Carrie R. Nugent
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EDUCATION

Ph.D., University of California, Los Angeles 2013
Geophysics and Space Physics
Dissertation: *"Solar Radiation and Near-Earth Asteroids: Thermophysical Modeling and New Measurements of the Yarkovsky Effect"*

M.S., University of California, Los Angeles 2009
Geophysics and Space Physics

B.S., Bucknell University (Lewisburg, PA) 2006
Physics

POSITIONS

Olin College Faculty, Computational Physics and Planetary Science
Associate Professor May 2022—Current
Assistant Professor August 2018—April 2022
The Franklin W. Olin College of Engineering is a small engineering school focused on educational excellence and equity. It is the #3 undergraduate engineering school in the USA (US News, 2022). I teach a broad range of interdisciplinary courses covering computer science, physics, and astronomy. I developed three new courses, including Astronomy and Statistics which teaches statistical principles using astronomical data. I conduct asteroid discovery research with students and contribute to the growth of the college via serving on committees and leading a student team that transforms unused lawn into wildflower meadows.

Machine Learning Specialist (six month position)
GlobalXplorer (Birmingham, AL) February 2018—July 2018

Staff Scientist
IPAC/Caltech (Pasadena, CA) 2015—2018

NASA Postdoctoral Fellow
Jet Propulsion Laboratory (Pasadena, CA) 2013—2015

AWARDS

Fulbright Scholar, Aalborg University 2024
J. William Mees Visiting Scholar, Lawrence Academy 2022
Carl Sagan Medal for Excellence in Public Communication in Planetary Science 2019
TED Senior Fellow 2018
TV show *Jeopardy* "Daily Double" clue 2018
Alumni Hall of Fame, Mira Costa High School 2017
JPL STAR award, for contributions to the NEOCam Proposal Team 2017
TED Fellow 2016

NASA Group Achievement Award: NEOWISE Science Team	2016
Asteroid named in honor, (8801) Nugent	2014
Collegium of University Teaching Fellows	2011
Nordic-NASA Summer School	2009
Excellence in Teaching Award: Dept. Earth and Space Sciences, UCLA	2008
AAAS Mass Media Fellowship (newspaper reporter, *The Oregonian*)	2008

NOTABLE OUTREACH

Expert, Apollo Academic Surveys Summer 2022

Designed questions, identified experts for a survey of planetary defense experts. Results showed that asteroid discovery needs improvement, that most agree we should not build an asteroid deflection spacecraft before an impactor is discovered, and that scientists wished more people knew an asteroid impact was preventable.

On-screen Expert, *We're All Gonna Die (Even Jay Baruchel)*

90th Parallel Productions Filmed Feb 2020

Asteroid expert for series on existential threats to humanity. Released April 2022, available on Crave.

Panelist, "Bill Nye and Friends vs. the Asteroids" May 2019

Selected to be one of five experts featured in the "Bill Nye and Friends vs. the Asteroids" public event as part of the May 2019 Planetary Defense Conference in Maryland.

Author, *Asteroid Hunters* March 2017

Simon and Schuster

Asteroid Hunters is available in hardcover, e-book, and audiobook in the US, UK, Canada, Australia, and India. Translated into Chinese, Turkish, Portuguese, French, and Hungarian.

Creator and Host, *Spacepod* 2015—present

listentospacepod.com

A relaxed interview podcast, *Spacepod* harnesses the intimate medium of podcasting to communicate not only amazing science, but the interesting and diverse personalities that make up the field. *Spacepod* has had over one million downloads, and has listeners on every continent. Reviews on iTunes are overwhelmingly positive.

Script Writer, Animated Asteroid Discovery Lesson Fall 2017

TED-ed

Partnered with TED-Ed to develop a fun and humorous lesson on asteroid discovery. Wrote script and ensured that every animation was technically accurate by generating simulations that were traced by animator. Over 270,000 views. Watch here.

Speaker, TED Talk February 2016

TED talk on near-Earth asteroids given at annual conference as TED Fellow.

Watch here. Over 1.4 million views, transcripts available in 31 languages.

