

Daniel David Sega Neuman
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Theoretical Astrophysicist with +9 years of experience in multidisciplinary research including dynamics of planetary rings, ion energization in the Earth's magnetotail, and Latin American philosophy. Specialized in mathematical modeling, data analysis, and statistical analysis. Extensive experience in scientific outreach and philosophy of science through development of resources and implementation of programs destined for the Latin American public.

Education

- **PhD**, Astrophysics and Planetary Sciences, University of Colorado Boulder, December 2023.
Advisors: Glen Stewart, Bob Ergun, Heather Demarest
Thesis: Two Examples of Modeling in Dynamics and Plasma Physics
- **M.Sc.** Astrophysics and Planetary Sciences, University of Colorado Boulder, May 2020.
- **M.St.**, Philosophy of Physics, University of Oxford, July 2018.
- **B.Sc**, Physics, Minor in Philosophy, Magna Cum Laude, University of Central Florida, May 2017.
- **B.Sc (incomplete)**, Physics, Universidad de Los Andes (Venezuela), September 2012-July 2014.
- **Associate in Arts**, Valencia College, July 2012.

Publications

- Sega, Daniel D.; Stewart, Glen; Colwell, Josh; Duvvuri, Girish; Jerousek, Richard; Esposito, Larry. **The dynamics of self-gravity wakes in the Mimas 5:3 bending wave: modifying the linear theory.** *Icarus*. May 2024.
- Sega, Daniel D. Robert E Ergun. **Turbulent Magnetic Reconnection as an Acceleration Mechanism in the Earth's Magnetotail.** *The Astrophysical Journal*. March 2024.
- Sega, Daniel D. **A Latin American Critique to the Phenomenology of Heidegger and Ricoeur.** Zulia University Press, November 2019. ISBN: 978-980-402-291-3.

Presentations (* Invited)

- **Turbulent Magnetic Reconnection as an Acceleration Mechanism.** Magnetic Multiscale Mission annual meeting. Boulder, CO. May 2023
- ***Gaps in Disks: The Titan 0:-1 Bending Wave and its Implications on Gap Formation on Disks.** College of Astrophysics Colloquium, Universidad de La Plata. April 2023.
- ***Advanced Lectures on Theoretical Physics: Quantum Gravity.** ICTP Physics Without Frontiers Guest Lecturer, Virtual. March 2023,
- **The Motion of Satellite Self-gravity Wakes Under the Effects of Tidal Forces and Shear: a Case Study of the Rings of Saturn.** Division of Dynamical Astronomy, New York, NY. May 2022
- **Interactions within Self-Gravity Wakes and Bending Waves Based on the Mimas 5:3 Bending Wave.** Division of Dynamical Astronomy, Virtual. May 2021.
- **Non-linear Model for the Mimas 5:3 Bending Wave Including Self-gravity Wakes.** American Geophysical Union Fall Meeting, San Francisco CA, December, 2019.
- **Is Cosmic Inflation a Testable Hypothesis?** Foundations of Physics, Utrecht University, July 2018.

- **Structure of the Mimas 5:3 Bending Wave in Saturn's Rings.** DPS meeting, Pasadena, CA 2016

Outreach and Public Engagement

- **Co-Author and Presenter:** "Astronomía Ancestral de América", Fiske Planetarium, 2023.
- **Panelist:** "Being a Latin American in Astrophysics" panel discussion, Cultural Responsiveness & Inclusion Strategic Plan for Boulder County Parks, April 2023.
- **Co-Founder.** Hispanic Outreach at the Planetarium and Observatory (HOFO). Fiske Planetarium, 2022.
- **Co-Founder.** Multiculturalism at the Observatory Bilingual Outreach Program. Sommers-Bausch Observatory, 2020

Leadership and Service

- **Reviewer** the Comprehensive Exam and Core Classes Syllabi for the Astrophysics Graduate Program at the University of Colorado, Boulder, 2020-2023.
- **Head and Organizer.** Peer mentoring program at CU Boulder. *Astropods*, 2018-2022.
- **Head of the Graduate Student Observatory Committee.** Sommers-Bausch Observatory, 2018-2021.
- **REU Mentor.** CU SMART program. 2018.
- **Instructional Designer** for CEVALE2VE, 2019.

Teaching Experience

- Florida State University 2025-current
 - Assistant Professor of Physics:
 - PHY 2048(9)C – Calculus-based Physics I(II)
 - ASTR1002 – Planets, Stars and Galaxies
 - PHI 3400 – History and Philosophy of Science
- University of Colorado, Boulder 2018-2022
 - Teacher Assistant for:
 - AST 1030 – Accelerated Introduction to Astronomy
 - PHIL 5450 – History and Philosophy of Physics
 - Lecturer Teacher Assistant for:
 - AST 1040 – Accelerated Introduction to Astronomy II
- Valencia College, 2014-2016
 - Learning Assistant for:
 - PHY 2053(4)C - College Physics I(II) with Algebra and Trigonometry
 - PHY 2048(9)C - General Physics with Calculus I(II)
 - PHY 1007C - Physics with Medical Applications

Grants, Awards, and Honors

- CU Outreach Grant (\$10k award for a Hispanic outreach initiative). University of Colorado.
- Future Investigators in NASA Earth and Space Science and Technology (\$135k award for PhD candidates). NASA
- Frost Scholarship Programme. University of Oxford.
- Scholars Award. University of Central Florida.
- Orden Luis María Ribas Dávila *for outstanding scholarly achievement at the Physics College. Universidad de Los Andes.*