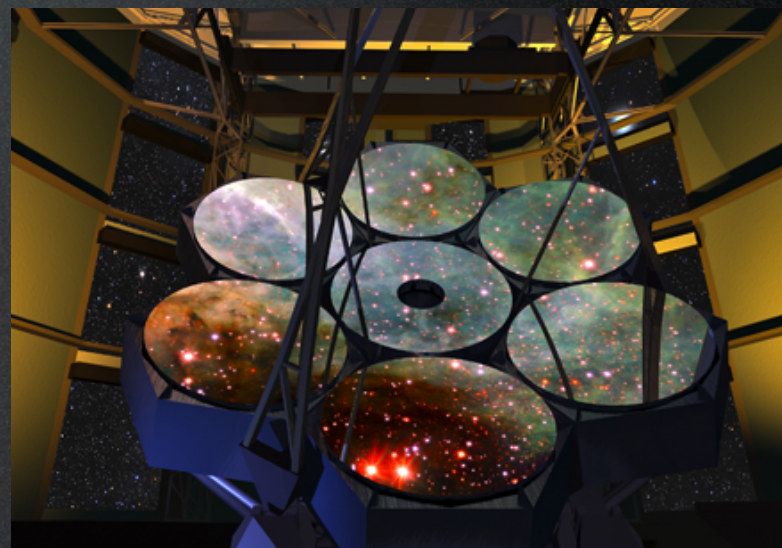




Astronomy Department Chair Report

Professor Shardha Jogee (Feb. 16, 2019)



Milestones for our Undergraduate Program

Thank You for our New Undergraduate Computer Lab!

In 2017, our UG program had doubled from 70 to ~140 majors, but our computer lab could only host 18 computers. To sustain our research-enhanced experiential model of UG education, with active involvement of students in research, we needed a larger, better lab!



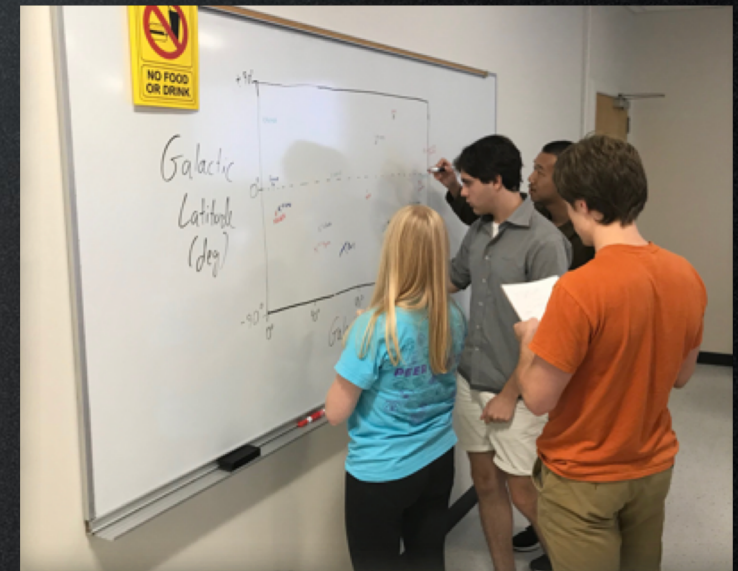
Thank you to all our BOV members for helping to make this new lab a reality. This is a major milestone for our UG program!



Features of the New Undergraduate Computer Lab



- 38 computers in a welcoming space
- Modular tables for team work and peer learning
- White boards for analytic brainstorming
- 360 degrees AV --> research AND experiential teaching lab



Advances Enabled by our New Undergraduate Computer Lab

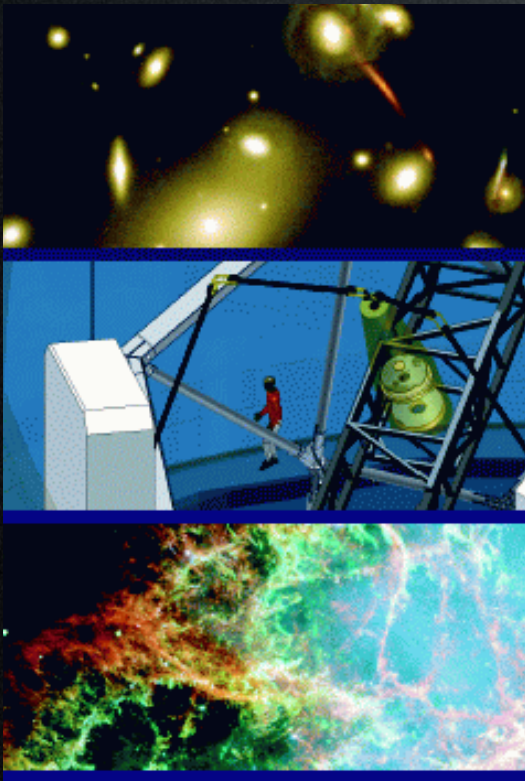


- **Experiential project-based courses**: Research Methods, FRI Stream, Observational Astronomy
- **Independent research** with faculty mentor → publications in top refereed journals
- 21st century skills: **Critical thinking, computing/data skills, innovation, team work, communication**
- **Building peer communities** that boost retention and graduation rate in STEM
- After graduation → Top graduate schools or careers in academia, industry, data science

THANK YOU!

