# DR. JAMES NEGUS

**Professional Affiliation**
Research Associate II: Outreach Coordinator
Colorado State University
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## EDUCATION

**University of Colorado Boulder** August 2023
Ph.D., Astrophysics
Department of Astrophysical and Planetary Sciences

**University of Colorado Boulder** December 2019
M.S., Astrophysics
Department of Astrophysical and Planetary Sciences

**The University of Chicago** June 2013
B.A., Physics with a Specialization in Astrophysics Dean's List: 2009 - 2010
Department of Physics

## EDUCATIONAL PROGRAMS

**Astronomical Society of the Pacific**
Exploring Lunar Eclipses Program March 2025
Eclipse Stars Program November 2023

Completed professional training in public science communication and engagement strategies, focusing on preparing for the April 2024 total solar eclipse and the March 2025 total lunar eclipse.

**University of California Berkeley** July 2021
AstroTech Summer School

Participated in an immersive astronomical instrumentation program that required building, testing, and processing data for an astronomical spectrograph.

Led the design and programming of an electronic motor used to align optics on the table-mounted spectrograph, including optomechanical, detector, and calibration setup.

**The Pennsylvania State University** June 2021
AstroStats Summer School

Participated in an intensive program in statistical inference covering principles of probability, regression and model selection, bootstrap resampling, multivariate clustering and classification, Bayesian analysis, Markov chain Monte Carlo methods, time series analysis, spatial statistics, deep learning neural networks, and machine learning with random forests.

Received extensive training in the public-domain statistical software *R* using Jupyter notebooks.

## WORK EXPERIENCE

**Colorado State University** — Fort Collins, CO
**Research Associate II: Outreach Coordinator** — April 2025 - Present

Direct outreach, advocacy, and education for the $42M DOE-funded U.S. IFE (Inertial Fusion Energy) Ecosystem; supervise a 12-member workforce development council, spearhead a national student mentorship program, and manage the digital presence.

Lead the IFE Student Undergraduate Research Experience (IFE-SURE) program, driving operational logistics and tracking for 82 undergraduate researchers across 19 participating institutions.

Devise and execute K-12 public engagement initiatives and forge local partnerships to pioneer industry-sponsored high school STEM workforce development pipelines.

Collaborate with researchers, national laboratories, and industry partners to facilitate cross-institutional training and professional development initiatives.

Coordinate national seminars, workshops, and capstone symposia, commanding full lifecycle speaker recruitment, event logistics, and digital archiving.

**DarkSky Colorado** — Colorado, USA
**Vice Chair** — January 2026 – Present
**Editor-in-Chief, DarkSky Colorado Newsletter** — January 2026 – Present
**Board of Directors Member** — December 2024 – Present

Provide executive leadership and support strategic planning to align the organization with dark-sky conservation goals.

Hold full editorial authority over the DarkSky Colorado Newsletter ($\sim$ 1,500 subscribers), including editorial direction, content selection, editing, approval, and publication.

Advocate for policies protecting Colorado's night skies and advance statewide public awareness of dark-sky conservation.

Develop partnerships with local governments, nonprofits, and educational institutions to support outreach and education initiatives.

**Science Writers Association of the Rocky Mountains** — Colorado, USA
**Board of Directors Member** — September 2024 - September 2026

Strategized and implemented efforts to build a diverse, equitable, and inclusive community of science writers, communicators, educators, students, and others in the Rocky Mountain region interested in writing science for the public.

**Mercury Magazine** — San Francisco, CA
**Advisory Board Member** — January 2024 - March 2025

Advised on content, business model, and marketing for Mercury Magazine, a magazine focused on how astronomy intersects with science, education, culture, history, and art.

**University of Colorado Boulder - CIRES/ NOAA Affiliate** — Boulder, CO
**Research Associate I: Solar Physics Research Scientist** — July 2023 - April 2025

Developed and improved calibration methods for the Extreme Ultraviolet and X-ray Irradiance Sensor instruments on the Geostationary Operational Environmental Satellite Series-R satellite.

Analyzed inter-calibrations between solar instruments, validated data, identified and resolved anomalies, and enhanced data quality.

Participated in developing, implementing, and maintaining operational and scientific space weather products.

Researched and developed new methods for real-time satellite operations.

Analyzed solar irradiance data and presented results in peer-reviewed publications and at scientific meetings.

**Astronomical Society of the Pacific** San Francisco, CA
**Board of Directors Member** May 2021 - Present

Help manage a $3 million operational budget to support educational programs that foster curiosity and equitable access to STEM opportunities.

Advise on long-term strategies to drive growth, expand outreach initiatives, and improve operational efficiency.

Contribute to shaping initiatives that bridge gaps in STEM education for underserved communities.

**Board of Directors Junior Fellow** February 2019 - May 2021

Added an early-career professional astronomer's voice to the Board.

**University of Colorado Boulder** Boulder, CO
**Graduate Teaching Assistant** August 2017 - April 2020

Served as a graduate teaching assistant instructor for the following undergraduate courses:

- Astronomical Observations and Instrumentation (14+ student classroom)
- Black Holes (160+ student classroom)
- Introductory Astronomy (two 20+ student labs and a 200+ student classroom)

Evaluated lab reports, demonstrated lab procedures, conducted exam reviews, and hosted office hours.

**Radiometrics Corporation** Boulder, CO
**Sodar Product Line Manager** April 2016 - July 2017

Subject matter and engineering design expert on Sonic Detection And Ranging Systems (SoDARS).

Managed documentation, business growth, software development, product improvements, and roadmap for Radiometrics' sodar product line.

Approved all changes to the sodar product line bill of materials and software/firmware; ensured change control documents were created and properly completed.

Vetted all customer-facing sodar technical documentation, including technical specifications, operator manuals, and TechNotes/Service Bulletins.

Participated in customer training and installation support as needed to meet customer commitments.

