Amy Secunda

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PROFESSIONAL POSITIONS

Flatiron Research Fellow, Center for Computational Astrophysics, Flatiron Institute 2024 – 2027
Helen Gurley Brown Post-Baccalaureate Fellow, American Museum of Natural History 2017 – 2018

EDUCATION

Princeton University, Ph.D. Astrophysical Sciences Aug 2024
Advisors: Prof. Jenny E. Greene and Dr. Yan-Fei Jiang
Princeton University, M.A. Astrophysical Sciences May 2020
Columbia University, Post-Baccalaureate Undergraduate Astrophysics Sep 2014 – Jun 2017
Northwestern University, B.S. Theatre, *cum laude* Jun 2013

AWARDS AND FELLOWSHIPS

Graduate Research Fellowship, National Science Foundation 2018 – 2023
Martin Schwarzschild Fellowship, Princeton University 2018 – 2019

SUCCESSFUL GRANT PROPOSALS

2026 "Condolence," Simons Foundation Triangle Program Grant, scientist awardee — **$30,000**
2025 "Condolence," Simons Foundation Open Interval Program Grant, scientist awardee — **$30,000**
2023–2026 "Mapping AGN Accretion Through Echo Mapping and Radiation MHD Simulations," NSF Award 2306950, co-author (PI: J. E. Greene) — **$328,865**

PUBLICATIONS

Full list: NASA ADS library * = student I mentored

First Author

1. **A. Secunda**, Y.-F. Jiang, J. E. Greene. "Disk Structure May Determine AGN Variability and Explain the Accretion Disk Size Problem: No Broad Line Region Required." *Submitted to ApJ*, arXiv:2610.12462.
2. **A. Secunda**, S. Wagner-Carena, H. Qu, S. Ho. "Measuring the Vertical Structure of Active Galactic Nuclei Disks with Transformer Models and the Vera C. Rubin Observatory." 2026, *ApJ*, 1010, 147.
3. **A. Secunda**, R. S. Somerville, Y.-F. Jiang, J. E. Greene, L. J. Furtak, A. Zitrin. "Do Little Red Dots Vary?" 2026, *ApJ*, 996, 6.
4. **A. Secunda**, Y.-F. Jiang, J. E. Greene. "Continuum Reverberation in Active Galactic Nuclei Disks Only With Sufficient X-ray Luminosity and Low Albedo." 2025, *ApJ*, 984, 19.
5. **A. Secunda**, Y.-F. Jiang, J. E. Greene. "Simulating X-ray Reverberation in the UV-Emitting Regions of Active Galactic Nuclei Accretion Disks with 3D Multi-Frequency Magnetohydrodynamic Simulations." 2024, *ApJL*, 965, 29.
6. **A. Secunda**, J. E. Greene, Y.-F. Jiang, P. Z. Yao, A. Zoghbi. "Negative Lags on the Viscous Timescale in Quasar Photometry and Prospects for Detecting More with LSST." 2023, *ApJ*, 956, 2.
7. **A. Secunda**, P. Donnel, H. Ji, J. Goodman. "Magnetorotational Instability in a Swirling Partially Ionized Gas." 2023, *MNRAS*, stad2738.
8. **A. Secunda**, B. Hernandez, J. Goodman, N. W. C. Leigh, B. McKernan, K. E. S. Ford, J. I. Adorno*. "Evolution of Retrograde Orbiters in an Active Galactic Nucleus Disk." 2021, *ApJL*, 908, L27.
9. **A. Secunda**, J. M. Bellovary, M.-M. Mac Low, K. E. S. Ford, B. McKernan, N. W. C. Leigh, W. Lyra, S. Zsolt, J. I. Adorno*. "Orbital Migration of Interacting Stellar Mass Black Holes in Disks around Supermassive Black Holes II. Spins and Incoming Objects." 2020, *ApJ*, 903, 133.