UT Astronomy Research Experience for UGs (REU) funded by National Science Foundation and Department of Defense

- For our nation to excel, we need to produce over 1 M more STEM graduates. This requires us to **train the full diverse pool of excellence, including women and URMs**
- Our REU Program: “Frontier Research and Training in Astronomy for the 21st Century”
 - At least 50% of participants will be women and URMs.
 - Participants have access to 4 UT gems: Department, McDonald Obs., TACC, TIDES



Recruiting and Supporting World-Class Faculty

Honoring Prof. Sneden's Research on Chemical Evolution of Stars

Prof. Chris Sneden is “retiring” (sort of) after 39 years of research and leadership



- Leading expertise in the chemical evolution of stars and nucleosynthesis of elements.
- Published 276+ refereed papers with over 24,000 total citations
- State of Texas Citation by former Governor Rick Perry for his work.
- Thanks to the BOV for supporting the research led by Chris and the 24 graduate students in his team !

Presenting Great Lecture Today at 2 p.m.
“Alchemy in the Early Milky Way”

Advancing our Research Program through Top Faculty hires

Thank you to the BOV for helping us bring the best minds to Texas!

From 2015 to 2019, we have

- grown strategic research areas via hires of 6 top faculty (and retention of 4 others)
- improved diversity of our faculty → Female faculty has risen from 13% to 24%

Evolution of the Universe Across Cosmic Time

- Formation of Stars, Black Holes, Galaxies
- Nature of Dark Energy and Dark Matter

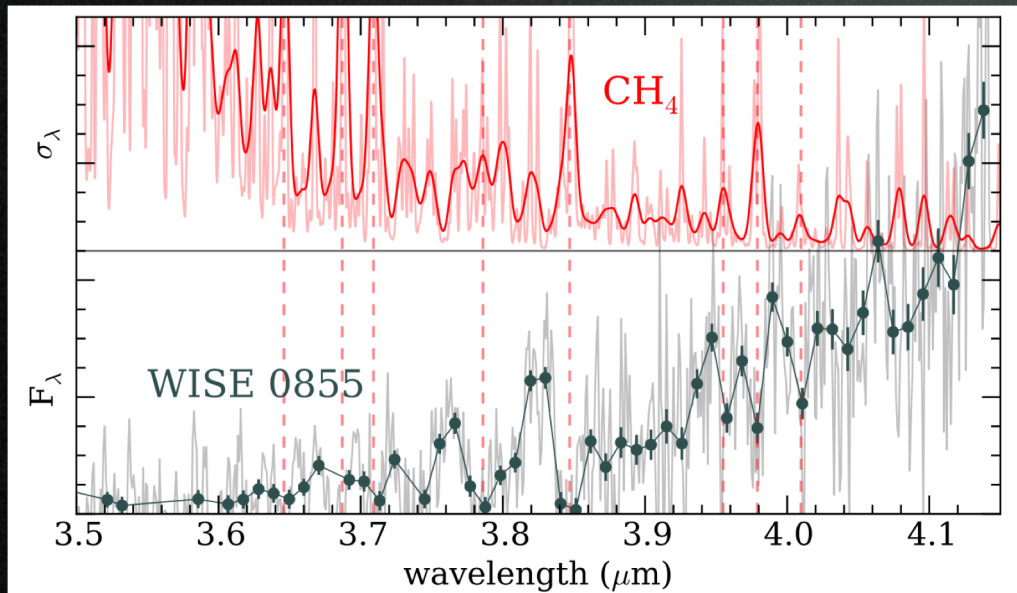


Planetary Science & Exploration of Life

- Formation of stars & proto-planetary disks
- Architecture and atmospheres of planets

