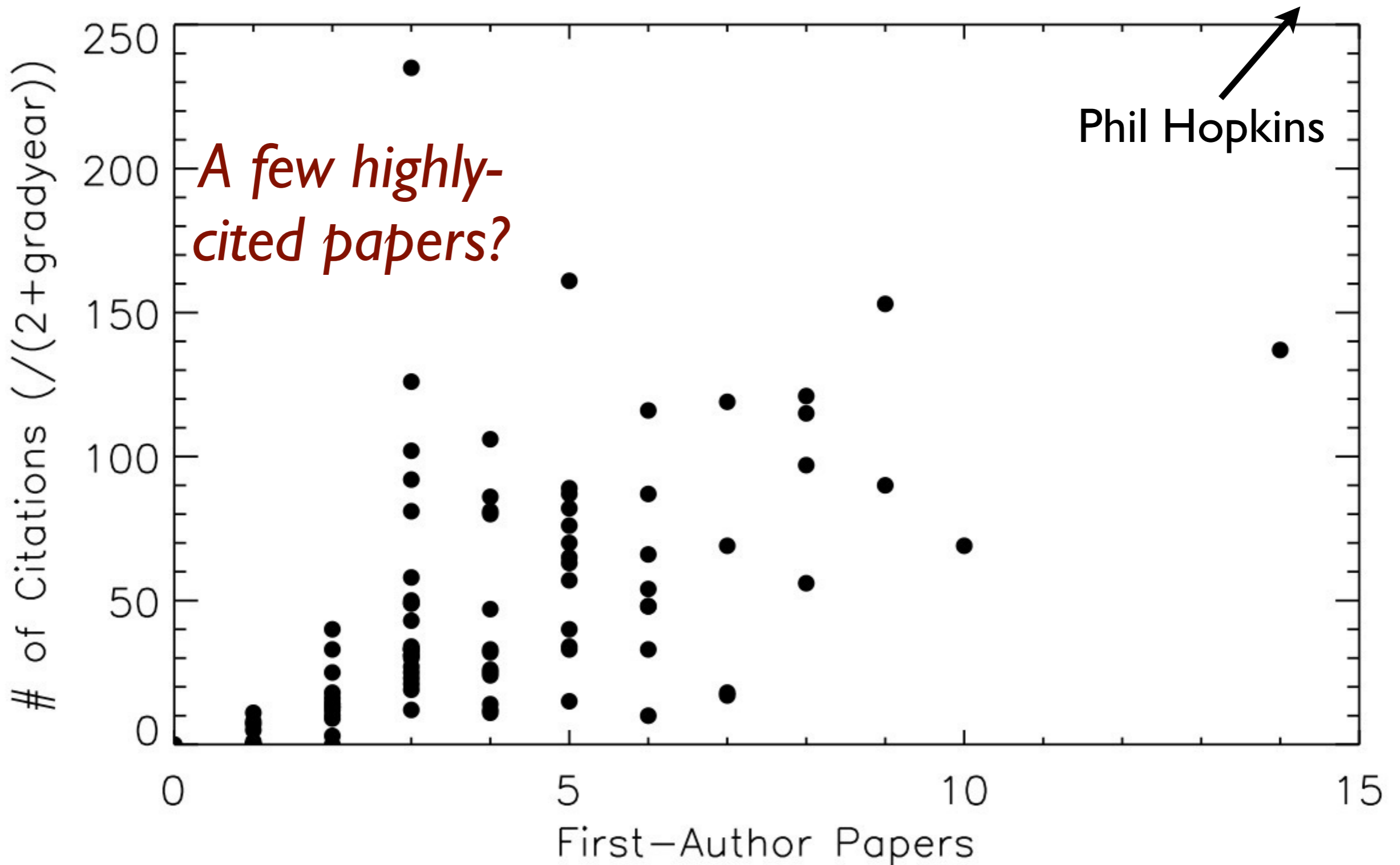
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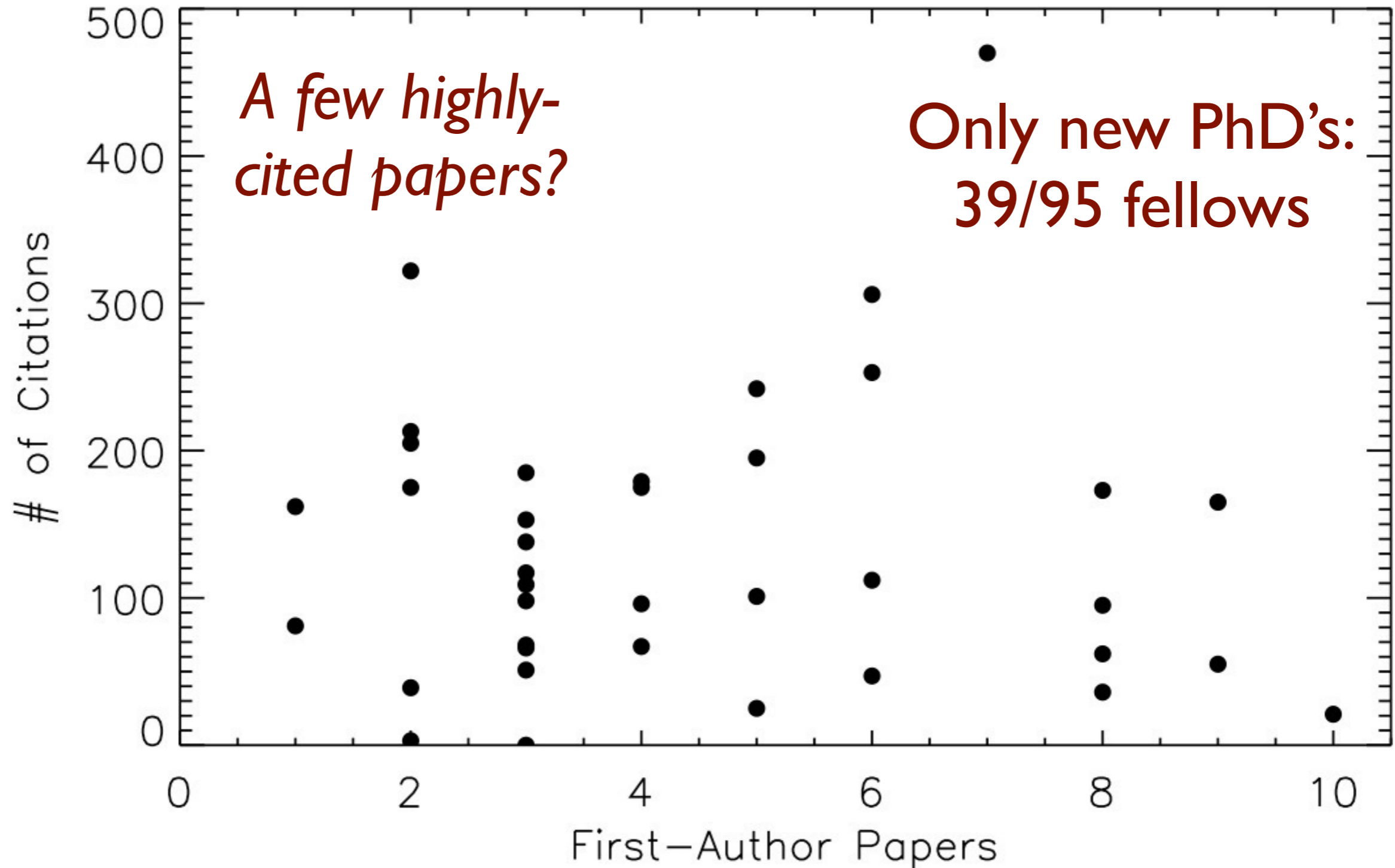
