

How to Win a 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.

Parts of the Application

- 1) Cover letter / abstract (maybe)
- 2) Letters (3+, famous sr. faculty if possible)
- 3) Proposal (2-5 pages)
- 4) Past Research *or* Personal Statement
- 5) CV and Grades

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 mechanisms behind this intimate connection remain 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 SMBH/galaxy coevolution using a combination of novel approaches on existing data and a new observing campaign.

Sample Figure

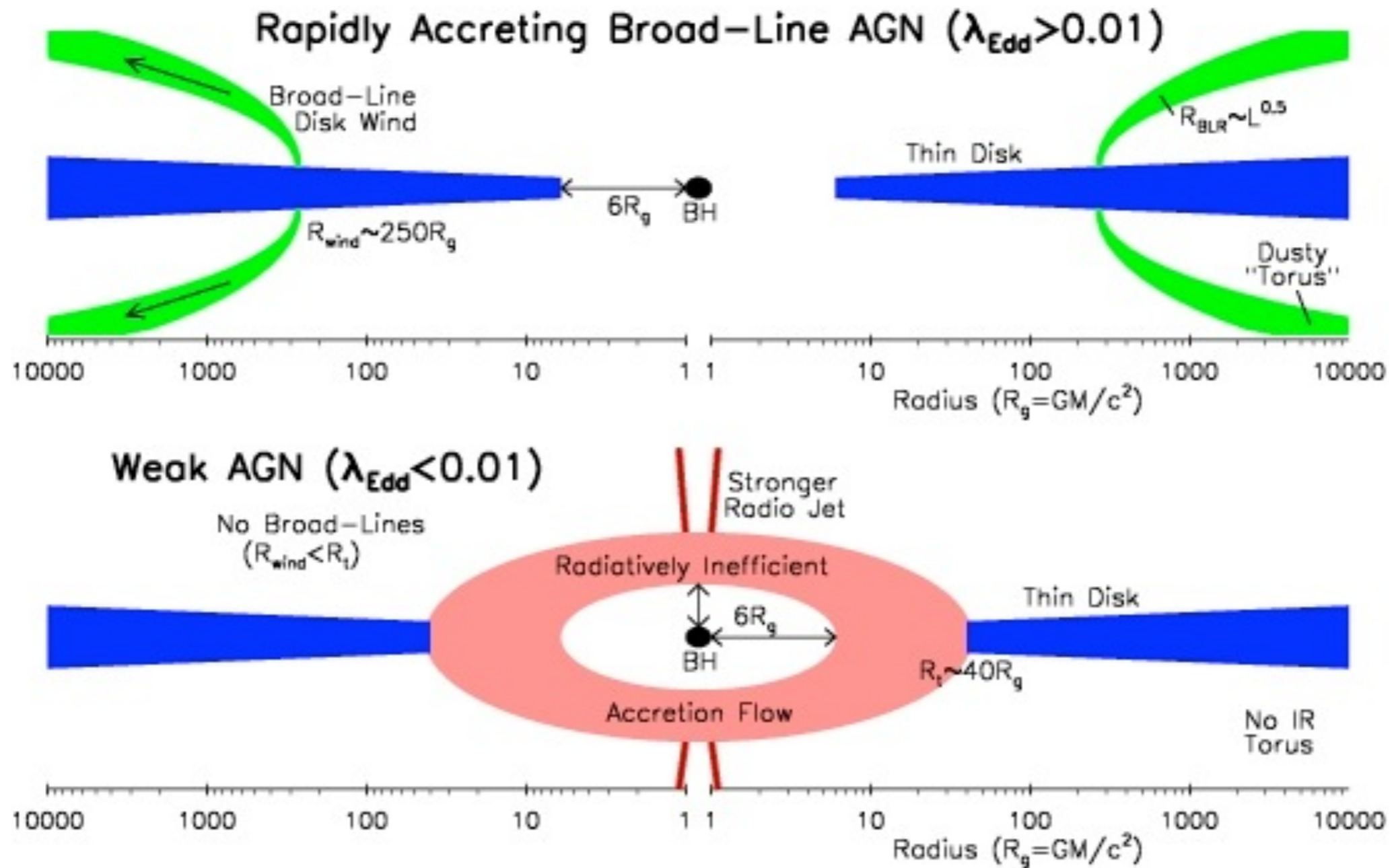


Figure 1: A simple model (from Trump et al. 2011b) demonstrating the importance of accretion rate as an axis in the AGN unified model. The emergence of a radiatively inefficient accretion flow explains the dramatic observed differences between rapidly accreting broad-line quasars (top panel) and weakly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

Personal Statements

Don't:

- *I have always loved the stars...*

Do:

- *Discuss your research experience: what you liked, why you want more*
- *Honestly discuss gaps in your resume (low grades, etc): growth is recognized*

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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Visibility

Research CV Publications Contact

Jonathan Trump

UC Santa Cruz

**~90% of postdoc
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](#)

My Advice

Build your reputation!

- **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!
- **Publicize:** Give talks & make a website

Physics is not a pure meritocracy!