

DEPARTMENT OF ASTRONOMY



The Department of Astronomy is an independent, active, and vibrant department that offers undergraduate and graduate instruction at a public University in New England. The Department is active in a broad range of observational and theoretical astrophysics and we seek to challenge and enhance our understanding of the cosmos that we live in.

UMass is a member of the Five College Astronomy Department (FCAD) alongside Amherst College, Mount Holyoke College, Smith College, and Hampshire College. As a result, students have access to a broad array of FCAD resources.

Students (Fall 2018)

100 Undergraduate majors

21 PhD students

Professors and Researchers

15 UMass professors

6 FCAD professors

5 Postdocs and research fellows



Program

- Research begins in the first semester, multiple research projects
- Currently, there are no preliminary exams and one two-hour qualifying (comprehensive) oral exam in the third year
- Part of the Five Colleges Astronomy Department (FCAD), which provides the ability to interact with individuals across all five colleges
- 10 courses provide a comprehensive background in modern astrophysics

Telescopes and Facilities

- Partner in the 50-m Large Millimeter Telescope (LMT) in Sierra Negra, Puebla, Mexico.
- Partner in the WIYN 0.9-m optical telescope
- Access to advanced computational facilities
- Continuum and heterodyne instrument labs

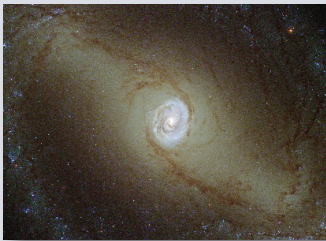
Statement on Diversity and Inclusion

The Department of Astronomy at the University of Massachusetts strongly values diversity and inclusion at all levels and is committed to provide opportunities to all. Towards the goal of being a community that reflects the diverse makeup of our society, the Department, in its graduate admission proceedings, will strive to increase the admission of students from historically underrepresented groups in Astronomy, aiming at aligning with national population averages. The Department will continue to be a welcoming beacon of scholarship for all.

Benefits at UMass

Graduate students are part of the GEO Union and receive exceptional benefits, such as:

- Excellent health insurance, including coverage for vision/dental
- Health/wellness reimbursement for gym fees
- Childcare assistance



Areas of research

Research areas cover the X-ray, UV, Optical, IR, (Sub)mm and Radio regimes

Computational probability and statistics (big data)

Simulations of the formation and evolution of galaxies

Large scale structure

Interaction of galaxies with their environment: structure of dark matter halos and global properties of galaxy clusters

Chemical evolution of the ISM and the circumgalactic enrichment

Resolved star formation: star cluster formation and the initial mass function

Star formation and feedback: examining high-energy sources of the ISM

Coevolution of galaxies and supermassive black holes

Astronomical instrumentation

Five-College Area

- Low rental cost in the local area
- Located near Boston and other regions with a high density of research institutions
- High visibility/opportunities to promote your research
- Beautiful scenery/hiking
- Skiing in nearby Vermont
- Lively arts scene



Grants and Fellowship Opportunities

Travel grants are available for conferences every semester, and students have access to the following potential funding:

- FCAD travel fellowships
- Graduate School fellowships
- Massachusetts Space Grant Consortium (MASGC)
- Northeast Alliance for Graduate Education and the Professoriate (NEAGEP)

Judith S. Young Memorial Fellowship

Judith S. Young was a pioneer in radio astronomy and professor at UMass Amherst, and this award for exceptional women applicants serves to honor her legacy as a scientist and pillar of the community. Among her many accomplishments are pioneering observations of extragalactic molecular gas and construction of the UMass Sunwheel observatory. The recipient of Young Fellowship will receive the following:

- Travel funds to attend a scientific conference
- Stipend for purchase of laptop or other research-related expenses
- Exemption from TA duties in the first semester

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