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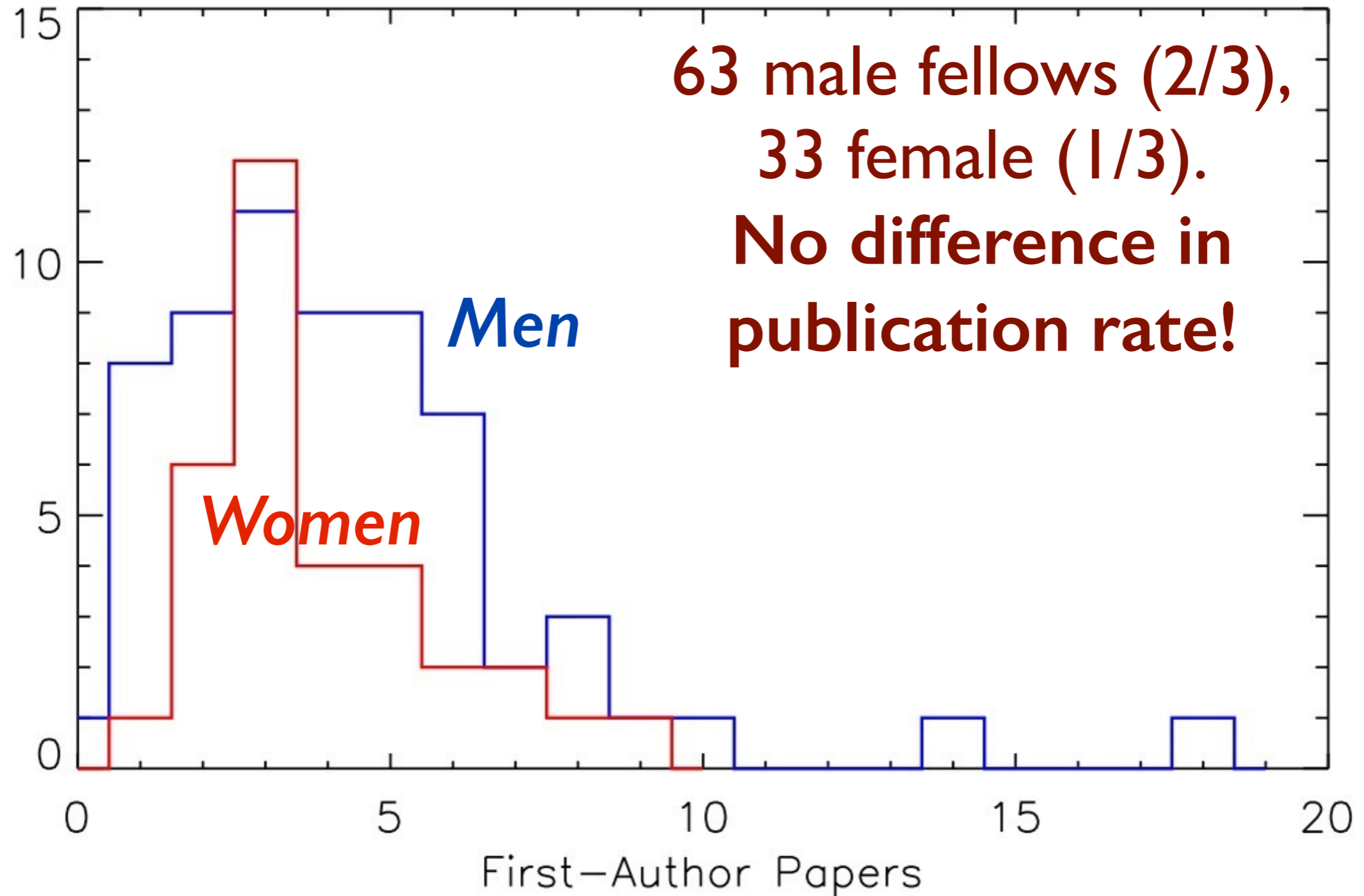
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