RIT

Astrophysical Sciences and Technology

CABM Exploration

RIT College of Science Astrophysical Sciences and Technology

Astrophysical Sciences & Technology Graduate Program





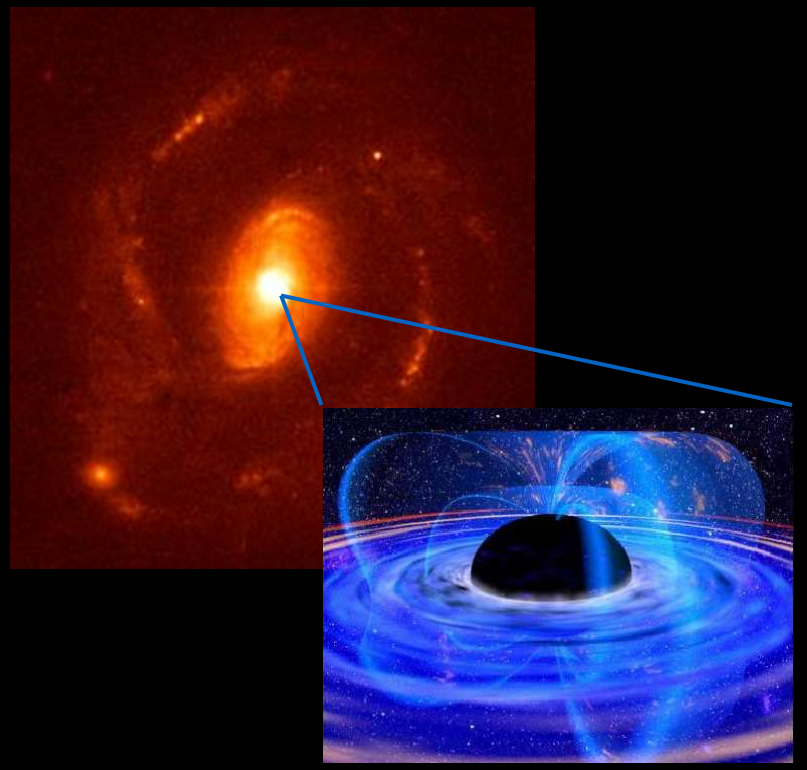
- Student-centered university offering cutting-edge research experiences
- At graduate level both MS and PhD degrees
- UG level includes BS Physics+MS AST
- ~ 80 faculty, post-docs & grad students
- Located in western New York state on Lake Ontario, 1 hour from Buffalo, 3 hours from Toronto, 5 hours from NYC
- I am Prof. Michael Zemcov, AST Director

A naturally inter-disciplinary program

- AST is part of the School of Physics and Astronomy
- 16 Program Faculty drawn from 4 academic units:
  - School of Physics & Astronomy
  - Center for Imaging Science
  - School of Mathematical Sciences
  - Department of Science & Mathematics, National Technical Institute for the Deaf
- Students may select research topics across
  - Multiwavelength observational astronomy, gravitational wave astronomy
  - Computational & theoretical astrophysics, numerical general relativity
  - Technology development and instrumentation

Current Research Foci

- Computational general relativity
- Gravitational wave astronomy
- Multi-messenger and time-domain astrophysics
- Stellar populations and modeling
- Data analysis and integration of AI/ML
- Experimental astrophysics
- Compact objects eg supermassive black holes
- Active Galaxies
- Galaxy evolution and populations
- Proto-stars & proto-planetary disks
- Planetary nebulae
- Instrumentation (UV to radio)
- Next-generation photon detectors



2026-27 student body

	New students	Total
PhD	10 (4)	44 (23)
MS	4 (3)	7 (5)
BS/MS	7 (3)	11 (4)
Total	21 (10)	64 (31)

(#) – number of women/non-binary

Nationalities: US (50), India (4), Canada (1), Thailand (1), Pakistan (2), China (1), Japan (1), Columbia (1)

Ours is the largest astrophysics graduate program in NY, top 5 in US

AIP Roster of Astronomy Departments 2024

RIT College of Science Astrophysical Sciences and Technology

AST Faculty

16(+1) AST Program Faculty
- School of Physics & Astronomy
- School of Mathematical Sciences
- Center for Imaging Science
- National Technical Institute for the Deaf



Nicole Melso
Instrumentation



Jason Nordhaus
Computational Astrophysics



Jeyhan Kartaltepe
Galaxy Evolution



Michael Zemcov
Experimental Astrophysics



Manuela Campanelli
Numerical Relativity



Richard O'Shaughnessy
Gravitational Wave Astronomy



Joel Kastner
Stellar Evolution

Full listing here: https://www.rit.edu/program-directory/6954262

Degree Timeline

	Year 3, Fall	Year 3, Spring	Year 3, Summer	Year 4, Fall	Year 4, Spring	Year 4, Summer	Year 5, Fall	Year 5, Spring
Classes	PHYS 374 (replaces Capstone prep)			ASTP 601, 608, 1 grad elective	ASTP 602, 609, 1 grad elective		1 Grad Elective	1 Grad Elective
Research		Talk to possible advisors	If possible		Lock in advisor	If possible	3/4s of your time	3/4s of your time

Decision Point 1

Decision Point 2

Financial Considerations

- New rules from federal government have changed how loans are handled.
- Your financial aid contact will know these rules and questions should be addressed to them.
- Broad advice: stay in UG status as long as you can.
- Required research component is **not paid**.



https://www.rit.edu/events/wise-summer-research-application-workshop

Contacts

- Undergraduate questions: Dawn Hollenbeck dmhsps@rit.edu
- Graduate questions: Michael Zemcov mbzsps@rit.edu
- Anything, especially how to blend the two together: Lindsay Cohen lacsse@rit.edu
- Financial questions: your financial aid person

Backup Slides

Program structure

- Flexible structure allows students to explore range of interests
- Students take common core, then tailored sequence of 6–10 advanced courses, including:
  - Observational Astrophysics
  - Theoretical Astrophysics
  - Gravitational Wave Astronomy
  - Astronomical Instrumentation
- Graduate seminar develops general research skills & transferrable skills
- Students embark on initial research project within first semester
- **MS:** possible to transfer to PhD upon completion of MS requirements, subject to Program approval
- **PhD additional requirements:**
  - Core courses must be passed with grades ≥ B
  - Ph.D. Qualifier – defense of ”Master’s Level Research Project” (or on-the-way MS)
  - Ph.D. Proposal Review – evaluation of Ph.D. plan by Dissertation Committee

