Nora A. Bailey, PhD
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An experienced scientist, writer, and leader with a broad range of experience and a passion for science, mathematics, and learning.

Education/Training:

Ph.D., Astronomy and Astrophysics, University of Chicago, Chicago, IL
- Thesis: "Planet-Planet Interactions in Exoplanet Systems"

B.S., Physics (Astrophysics track), United States Naval Academy, Annapolis, MD
- With merit; 3.92 GPA (4.0 in major)
- Minor: Spanish Language Study

Selected Experience:

Teaching/Research Assistant, Astronomy and Astrophysics, 2017 – 2022
University of Chicago, Chicago, IL
Conducted cutting edge research in the field of extrasolar planets, particularly related to the physical dynamics of planetary systems via computer simulations. In addition, completed full course load in general astronomy and astrophysics topics. Published four first-author papers, gave five scientific talks, presented three conference posters, and provided teaching support for three undergraduate courses and lectured for one undergraduate course.
- Python, GitHub, Linux, high-performance computing cluster
- Data generation, management, and visualization

Associate, Project Management/Systems Engineering, 2014 – 2017
Booz Allen Hamilton, San Diego, CA, Charleston, SC
Utilized creative problem solving to assist clients in optimization and planning and provided unparalleled program management and technical support to Navy/DoD clients, including the Space and Naval Warfare Chief Engineer and the Commercial Broadband Satellite Program, the Navy program of record for commercial satellite access. Managed a multi-million dollar annual budget. Created top quality deliverables, including spreadsheets, white papers, and briefs, and provided rigorous analysis to key challenges facing clients.

Certified as a **Nuclear Engineer Officer** by the Departments of Energy and Defense, 2014
- ➔ One of 3 NEOs to be recognized by Naval Reactors (Admiral John M. Richardson) as excellent during examination.

Skills/Tools:

Python (Matplotlib, Numpy, Pandas, Seaborn, emcee), Jupyter Notebooks, Excel, Data Analysis, Data Visualization, GitHub, SQL, Jira, LaTeX, PhotoShop, PowerPoint

Additional Experience/Education:

Public Engagement Specialist, 2022 – 2023
Jet Propulsion Laboratory, Pasadena, CA
Primary communications point person for NASA's Exoplanet Exploration program.

Science Communicator, 2020 - present
Nora's Guide to the Galaxy
Content creator in the areas of space, astronomy, science, and women in STEM for an audience of 37k+ followers plus additional freelance science communication work for clients.

Video Creator, 2021-2022
Khan Academy
Physics and space science educational videos for middle school and high school audiences.

Reactor Mechanical Division Officer, 2012 – 2014
United States Navy, USS Carl Vinson, CVN 70, San Diego, CA
Led a division of 20+ personnel responsible for the primary systems of an A4W nuclear reactor.

Combat Information Center Officer/Fire Control Officer/Public Affairs Officer, 2009 – 2011
United States Navy, USS Green Bay, LPD 20, San Diego, CA
Led 30+ personnel in performance of operational duties.
- ➔ Ranked first amongst peer group.

Accounting Certificate, 2016
University of California San Diego Extension, San Diego, CA
- ➔ Completed with 98% average.

Navy Prototype School, 2012
United States Navy, Charleston, SC
- ➔ Graduated #1 in class.

Navy Nuclear Power School, 2011
United States Navy, Charleston, SC
- ➔ Graduated #2 in class.

Research Publications:

Ji, X., **Bailey, N.**, Fabrycky, D., et al. "Inner Habitable Zone Boundary for Eccentric Exoplanets" 2023, ApJL, 943, L1

Bailey, N., & Fabrycky, D. "Relative Habitability of Exoplanet Systems with Two Giant Planets" 2022, MNRAS, 514, 4765

Bailey, N., Gilbert, G., & Fabrycky, D. "Period Ratio Sculpting near Second-order Mean-motion Resonances" 2022, AJ, 163, 13

Bailey, N. & Fabrycky, D. "Nodal Precession in Closely Spaced Planet Pairs" 2020, AJ, 159, 217

Bailey, N. & Fabrycky, D. "Stellar Flybys Interrupting Planet-Planet Scattering Generates Oort Planets" 2019, AJ, 158, 94