Namrata Roy

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Studies galaxy formation, star formation quenching, gas in galaxies, active galactic nuclei (AGN) and stellar feedback using both observations and simulations. Experienced in using spatially resolved and multi wavelength studies of AGN and galaxies ranging from γ-ray to radio wavelengths.

Academic Positions held

- **Flatiron Institute** — **New York city, NY/ Remote**
  Pre-Doctoral Fellow (Remote) — *September 2021 - May 2022*
- **University of California, Santa Cruz** — **Santa Cruz, CA**
  Graduate Student Researcher — *September 2016- Present*
- **University of California, Santa Cruz** — **Santa Cruz, CA**
  Osterbrock Fellow — *September 2019- Present*
- **University of California, Santa Cruz** — **Santa Cruz, CA**
  Teaching Assistant — *Winter 2017, 2018*
- **Harish Chandra Research Institute** — **Allahabad, India**
  Summer Research Fellow — *2015*

Education

- **University of California, Santa Cruz** — **Santa Cruz, CA**
  PhD, Astronomy/Astrophysics — *2016-Present (Expected: June 2022)*
  Thesis: Star formation suppression and feedback in nearby galaxies
- **Presidency University** — **Kolkata, India**
  M.Sc., Physics — *2016*
- **Presidency University** — **Kolkata, India**
  B.Sc., Physics — *2014*

Awards and Honors

- **2021:** Remote Pre-doctoral Fellowship, Center for Computational Astrophysics, Flatiron Institute
- **2021:** UC Dissertation Year Fellowship.
- **2019-Present:** Osterbrock Leadership Fellowship, UC Santa Cruz
- **2015:** Summer Research Fellowship, Harish Chandra Research Institute, India
- **2011-2016:** INSPIRE scholarship, Department of Science & Technology, Govt. of India

Refereed Publications | 5 published 1st author, 1 in prep

1. **2021: Roy, N.,** Moravec, E., Bundy, K., et al. 2021, *Radio Morphology of Red Geysers*, arXiv e-prints, arXiv:2109.02609 (in press ApJ)
2. **2021: Roy, N.,** Bundy, K., et al. 2021, *Signatures of inflowing gas in red geyser galaxies hosting radio-AGN*, ApJ, 919, 145

3. **2021: Roy, N.,** Bundy, K., et al. 2021, *Evidence of Wind Signatures in the Gas Velocity Profiles of Red Geysers*, ApJ, 913 33
4. **2021:** Mulcahey, C.-R., et al. 2021 (incl **Roy, N**), *Star Formation and AGN Feedback in the Local Universe: Combining LOFAR and MaNGA*, Submitted to A & A
5. **2021:** Frank, E., et al. 2021 (incl. **Roy, N**), *HI content of the red geyser galaxies*, Submitted to ApJ
6. **2020:** Comerford, J., et al. 2020 (incl **Roy, N**), *A Catalog of 406 AGNs in MaNGA: A Connection between Radio-mode AGNs and Star Formation Quenching*, ApJ 901, 159
7. **2019: Roy, N.,** Chatterjee, R., et al. 2019, *Probing the jets of blazars using the temporal symmetry of their multiwavelength outbursts*, MNRAS, 482, 743
8. **2019:** Riffel. R., et al. 2019 (incl **Roy, N**), *Precessing winds from the nucleus of the prototype Red Geyser?*, MNRAS, 485, 5590
9. **2019:** Bizyaev. D., et al. 2019 (incl **Roy, N**), *SDSS IV MaNGA: Star-formation-driven Biconical Outflows in the Local Universe*, ApJ, 882, 145
10. **2018: Roy, N.,** Bundy, K., et al. 2018, *Detecting Radio AGN Signatures in Red Geysers*, ApJ, 869, 117
11. **2021: Roy, N.,** et al. 2021 (in prep), *The effect of stellar feedback driven winds on the spatially resolved gas kinematics of dwarf galaxies using FIRE2 simulations*

