Megan Christina Davis

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Education

2015 – 2019 Michigan State University (MSU), East Lansing.
Bachelors of Science from the Honors College in Astrophysics with a minor in Computational Mathematics, Science, and Engineering, 3.6 GPA.

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)

Work and Research Experience

May – Aug. 2018 **National Aeronautics and Space Administration (NASA) Intern**
Jet Propulsion Laboratory in Pasadena, California under Dr. Mike Bottom

- Built a fully-automated testbed model of a Starshade-Telescope System to test Formation Flying concepts to be used in direct exoplanet imaging

May – Aug. 2017 **IceCube International Research Experience for Students (IRES)**
Vrije Universiteit Brussel in Brussels, Belgium under Dr. Katie Mulrey

- Worked on scintillator data reduction and analysis techniques in Python for the LOFAR Radio Telescopes LORA scintillating detectors and made Monte Carlo simulations of cosmic ray showers passing through a LORA detector

May – Aug. 2016 **IceCube Research Experience for Undergraduates (REU)**
University of Wisconsin in River Falls, Wisconsin under Dr. Lowell McCann

- Worked in an optics lab, studying optical fibers and their properties for possible use in IceCube Gen2 light detectors

Michigan State University

2019 – **Post-Baccalaureate Researcher**

- Studies compact objects and their spectral variability in the x-ray wavelength

2018 – 2019 **Undergraduate Researcher**

- Used the NuPyCEE Galactic Chemical Evolution Python code to make simulations of the Milky Way
- Built new functionality to account for radial migration of gas and stars in the thin disk of the Milky Way
- Paper forthcoming

2017 – **Observer and Outreach Coordinator at the Campus Observatory**

- Takes calibration frames and images of various sources, like exoplanet candidates or cataclysmic variable stars
- Reduces raw data and submits it to the American Association of Variable Star Observers, KELT Collaboration, and Center for Backyard Astrophysics

2017 – 2019 **Learning Assistant**
AST 208: an introduction to exoplanet and observational techniques
AST 207: an introductory course for astronomy majors
ISP 205: an introductory astronomy course for non-science majors

2016 – 2017 **Resident Assistant in *Case Hall***

- Assisted fellow undergraduate students by providing resources and support to the building community

Publications

M. Bottom, S. Martin , E. Cady , **M. C. Davis**, et al. 2019. Starshade formation flying I: optical sensing, submitted to **JATIS** on 28 May 2019.

Awards

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

2016 Alternate Student selected to be sent to the Amundsen-Scott South Pole Station in Antarctica

2016 – 2017 Winner of the Most Compassionate RA

Committees

2019 – 2020 Astronomy Department Reporting Task Force

- developing the infrastructure for reporting harassment/bullying/bad behavior within the group for students, faculty, and research associates

2019 – 2020 Undergraduate Leader for the Stellar Mentorship Program

- overseeing the development and implementation for a mentor/mentee program for students within the astronomy department

Conferences Attended and Presentations

July 2019 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE) Poster Presentation

May 2019 JINA-CEE Frontiers and the First Frontiers Summer School in East Lansing, MI

April 2019 University Undergraduate Research and Arts Forum (UURAF) Poster Presentation

January 2019 Conference for Undergraduate Women in Physics (CUWiP) in East Lansing, MI

Outreach Experience

2019 – MSU Observatory Outreach Coordinator

2015 – 2019 Abrams Planetarium and MSU Observatory Outreach Assistant

2014 – Conference organizer - Rotary Internationals Seminar for Tomorrows Leaders, ran in London, Ontario, Canada

Invited Outreach Talks and Panels

January 2019 MSU Honors College Student Recruitment Weekend Panelist

November 2018 **Storytellers: Lets Talk NASA**- Impact89 FM Radio Interview

October 2018 **Interview a Professional** at Freeman Elementary School in Flint, MI

Additional Skills

- Competent to program in Python, including in Jupyter Notebooks and Spyder
- Familiar with programming in C++
- Proficient in AstroImageJ, MaximDL, and Microsoft Office
- Regularly uses a DSLR and CCD cameras for astrophotography and photometry
- Proficient in French with elementary German and Dutch language skills
- Conflict resolution and personal development training

Extracurricular Activities

2016 – 2019	Alpha Omicron Pi Sorority, Beta Gamma Chapter
2015 – 2019	MSU Astronomy Club
2015 – 2019	Society of Physics Students
2018 – 2019	President
2017 – 2018	Vice President