Kristin Hoch

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EDUCATION

University of Maryland, College Park, MD   **August 2023 - Present**
PhD student in Neuroscience and Cognitive Science (NACS)
Graduate assistant in the Language Development and Perception Laboratory working under Dr. Rochelle Newman

University of Maryland, College Park, MD   **August 2022 - May 2023**
Non-degree student
Graduate coursework in psycholinguistics and cognitive science

University of New Mexico, Albuquerque, NM   **August 2020 - December 2020**
Non-degree student
Undergraduate coursework in psychology, linguistics and statistics

St. John's College, Santa Fe, NM   **Graduated May 2016**
Bachelor of Arts, Liberal Arts
Interdisciplinary all-required curriculum in philosophy, language, literature, history, mathematics, and science. Classes focus on reading original texts, discussion, written work, and oral examinations.

- Liberal Arts degree equivalent to:
    - Double major in Philosophy and History of Mathematics and Science
    - Double minor in Classical Studies and Comparative Literature
- Faculty Award for Sustained Academic Excellence
- GPA: 3.96
- Senior thesis: *Remaking the Cosmos: Time, Space, and Thought Experiments in Einstein's Physics*
- Laboratory Assistant for senior classes in biology and physics

RESEARCH EXPERIENCE

Post Bachelors Student   **September 2018 - August 2020**
Los Alamos National Laboratory - E3SM (Energy Exascale Earth System Model)

- Worked on computational simulations of ocean and climate dynamics using the Department of Energy's earth system model (E3SM)
- Collaborated with other E3SM researchers to study climate modeling grids, Antarctic ice/ocean interactions, and Gulf Stream dynamics
- First author on a paper on the effects of grid size and regularity on Gulf Stream dynamics in computational ocean models
- Presented research at conferences, workshops, and project-wide E3SM meetings

Summer Student   **Summers of 2015, 2016 & 2018**
Los Alamos National Laboratory - XTD-IDA

Summer 2018
- Collaborated on a video submission for a supercomputing conference on the formation of water in the early universe
- Improved skills in data visualization and scientific communication, with a focus on presenting clear representations of massive, multidimensional datasets

Summer 2016
- Wrote a manual for future students that covered topics in cosmology, and how to run, analyze and visualize cosmology simulations

Summer 2015
- Acquired scientific computing skills in Python, Linux, data visualization, and modeling using supercomputing systems
- Ran simulations of galaxy formation in two models, focusing on their divergent behavior

Publications & Conference Presentations

- Hoch, K. E., Petersen, M. R., Brus, S. R., Engwirda, D., Roberts, A. F., Rosa, K. L., Wolfram, P. J. (2020, February 26). MPAS-Ocean simulation quality for variable-resolution North American coastal meshes. *Journal of Advances in Modeling Earth Systems*, 12, e2019MS001848. https://doi.org/10.1029/2019MS001848

- Hoch, K. E., Petersen, M. R., Brus, S. R., Engwirda, D., Roberts, A. F., Rosa, K. L., Wolfram, P. J. (2020, February 20). *MPAS-Ocean Simulation Quality for Variable-Resolution North American Coastal Meshes.* [Conference Poster]. Ocean Sciences Conference, San Diego, CA.

- Hoch, K. E., Petersen, M. R., Brus, S. R., Engwirda, D., Roberts, A. F., Rosa, K. L., Wolfram, P. J. (2019, September 26). *MPAS-Ocean Simulation Quality for Variable-Resolution North American Coastal Meshes* [Conference presentation]. IMUM (International workshop on Multi-scale Unstructured mesh numerical Modeling for coastal, shelf, and global ocean dynamics), Santa Fe, NM.

- Hoch, K. E., Petersen, M. R., Brus, S. R., Engwirda, D., Roberts, A. F., Rosa, K. L., Wolfram, P. J.(2019, March 20). *Variable-Resolution Mesh Characterization for North American Coastal Simulations with MPAS-Ocean* [Conference presentation]. E3SM All Hands Meeting, Denver, CO.

- Smidt, Joseph, Wiggins, Brandon, Samsel, Francesca, Hoch, Kristin, Abram, Gregory, Jones, Sam, Gagliano, Alex, Taylor, Morgan. (2018, November). *The First Water in the Universe* [Conference video], Supercomputing, Dallas, TX.

TECHNOLOGY SKILLS

- Scientific data analysis and visualization
- Programming in Python and Fortran
- Scientific modeling on supercomputing systems
- Command line Linux systems
- Latex

OTHER EMPLOYMENT

Tutor   **October 2021 - August 2023**
C2 Education, Bethesda, MD

- Tutored high school students in SAT/ACT prep, AP/IB coursework, and general academic skills

- Prepared lessons for students in literacy, mathematics, English, history and science

Early Childhood Educator   **August 2017 - June 2018**
Rio Grande School, Santa Fe, NM

- Provides classroom support and after school care for students in the early childhood program

- Prepared educational activities in science, number sense, literacy, physical education and art for early childhood students

Tutor   **March 2017 - May 2018**
A+ Academic Coaching, Santa Fe, NM

- Tutored students from fourth grade through college in math, English, and science

- Prepared and taught daily math and science lessons to home schooled forth grade students

Tutor   **January 2014 - May 2017**
Breakthrough Santa Fe, Santa Fe, NM

- Worked for a non-profit that provides academic support for students who will be the first in their family to attend college

- Tutored students in math, English, history, science and academic skills

Lab Assistant   **August 2015 - May 2016**
St. John's College, Santa Fe, NM

- Prepared, demonstrated and taught all of the laboratory work for a senior laboratory class in physics (electromagnetism and atomic physics) and biology (genetics and ecology)

- Collaborated with faculty members, students, laboratory assistants and the laboratory director to maintain laboratory space, develop lessons and prepare experiments