New Faculty Joining us This Year: Caroline Morley

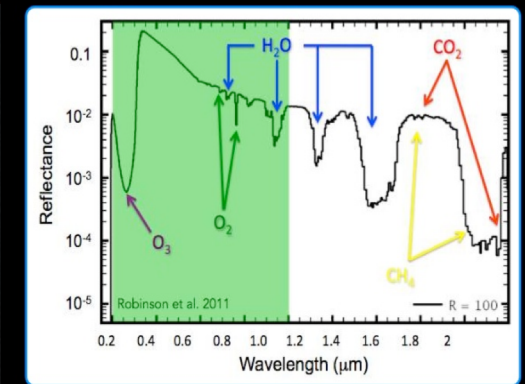
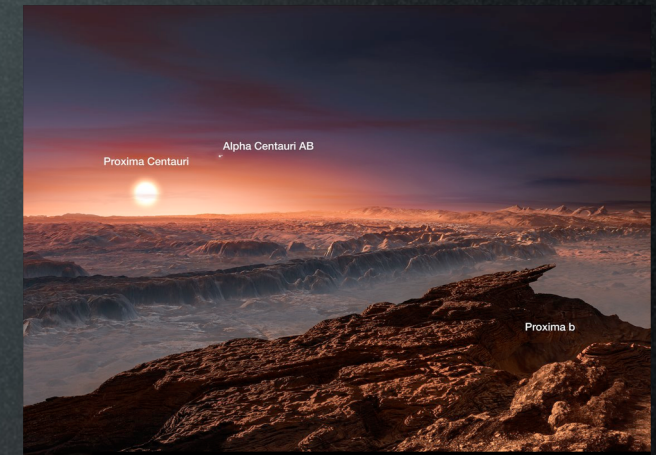
- 2016 Ph.D. in Astrophysics from UC Santa Cruz
- Formerly a Sagan Prize Postdoctoral Fellow at Harvard University
- Research Expertise
 - Modeling exoplanet atmospheres
 - Understanding the compositions of planets
 - Investigating clouds & weather on exoplanets



- You will hear from Caroline today!

Interdisciplinary Hire for the exploration of life and habitability

In less than two decades, we have gone from knowing only our Solar System to uncovering thousands of diverse planetary systems.



The exploration of life and planetary habitability require interdisciplinary collaborations:

- **UT Astronomy:** Expertise in exoplanets + access to key facilities (McD, GMT, JWST)
- **Biology and Chemistry:** Interpretation of biochemical signatures for different life forms
- **Jackson School of Geosciences:** The Solar system
- **Aerospace Engineering:** Spacecraft instrumentation and mission design

Faculty Receive National awards in 2017-2018



Caitlin Casey

**American Astronomical
Society Newton Pierce
Prize**

"For outstanding early-career achievement in observational astronomical research"



Mike Boylan-Kolchin

**NSF CAREER
Award**

"Most prestigious NSF award in support of early-career faculty"



Stella Offner

Cottrell Scholar

"For the very best early career teacher-scholar... for innovative research and education"

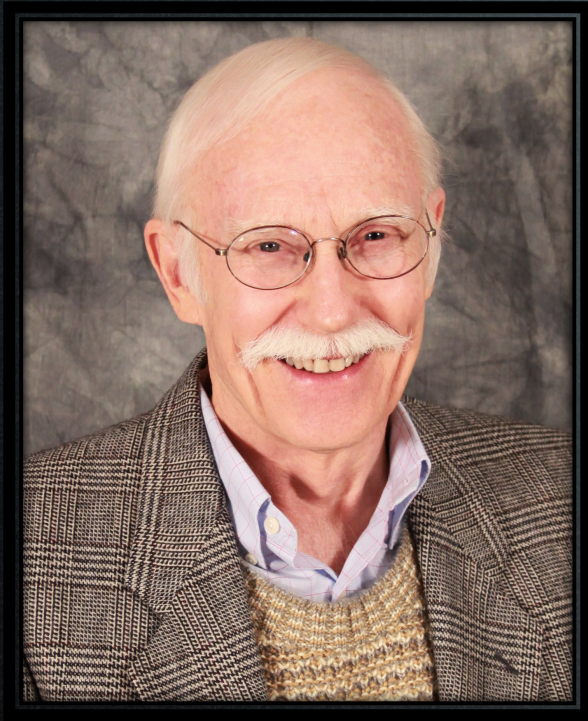


Don Winget

**Department of
Energy \$7 M Award**

"To set up a Center for Astrophysical Plasma Properties (CAPP) at UT"

Faculty Receive Prestigious Awards in 2018-2019



J. Craig Wheeler

AAS Chambliss Writing Award

“For his book on ‘Supernova Explosions’... an extraordinary compilation of information ... with terrific insights”



Keely Finkelstein

UT President's Associates Teaching Excellence Award

“For her exceptional undergraduate teaching and innovation in the Department of Astronomy

”



David L. Lambert

Distinguished Texas Scientist TX Academy of Sciences

”For outstanding contributions to astronomy and for promoting science in the state of Texas“