**RMA Manager/ Project Analyst** April 2015 - April 2016

Analyzed boundary-layer physics for microwave retrievals of thermodynamic atmospheric profiles using Python routines.

Worked closely with NASA's JPL and the National Radio Astronomy Observatory to improve observations of boundary layer physics.

Generated operating and procedural manuals for instrument production, testing, quality control, engineering, and administration.

**Engineering Intern** November 2014 - April 2015

Helped develop an artificial neural network to deliver boundary-layer thermodynamic data vital for accurate, high-impact local weather forecasting and atmospheric remote microwave sensing retrievals.

## EDUCATION AND OUTREACH EXPERIENCE

**American Physical Society - Division of Plasma Physics** National
**Education and Outreach Committee Member** August 2025 - December 2025

Organize annual outreach programs to increase public knowledge and awareness of plasma physics.

Collaborate with the Executive Committee to design and implement education initiatives.

Support community engagement efforts to broaden participation in plasma science.

**White House National Space Council** National
**"Find Your Place in Space Week" Event Organizer** April 2024

Led a coordinated NOAA-NIST-CU outreach event for the White House National Space Council's "Find Your Place in Space Week", hosted at the University of Colorado Boulder.

Organized public-facing activities, including keynote talks, hands-on space science demonstrations, and prize-driven engagement to connect participants with the relevance of space science in their lives.

Facilitated collaboration between federal agencies, academic institutions, and the public to promote awareness of space-related opportunities and innovations.

**NOAA's Boulder Outreach Coordinating Committee** Boulder, CO
**Committee Member** November 2023 - April 2025

Develop, design, and promote outreach and educational programs, activities, and resources at NOAA's David Skaggs Research Center in Boulder, CO.

Convey NOAA's extensive portfolio of data collection and dissemination programs, space weather research, and operational weather forecasts to the broader public and K-12 students through conference talks, public tours, and Science on a Sphere presentations.

**Science Through Shadows - $2 Million NASA Funded Grant** Boulder, CO
**Advisor, Actor, Writer, Editor, and Narrator** August 2022 - September 2026

Served as an advisor, actor, writer, editor, and narrator for heliophysics and asteroid-related content that was presented to hundreds of thousands of individuals through: (1) the NASA Solar System Ambassadors Program, (2) the Night Sky Network, (3) 200+ planetariums, (4) 300+ portable planetariums, (5) the NASA@MyLibrary network, and (6) the NASA Community College Network.

**"The Clock Tower Project"** Boulder, CO
**Outreach Advisor** April 2022 - August 2023

Advised on the development of a modern, digital, and three-dimensional "clock tower model" to provide a new perspective on coordinating global climate action.

Contributed to strategies that enhance public engagement and understanding of climate issues, encouraging long-term action through educational outreach.

**Fiske Planetarium: "Science Under the Dome" Talk Series** Boulder, CO
**President** August 2020 - August 2022

Advised members on the organization's strategic direction, refining outreach and education initiatives to better serve the community.

Managed key formal documentation, including bylaws, university proceedings, and financial statements, ensuring organizational compliance and transparency.

Led recruitment efforts, interviewing and evaluating potential new members to strengthen the organization's membership base.

Coordinated and facilitated speaker talks, ensuring high-quality, engaging presentations that aligned with the organization's educational goals.

**Public Talk Coordinator** August 2019 - August 2023

Interviewed and evaluated speakers for the talk series, ensuring a diverse, high-quality lineup.

Helped selected speakers develop professional, jargon-free, engaging science presentations tailored for the CU community and the general public.

Collaborated with the planetarium staff to create a welcoming, educational environment for audiences of all backgrounds.

**Mercury Magazine** San Francisco, CA
**Writer** July 2019 - August 2023

Worked closely with editors to craft engaging content that aligns with the magazine's mission of fostering public interest and understanding of astronomy.

**Sommers-Bausch Observatory** Boulder, CO
**Outreach Volunteer** August 2017 - August 2023

Hosted observing nights that featured the observatory's two 20" Cassegrain telescopes.

Enthusiastically advocated for student, faculty, and public participation in open-house observing nights.

Volunteered for the observatory's annual "Astronomy Day" event, which typically hosted over 1,000 local K-12 students each year.

**Astrobites** National
**Writer** July 2019 - February 2022

Wrote accessible summaries of current astronomical peer-reviewed publications, translating complex research into digestible articles for students and early-career scientists.

Edited and provided constructive feedback on articles written by fellow Astrobites authors, ensuring clarity, accuracy, and adherence to editorial standards.

Contributed to the platform's growth as a key resource for astronomy students and the general public interested in the latest research developments.

**Scale Model Solar System Campaign** Boulder, CO
**Director** April 2018 - January 2022

Spearheaded a $112,000 fundraising effort to build a new scale model solar system at CU Boulder.

Worked with the director of the Fiske Planetarium and Sommers-Bausch Observatory to develop, write, and edit pedagogical content for the model (e.g., lesson plans and labs).

Assisted in the development of the scientific content for the "Wanderers CU" mobile application that pairs with the model.

**Science Buffs** Boulder, CO
**Writer** June 2018 - June 2021

Contributed research-based articles to the site, translating scientific topics into accessible, engaging content for a general audience.

Wrote clear, concise summaries of current scientific developments and trends, encouraging public interest in STEM fields.

**"Astropals" Peer Mentoring - University of Colorado Boulder** Boulder, CO
**Co-Founder & Board Member** August 2018 - August 2020

Co-founded the peer mentoring organization and helped strategize its roadmap, focusing on graduate student success and well-being.

Designed and led workshops addressing the academic and personal challenges of graduate school, providing resources and support for fellow students.

Recruited a diverse group of participants to foster community, mentorship, and inclusivity within the CU Boulder graduate student body.

**Fiske Planetarium** Boulder, CO
**Fiske Oversight Committee Member** August 2017 - August 2020

Advised the committee on strategies to increase planetarium revenue and boost visitor attendance, ensuring a broad and diverse audience.

