

# MEGAN CHRISTINA DAVIS

Physics Department  
University of Connecticut  
Storrs, CT 06269  
USA

Pronouns: they/them/theirs and she/her/hers  
E-mail: [megan.c.davis@uconn.edu](mailto:megan.c.davis@uconn.edu)  
Webpage: [davis191.github.io](https://davis191.github.io)  
ORCID iD: [0000-0001-9776-9227](https://orcid.org/0000-0001-9776-9227)

## EDUCATION AND RESEARCH EXPERIENCE

- 2020 – Present*     **University of Connecticut (UConn)**, Storrs, CT.  
PhD in Physics, expected in 2025. MSc in Physics, conferred in 2022.
- Thesis:** Binary Black Holes and Hypervariable Quasars in Massive Time-Domain Surveys  
**Advisor:** Dr. Jonathan Trump
- 2020 – Present*     **NSF Graduate Research Fellow**  
University of Connecticut with Dr. J. Trump
- Simulates and analyzes time-domain optical observations of binary supermassive black holes (SMBHs) as will be observed via the Vera Rubin Observatory (Rubin/LSST)
- 2020 – 2022*     **Isaac S. and Lois W. Blonder Graduate Research Fellow**  
University of Connecticut with Dr. J. Trump
- Curated custom observation designs for the SDSS-V Black Hole Mapper (BHM) Reverberation Mapping (RM) working group
  - Compiled the SDSS BHM-RM parent catalog of targets, guiding the future of all observing campaigns within SDSS with this information
- 2015 – 2019*     **Michigan State University (MSU)**, East Lansing, MI.  
Bachelors of Science in Astrophysics with a minor in Computational Mathematics, Science, and Engineering.
- Thesis:** Modeling the Radial Migration of Stars and Gas in the Milky Way  
**Advisors:** Dr. Brian O'Shea (MSU/JINA-CEE) and Dr. Benoit Côté (MSU/Konkoly Observatory)
- Five years of research, outreach, and teaching experience, including:
- A NASA internship (Jet Propulsion Laboratory, California, 2018)
  - REU and IRES positions with the IceCube collaboration (Wisconsin, 2016 and Brussels, Belgium, 2017)
  - Undergraduate (thesis work, 2018-2019) and Post-Baccalaureate (X-ray binaries, 2019-2020) Research Assistant positions
  - Three years of Undergraduate Teaching Assistant positions, leading monthly outreach events, and participating in department-wide DEI committees and efforts

## TEACHING AND OUTREACH EXPERIENCE

*2022 – Present*    **Co-Organizer of Astronomy on Tap- Storrs, CT**

- Organizes monthly public outreach events comprising of astronomy-themed talks and trivia at local restaurants and bars

*2019 – 2020*    **Outreach Coordinator at the MSU Campus Observatory**

With Dr. L. Chomiuk

- Developed educational activities and displays for the Public Outreach Program, ran social media accounts, and recruited and organized volunteers for monthly outreach events

*2017 – 2019*    **Learning Assistant**

- ISP 205 (two semesters): an introductory astronomy course for non-science majors
- AST 207: an introductory course for astronomy majors
- AST 208: an introduction to exoplanets and observational techniques

*2015 – 2019*    **Abrams Planetarium and MSU Observatory Outreach Assistant***2017 – Present*    **Undergraduate Academic and Research Mentor**

- 2020 – Present*    Micah Banschick (UConn BSc ‘26)  
 Matthew Tiongko (UConn BSc ‘26)  
 Abena Adzenyah (UConn BEng ‘25)  
 Kaylee Grace (UDel PhD ‘28, UConn BSc ‘22)
- 2017 – 2020*    Caleb Rispler (MSU MD ‘26, MSU BSc ‘22)  
 Trevor Fush (Princeton PhD ‘28, MSU BSc ‘22)  
 Elizabeth Kowalczyk (UMD PhD ‘28, MSU BSc ‘22)  
 Jessie Miller (Caltech PhD ‘27, MSU BSc ‘21)

## PUBLICATIONS

Bolded work denotes first-authored or significant contribution

- [1] Almeida et al. “The eighteenth data release of the Sloan Digital Sky Surveys: targeting and first spectra from SDSS-V”. In: *The Astrophysical Journal Supplement Series* 267.2 (2023), p. 44.
- [2] Anderson et al. “The Black Hole Mapper in SDSS-V”. In: *American Astronomical Society Meeting Abstracts*. Vol. 55. 2. 2023, pp. 301–03.
- [3] Bachetti et al. “StingraySoftware/stingray: v1. 0-beta”. In: *Zenodo* (2022).
- [4] Bachetti et al. “StingraySoftware/stingray: Version 1.0”. In: *Zenodo* (2020).
- [5] **Bottom** et al. “Starshade formation flying I: optical sensing”. In: *Journal of Astronomical Telescopes, Instruments, and Systems* 6.1 (2020), pp. 015003–015003.