Proposer, Asteroid Names 2014-present

Proposed asteroid names for extraordinary individuals from communities not well represented in astronomy, particularly women of color. The asteroid 316201 Malala, after Malala Yousafzai, received worldwide press coverage.

FIRST AUTHOR REFEREED PUBLICATIONS

1. C. R. Nugent *et al.*, "Observed Asteroid Surface Area in the Thermal Infrared," *The Astronomical Journal*, vol. 153, p. 90, Feb. 2017
2. C. R. Nugent *et al.*, "NEOWISE Reactivation Mission Year Two: Asteroid Diameters and Albedos," *The Astronomical Journal*, vol. 152, p. 63, Sept. 2016
3. C. R. Nugent *et al.*, "NEOWISE Reactivation Mission Year One: Preliminary Asteroid Diameters and Albedos," *The Astrophysical Journal*, vol. 814, p. 117, Dec. 2015
4. C. R. Nugent *et al.*, "The Yarkovsky Drift's Influence on NEAs: Trends and Predictions with NEOWISE Measurements," *The Astronomical Journal*, vol. 144, p. 75, Sept. 2012
5. C. R. Nugent *et al.*, "Detection of Semimajor Axis Drifts in 54 Near-Earth Asteroids: New Measurements of the Yarkovsky Effect," *The Astronomical Journal*, vol. 144, p. 60, Aug. 2012
6. C. R. Nugent *et al.*, "Colloidal Glass Transition Observed in Confinement," *Physical Review Letters*, vol. 99, p. 025702, July 2007
7. C. R. Nugent, W. M. Quarles, and T. H. Solomon, "Experimental Studies of Pattern Formation in a Reaction-Advection-Diffusion System," *Physical Review Letters*, vol. 93, p. 218301, Nov. 2004

OTHER REFEREED PUBLICATIONS

1. J. Bauer *et al.*, "Planetary Science with Astrophysical Assets: Defining the Core Capabilities of Platforms," *Bulletin of the American Astronomical Society*, vol. 51, p. 477, May 2019
2. J. D. Rosser *et al.*, "Behavioral Characteristics and CO+CO_2 Production Rates of Halley-type Comets Observed by NEOWISE," *The Astronomical Journal*, vol. 155, p. 164, Apr. 2018
3. T. S. Boyajian *et al.*, "The First Post-Kepler Brightness Dips of KIC 8462852," *The Astrophysical Journal Letters*, vol. 853, p. L8, Jan. 2018
4. J. R. Masiero *et al.*, "Small and Nearby NEOs Observed by NEOWISE During the First Three Years of Survey: Physical Properties," *The Astronomical Journal*, vol. 156, p. 60, Aug. 2018
5. J. R. Masiero *et al.*, "NEOWISE Reactivation Mission Year Three: Asteroid Diameters and Albedos," *The Astronomical Journal*, vol. 154, p. 168, Oct. 2017
6. J. M. Bauer *et al.*, "Debiasing the NEOWISE Cryogenic Mission Comet Populations," *The Astronomical Journal*, vol. 154, p. 53, Aug. 2017