Advised the committee on hardware upgrades to enhance the planetarium's technical capabilities and improve the visitor experience.

Contributed to optimizing both new and existing outreach and education projects, aligning them with the planetarium's mission to inspire curiosity in science and space exploration.

**"CU Cafe" Diversity Initiative - University of Colorado Boulder** Boulder, CO
**Outreach Director** August 2017 - May 2018

Promoted STEM scholarship and racial and ethnic diversity by recruiting a diverse group of members.

Coordinated public talks for underrepresented visiting scientists, fostering an inclusive environment for learning and collaboration.

Collaborated with similar organizations on campus to build a sense of community and enhance mentorship opportunities for underrepresented students in STEM.

**Ryerson Astronomical Society - The University of Chicago** Chicago, IL
**Vice-President** September 2012 - June 2013

Assisted in organizing and running weekly meetings, fostering an engaging environment for society members.

Helped plan and execute quarterly outreach trips, giving the community opportunities to engage with astronomy.

Secured guest speakers to enhance the educational experience and broaden the society's exposure to various astronomical topics.

**Student Dome Engineer** March 2012 - June 2013

Maintained the functionality and integrity of the dome on our rooftop observatory.

**Society for Physics Students - The University of Chicago** Chicago, IL
**Outreach Officer** March 2012 - June 2013

Collaborated with campus physical science organizations to plan and execute outreach events, increasing community engagement with physics.

Recruited new members by organizing and promoting events.

Secured guest speakers in physics to broaden the learning experience and bring diverse perspectives to the society.

## MEMBERSHIP ORGANIZATIONS

**American Geophysical Union** National
**Member** July 2024 - December 2024

Deliver oral presentations, sharing original research with Earth and space science professionals.

Engage in discussions and feedback sessions to foster interdisciplinary collaboration and advance scientific understanding.

**SciAll** National
**Member Scientist** April 2024 - Present

Foster STEM identity development in underrepresented groups by humanizing diverse scientists through honest online dialogue about personal relationships with STEM.

Contribute to initiatives that humanize diverse scientists, foster inclusive representation, and inspire future generations of STEM professionals.

**Astronomers Without Borders** National
**Member** February 2024 - Present

Actively support a global community that celebrates and studies the wonders of the universe, promoting cross-cultural dialogue and collaboration.

Contribute to initiatives that transcend borders, using astronomy to broaden perspectives and improve lives through education and outreach.

**Astronomical Society of the Pacific** San Francisco, CA
**Member** February 2019 - Present

Regularly receive the quarterly Mercury magazine, staying informed on the latest advancements in astronomical research and education.

Actively participate in the society's annual conference, attending and chairing sessions focused on leading U.S. astronomical outreach and educational programs.

Engage with the community to promote best practices in STEM outreach and foster connections within the field.

**American Astronomical Society** National
**Member** February 2018 - August 2023

Attended and presented at annual conferences, helping disseminate pioneering research in astronomy.

Engaged with cutting-edge developments in astronomical research and networked with professionals to advance scientific discourse.

**American Meteorological Society** National
**Member** November 2015 - November 2017

Attended and presented at annual conferences, showcasing pioneering research and engaging with the meteorological community.

Contributed to discussions on advancements in meteorology, exchanging ideas with professionals and researchers in the field.

**Boulder Astronomy and Space Society** Boulder, CO
**Member** October 2014 - October 2017

Attended monthly lectures delivered by astronomers and space industry experts, staying informed on the latest developments in astronomy and space science.

Participated in local outreach efforts by connecting with fellow astronomers to facilitate public stargazing events and night-sky viewings at the Sommers-Bausch Observatory in Boulder, CO.

Actively engaged with the community to foster interest in astronomy and space exploration.

**The Planetary Society** International
**Member** April 2014 - April 2017

Received the quarterly The Planetary Report, providing updates from leading engineers and scientists in planetary science.

Contributed funding to support innovative outreach, education, science, and technology projects aimed at advancing space exploration and public engagement.

**Association of Lunar and Planetary Observers** National
**Member** February 2014 - February 2017

Received the quarterly publication The Journal, which highlights astronomical work conducted by both professional and amateur astronomers, advancing the field of lunar and planetary observations.

Stayed informed on the latest trends and discoveries in lunar and planetary science, contributing to a broader understanding of space exploration.

**NASA Night Sky Network/ Astronomical League** National
**Member** December 2013 - December 2016

Received the quarterly newsletter The Reflector, which provided the latest updates on astronomical discoveries and developments in the field.

Actively participated in outreach efforts, organizing and leading stargazing sessions to bring the wonders of the universe to the public and foster a greater appreciation for astronomy and space science.

**Atlanta Astronomy Club** Atlanta, GA
**Member** December 2013 - December 2015

Attended monthly astronomy lectures to deepen knowledge of celestial phenomena and the latest astronomical discoveries.

Participated in dark sky observing outreach events, guiding the public in viewing constellations, planetary events, and other significant celestial occurrences.

## RESEARCH EXPERIENCE

**University of Colorado Boulder** Boulder, CO
**Graduate Research Assistant** July 2017 - August 2023

Analyzed a dataset of over 29 million galactic spectra from the Sloan Digital Sky Survey's Mapping Nearby Galaxies at APO (MaNGA) catalog, encompassing 10,000 galaxies observed using Integral Field Unit spectroscopy.

Developed a custom Python pipeline and utilized CU Boulder's Summit supercomputer to process and analyze large-scale spectroscopic data efficiently.

Identified high-ionization and broad-line emission signatures of Active Galactic Nuclei (AGN), characterizing their physical properties and estimating their population within the MaNGA catalog.

Advanced understanding of galaxy evolution by refining AGN detection methods.

**The University of Chicago** Chicago, IL
**Exoplanet Student Researcher** March - June 2013

Explored transit spectroscopy techniques to detect exoplanets using Kepler Space Telescope data in a research-focused course.