10. **A. Secunda**, R. Cen, T. Kimm, Y. Götberg, S. de Mink. “Delayed Photons from Binary Evolution Help Reionize the Universe.” 2020, *ApJ*, 901, 72.
11. **A. Secunda**, J. M. Bellovary, M.-M. Mac Low, K. E. S. Ford, B. McKernan, N. W. C. Leigh, W. Lyra, S. Zsolt. “Orbital Migration of Interacting Stellar Mass Black Holes in Disks around Supermassive Black Holes.” 2019, *ApJ*, 878, 85.

Significant Contributions

12. Z. Liu, R. Naidu, **A. Secunda**, et al. “How I Wonder What You Are — JWST’s Little Red Dots do not TWINKLE.” *Submitted to ApJ*, arXiv:2604.13000.
13. K. Gonglewski*, **A. Secunda**, M.-M. Mac Low, K. E. S. Ford, B. McKernan, F. R. N. Schneider. “Orbital Migration of Interacting Stellar Mass Black Holes in Disks around Supermassive Black Holes. III. Mass Distribution of Hierarchical Mergers.” 2026, *ApJ*, 1011, 107.
14. L. Furtak, **A. Secunda**, et al. “Investigating Photometric and Spectroscopic Variability in the Multiply-Imaged Little Red Dot A2744-QSO1.” 2025, *A&A*, 698, 227.
15. P. Yao, **A. Secunda**, Y.-F. Jiang, J. E. Greene, A. Villar. “A Negative Long Lag from the Optical to the UV Continuum in Fairall 9.” 2023, *ApJ*, 953, 43.
16. E. Berzin*, **A. Secunda**, R. Cen, Y. Götberg, A. Menegas*. “Determining the Presence of Population III and Stripped Stars in Galaxies at the Epoch of Reionization.” 2021, *ApJ*, 918, 5.
17. R. E. Sanderson, **A. Secunda**, K. V. Johnston, J. Bochanski. “New Views of the Distant Stellar Halo.” 2017, *MNRAS*, 470, 5014.

Contributing Author

18. E. Lambrides, …, **A. Secunda**, et al. “The GlimmIr: Spectroscopic Variability in a z~7 LRD Indicates Rapid Changes in Both the Narrow and Broad Line Regions.” *Submitted to ApJL*, arXiv:2604.25991.
19. Y. Wang, …, **A. Secunda**, et al. “Optical Counterparts to X-ray Sources in LSST DP1.” 2026, *ApJ*, 284, 13.
20. S. Nasim, G. Fabj, F. Caban, **A. Secunda**, K. E. S. Ford, B. McKernan, J. Bellovary, N. W. C. Leigh, W. Lyra. “Aligning Retrograde Nuclear Cluster Orbits with an Active Galactic Nucleus Accretion Disc.” 2023, *MNRAS*, 522, 5393.
21. P. Amaro-Seoane, …, **A. Secunda**, et al. “Astrophysics with the Laser Interferometer Space Antenna.” 2023, *Living Reviews in Relativity*, 26, 2.

INVITED TALKS

Oct 2026	“Uncovering the Nature of Active Galactic Nuclei from z=0 to z=9 with Variability”, *NYU Center for Cosmology and Particle Physics Seminar*
Sep 2026	“Uncovering the Nature of Active Galactic Nuclei from z=0 to z=9 with Variability”, *Stony Brook Astronomy Seminar*
Aug 2026	“Can We Use Variability to Constrain LRD Models?” *NBIA/DAWN Workshop on Little Red Dots*
May 2026	“Uncovering the Nature of Active Galactic Nuclei from z=0 to z=9 with Variability”, *Athens Observatory*
Feb 2026	“Uncovering the Nature of Active Galactic Nuclei Accretion Disks,” *University of Wisconsin Colloquium*
Oct 2025	“AGN Variability and Simulating Observables with Radiation Magnetohydrodynamics,” *UC Berkeley Theoretical Astrophysics Center Seminar*
Oct 2025	“Using Machine Learning to Probe AGN Accretion Disk Structure,” *Yale Data Science x Astronomy-Astrophysics Seminar*
Feb 2025	“Reverberation Mapping AGN Accretion Disks via Observational and Theoretical Routes,” *American Museum of Natural History Colloquium*
Apr 2023	“BHs in AGN Disks and GWs,” *Georgia Institute of Technology Colloquium*
Mar 2023	“Probing Accretion Disk Structure with Long Negative Lags,” *AGN Santa Fe: Where are the Objects in AGN Disks*
May 2022	“How to Form Binaries in AGN Disks,” *Niels Bohr Institute Black Hole Dynamics Workshop*
Jun 2021	“BHs in AGN Disks and GWs,” *Universidad de Concepción Colloquium*

