Dylan Cromer

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Research Interests: Cosmology, inferring fundamental physics from cosmological observations, physics and mathematics education/pedagogy.

Education

- PhD in Astronomy and Space Sciences. *Cornell University* — Expected May 2022
- B.S. in Physics, B.A. in Mathematics. *UNC-Asheville* — May 2017
  (Manly Wright Scholar, summa cum laude, distinction as research scholar)

Honors and Awards

- Cornell Graduate Fellowship — 2018–2019 academic year (deferred from previous year)
- UNC Asheville Manly E. Wright Scholarship Award recipient — May 2017
- UNC Asheville Chancellor's List — Spring 2014–May 2017
- UNC Asheville Mathematics Department Parsons Scholarship — 2016–2017 academic year
- North Carolina Space Grant Research Scholarship — Summer 2015
  Awarded for fast radio burst research project
- UNC-Asheville Physics Department research stipend — Summer 2014
  Awarded for fast radio burst research project.
- North Carolina Space Grant Student Scholarship — 2014–2015 academic year
- UNC Asheville Dean's List — Fall 2013

Employment History

- *Graduate Research Assistant at Cornell University.* August 2017 – May 2018.

  Supervised by Professor Rachel Bean. Project on modifying correlation functions for enhanced signal-to-noise properties from galaxy surveys.

- *STEM Outreach Intern at UNC-Asheville Department of Physics.* August 2016 – May 2017.

  Physics and general scientific outreach position. Assisted outreach events in coordination with Asheville City Schools Foundation IRL Program. Assisted North Carolina Section American Association of Physics Teachers Fall 2016 meeting.

- *Lookout Observatory Docent at UNC-Asheville.* August 2014 – May 2017

  Assisted in monthly public stargazes, outreach events, and other programs held by the observatory.

- *Physics Peer Tutor at UNC-Asheville Peer Tutoring Program.* July 2014 – May 2017.

  Tutored introductory mechanics and electromagnetism courses and upper-level physics courses.

- *Math Tutor at UNC-Asheville Math Assistance Center.* September 2016 – May 2017.

  Tutored math courses taught at UNC-Asheville.

Published Articles

"Surface Enhancement in Ferroelectric Lithographic Silver Nanowires",
National Conferences on Undergraduate Research 2016 Proceedings, 1055–1063.

Presentations
(Repeated presentations have been ommitted)

Presented talk "Fast Radio Bursts - Mysterious Flashes From Other Galaxies, or Our Own?", Sparks Lecture Series seminar, UNC-Asheville, Asheville, NC, February 2017.

Presented talk "Computational Modeling of Surface Enhancement in Ferroelectric Lithographic Nanowires", National Conferences on Undergraduate Research, UNC-Asheville, Asheville, NC, April 2016.

Presented poster "Computational Modeling of Surface Enhancement", UNC-Asheville Undergraduate Research Symposium, Asheville, NC, December 2016.

Presented poster "Comparing Fast Radio Burst Observations to a Stellar Flare Model", North Carolina Section of the American Association of Physics Teachers and Society of Physics Students Joint Meeting, UNC-Asheville, Asheville, NC, November 2016.

Presented poster "Modeling Surface-Enhanced Raman Spectroscopy via Computational Electrodynamics", 2016 Quadrennial Physics Congress, San Francisco, CA, November 2016.

Presented poster "First Steps in Comparing Analytical Surface Enhancement Models With Experimental Results", State of North Carolina Undergraduate Research and Creativity Symposium, High Point University, High Point, NC, November 2015.

Presented poster "Modeling Surface Enhancement due to Silver Nanowires", UNC-Asheville Undergraduate Research Symposium, Asheville, NC, April 2015.

Presented poster "Modeling Fast Radio Bursts in Stellar Coronae", UNC-Asheville Undergraduate Research Symposium, Asheville, NC, April 2015.

Presented poster "Spatially Variable Surface Enhancement of Ferroelectric Lithographic Nanowires", UNC-Asheville Undergraduate Research Symposium, Asheville, NC, December 2014.

Presented poster "Modeling Fast Radio Bursts in Stellar Coronae", State of North Carolina Undergraduate Research and Creativity Symposium, North Carolina State University, Raleigh,

NC, November 2014.

Selected Outreach Activities

Volunteer, Alien Worlds workshop, Cornell University Expanding Your Horizons program, April 2018.

Volunteer, "Museum In the Dark", Museum of the Earth, Ithaca NY, October 2017.

Ran UNC-Asheville Society of Physics Students scientific outreach workshop, February 2017.

Event leader, Junior Bulldog Program, UNC-Asheville, fall 2016.

"Event Captain" volunteer, North Carolina Science Olympiad, February 2016.

"Event Captain" volunteer, North Carolina Science Olympiad, February 2015.

Assistant volunteer, North Carolina Science Olympiad, February 2014.

Volunteer, Super Saturday enrichment program, UNC-Asheville; fall 2013, spring 2014, and fall 2014.

Computing Experience

Python 3 – extensive usage for scripting in scientific context. Familiar with most common scientific/numeric packages.

Mathematica – extensive usage for coursework, wrote program to assist in fast radio burst research.

LaTeX – extensive usage for coursework, academic writing.

Linux/Unix – familiar with setting up and using several flavors of Linux. Used for both desktop and server applications.

Academic Organizations

Society of Physics Students. Outreach coordinator for UNC-Asheville Chapter.

Sigma Pi Sigma, inducted member (physics honors society).

UNC-Asheville Honors Program.