Presented research on exoplanet detection methodologies to faculty at The University of Chicago.

Gained foundational experience in data analysis, transit photometry, and scientific communication.

**Laboratory for Atmospheric and Space Physics** Boulder, CO
**Solar Physics REU Research Assistant** June - August 2012

Analyzed live streams of solar data from the Geostationary Operational Environmental Satellite and instruments on NASA's Solar Dynamics Observatory using IDL programming language.

Developed an artificial neural network to better classify and predict solar flares.

Presented research results to scientists from the Laboratory for Atmospheric and Space Physics, National Center for Atmospheric Research, High Altitude Observatory, and the Space Weather Prediction Center.

Enhanced understanding of space weather phenomena and their impact on Earth through interdisciplinary collaboration.

**National Radio Astronomy Observatory** Green Bank, WV
**Radio Astronomy Research Assistant** July 2010

Mapped regions of the galactic plane and extragalactic zones using data acquisition software linked to the University of North Carolina's SKYNET robotic telescope operation, an internationally distributed network of radio telescopes in Chile and several areas in the US and Europe.

Assisted in constructing a ground-based antenna to detect radio emission from Jupiter.

Presented research results to scientists and graduate students from UNC-Chapel Hill, demonstrating early experience in scientific communication and collaborative research.

## AWARDS, GRANTS, AND HONORS

**CIRES Outstanding Performance Award: Science Service** May 2025

Awarded for dedicating a significant portion of time to science outreach and communication, and for service that promotes and inspires excellence and dedication to research performed at CIRES.

Nominated by my peers and voted on by a subcommittee of the CIRES Members Council. This is the highest award given by CIRES.

**CIRES Bronze Medal Award** May 2025

Awarded for significantly enhancing NOAA's ability to increase awareness of NOAA's mission through outreach, education, and service.

**Colorado Capital Conference Citizen Leader** April 2025

Selected as 1 of 100 citizen leaders for a premier leadership and policy conference in Washington, D.C.

Chosen through a competitive application process reviewed by U.S. Senators Michael Bennet and John Hickenlooper, and the presidents of Colorado Mesa University and the University of Colorado.

**2024 NOAA Education Photo Contest** December 2024

Featured in the grand prize-winning photograph of the 2024 NOAA Education Photo Contest, which was showcased on the cover of the Fiscal Year 2024 NOAA Education Report.

**NOAA Ambassador: Gold Star Awards** December 2024

Recipient of six NOAA Ambassador Gold Star Awards for outstanding contributions to outreach and education, culminating in recognition as a 2024 NOAA Ambassador.

**NASA Chandra X-Ray Observatory**

"AGN Identification in MaNGA Coronal Line Galaxies" (PI) July 2022
$83,550

**Department of Astrophysical and Planetary Sciences - University of Colorado Boulder**

Chance Irick Cooke Graduate Fellowship - Excellence in Graduate Research October 2021
$3,000

**Astrophysical Research Consortium/ Sloan Digital Sky Survey Collaboration**

Early Career Astronomer Award March 2020
$1,200

### Department of Astrophysical and Planetary Sciences - University of Colorado Boulder

Travel Grant — April 2020
$1,000

### Graduate and Professional Student Government - University of Colorado Boulder

Travel Grant — February 2020
$300

### Astrophysical Research Consortium/ Sloan Digital Sky Survey Collaboration

Early Career Astronomer Award — February 2019
$1,200

### The University of Chicago

Odyssey Scholarship — October 2008 - June 2013

## PRESS & MEDIA

Fiske Planetarium - Science Through Shadows, "Exoshadows", September 23, 2026.

Fiske Planetarium - Science Through Shadows, "Eclipse Participatory Science", February 11, 2026.

Rapid City Journal, "Harnessing the power of the sun: Scientists talk fusion energy and jobs with Mines students", October 4, 2025.

Fiske Planetarium - Science Through Shadows, "Humanity Touches The Sun", December 9, 2024.

The Upcoming Solar Eclipse is a Rare Event. Some Colorado Schools Won't Let Students Watch, CPR News, Jenny Brundin, April 5, 2024.

Jacksonville: Into The Darkness Video — What to Expect During Total Eclipse, My Journal Courier, David C.L. Bauer, April 5, 2024.

Total Solar Eclipse Interview, KVCU 1190 Radio, Boulder, CO, April 9, 2024.

What To Expect in Boulder County With Monday's Solar Eclipse, Olivia Doak, Boulder Daily Camera, April 6, 2024.

Tips For Viewing The Upcoming Solar Eclipse Safely, Daniel Strain, CU Boulder Today, April 1, 2024.

NOAA Employee Showcase, Boulder Outreach Coordinating Council's Featured Employee, March 2024.

Humans of CIRES Spotlight, "Stargazer On Two Wheels", November 29, 2023.

NewsNation Live Interview, "Where are UFO Hotspots Around The Globe?", September 8, 2023.

Consulting Producer, Astrophysics, "Behind The Sun", Directed by Dr. Bentley Brown, 2023. Screened at the Hot Docs Canadian International Film Festival, Toronto, Canada (2023), Camden International Film Festival, Camden, USA (2023), Mimesis Documentary Festival, Boulder, USA (2023), Minikino Film Week, Bali, Indonesia (2023), MESA Film Fest (Middle Eastern Studies Association Annual Meeting), Montréal, Canada (2023), Forum Film Dokumenter, Jakarta, Indonesia (2023), Labocine, New York, USA (2024), Dallas International Film Festival, Dallas, USA (2024), and Prismatic Ground, New York, USA (2024).

Fiske Planetarium - Science Through Shadows, "Total Eclipse Of The Sun", May 17, 2023.

Fiske Planetarium - Science Through Shadows, "Ring of Fire Eclipse", March 8, 2023.

"CU Fiske Planetarium Scale Model Solar System Ribbon Cutting Ceremony", Chancellor's Office/ Fiske Planetarium, December 8, 2021.

