# Reading, Presenting, and Organizing Papers

## Also - Starting Research at A&M

Leo Alcorn - GLASS Workshop

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# Where to find papers

New postings:

• arXiv.org - updated M-F (7:30p)

• voxcharta.org - pulls from arXiv, but allows you to see what other people think is important, and upvote for Friday discussion

• Efficient searching: http://adsabs.harvard.edu/abstract_service.html

- allows searching by year, author title, etc.

# Using VoxCharta

Upvotes - can view votes from TAMU or all institutions
For each person, can view previous voting record
Previous agendas
View by field

Talk to Katelyn about setting up an account if you do not have one already.

# How to read papers

Broadly speaking for daily postings: title (most postings), abstract (<20%), figures (1- a few), conclusions, intro, entire paper.

Generally if I look at the figures, I'll add the paper to my Mendeley library and continue reading it there.

If you are looking at a paper recommended to you by your advisor, you'll want to do a more in-depth read, but going through the same order above can work to get the main points out.

Try to read around 1 paper/day.

# How to Present Papers at Astro Coffee

READ THE PAPER!

Try to provide some general background/context for those who aren’t experts in that subfield (this is often in the Introduction).

Present the key figures - Most important part of your presentation

End with a set of main takeaways/conclusions. Why should I care?

# How to Present Papers at Astro Coffee

You do not need to know the details of every method used.

You should be able to answer basic questions and have a rough idea of the process used (there will almost always be questions).

It’s okay to bring up a paper for discussion that you have questions about - chances are someone else will be able to help.

Remember - critiques of the paper are not critiques of you (unless you do a REALLY bad job presenting or it is your paper).

# Organization

Programs like Mendeley will keep track of your papers, allow sorting into groups, highlighting/notetaking, and even create BibTex files (useful for writing papers down the line…) https://www.mendeley.com/

Plenty of alternatives exist, but I don't know much about them and didn't like the one other organizer I tried apart from Mendeley: http://www.topbestalternatives.com/2015/top-7-bestalternatives-to-mendeley/

# Starting in Research

# Choosing an Advisor

Things to consider:

- What topics are you interested in?
- What do you need from an advisor?
- Who has projects/money for you?

# What Interests You?

Extragalactic:

- Papovich - Galaxy evolution
- Walsh - Supermassive Black Holes

Time-Domain:

- Suntzeff - Type 1a SN
- Lifan - Primordial Supernovae
- Macri - Cepheids and Miras
- Brown - UV Supernovae

Galactic:

- Marshall - Near-field cosmology
- DePoy - Instrumentation (side projects)
- Schmidt - Instrumentation

Theory and Simulations:

- Strigari - Dark matter
- Pace - Dark matter substructure

Astrostats:

- Long (statistics) - collaboration only

# What do ***you*** need?

- Communication, collaboration, direction
  - OR -
  I work on my own, leave me alone!
- Most of us need a decent amount of assistance/direction our first few years, and become more independent as we go on.
- Know a potential advisor's availability (physical and electronic), update/progress frequency expectations.

# Programming

Most astronomy research is programming.

If you don’t have much programming experience, learn a language ASAP. Most of us use Python, but if your advisor gives you a bunch of code in e.g. IDL, that’d be good to know.

Always look for a code that does what you want before rewriting - many astronomy packages are available, particularly in Python!

# Keep in mind…

• You can switch if project or advisor isn’t working for you… but not too many times!

• While you are taking classes, your priority is to pass them (not necessarily get an A…), but you should make progress on research.

• You are here to do research - it’s not always fun, but if you don’t enjoy it on the whole, this program may not be for you (and realize that that is perfectly fine).

# Building Community

- We are not just coworkers, we are all friends.
- No backstabbing, malicious competition, or drama - keep the astro group boring.
- Group activities (AKA cluster dynamics) include: board games, RPGs, drinking, Superbowl/July 4th/paper publishing parties, MAT3K, movie nights, Friday lunches, SUPA… check the #eventinvites slack channel.
- Pranks - An A&M Tradition.
- Soon - First Year BBQ!
- Senior students are here to help you.
- I (Leo) am your GSC representative for astronomy. Come to me with any major and so far unsolvable concerns.