7. J. R. Masiero *et al.*, "The Euphrosyne Family's Contribution to the Low Albedo Near-Earth Asteroids," *The Astrophysical Journal*, vol. 809, p. 179, Aug. 2015
8. J. M. Bauer *et al.*, "The NEOWISE-Discovered Comet Population and the CO + CO_2 Production Rates," *The Astrophysical Journal*, vol. 814, p. 85, Dec. 2015
9. T. Grav *et al.*, "NEOWISE: Observations of the Irregular Satellites of Jupiter and Saturn," *The Astrophysical Journal*, vol. 809, p. 3, Aug. 2015
10. J. R. Masiero *et al.*, "Main-belt Asteroids with WISE/NEOWISE: Near-infrared Albedos," *The Astrophysical Journal*, vol. 791, p. 121, Aug. 2014
11. A. Mainzer *et al.*, "Initial Performance of the NEOWISE Reactivation Mission," *The Astrophysical Journal*, vol. 792, p. 30, Sept. 2014
12. A. Mainzer *et al.*, "The Population of Tiny Near-Earth Objects Observed by NEOWISE," *The Astrophysical Journal*, vol. 784, p. 110, Apr. 2014
13. J. M. Bauer *et al.*, "Centaurs and Scattered Disk Objects in the Thermal Infrared: Analysis of WISE/NEOWISE Observations," *The Astrophysical Journal*, vol. 773, p. 22, Aug. 2013
14. J. R. Masiero *et al.*, "Asteroid Family Identification Using the Hierarchical Clustering Method and WISE/NEOWISE Physical Properties," *The Astrophysical Journal*, vol. 770, p. 7, June 2013
15. A. Mainzer *et al.*, "Physical Parameters of Asteroids Estimated from the WISE 3-Band Data and NEOWISE Post-Cryogenic Survey," *The Astrophysical Journal Letters*, vol. 760, p. L12, Nov. 2012
16. J. R. Masiero *et al.*, "Preliminary Analysis of WISE/NEOWISE 3-Band Cryogenic and Post-cryogenic Observations of Main Belt Asteroids," *The Astrophysical Journal Letters*, vol. 759, p. L8, Nov. 2012
17. T. Grav *et al.*, "WISE/NEOWISE Observations of the Jovian Trojan Population: Taxonomy," *The Astrophysical Journal*, vol. 759, p. 49, Nov. 2012
18. A. Mainzer *et al.*, "Characterizing Subpopulations within the near-Earth Objects with NEOWISE: Preliminary Results," *The Astrophysical Journal*, vol. 752, p. 110, June 2012
19. K. V. Edmond, C. R. Nugent, and E. R. Weeks, "Influence of confinement on dynamical heterogeneities in dense colloidal samples," *Physical Review E*, vol. 85, p. 041401, Apr. 2012
20. K. V. Edmond, C. R. Nugent, and E. R. Weeks, "Local influence of boundary conditions on a confined supercooled colloidal liquid," *European Physical Journal Special Topics*, vol. 189, pp. 83–93, Oct. 2010
21. M. S. Paoletti, C. R. Nugent, and T. H. Solomon, "Synchronization of Oscillating Reactions in an Extended Fluid System," *Physical Review Letters*, vol. 96, p. 124101, Mar. 2006

PROFESSIONAL SERVICE

DPS Prize Committee	2023-present
International Astronomical Union, Working Group on Small Bodies Nomenclature	2018-present
Small Bodies User's Group (SMUG)	2019-present
Reviewer, *Icarus*, *The Astronomical Journal*	2013-present
NASA funding review panel member	2013-present
DPS Nominating Committee	2017-2020
MPC User Advisory Committee	2017-2019
Planetary Science with Astrophysics Assets Group	2018
Asteroid Day Expert Panel	2016-2018
Small Bodies Assessment Group member, Human Exploration Goals Document Committee	2015-2016
Science Organizing Committee, NASA Exploration Science Forum	2015

TEACHING

Created courses in bold. Letter after year indicates semester/quarter taught (fall, winter, spring).

Computational Physics 2023s, 2023f
Olin ENGR3599B

Astronomy and Statistics 2019f, 2019s, 2021s, 2022s, 2022f, 2023f
Olin MTH2188A/SCI2199A.

Machine Learning 2021f
Olin ENGR3599A/MTH2199A, 1 of 2 instructors

Software Design 2021s
Olin ENGR2510, 1 of 3 instructors.

Environmental Consulting at Olin 2020s, 2021f
Olin AHSE2599/ENGR3299. 1 of 2 or 3 instructors.

Introduction to Sensors, Instrumentation and Measurement 2019f
Olin ENGR1125, 1 of 4 instructors.

Olin Firefly Project 2019f, 2022f
Olin co-curricular (not for credit).

Quantitative Engineering Analysis 2018f
Olin CIE2018B, 1 of 5 instructors.

Earth without the Moon 2011w
UCLA, through Collegium of University Fellows Program.

27 research students advised.