"CU Boulder's Fiske Planetarium Installs Updated Version of Solar System on Campus", Mackenzie Eldred, Boulder Daily Camera, December 8, 2021.

"Hear Planets Sing As You 'Walk' Through Space In New Solar System Model", Daniel Strain, CU Boulder Today, December 7, 2021.

"CU Boulder Grad Student Aims To Update Campus' Scale Model Solar System", Amy Bounds, Boulder Daily Camera, June 21, 2019.

## PUBLICATIONS & ABSTRACTS

### Outreach and Education

Publication: "Workforce Expansion in the Inertial Fusion Science and Technology (RISE) Hub for Inertial Fusion Energy", Kavita Desai Kabelitz, Emma Rasmussen, Gennady Shvets, Arianna Gleason, Zhenhuan Yi, Alexei V. Sokolov, Aleksei M. Zheltikov, Robert Brick, James Negus, et al., Fusion Science and Technology, 1–8, November, 2025.

Publication: "The quantum universe: How tiny fluctuations can shape cosmic evolution", James Negus, May 1, 2025, The Physics Teacher, 63, 388–389.

Publication: "The Solar System to Scale", James Negus, Mercury Magazine, Winter, 2022.

Publication: "A New Scale-Model Solar System", James Negus, Sky & Telescope, January 20, 2022.

Publication: "Bringing a Scale Model Solar System to CU Boulder", James Negus, Astrobites, January 19, 2022.

Publication: "Uncovering Hidden Active Galactic Nuclei in Dwarf Galaxies", James Negus, Astrobites, September 25, 2021.

Publication: "Unidentified Flaring Object", James Negus, Astrobites, September 7, 2021.

Publication: "Shine On You Crazy Outflow!", James Negus, Astrobites, August 9, 2021.

Publication: "ALMA's Glimpse Into Protoplanetary Disk Evolution", James Negus, Mercury Magazine, Winter 2021.

Publication: "Gas and Dust Evolution Near a Cosmic Engine", James Negus, Astrobites, March 1, 2021.

Publication: "The Eyes of GAIA: Peering Into Our Galaxy's Variable Nature", James Negus, Astrobites, December 12, 2020.

Publication: "AGN Ionization: A Dance Between Photoionization and Shocks", James Negus, Astrobites, October 24, 2020.

Publication: "Active Galactic Bulbs: Tracking Glowing Quasars", James Negus, Astrobites, September 9, 2020.

Publication: "The Impact of Polar Ice on Our Planet's Evolution", James Negus, Science Buffs, July 28, 2020.

Publication: "Faint Jewels: Discovering The Brilliance of Dwarf Galaxies", James Negus, Astrobites, July 27, 2020.

Publication: "Remnant Tales: Uncovering the Link Between Type Ia Supernova Ejecta and Planetary Nebulae", James Negus, Astrobites, May 14, 2020.

Publication: "Star Clusters at Galaxies' Centers and Galactic Evolution", James Negus, Mercury Magazine, Winter 2020.

Publication: "Galactic Outflows: A Stellar Matter?", James Negus, Astrobites, March 4, 2020.

Publication: "Uncovering a Cosmic Matter Reservoir", James Negus, Astrobites, February 3, 2020.

Publication: "Are Supermassive Black Holes Galactic Regulators?", James Negus, Mercury Magazine, Summer 2019.

Publication: "Ten-Hundred Word Challenge", James Negus, Science Buffs, February 4, 2019.

Publication:"The Mysteries of Space: Supernovas Explained", James Negus, Enslow Publishing, New York, NY, 2018.

Publication: "The Mysteries of Space: Black Holes Explained", James Negus, Enslow Publishing, New York, NY, 2018.

**Other**

Science Book Editor/ Reviewer: "The Scale of the Universe", Dr. Jeffrey Bennett, Big Kid Science, Boulder, Colorado, 2026.

Science Book Editor/ Reviewer: "Totality! An Eclipse Guide in Rhyme and Science", Dr. Jeffrey Bennett, Big Kid Science, Boulder, Colorado, 2021.

Science Book Editor/ Reviewer: "Earth & Space Science", Dr. Jeffrey Bennett, Big Kid Science, Boulder, Colorado, 2020.

**Research**

Publication "GOES-R Series X-Ray Sensor (XRS): 2. On-Orbit Measurements and Calibrations", Janet L. Machol, Stefan M. Codrescu, Courtney L. Peck, Elysia S. Lucas, James F. Mothersbaugh III, Thomas N. Woods, Ann Marie Mahon, James Negus, et al., 2026, Journal of Geophysical Research: Space Physics, 131, 5.

Conference Abstract: "PUNCH PULSE: A Citizen-Science Pipeline for Heliospheric Imagery", C. Gilly (NWRA), S. Kovac (UCAR), C. Morrow (SwRI), J. Negus (CSU), S. Buxner (PSI), Seventh PUNCH (Polarimeter to UNify the Corona and Heliosphere) Science Meeting, May 12 - 14, 2026.

Publication: "Recoiling Black Hole Candidates from Spatially Offset Broad Emission Lines in MaNGA", R. Scott Barrows, Julia M. Comerford, James Negus, and Francisco Muller-Sanchez, 2025, The Astrophysical Journal, 992, 38.

Conference Abstract: "Validating Real-Time GOES-R XRS Solar Flare Locations", James Negus, Janet Machol, American Geophysical Union, December, 2024.

Publication: "A Catalog of Broad H$\alpha$ and H$\beta$ Active Galactic Nuclei in MaNGA", James Negus, Julia M. Comerford, and Francisco Müller Sánchez, 2024, The Astrophysical Journal, 971, 92.

Publication: "An Excess of AGNs Triggered by Galaxy Mergers in MaNGA Galaxies of Stellar Mass $\sim 10^{11}$ $M_{\odot}$", Julia M. Comerford, Rebecca Nevin, James Negus, et al., 2024, The Astrophysical Journal, 963, 1.

