

# CURRICULUM VITAE: KATE E. FUTROWSKY

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## EDUCATION

**Master's/Ph.D. Candidate;** *Ph.D. Student August 2022 – Present; Master's Expected Fall 2024*

Georgia Institute of Technology School of Physics, Atlanta, GA

GPA: 3.81/4.00

Completed thesis proposal exam in October 2024

**Science Policy & Advocacy Certificate Program Participant;** *July 2023 – September 2023*

University of California, Irvine, CA

**Bachelor of Science;** *May 2022*

University of Maryland, College Park, MD

Dual degrees in Physics and Astronomy (High Honors)

GPA: 3.73/4.00

Global Fellows Policy and Leadership Program; *May 2021 – May 2022*

College Park Scholars Program; *August 2018 – May 2020*

## HONORS AND AWARDS

**Honorable Mention recipient of the Chambliss Astronomy Achievement Award**

Given for poster at the 243rd Annual Meeting of the American Astronomical Society (AAS) in New Orleans, LA; *January 2024*

**Georgia Tech Center for Relativistic Astrophysics Travel Award, \$1,000**

Given for travel expenses pertaining to the 243rd Annual Meeting of the American Astronomical Society (AAS) in New Orleans, LA; *January 2024*

**President's Fellowship, \$5,500 per year for four years**

Georgia Institute of Technology, Atlanta, GA; *Fall 2022 through Summer 2026*

**Dean's List, College of Computer, Mathematical, and Natural Sciences**

University of Maryland, College Park, MD; *Fall 2018 through Spring 2022*

**Dean's Scholarship, \$4,500 per year for two years**

University of Maryland, College Park, MD; *Fall 2018 through Spring 2020*

## RESEARCH EXPERIENCE

**Graduate Research Assistant, Georgia Institute of Technology School of Physics;** *August 2022 – Present*

- Advised by Dr. Tamara Bogdanović in the Center for Relativistic Astrophysics
- Utilizing the Illustris-TNG cosmological simulation to create a census of the numbers and properties of galaxies in the future Laser Interferometer Space Antenna error volume

**Research Assistant, University of Maryland Department of Astronomy;** *May 2021 – May 2022*

- Analyzed assumptions and relevant calculations regarding binary black hole mergers in gas disks around active galactic nuclei with Dr. M. Coleman Miller

**Research Assistant, Stony Brook University Department of Physics and Astronomy;** *June 2021 – August 2021*

- Visualized particle collision data using neural networks and the rapidity mass matrix with Dr. Dmitri Tsybychev

**Research Assistant, University of Maryland Department of Astronomy;** *May 2020 – December 2020*

- Modeled emission and transmission spectra of sub-Neptune exoplanet atmospheres utilizing Python with Dr. Eliza Kempton
- Analyzed degeneracies between pairs of model spectra

## PUBLICATIONS

- Zoltán Haiman, Chengcheng Xin, Tamara Bogdanović, Pau Amaro Seoane, Matteo Bonetti, J. Andrew Casey-Clyde, Maria Charisi, Monica Colpi, Jordy Davelaar, Alessandra De Rosa, Daniel J. D'Orazio,

**Kate Futrowsky**, Poshak Gandhi, Alister W. Graham, Jenny E. Greene, Melanie Habouzit, Daryl Haggard, Kelly Holley-Bockelmann, Xin Liu, Alberto Mangiagli, Alessandra Mastrobuono-Battisti, Sean McGee, Chiara M. F. Mingarelli, Rodrigo Nemmen, Antonella Palmese, Delphine Porquet, Alberto Sesana, Aaron Stemo, Alejandro Torres-Orjuela, and Jonathan Zrake, “**Massive Black Hole Binaries as LISA Precursors in the High Latitude Time Domain Survey**” [Roman Core Community Survey White Paper] arXiv:2306.14990 (2023).

- Eliza M.-R. Kempton, Madeline Lessard, Matej Malik, Leslie A. Rogers, **Kate E. Futrowsky**, Jegug Ih, Nadejda Marounina, and Carlos E. Munoz-Romero, "Where are the Water Worlds?: Self-Consistent Models of Water-Rich Exoplanet Atmospheres." *ApJ*, **953** 57 (2023).