Conference Preceedings

1. **2018: Roy, N.,** Bundy, K., et al. 2018, *Red geyser: A new class of galaxy with large scale AGN driven winds*, American Astronomical Society Meeting Abstracts, 231, 250.46
2. **2018:** Dhara, A., et al. 2018 (incl **Roy, N**), *A study of Galaxies and Quasars in the background of Andromeda Galaxy*, American Astronomical Society Meeting Abstracts, 231, 351.11
3. **2018:** Bundy, K., et al. 2018 (incl **Roy, N**) *WFOS instrument trade study: slicer vs. fiber instrument concept designs and results*, Proc. SPIE 10702, Ground-based and Airborne Instrumentation for Astronomy VII, 1070220 (9 July 2018)

Successful Proposals

- **2020:** Co-I | GBT19B-336
  Exploratory Observations of CO(1-0) 115.271 GHz Emission in MaNGA Galaxies
- **2019:** Co-I | GMRT 36_022
  A Study of Radio Mode Feedback in Red Geysers from SDSS IV's MaNGA Survey
- **2018:** Co-I | Keck KCWI 2018B_U081
  Towards the first measurement of gas-phase metallicity in early type LINER galaxies
- **2018:** Co-I | UCO Mini Grant
  Modeling Fiber Performance for Ultra-faint Spectroscopy
- **2018:** Co-PI | NSF Proposal A18_0759
  Red geysers and the suppression of star formation

Seminars & Conference presentations | 5 / 24 shown

- **September 2021:** Center for Astrophysics (CfA) colloquium
- **August 2021:** SDSS Collaboration meeting
- **October 2020:** Young Astronomers on Galactic Nuclei (yAGN) meeting, 2020

- **September 2020:** Keck Science meeting, 2020
- **August 2020:** Alumni Lecture Series, Presidency University, India

Broader Impacts

- **2021:** Python Instructor, Lamat: Summer Tech training
  Goal: to introduce community college and under-represented students to Astrophysical research
- **2021:** Invited Panelist, Presision (undergraduate symposium) at Presidency University, India
  Goal: To advise and guide undergraduate Physics students of India on choosing career paths
- **2021:** Mentor, Society of Physics Students and Women in Physics and Astronomy mentoring program
  Goal: Advise a woman undergraduate student on graduate school, research and future career plans
- **2019-Present:** Organizer of various events for the Osterbrock Leadership Program
  Goal: Organize and direct the Mini-grants Program to enable graduate students carry on leadership-based projects, host career advice panels for graduate students with distinguished faculty and alumni
- **2016-2017:** Women in Physics & Astronomy
  Goal: to build community among women in physics and astronomy departments
- **2016-2017:** Lead of Ask-an-astronomer
  Goal: To answer basic questions about astronomy from interested citizens

Teaching & Mentoring

- **2018:** Teaching Assistant, UC Santa Cruz (class of $\sim$ 150 undergraduates)
  ASTR 5: Overview of the Universe
- **2017:** Teaching Assistant, UC Santa Cruz (class of $\sim$ 150 undergrauates)
  ASTR 2 : The formation and Evolution of the Universe
- **2017:** Primary research mentor, Science Internship Program (3 students: Atirath Dhara, Kaela McConnell, Jurij Waite)
  A study of Galaxies and Quasars in the background of Andromeda Galaxy
- **2017:** Co-advised undergraduate research, UC Santa Cruz (student: Marina Huang)
  An automatic algorithm to identify MaNGA Red Geysers

Computer skills

1. **Programming language:** Efficient in Python, Fortran, IDL. Working knowledge of IRAF, C, Mathematica and MATLAB.
2. **Operating system:** Have used Windows, Linux and Mac-OS.

References

- Prof. Kevin Bundy, UC Santa Cruz, kbundy@ucolick.org
- Dr. Rachel Somerville, Flatiron Institute, rsomerville@flatironinstitute.org
- Prof. Sandra Faber, UC Santa Cruz, faber@ucolick.org
- Prof. Martin Hardcastle, University of Herdfortshire (UK), m.j.hardcastle@herts.ac.uk
- Dr. Ritaban Chatterjee, Presidency Unievrsity (India), ritaban.physics@presiuniv.ac.in