Publication: "A Catalog of 71 Coronal Line Galaxies in MaNGA: [NeV] is an Effective AGN Tracer", James Negus, Julia M. Comerford, et al., 2023, The Astrophysical Journal, 945, 2.

Publication: "Toward a More Complete Optical Census of Active Galactic Nuclei, Via Spatially-Resolved Spectroscopy", Julia M. Comerford, James Negus, et al. 2022, The Astrophysical Journal, 927, 1.

Publication: "The Physics of the Coronal Line Region for Galaxies in MaNGA", James Negus, Julia M. Comerford, et al. 2021, The Astrophysical Journal, 920, 62.

Publication: "A Catalog of 406 AGNs in MaNGA: A Connection between Radio-mode AGNs and Star Formation Quenching", Julia M. Comerford, James Negus, et al. 2020, The Astrophysical Journal, 901, 159.

Conference Abstract: "Studying AGN Activation in Galaxy Mergers", James Negus and Laura Blecha, American Astronomical Society, June, 2018.

Publication: "A New Narrow Beam, Multi-Frequency Scanning Radiometer and Its Application to In-Flight Icing Detection", David Serke, James Negus, et al., 2017, Atmospheric Research, Volume 185, Pages 84-91.

Conference Abstract: "Icing Characterization Based on In-Situ Aircraft and Remote Sensing Platform Observations", Randolph Ware, Don Berchoff, James Negus, et al., American Meteorological Society, January, 2017.

Conference Abstract: "Integrated Wind and Thermodynamic Profiling for High-Impact Nowcasting", Randolph Ware, Jyoti Bhate, James Negus, et al., American Meteorological Society, January, 2017.

Conference Abstract: "Boundary Layer Thermodynamic and Wind Observations for Improved Fog and Marine Layer Modeling and Forecasting", Randolph Ware, Levi Blanchette, James Negus, et al., American Meteorological Society, January, 2016.

## PRESENTATIONS & PODCASTS

### Outreach and Education

Presentation: "U.S. IFE Ecosystem: Student Research Opportunities in Inertial Fusion Energy", University of Colorado Boulder, Boulder, CO, October 14, 2026.

Presentation: "U.S. IFE Ecosystem: Student Research Opportunities in Inertial Fusion Energy", Colorado State University, Fort Collins, CO, October 13, 2026.

Presentation: "Building the U.S. IFE Ecosystem: National Coordination and Workforce Development for Inertial Fusion Energy", Casper College, Casper, WY, July 20, 2026.

Panel Moderator: "RISE Hub Graduate Student Panel", U.S. IFE Ecosystem, July 15, 2026.

Presentation: "Designing and Delivering Powerful Presentations" Workshop, Inertial Fusion Energy National Summer Undergraduate Research Program, Colorado State University, June 30, 2026.

Panelist: "Broadcasting The Stars: STEM & Outreach Panel", Black in Astro, June 15, 2026.

Presentation: "DarkSky Colorado: Reclaiming the Night", Denver Museum of Nature and Science, June 6, 2026.

Event Management: "Fusion Energy Week Outreach Fair: A Collaborative Showcase of the U.S. IFE Ecosystem", Lead Organizer for 10 Volunteers, Lory Student Center Plaza , Colorado State University, May 8, 2026.

Presentation: "U.S. IFE Ecosystem: A Collaborative Platform for Inertial Fusion Energy in the U.S.", Spring Industry Night, Colorado State University, March 31, 2026.

Presentation and Panelist: "Fusion in Colorado: Smashing Progress", Colorado Climate Week, Colorado State University - Spur Campus, March 30, 2026.

Poster Presentation: "The U.S. IFE Ecosystem: Fueling the Next-Generation Inertial Fusion Energy Workforce", U.S. IFE Conference, Washington, D.C., March 24, 2026.

Poster Presentation: "Building the IFE-STAR Ecosystem: National Coordination and Workforce Development for Inertial Fusion Energy", 67th American Physical Society: Division of Plasma Physics Annual Meeting, Long Beach, CA, November 17, 2025.

Presentation: Introduced the Robert J. Trumpler Award Recipient, Dr. Justin Myles, Princeton University, The Astronomical Society of the Pacific Awards Gala, November 08, 2025.

Presentation: "IFE-SURE: Empowering the Next Generation of Fusion Energy Researchers", US Fusion Outreach Team, October 29, 2025.

Panelist: "Switching Lanes: Career Transitions in SciComm and Science Writing", Science Writers Association of the Rocky Mountains, October 21, 2025.

Presentation: "Active Galaxies, Solar Storms, and Starships: Exploring Cosmic Energy", Northern Colorado Astronomical Society, Fort Collins, CO, October 2, 2025.

Presentation: "IFE-STAR Ecosystem: A Collaborative Platform for Inertial Fusion Energy in the U.S.", South Dakota School of Mines and Technology, September 30, 2025.

Presentation: "From Black Holes to Impulse Engines: Real Cosmic Power in Deep Space and Here on Earth", Comic Con, Fort Collins, CO, August 17, 2025.

Presentation: "Written Science Communication" Workshop, Inertial Fusion Energy National Summer Undergraduate Research Program, Colorado State University, July 15, 2025.

Presentation (Keynote): "Dark Skies: A Pathway to the Universe", Lake City Star Festival, June 28, 2025.

Presentation: "Creating and Delivering Effective Presentations" Workshop, Inertial Fusion Energy National Summer Undergraduate Research Program, Colorado State University, June 17, 2025.

Presentation: "Saving Dark Skies", Denver Museum of Nature and Science, June 7, 2025.

Podcast: "University of Colorado Boulder Voyage Scale Model Solar System", Science Communication and Outreach for Public Engagement Podcast, May 9, 2025.

Presentation: "Exploring Our Dynamic Star With GOES", Science & Bites, University of Colorado Boulder, March 11, 2025.