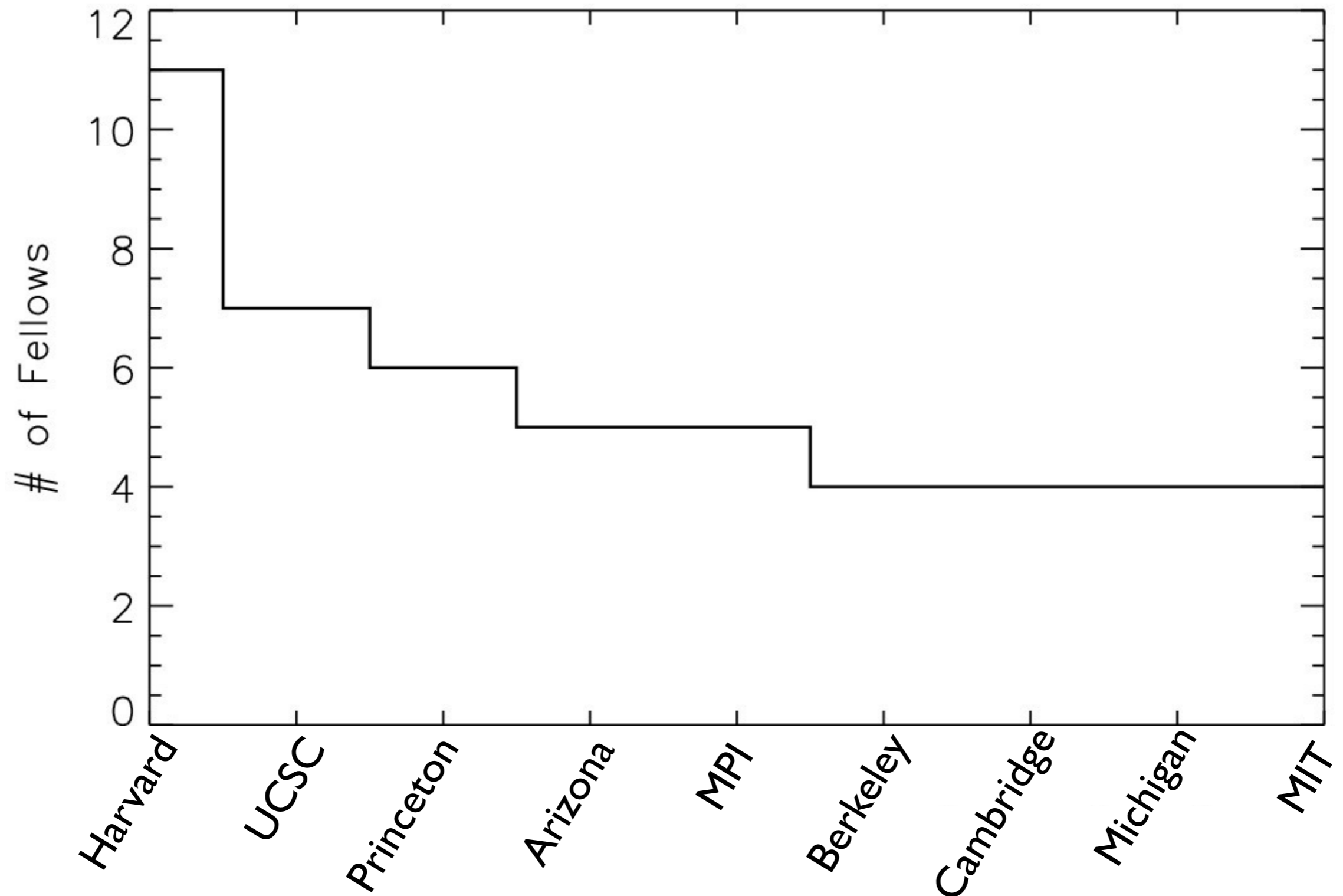
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Does Sex Matter?



