

ZANE KARAS MARTIN, PH.D.

NSF POST-DOCTORAL RESEARCH FELLOW, COLORADO STATE UNIVERSITY

Web: www.zanekmartin.com | Publications: [Google Scholar](#)

EXPERIENCE

Post-doctoral Research Fellow

Colorado State University

June 2020 - Present

- Lead original scientific research using machine learning and artificial intelligence tools to make sub-seasonal weather & climate predictions, focusing especially on Earth's tropical atmosphere
- Awarded competitive National Science Foundation fellowship (\$190K) based on original, peer-reviewed proposal
- Independently manage multiple ongoing research projects, including with many collaborators across institutions
- Communicate results through scientific talks and peer-reviewed publications in high-impact journals
- Peer-review articles | Attend & organize scientific conferences | Aid in developing & writing scientific grants

Graduate Research Fellow | Graduate Teaching Assistant

Columbia University

August 2015 - June 2020

- Carried out Ph.D. research studying Earth's tropical atmosphere using primarily numerical climate models
- Awarded competitive NASA Graduate Fellowship (\$45K/yr) to carry out independently-developed research agenda
- Lectured, tutored, and aided in grading several applied math graduate and undergraduate courses (3 semesters)
- Published research in leading journals | Participated in 15+ scientific conferences | Assisted with 2 field campaigns

Senior Legal Assistant

Sanford Heisler Sharp, LLP

August 2013 - August 2015

- Provided administrative support, managed client relations, and drafted legal documents at a civil rights law firm

Undergraduate Researcher

Williams College

Summer 2012, 2012-13 Academic Year, Summer 2013

- Carried out summer research and a senior honors thesis in mathematics on optimal tiling problems

TOOLS & SKILLS

Quantitative and Technical Skills

- Scientific coding in Python (5+ years), with focuses on:
 - data analysis and statistics (e.g. numpy, scipy, pandas, xarray, dask)
 - machine learning (e.g. keras/tensorflow, scikit-learn, innvestigate, kerastuner)
 - data visualization (e.g. matplotlib, seaborn)
- Exceptional quantitative and statistical skills processing, analyzing, and visualizing large, complex datasets
- Expertise developing, training, and analyzing neural networks and other statistical models with climate applications
- Experience applying and researching explainable artificial intelligence methods, focusing on climate applications
- Ability to run, analyze, and understand a range of state-of-the-art numerical climate models
- Proficient in Matlab, Fortran, Linux, git, NCO/CDO. Experience in high-performance computing environments

Communication Skills

- Published 17 peer-reviewed scientific articles in high-impact journals, including *Nature Reviews*. Outlined, drafted, and edited manuscripts. Responded to peer-reviewed critiques as both a lead and co-author
- Developed publication-quality figures to craft coherent stories and visualize complex results of data analysis
- 40+ scientific talks, nationally and internationally, to a range of technical and non-specialist audiences. Received multiple "outstanding presentation" awards from professional societies and invited lectures/seminars
- Additional scientific outreach, science policy, and scientific communication training through Sustainability Leadership Fellow program (Colorado State University, 2020-2021)

Project Management Skills

- Independently manage multiple research projects simultaneously across diverse groups of coauthors world-wide
- Self-motivated; able to set and meet internal deadlines to ensure effective, timely dissemination of research results
- Experience managing and mentoring a junior scientist (e.g. an undergraduate intern) on an original research project

EDUCATION

Columbia University in the City of New York

Ph.D. | M.Phil. | M.Sc. in Applied Mathematics and Atmospheric Science | GPA: 4.04

New York, NY

May 2020

Williams College

B.A. with Honors in Mathematics | Magna Cum Laude, Phi Beta Kappa | GPA: 3.89

Williamstown, MA

Class of 2013

Oxford University

Williams-Exeter Program at Oxford

Oxford, England

2011-2012 Academic Year