Panelist: "Science Writing and Ethics", Conference for Undergraduate Women and Gender Minorities in Physics, University of Colorado Boulder, January 26, 2025.

Panelist: "BIPOC Experiences in Physics", Conference for Undergraduate Women and Gender Minorities in Physics, University of Colorado Boulder, January 25, 2025.

Presentation: "Space Weather!", Nederland Elementary School, NOAA's Space Weather Prediction Center, Boulder, CO, November 12, 2024.

Presentation: Introduced the Arthur B.C. Walker II Award Recipient, Dr. Gibor Basri, University of California, Berkeley, The Astronomical Society of the Pacific Awards Gala, November 09, 2024.

Presentation: Introduced the Richard H. Emmons Award Recipient, Dr. Daniel Reichart, University of North Carolina, The Astronomical Society of the Pacific Awards Gala, November 09, 2024.

Presentation: "A Solar Journey: Peering Into The Nature of Our Active Sun", Longmont Rotary Club, Longmont, CO, October 8, 2024.

Presentation (Keynote): "Pathways to Success in STEM", SMART Program, University of Colorado Boulder, August 8, 2024.

Presentation: "Space Weather!", Bring Your Kids to Work Day, NOAA's Space Weather Prediction Center, Boulder, CO, April 25, 2024.

Presentation: Science on a Sphere lecture to local high school CubeSat team, White House National Space Council's "Find Your Place in Space Week", NOAA, Boulder, CO, April 10, 2024.

Presentation (Keynote): Live Commentary With Astronaut Alvin Drew For $\sim$ 1,000 Total Solar Eclipse Attendees, Dallas Arboretum (Concert Stage), April 8, 2024.

Presentation: "From Totality to Space Exploration", Rosine Hall, Dallas Arboretum, April 8, 2024.

Presentation: "Ask An Astronomer", Big Kid Science Booth, National Science Teaching Association Conference, March 21 - March 23, 2024.

Podcast: "Solar Flares and Deep Space Nine with Dr. Jimmy Negus", The LIUniverse, February 28, 2024.

Presentation: "Astronomy!", Cherry Drive Elementary School, May 23, 2023.

Presentation: "Cosmic Mirror: Earth's Reflection in Space Exploration", Fiske Planetarium - Science Under the Dome, March 16, 2023.

Planetarium Host: Anneke Kakebeen (Featured Speaker), "Journey to the Center of the Embryo", Fiske Planetarium - Science Under the Dome, December 9, 2022.

Presentation: Introduced the Arthur B.C. Walker II Award Recipient, Dr. Jedidah C. Isler, Principal Assistant Director for STEM Opportunity and Engagement at the White House Office of Science and Technology Policy, The Astronomical Society of the Pacific Awards Gala, November 19, 2022.

Panelist: "The Clock Tower Project: A New Perspective to Coordinate Climate Action", Fiske Planetarium, April 08, 2022.

Podcast: "Black Holes, Galaxies, and The Expanse with Jimmy Negus", The LIUniverse, March 26, 2022.

Planetarium Host: Corey Trujillo (Featured Speaker), "Arches: The Ancient Bones of Modern Architecture", Fiske Planetarium - Science Under the Dome, February 17, 2022.

Podcast: "A View From Earth 2021 Holiday Special (The Colorado Scale Model Solar System)", Fiske Planetarium - A View From Earth, December 14, 2021.

Presentation (Ribbon Cutting Ceremony): "Upgrading The Colorado Scale Model Solar System", Fiske Planetarium, December 8, 2021.

Presentation (Keynote): "A Career in Academia: Overcoming Barriers to Success", Bruin Brains Research Conference, Salt Lake City Community College, December 3, 2021.

Presentation: Introduced the Robert J. Trumpler Award Recipient, Dr. Gudmundur Kári Stefánsson, Princeton University, The Astronomical Society of the Pacific Awards Gala, November 19, 2021.

Planetarium Host: Catherine Blume (Featured Speaker), "Penrose Tilings, Quasicrystals, and Islamic Architecture", Fiske Planetarium - Science Under the Dome, October 21, 2021.

Presentation: "The Evolution of Space Instrumentation: Where Do We Go From Here?", Brookdale Senior Living, Boulder, CO, July 15, 2021.

Presentation: "A Crowded Orbit: The Co-Evolution of Satellites and Space Junk", Fiske Planetarium - Science Under the Dome, April 15, 2021.

Presentation Host: Prasanth Prahladan (Featured Speaker), "Future of the Autonomous Self: Personal Autonomy, Social Oppression and Social-Media", Fiske Planetarium - Science Under the Dome, February 11, 2021.

Presentation Host: Erika Schreiber (Featured Speaker), "Fires, Flooding, Heat Waves, Drought: Extreme Events in a Changing Climate", Fiske Planetarium - Science Under the Dome, November 19, 2020.

Presentation Host: Will Holsclaw (Featured Speaker), "Black Marble: Exploring the Earth's Dark Side", Fiske Planetarium - Science Under the Dome, September 17, 2020.

Podcast: "Ep 56: The Fowl Ward", Buffs Talk Science, June 16, 2020.

Presentation: "Ep 1: Supermassive Black Holes and Where to Find Them", Fiske Planetarium - A View From Earth, June 21, 2020.

Presentation: "Re-Envisioning The Colorado Scale Model Solar System", ComSciCon20, June 11, 2020.

Presentation: "The Future of NASA and Space Exploration", King Adult Day Enrichment Program for Multiple Sclerosis Patients, Westminster, CO, January 31, 2020.

Presentation: Introduced the Richard H. Emmons Award Recipient, Dr. Nick Schneider - University of Colorado Boulder, The Astronomical Society of the Pacific Awards Gala, San Francisco, CA, November 19, 2019.

Presentation: "Topics in Astronomy", Brookdale Senior Living, Boulder, CO, August 15, 2019.