- [6] **Megan C Davis** and AL Stevens. “Spectral Variability of a Soft-intermediate State QPO from MAXI J1820+ 070”. In: *Research Notes of the AAS* 4.6 (2020), p. 95.
- [7] **Megan C Davis**, AL Stevens, and J Strader. “Rapid spectral variability in the black hole transient MAXI J1820+ 070”. In: *American Astronomical Society Meeting Abstracts# 235*. Vol. 235. 2020, pp. 170–13.
- [8] **Megan C Davis** et al. “Reliable Identification of Binary Supermassive Black Holes from Rubin Observatory Time-domain Monitoring”. In: *The Astrophysical Journal* 965.1 (2024), p. 34.
- [9] Flinois et al. “S5: Starshade technology to TRL5 Milestone 4 Final Report: Lateral formation sensing and control”. In: *Jet Propulsion Laboratory Publications* (2018).
- [10] **Fries** et al. “The SDSS-V black hole mapper reverberation mapping project: unusual broad-line variability in a luminous quasar”. In: *The Astrophysical Journal* 948.1 (2023), p. 5.
- [11] Kaylee Grace, **Megan C Davis**, and Jonathan Trump. “Electromagnetic Detectability of Binary Supermassive Black Holes with the Vera Rubin Observatory”. In: *Bulletin of the American Physical Society* 67 (2022).
- [12] Homayouni et al. “A Fundamental Test of Black Hole Masses: Ultraviolet Echo Mapping the Multi-Scale Broad Line Gas around Quasars”. In: *HST Proposal* (2023), p. 17487.
- [13] Sharp et al. “The Sloan Digital Sky Survey Reverberation Mapping Project: investigation of continuum lag dependence on broad-line contamination and quasar properties”. In: *The Astrophysical Journal* 961.1 (2024), p. 93.
- [14] Shen et al. “The Sloan Digital Sky Survey Reverberation Mapping Project: Key Results”. In: *arXiv preprint arXiv:2305.01014* (2023).
- [15] Zeltyn et al. “A Transient “Changing-look” Active Galactic Nucleus Resolved on Month Timescales from First-year Sloan Digital Sky Survey V Data”. In: *The Astrophysical Journal Letters* 939.1 (2022), p. L16.
- [16] Zeltyn et al. “Exploring Changing-look Active Galactic Nuclei with the Sloan Digital Sky Survey V: First Year Results”. In: *The Astrophysical Journal* 966.1 (2024), p. 85.

## AWARDS AND SCHOLARSHIPS

2024	Summer Doctoral Dissertation Fellowship
2024, 2023	National Fellowships Incentive Program Award
2020 - 2021	The Isaac S. and Lois W. Blonder Graduate Research Fellowship (UConn)
2020 - 2025	NSF Graduate Research Fellowship
2019	1st Prize in the University Undergraduate Research and Arts Forum (UURAF) for presenting a poster titled “Modeling the Radial Migration of Stars and Gas in the Milky Way”
2019	Outstanding Teaching Assistant Award from the Department of Physics and Astronomy
2015 – 2019	The John F. and Edith L. Wilsterman Scholarship

*2015 – 2019*      Flint Kiwanis Educational Foundation Scholarship

## TALKS AND PANELS

*May 2024*      Invited talk - Northwestern/CIERA Observational Group Meeting

*March 2024*      Invited talk - Kansas University Astronomy Seminar

*November 2023*      Invited talk and panelist - Yale Gravitational Wave Symposium

## CONFERENCES AND WORKSHOPS

*July 2024*      Catching supermassive black holes with Rubin-LSST: Towards novel insights and discoveries into AGN science, Turin, Italy

*May 2024*      Astrocodex Hack Day Conference, Yale

*April 2024*      Time-Domain Needles in Rubin's Haystacks Hack Workshop, Harvard CfA

*July 2023*      Establishing Multi-messenger astronomy Inclusive Training (EMIT) Summer School, Vanderbilt

*November 2022*      SDSS Science Festival, Toronto, ON, Canada

*October 2022*      Astro Hack Week, Heidelberg, Germany

*October 2022*      SDSS Software Coding Week, Apache Point Observatory, Sunspot, New Mexico

*May 2022*      New England Regional Quasar and AGN Meeting (NERQUAM), UConn

*July 2021*      SDSS 2021 Collaboration meeting , virtual- talk given

*April 2021*      UConn Physics Graduate Student Association annual poster session- Poster presented

*January 2020*      235th meeting of the American Astronomical Society (AAS) in Honolulu, Hawaii- poster presented

*May 2019*      JINA-CEE Frontiers and the First Frontiers Summer School at MSU

*April 2019*      University Undergraduate Research and Arts Forum (UURAF)- poster presented

*January 2019*      Conference for Undergraduate Women in Physics (CUWiP) at MSU

## COMMITTEES

*2023 - Present*      UConn Physics Space Committee

- Handles office assignments and room allocations for the department

*May 2022*      Co-Lead of the Local Organizing Committee for NERQUAM 2022

- Organized the 30th annual, one-day New England Regional Quasar and AGN Meeting (NERQUAM) held in Storrs, CT in May 2022.

*2019 – 2020*      MSU Astronomy Department Reporting Task Force

- Developed the infrastructure for reporting harassment/bullying/bad behavior within the Astronomy group for students, faculty, and staff

*2019 – 2020*      Co-Lead of the Stellar Mentorship Program at MSU

- Oversaw the development and implementation of a mentor/mentee program for undergraduates, graduates, and post-doctoral researchers within the Astronomy group

## ADDITIONAL SKILLS

### Software and Hardware:

- Competent in Python, bash scripting, C++, SQL, and HTML
- Regularly uses version control software, like GitHub
- Proficient in using AstroImageJ, MaximDL, and XSPEC

### Personal Development:

- Proficient in French and familiar with German, Dutch, and Italian
- Trained in conflict resolution and emergency trauma response