

Astronomy 596/496 APA

Lecture 5

Oct. 8, 2015

Today's Agenda

- ★ Guest Lecture & Colloquium Recap
- ★ Scientific Presentations
- ★ Colloquium Preview

this past Tuesday: Adam Leroy

- “Star Formation-Driven Molecular Superwinds as Understood From the Two Nearest Starburst Galaxies (and a Small Survey)”

Q: What was the talk about?

Q: Key/memorable results?

Q: What did you like about the presentation?

Q: Lingerin questions?

Q: Other comments?

Care and Feeding of Advisors

Finding an Advisor

Q: Why is choosing an advisor important?

Note: we offer first summer fellowship because this is so important
give it a trial run and see how it goes

Q: How did you find your advisor?

Q: Criteria for selecting an advisor?

Criteria for Selecting and Advisor

- communication
 - work that you like to do, that you care about
Goodmans theorem: you wind up in the field where you like doing the scut work
 - personal chemistry
 - The Tale of the Rabbits Thesis (wolf, bear, deer)
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From “Pep Talk on Research” by David N. Weil

Doing research is a skill. The only way to learn it is to do it. The sooner you start the better. Your first few productions will be bad. This happens to everybody. So don't be a perfectionist. Get practice going through the process.

See your advisors a lot. A huge amount of time is wasted by students going off on tangents, re-inventing the wheel, or trying to solve impossible problems. Use your advisors as a guide to where you should be going.

Habits of Successful Thesis Students

- Meet with your advisor regularly
- Selecting a good project: warm-up project? Should you tell your advisor what to do?
- Identifying the context: where should you go? Read paper introductions, reviews, decadal review
- Keeping up with the literature: read astro-ph! Tell your advisor about interesting papers, discuss them.
- You will get stuck! Don't let this derail you—tell advisor
- Controlling distraction
- Follow-through (completing projects, answering questions, not letting things drop)
- Diversification: identifying collaborators other than your thesis advisor.
- Finding an audience for your work: talks, papers, group meetings

- Owning your project: take it seriously, get the resources you need, treat it as if it were important!
- Good students are slightly annoying they argue, they have their own opinions, but they don't argue counter-productively, i.e. they'll still listen.

Eyes on the Prize

- first-author papers** are the crown jewels of your scientific record
- shows research knowledge, initiative, accomplishment
 - opens doors to postdocs, prizes, grants

Keep asking yourself:

How am I making progress on my next first-author paper?

From “Pep Talk on Research” by David N. Weil

If you don't have a paper started by the spring of your third year, be alarmed. If you don't have a paper largely drafted by the fall of your fourth year, panic.

Keep your eye on the bottom line. Is the way in which you are spending your time bringing you closer to producing research output?

Colloquium Preview

Next week, Oct. 13: Jeff Cooke, Swinburne U.

- “Deeper, Wider, Faster: A multi-facility, multi-wavelength search for the fastest bursts in the sky”

Q: *what defines an astrophysical burst/transient? examples?*

Q: *what is exciting about burst/transient science? what is challenging?*

We are about to enter a revolution in time-domain astronomy?

Q: *what's that? why will there be a revolution, and why now?*

Homework: fast radio bursts

⁹ Q: *what are they empirically? physically? how many are known?*

Q: *possible Galactic sources? extragalactic sources?*