Presentation: "Black Holes!", King Adult Day Enrichment Program for Multiple Sclerosis Patients, Westminster, CO, May 3, 2019.

**Research**

Presentation: "GOES-19 EXIS XRS L1b Provisional Maturity", NOAA - David Skaggs Research Center, Boulder, CO, March 11, 2025.

Presentation: "SDO Mini-Workshop: Solar Data from NOAA Space Weather Operational Instruments on GOES", SDO Science Workshop, Boulder, CO, February 22, 2025.

Presentation: "Using NOAA's GOES-R Satellites To Trace Solar Flares", American Geophysical Union, Washington, D.C., December 11, 2024.

Presentation: "Validating Real-Time GOES-R XRS Solar Flare Locations", American Geophysical Union, Washington, D.C., December 10, 2024.

Presentation: "GOES-18 EXIS XRS L1b Provisional Maturity", NOAA - David Skaggs Research Center, Boulder, CO, December 1, 2024.

Presentation (Invited): "From Black Holes to Sunspots: Our Active Universe", Colorado Science Conference, Colorado State University - Spur Campus, October 25, 2024.

Presentation (Invited): "Tracing Solar Features With GOES", SpaceVision Conference, University of Denver, October 5, 2024.

Presentation: "GOES EUV Real-Time Products for WAM-IPE: Operational GOES Products", University of Colorado Boulder, September 18, 2024.

Presentation: "From Solar Flares to Eclipses: Exploring Our Dynamic Star Through Science and Outreach", NOAA's NCEI Seminar, University of Colorado Boulder, July 30, 2024.

Presentation: "Finding Accurate Solar Flare Locations with Geostationary Satellites", Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder, November 15, 2023.

Presentation (Invited): "Tracing AGN in MaNGA With Coronal Lines", NASA Jet Propulsion Laboratory, Pasadena, CA, October 11, 2022.

Presentation (Invited): "Tracing AGN in MaNGA With Coronal Lines", California Institute of Technology, October 12, 2022.

Presentation (Invited): "Investigating Coronal Line Emission for Galaxies in MaNGA", Astrocoffee, Institute for Astronomy, University of Hawai'i at Mānoa, September 23, 2022.

Presentation: "Uncovering Active Galactic Nuclei in Large Spectroscopic Surveys", Black Holes Across Space and Time Workshop, Harvard University (Black Hole Initiative), July 28, 2022.

Presentation (Invited): "Using Coronal and Broad Line Detections to Investigate AGN in MaNGA", Galaxies and AGN Seminar and Journal Club, Space Telescope Science Institute, June 09, 2022.

Lightning Talk + Poster: "Leveraging Integral Field Spectroscopy to Detect AGN in MaNGA", Large-Volume Spectroscopic Analyses of AGN and Star Forming Galaxies in The Era of JWST Conference, Space Telescope Science Institute, March 30, 2022.

Presentation (Invited): "Coronal Lines: An Ideal Tracer for AGN Activity?", Astronomy and Space Physics Seminar, University of Kansas, December 10, 2021.

Presentation (Invited): "Coronal Line Emission: A New Tool for Identifying AGN Activity?", The University of California Santa Cruz, October 26, 2021.

Presentation: "Can Coronal Line Emission Effectively Trace AGNs in MaNGA?", SDSS-IV/ SDSS-V Collaboration Meeting, August 12, 2021.

Presentation: "The Physics of the Coronal Line Region for Galaxies in MaNGA", SDSS-IV/ SDSS-V Collaboration Meeting, June 22, 2020.

Presentation (Master's Defense: High Pass): "The Physics of the Coronal Line Region for Galaxies in MaNGA", University of Colorado Boulder, October 16, 2019.

Presentation: "Discovering AGN in MaNGA Through Coronal Line Observations", SDSS-IV/ MaNGA Collaboration Meeting, University of Oxford, April 1, 2019.

Presentation: "Tackling Galactic and Black Hole Coevolution", Speak Easy: A Science Communication Workshop for Researchers, University of Colorado Boulder, February 24, 2019.

Presentation: "Tracing AGN in MaNGA Using Coronal Line Observations", 232$^{nd}$ American Astronomical Society Conference, Denver, CO, June 4, 2018.

Presentation: "Transit Timing: Exoplanet Discovery", James Negus, The University of Chicago, June 4, 2013.

Presentation: "Automatic Predictions of Solar Flares Using a Neural Network", Laboratory for Atmospheric and Space Physics, Boulder, CO, James Negus, August 2, 2012.

Presentation: "Gamma Ray Cross Sections", The University of Chicago, October 31, 2012.

**Other**

Session Chair: Graduate Student Poster Slam, U.S. IFE Conference, Washington, D.C., March 25, 2026.

Session Chair: The American Physical Society - Division of Plasma Physics, Graduate School & Careers Day Graduate Opportunities Panel, October 4, 2025.

Session Chair: The Astronomical Society of the Pacific, Virtual Symposium, August 21, 2025.

Session Chair: The Astronomical Society of the Pacific, Annual Conference, December 5, 2020.

## MENTORSHIP

Kalin Landry, University of Colorado Boulder, BA (Astrophysics), graduated Spring 2023.

## SKILLS & TRAINING

Technical & Creative Skills: Python, LaTeX, GitHub, Bash, Linux, Adobe Creative Cloud (Premiere Pro, Photoshop, InDesign), Video Editing, Graphic Design, Spectral Analysis, Remote Sensing.

Core Competencies: Outreach, Education, Public Speaking, Team Leadership, Project Management, Proposal Writing, Event Management, Strategic Planning, Analytics.

Formally trained to conduct remote observations at The Apache Point Observatory.

Human Research Participant, University of Colorado Boulder, Bioastronautics Laboratory, February 14, 2025: Participated in NASA-funded study on Galvanic Disorientation Simulation Training, helping validate and advance astronaut training methods for post-spaceflight vestibular adaptation.