Does PhD School Matter?



Visibility

Research CV Publications Contact

Jonathan Trump

UC Santa Cruz

~90% of fellowship winners have a website!

Most of these are just simple iWeb sites...



Research Interests

I'm an observational astronomer who studies active galaxies: that is, galaxies with an accreting supermassive black hole. In particular I'm interested in the co-evolving growth of black holes and galaxies: how do galaxies feed their black holes, and how do black holes influence star formation in their host galaxies? Because active galaxies emit over a wide range of energies, I use telescopes spanning the electromagnetic spectrum: I observe in X-rays ([Chandra](#), [XMM-Newton](#)), ultraviolet ([GALEX](#)), optical ([Hubble](#), Keck, [Subaru](#), [Magellan](#)), infrared ([Spitzer](#)), and radio ([VLA](#)) light.

To learn more about my research, check out some of my publications. Or see this recent press release:

[Small distant galaxies host supermassive black holes](#)

What Makes a Fellow?

There is no magic “Paper Threshold!”

- Very broad publication distribution
- Papers usually not highly cited
- Perceived reputation probably matters most - and probably has little to do with papers!

Astronomy is not a meritocracy!

My Advice

Build your reputation!

- ***Publicize:*** Give a talk tour & make a website
- ***Letter Writers:*** Use senior co-authors, cultivate them early, and tell them what to say
- ***Network:*** meet senior people, tell them how your exciting research relates to theirs: they might be on a fellowship committee!
- **Also:** apply for “back-up” grants to minimize panic

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- **Visibility? (having a website?)**
- *Doing a talk tour?*
- *Letter writers?*
- **-> Perceived reputation**