## PRESENTATIONS AND TALKS

Prospects for Multimessenger Observations of Massive Black Hole Binaries with LISA and Electromagnetic Observatories

- November 21, 2024 – Poster presentation at the 2024 Joint Space-Science Institute (JSI) Workshop: The Formation and Early Evolution of Supermassive Black Holes; Baltimore, MD

Prospects for Multimessenger Observations of LISA Massive Black Hole Binaries

- November 5, 2024 – Virtual Talk at the 2024 LISA Astrophysics Working Group Meeting; Max Planck Institute for Astrophysics (MPA), Garching, Germany

Preparing for Multimessenger Observations of Massive Black Hole Binaries with LISA

- March 6, 2024 – Talk at Clemson University; Clemson, SC

Prospects for Multimessenger Observations of Massive Black Hole Binaries with LISA and Electromagnetic Observatories

- January 11, 2024 – Poster presentation at the 243<sup>rd</sup> Annual Meeting of the American Astronomical Society; New Orleans, LA

Multimessenger Observations of Merging Massive Black Holes with Roman and LISA

- June 20, 2023 - Poster presentation at Space Telescope Science Institute; Baltimore, MD
- November 4, 2023 – Poster presentation at the 2023 Georgia Regional Astronomy Meeting; Decatur, GA

The Concerning Status of Climate Change Legislation and Policies in the United States

- August 4, 2022 – Talk at the American Physical Society; College Park, MD

## TEACHING EXPERIENCE

**Graduate Teaching Assistant**, Georgia Institute of Technology School of Physics; *August 2022 – Present*

- Lead weekly recitations for PHYS 2212: Introductory Physics II and aid students in solving complex word problems

**High School Physics Tutor**, Atlanta, GA; *April 2024 – Present*

- Tutor local high school students in introductory, AP, IB, and Honors Physics courses

**Undergraduate Teaching Assistant**, University of Maryland Department of Astronomy; *January 2022 – May 2022*

- Led weekly office hours for ASTR 350: Black Holes and graded student assignments

**Astronomy Tutor**, University of Maryland Department of Astronomy; *September 2019 – May 2022*

- Assessed individual student needs, explained astronomy concepts, answered student questions, and assisted with assignments

**Observatory Teaching Assistant**, University of Maryland Department of Astronomy; *September 2021 – November 2021*

- Guided students in operating telescopes and collecting data with them at the University of Maryland Observatory for ASTR 310: Observational Astronomy

## SERVICE/LEADERSHIP

**AAS Congressional Visits Day Participant**, American Astronomical Society; *April 2024*

- Advocated for NSF and NASA Science Mission Directorate Funding to Congressional staffers on behalf of AAS

**First Year Representative of the Graduate Association of Physicists (GAP),** Georgia Institute of Technology; *August 2022 – June 2023*

- Acted as a liaison between faculty and graduate students to improve student life and create a set of guidelines for first-year graduate students working as teaching assistants

**Vice President of the AstroTerps Astronomy Club,** University of Maryland; *May 2021 – May 2022*

- Organized and participated in various outreach events including Maryland Day

## OUTREACH

**GAP Mentor,** Georgia Institute of Technology; *June 2023 – May 2024*

- Guided first-year physics graduate students through their transition into graduate school

**Peer Mentor,** University of Maryland; *March 2020 – May 2022*

- Acted as a teaching assistant for UNIV100: The Student in the University
- Guided students through academic and social challenges
- Assisted students with four-year plans

## WORK EXPERIENCE

**AIP Mather Public Policy Intern,** Office of Congressman Bill Foster; *May 2022 – August 2022*

- Provided support to representatives and staff as needed, attended and helped prepare for hearings and markups, wrote letters to constituents, gathered background materials related to votes, and provided general support to the office

**Legislative Intern,** Office of Congressman John Sarbanes; *December 2021 – January 2022*

- Drafted letters to constituents, attended committee hearings, wrote summary briefs, researched various issues for staff, and assisted with additional office duties

**Policy Intern,** Ridge Global; *August 2021 – October 2021*

- Researched and wrote briefings on a variety of topics, including cybersecurity, critical infrastructure, insurance, and aerospace, that incorporated up-to-date information from Congress, policy, news, and business worlds

**Observatory Staff,** University of Maryland Observatory; *September 2019 – May 2022*

- Prepared and operated telescopes during observation
- Communicated and explained scientific ideas to the public

## ACTIVITIES

**Graduate Association of Physicists,** Member, *August 2022 – Present*

**AstroTerps Astronomy Club,** Vice President, *May 2021 – May 2022*; Secretary, *May 2020 – May 2021*; Member. *August 2018 – May 2020*

**Society of Physics Students,** Member; *August 2018 – May 2022*

**Women in Physics,** Member; *August 2018 – May 2022*

## SKILLS

**Computer:** Proficient in Python, MATLAB, Microsoft Office, and G Suite

**Language:** Beginner skills in French