

Research Interests

Aerospace engineering, astronomical instrumentation, astronomy, computational modeling, space systems, system design, systems engineering, system verification, safety & mission assurance, and uncertainty quantification.

Education

Massachusetts Institute of Technology

Cambridge, MA

PhD in Aeronautics & Astronautics, Course 16

2025

- Major Field of Study in Space Systems
- Minor Field of Study in Stochastic Modeling for Engineering
- Advisor: Prof. Olivier de Weck
- Doctoral Thesis: “*Verification Planning for Efficient Uncertainty Reduction of Space Science Systems*,” September 2025

Massachusetts Institute of Technology

Cambridge, MA

Master of Science in Aeronautics & Astronautics, Course 16

2022

- Advisor: Dr. Rebecca Masterson
- Master’s Thesis: “*Model-Based Verification of the Large Lenslet Array Magellan Spectrograph*,” May 2022 <https://hdl.handle.net/1721.1/144841>

Texas A&M University

College Station, TX

Bachelor of Science in Physics; Cumulative GPA:4.00

2018

- Minors in Math and Astrophysics, additional coursework in Computer Science

Professional Experience

NASA Jet Propulsion Laboratory

Pasadena, CA

Intern

Sum. 2022, Sum. 2023, Jan. 2024, Sum. 2024, Spr. 2025

- Worked in Group 314C, System Verification & Validation for a cumulative period of 11 months
- Developed an uncertainty-based engineering method for planning verification & validation activities and implemented it at the high level on JPL spaceflight mission case studies
- Presented research findings to researchers across the uncertainty quantification technical community at JPL

Massachusetts Institute of Technology

Cambridge, MA

Research Assistant

September 2020 – May 2021

- Worked in the Space Systems Laboratory as a member of the MIT Kavli Institute’s Astronomical Instrumentation Team.
- Provided systems engineering and verification for the Large Lenslet Array Magellan Spectrograph (LLAMAS) project, a wide-field spectroscopy instrument being developed for the Giant Magellan Telescope.
- Performed laboratory verification of charge-coupled devices (CCDs) for the LLAMAS instrument.

Research Fellow

August 2021 – August 2025

- Worked in the Engineering Systems Lab at MIT, studying systems engineering and design optimization.

- Developed a novel systems engineering methodology for model-informed verification planning.

Odyssey Space Research

Software Engineer

Houston, TX

March 2018 – August 2020

- Served as Technical Lead for a NASA project to create a simulation testbed to provide independent verification and validation (IV&V) for lunar terrain relative navigation (TRN) technologies, including hardware and software components, for commercial lunar landing missions
- Worked with a team to provide software IV&V for crewed commercial spaceflight. Focused on developing test protocols ground support software
- Developed specialized physics modeling software in support of development of crew-training simulation architecture for the EM-1 and EM-2 missions of NASA's Orion project
- Developed simulation-based IV&V for flight software of a commercial lunar lander

Publications

1. [In preparation] **June Stenzel**, Robert A. Simcoe, Olivier de Weck, Rebecca Masterson, Youssef Marzouk, Akshata Krishnamurthy, Mark Chodas, “Optimal verification planning for the Large Lenslet Array Magellan Spectrograph,” SPIE Journal of Astronomical Telescopes Instruments and Systems
2. Robert A. Simcoe, Gabor Furesz, Rebecca Masterson, **June Stenzel**, Danielle Frostig, John Piortowski, Mark Egan, Andrew Malonis, Erik Hinrichsen, Michelle Gabutti, Cody Schneller, Sean MacBride, Rongmon Bordoloi, and Michael McDonald “Construction update on the Magellan LLAMAS integral field spectrograph”, Proc. SPIE 12184, Ground-based and Airborne Instrumentation for Astronomy IX, 121840D (29 August 2022); DOI:10.1117/12.2630489
3. Herman L. Marshall, Sarah N. T. Heine, Rosemary Davidson, Alan Garner, Eric M. Gullikson, H. Moritz Günther, Christopher Leitz, Rebecca Masterson, Eric D. Miller, **June S. Stenzel**, William W. Zhang, Rozenn Boissay-Malaquin, Ilaria Caiazzo, Deepto Chakrabarty, Luigi G. Gallo, Ralf K. Heilmann, Jeremy Heyl, Erin Kara, Norbert S. Schulz, “The Globe Orbiting Soft X-ray (GOSoX) polarimeter concept study,” Proc. SPIE 11822, Optics for EUV, X-Ray, and Gamma-Ray Astronomy X, 118220O (23 August 2021); DOI:10.1117/12.2596186
4. K. Krisciunas, N. B. Suntzeff, B. Kelarek, K. Bonar, and **J. Stenzel**, “Spectrophotometry of Very Bright Stars in the Southern Sky,” PASP, vol. 129, no. 975, p. 054504, May 2017, arXiv:1702.01602