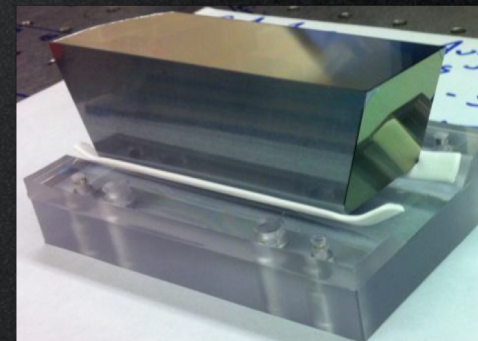
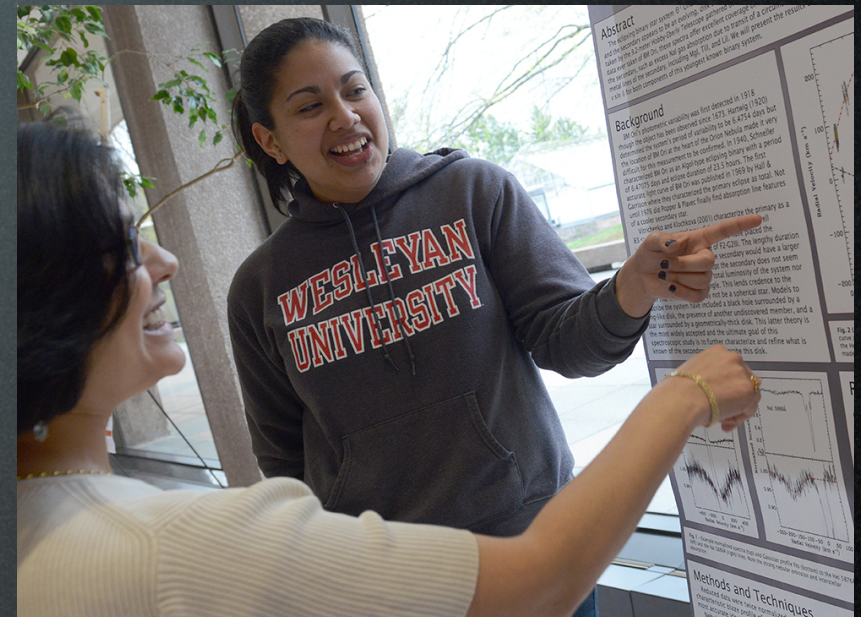
Thank you to the BOV for supporting the research of our faculty and students

Milestones for our Graduate Program

Thank You For Supporting our Graduate Students

Graduate students are **the lifeblood of our research program**, partnering with faculty to bolster Texas' leadership in research breakthroughs and innovation.

- Conduct observations and data analysis (e.g., McD, Hubble, ALMA, GMT, JWST)
- Develop theory & instrumentation
- Publish in top journals, shaping our ranking
- Develop STEM pipeline (UG and K-12)



Thank You For Supporting our Graduate Students



Our deep thanks and appreciation to to the [inaugural donors](#) for the [Astronomy Research Endowment](#) which aims to provide research support for students.

Fellowship

Mrs. Joan Smith has established the [*Harlan J. Smith Fellowship in Astronomy*](#)

Excellence Funds

- Anne Adkins
- Barbara and Wayne Alexander
- Sam Cooper
- Virginia Holbrook and Paul Teten

Thanks to Your Support Students Win Prestigious Fellowships



**Rebecca Larson
(current UT student)**

**NSF Graduate Research
Fellowship**



**Wenbin Lu
(graduated)**

**Burke Institute
Postdoctoral
Fellowship
(Caltech)**



**Aaron Smith
(graduated)**

**NASA Einstein
Postdoctoral
Fellowship
(MIT)**

These students were able to focus on research thanks to you support

Join our Graduate Students for Lunch!

Please join our graduate students at lunch for informal chats on their research, journey
Lunch tables below are co-hosted by graduate students and faculty mentors

- White Dwarfs and Laboratory Astrophysics ([Patty Cho](#) , Don Winget)
- Galaxies and Black Holes in Early Cosmic Times ([Jonathan Florez](#), Shardha Jogee)
- Searching for First Galaxies ([Rebecca Larson](#), Steve Finkelstein)
- Galactic & Stellar Archeology ([Andreia Carrilo](#), Keith Hawkins)
- Exoplanets ([Jessica Luna](#), Caroline Morley)
- ALMA & Galaxy Formation ([Patrick Drew](#), Justin Spilker)
- Chemical Evolution of Galaxies ([Maddie Lucey](#), Chris Sneden)
- Center for Astrophysical Plasma Properties ([Karen Winget](#), Craig Wheeler)