Logan A. White

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Education

North Carolina State University, Raleigh, NC *Expected May 2025*
B.S., Physics; Minors: Computer Programming, Mathematics

Relevant Coursework: Astrophysics, Plasma & Fusion Physics, Computational Physics, Intro to Astrophysical Hydrodynamics, Cosmology,

Alamance Community College, Graham, NC *May 2022*
A.S., University Transfer, High Honors

Skills

Programming: Python, Java, C, C++, Linux, Fortran, MATLAB, R, Mathematica
Libraries: AstroPy, Matplotlib, NumPy, SciPy, SciKit-Learn
Observational Astronomy: KOSMOS, 3.5-meter Telescope, Apache Point Observatory

Experience

Undergraduate Researcher – North Carolina State University *Jan. 2023 – present*
Advisor: Carla Fröhlich
- Simulating numerical models of core-collapse supernovae using the Agile/PUSH framework.
- Generating post-collapse light curve models using nuclear reaction networks and the SNEC method.
- Working to develop a comprehensive statistical analysis of light curve models to determine supernovae simulation accuracy.

Simons-NSBP Scholar – Flatiron Institute & Simons Observatory *May 2023 – Jan. 2024*
Advisors: Vera Gluscevic, Ethan Nadler
- Investigating long-scale dark matter structure evolution through N-body cosmological simulations.
- Examining halo and subhalo mass distribution around Milky Way-like galaxies over long timescales.
- Measuring the time-dependence of the subhalo mass function for beyond-CDM models.

Undergraduate Researcher – Georgia State University NSF REU *Jun. 2022 – Jan. 2024*
Advisor: Viacheslav Sadykov
- Developed machine learning regression models using magnetic data from the Solar Dynamics Observatory and Solar and Heliospheric Observatory.
- Researched algorithm refinement and effectiveness on active regions and the quiet Sun.
- Worked to support the development of more accurate prediction models for solar activity.
- Conducted observations with KOSMOS on the 3.5-m telescope at Apache Point Observatory.

Publications & Presentations

American Astronomical Society, National Harbor, MD, January 2025. White, L. A., Barker, B. L., Fröhlich, C., *Towards Lightcurves and Observables of Neutrino-driven Explosions* (poster).

National Society of Black Physicists, Houston, TX, November 2024. White, L. A., Barker, B. L., Fröhlich, C., *Towards Lightcurves and Observables of Neutrino-driven Explosions* (poster).

Center for Theoretical Astrophysics Seminar, Los Alamos National Laboratory, Los Alamos, NM, November 2024. White, L. A., *Towards Lightcurves and Observables of Neutrino-driven Explosions* (oral).

McCormick Undergraduate Research Symposium, Raleigh, NC, April 2024. White, L. A., Fröhlich, C., *Towards Lightcurves and Observables of Neutrino-driven Explosions* (poster).

American Astronomical Society, New Orleans, LA, January 2024. White, L. A., Gluscevic, V., Nadler, E., *Evolution of Warm Dark Matter Subhalo Populations in Milky Way-like Hosts* (oral).

National Society of Black Physicists, Knoxville, TN, November 2023. White, L. A., Gluscevic, V., Nadler, E., *Evolution of Warm Dark Matter Subhalo Populations in Milky Way-like Hosts* (oral).

American Astronomical Society, Seattle, WA, January 2023. White, L., Sadykov, V., Kempton, D., Dahiya, P., *Cross-Calibration of Magnetic Field Measurements of Solar Active Regions* (poster).

American Geophysical Union, Chicago, IL, December 2022. White, L., Sadykov, V., Kempton, D., Dahiya, P., *Cross-Calibration of Magnetic Field Measurements of Solar Active Regions* (oral).

Lloyd International Honors College Symposium, University of North Carolina at Greensboro, Greensboro, NC, March 2022. White, L. *Look to the Sky: An Examination of Astronomy in Ancient Art* (oral).

Leadership & Mentorship

LUCY Mission Intern – Science Advisor, L'SPACE Mission Concept Academy *May 2024 – present*

- Facilitating the training and professional development of a team of four science mentors through feedback review and performance analysis.
- Collaborating with Academy staff and advisors to develop training materials that increase student proficiency in science-driven mission development and leadership.
- Advising science leadership of 30+ student teams on the selection of science objectives, development of science traceability matrices, and design of planetary science mission proposals.