Conference Papers and Poster Sessions

1. Akshata Krishnamurthy, Mark Chodas, Bogdan Oaida, Olivier de Weck, **June Stenzel**, “Integrating Uncertainty Quantification with Traditional Systems Engineering Practices,” JPL Annual Research Poster Day Conference, November 2024
2. **June Stenzel**, Rebecca Masterson, Robert A. Simcoe, “A Model-based Approach for Verification of the Large Lenslet Array Magellan Spectrograph (LLAMAS),” IEEE Aerospace, May 2024 DOI:10.1109/AERO58975.2024.10521313
3. **June Stenzel**, Rebecca Masterson, Youssef Marzouk, Akshata Krishnamurthy, Mark Chodas, “Optimizing verification planning for uncertainty reduction using Bayesian design of experiments,” AIAA SciTech, Jan 2024 DOI:10.2514/6.2024-1852
4. **J. Stenzel**, J. Marshall, D. Nagasawa, L. Schmidt, T. Tipton, and T. Li, “Measuring M-dwarf Metallicity through Spectroscopy of Proper Motion Binaries at Optical Wavelengths” at the Joint Fall 2017 Meeting of the Texas Section of the APS BAPS.2017.TSF.L1.30

Awards & Honors

- 2023 NASA Space Technology Graduate Research Opportunities (NSTGRO). Funded as a NASA Space Technology Graduate Researcher for the research proposal, “*Developing a Verification and Validation Optimization Methodology with Uncertainty Quantification*”.
- 2023 JPL Strategic University Research Partnerships program (SURP) fellowship for the proposal, *Integrating Uncertainty Quantification with Traditional Systems Engineering Practices*.
- 2021 NASA Space Technology Graduate Research Opportunities (NSTGRO). Funded as a NASA Space Technology Graduate Researcher for the research proposal, “*Applying a Model-Based Systems Engineering Approach to Simulation and Testing for Ground and Space Applications*”.
- John Beckham Award. Issued Feb 2018 by the Texas A&M College of Science. The College of Science’s highest mark of distinction, which recognizes students who best exemplify characteristics of academic achievement, character, leadership and extracurricular activities.

Service & Advocacy

MIT Queer Advocacy Space in AeroAstro (QuASAR) <i>Co-Founder, Co-President</i>	<i>2021 – 2024</i>
MIT Graduate Women in Aerospace Engineering (GWAE) <i>Social coordinator</i>	<i>2021 – 2022</i>
MIT Graduate Student Union <i>Organizer, Executive Board member, Chief Steward</i>	<i>2021 – 2025</i>
MIT AeroAstro DEI Committee <i>Member</i>	<i>2021 – 2023</i>
MIT AeroAstro Joint Advisory Group <i>Graduate Member</i>	<i>2022 – 2024</i>
MIT AeroAstro Graduate Visiting Weekend <i>Student Ambassador</i>	<i>2023</i>
TAMU Conference for Undergraduate Women in Physics (CUWiP) <i>Invited panelist</i>	<i>2020</i>
TAMU Discover, Explore, & Enjoy Physics (DEEP) program <i>Undergraduate member</i>	<i>2014 – 2018</i>
Texas A&M University Society of Physics Students <i>Vice President, Outreach Director</i>	<i>2014 – 2018</i>