Sep 2020	"Overview of N-Body Simulations of BHs in AGN Disks," *AGN Disks: Where the Wild Things Are*, Center for Computational Astrophysics

RECENT CONTRIBUTED TALKS

May 2026	"Measuring Lags on the Inflow Timescale: Observations and Simulations," *Rubin AGN Science Collaboration Summer Meeting*, Crete
Mar 2026	"Do Little Red Dots Vary?" *The First Billion Years*, Aspen Center for Physics

OUTREACH TALKS AND PERFORMANCES

Dec 2026	Co-author of the show "Condolence," *New York Live Arts*
Nov 2026	"Simons Foundation Presents" panel, *Simons Foundation*
Oct 2026	"Physics 101," *Simons Foundation Science, Society and Culture Summit*
Apr 2025	"Echo Mapping: Your Guide to the Supermassive Black Hole Region," *Rockland Astronomy Club*
Mar 2020	Guest, iHeart Radio podcast *The Limit Does Not Exist*, episode "Star Power"
Dec 2019	"Black Holes and Gravitational Waves: An Impossible Discovery," *Princeton Science Café*
Oct 2019	Plenary Speaker, *Annual New York City Girls Computer Science and Engineering Conference*
May 2019	Dance performance, "From Stellar Death to Chemical Rebirth," *Princeton Research Day*
Nov 2017	"Why I Am Thankful for Gas," *Astronomy on Tap NYC*

MENTORING

Graduate: Katherine Gonglewski (U. Arizona), Roberto Serrano (Illinois State)
Princeton Undergraduates: Elizabeth Berzin, Nicole Gountanis, Kate Macakanja, Alexander Menegas
CUNY Undergraduates: Jose I. Adorno, Méabh Jack
High School: Juliet Cornelis, Denelis Ferreira, Anais Gomez, Ariba Khan, Anna Li, Audrey Soo

TEACHING

Summer 2025	Module Instructor, "Tidal Disruption Events" and "Active Galactic Nuclei," *CCA LSST Summer School*
Spring 2024	Course Coordinator/Instructor, "MATH 015: Developmental Math," *Edna Mahan Correctional Facility for Women*
Fall 2023	Curriculum Developer/Instructor, "PHYS 130: Astronomy," *Edna Mahan Correctional Facility for Women*
Summer 2023	Teaching Assistant, "Scientific Theory and Practice," *Princeton summer research internship for Prison Teaching Initiative alumni*
2021–2022	Instructor, "MATH 020: Beginning Algebra," *East Jersey State Prison*
Spring 2020	Assistant in Instruction, "Planets in the Universe," *Dept. of Astrophysical Sciences, Princeton University*
2017–2018	Instructor, BridgeUP: STEM after-school and summer scientific coding classes, *American Museum of Natural History*

SERVICE AND LEADERSHIP

2024–present	Co-Leader, Rubin AGN Science Collaboration Variability Subgroup
2025–present	Co-Leader, Black Hole Interest Group, Center for Computational Astrophysics
2026–present	Member, Rubin AGN Science Collaboration Publication Committee
2022–present	Full Member, Rubin AGN Science Collaboration
2018–present	Associate Member, LISA Astrophysics Working Group
2022–present	Peer Reviewer for *Nature*, *ApJ*, *MNRAS*, *A&A*
2023–2024	Leader, Princeton Astrophysics Mentoring Committee
2021–2024	Team Member, Princeton Astrophysics and Physics AIP TEAM-UP
2020	Co-author, Princeton Department of Astrophysical Sciences DEI Statement