President – National Society of Black Physicists, NCSU Chapter *Aug. 2024 – present*

- Facilitating the successful organization, operation, and outreach of the NCSU chapter of NSBP.
- Coordinating collaboration with Society of Physics Students and Women in Physics to promote community in the physics department.
- Ensuring members have opportunities to network and interact with the NSBP/NSHP communities through local and national events.

Mentor – NCSU Physics Mentorship Program *Jan. 2024 – present*

- Mentoring first-year physics undergraduates to ensure underclassmen have the connections, resources, and support systems to become successful students in physics.

Undergraduate Coordinator – CDSA NSF REU, North Carolina State University *May 2024 – July 2024*

- Organizing and moderating a weekly astrophysics journal club for incoming undergraduate researchers to promote scientific collaboration and discussion.
- Presenting introductory lectures covering key computational and astrophysical concepts.
- Promoting the development of community and providing a support system for REU participants.

Teaming Mentor – Milo Mission Academy/AROSE *Mar. 2024 – June 2024*

- Mentoring an international team of 15 participants from Australia, New Zealand, and India in the development and writing of a science-driven preliminary design review.
- Reviewing and providing detailed feedback on technical deliverables modeled after Phases A-B of the

NASA Mission Lifecycle.

Undergraduate Lab TA – North Carolina State University *Jan. 2024 – Apr. 2024*
- Facilitated and supervised spectrometry-focused statistical mechanics labs for second-year physics undergraduates.

Astrophysics Mentor – L'SPACE Mission Concept Academy *Jan. 2023 – May 2024*
- Mentored 100+ students during the creation and writing of science-driven preliminary design reviews.
- Advised over 2,000 students on the development of science objectives, science traceability matrices, and key performance parameters.
- Developed and presented training materials for scientific communication and technical writing.

Service & Outreach

College of Sciences Ambassador – North Carolina State University *Aug. 2023 – present*
- Representing the College of Sciences at university-wide events for prospective & current students, alumni, and donors.
- Supporting and managing college-sponsored symposiums, colloquia, and events.
- Building and encouraging community and engagement throughout the College of Sciences.

Mountains to Coast – Alternative Service Break *March 2022*
- Presented hands-on STEM enrichment activities to over 200 students in rural middle schools across North Carolina.
- Promoted learning objectives that met the state's 7th grade science curriculum, including key physics concepts and the engineering design process.

Coding Instructor – Champions Academy *Jan. 2022 – May 2022*
- Adapted curricula and learning activities from Code.org for an elementary-level classroom.
- Taught weekly classes that encouraged learning through investigation and experimentation.

Other Experience

L'SPACE NASA Proposal Writing and Evaluation Experience *Sep. 2022 – Dec. 2022*
- Facilitated the development and writing of a top-scoring proposal in response to a solicitation from NASA Marshall Space Center.
- Served as a primary reviewer on a proposal review panel with a NASA Deputy Center Chief Technologist.
- Trained to review and score proposals through the lens of a NASA reviewer.

Science Lead – L'SPACE Mission Concept Academy *Jan. 2022 – Apr. 2022*
- Received weekly mission development skills training from NASA scientists and engineers.
- Organized, guided, and led the Science subteam during mission concept development.
- Identified and established the primary scientific goals and objectives of the proposed mission.
- Facilitated collaboration between the Science, Engineering, and Business subteams.

NASA Community College Aerospace Scholars *Oct. 2021 – Apr. 2022*
- Developed a mock proposal exploring the future of space exploration through habitat systems.
- Led a 12-member interdisciplinary team as project manager during a weeklong mission design challenge.

Awards & Honors

Black Space Week Undergraduate Research Showcase, 1st Place, Black in Astro (2024)
Rodney McCormick Poster Award, 2nd Place, North Carolina State University (2024)
Sigma Pi Sigma Honors Society, North Carolina State University (2024)
Chambliss Astronomy Achievement Student Award, American Astronomical Society (2023)
Goodnight Scholars Program, Transfer Class of 2025, North Carolina State University
NCCCS Academic Excellence Award, Alamance Community College (2022)

Professional Societies

American Astronomical Society	Student Member
National Society of Black Physicists	Student Member
American Physical Society	Student Member