

Shalini Kurinchi-Vendhan

aspiring astrophysicist

McWilliams Center for Cosmology and Astrophysics

skurinch@andrew.cmu.edu



I am a Ph.D. Student and National Science Foundation Graduate Research Fellow at Carnegie Mellon University, exploring the coevolution of supermassive black holes and star formation with cosmological simulations of galaxy formation.

educational background

- Present ♦ **Carnegie Mellon University**
Doctor of Philosophy in Astronomy and Astrophysics
- 2025 ♦ **Heidelberg University**
Master of Science in Physics
Thesis: Idealized Simulations of Supermassive Black Hole Feedback in Multiphase Gaseous Media
- 2023 ♦ **California Institute of Technology**
Bachelor of Science in Astrophysics & English Literature

noteworthy honors

- ♦ **National Science Foundation Graduate Research Fellowship**
- ♦ **Fulbright Scholarship Award**
- ♦ **American Astronomical Society Chambliss Achievement Medal**
- ♦ **Margie Lauritsen Leighton Prize for Physics & Astronomy**

research experience

- 2024 ♦ **Max Planck Institute for Astronomy**
advised by Dr. Annalisa Pillepich
Supermassive Black Holes and Dense Environments in IllustrisTNG Jellyfish Galaxies
- 2023 ♦ **École Polytechnique Fédérale de Lausanne**
advised by Professor Michaela Hirschmann
The Origin of Star Formation Quenching in Early, Massive Galaxies with IllustrisTNG
- 2022 ♦ **Harvard & Smithsonian Center for Astrophysics**
advised by Dr. Francesca Civano and Dr. Laura Brenneman
Constraining Supermassive Black Hole Accretion with the Chandra X-Ray Telescope
- 2021 ♦ **Carnegie Observatories**
advised by Dr. Andrew Benson
Numerical Simulations of Dark Matter with the Semi-Analytic Code *Galacticus*
- 2020 ♦ **Dark Cosmology Center**
advised by Dr. Michaela Hirschmann
Active Galactic Nuclei in Quiescent Dwarf Galaxies with IllustrisTNG and Synthetic Emission-line Models



- ◆ **S. Kurinchi-Vendhan**, E. Rohr, A. Pillepich, E. Zinger, M. Ayromlou, and G. Joshi, *Jellyfish galaxies with the IllustrisTNG simulations – Supermassive black hole activity in dense environments with ram-pressure stripped satellites*, MNRAS, Volume 542, Issue 3, September 2025, Pages 1901–1922.



- ◆ **S. Kurinchi-Vendhan**, M. Farcy, M. Hirschmann, F. Valentino, *On the origin of star formation quenching in massive galaxies at $z \gtrsim 3$ in the cosmological simulations IllustrisTNG*, MNRAS, Volume 534, Issue 4, November 2024, Pages 3974–3988.



- ◆ P. Hopkins, A. Gurvich, X. Shen, Z. Hafen, M. Y. Grudić, **S. Kurinchi-Vendhan**, C. Hayward, F. Jiang, M. Orr, A. Wetzel, D. Keres, J. Stern, C.-A. Faucher-Giguere, J. Bullock, et al., *What causes the formation of discs and end of bursty star formation?*, MNRAS, Volume 525, Issue 2, October 2023, Pages 2241–2286.

conferences and colloquia

2026	◆ Building Galaxies from Scratch	Heidelberg
2026	◆ AGN Feedback Across All Scales and Time	Garching
2026	◆ Supermassive Black Holes and Blue Notes	Montreal
2026	◆ The End of Star Formation	Champaign
2025	◆ European Astronomical Society Meeting	Cork
2025	◆ Max Planck Institute of Astronomy Galaxies & Cosmology Colloquium	Heidelberg
2024	◆ The Physical Processes Shaping the Stellar and Gaseous Histories of Galaxies	Pisa
2023	◆ American Astronomical Society Meeting	Seattle
2020	◆ Symposium at the Cosmic Dawn Centre	Copenhagen

courses taught

2026	◆ Galaxy Dynamics and Evolution	Prof. Dusan Keres
2026	◆ Introduction to Astronomy and the Universe	Prof. Ethan Nadler

academic references

Dr. Annalisa Pillepich
Max Planck Institute for Astronomy
 pillepich@mpia-hd.mpg.de

Professor Philip Hopkins
California Institute of Technology
 phopkins@caltech.edu

Professor Michaela Hirschmann
École Poly. Fédérale de Lausanne
 michaela.hirschmann@epfl.ch

“The resilient human heart is a thing of intergalactic, interwoven, incredible rarity.”