Nicole Keeney

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SUMMARY

Fast learning, detail-oriented climate data scientist with a background in computational earth science research. Highly qualified with python data science modules for visualization, wrangling, and statistical analysis of climate model and remote sensing data.

EDUCATION

Colorado State University Fort Collins, CO
M.S. candidate in Hydrologic Science & Engineering August 2023 – present

University of California at Berkeley Berkeley, CA
B.A. in Atmospheric Science, Departmental Honors 2020

- Senior thesis*: Evaluation of a simple parameterization of the Evaporative Stress Index using FLUXNET data and a planetary boundary layer model* (advised by Prof. Dennis Baldocchi)

PROFESSIONAL EXPERIENCE

Eagle Rock Analytics Sacramento, CA
Scientific Developer (remote, part-time) May 2024 – present
Junior Atmospheric Scientist (remote) June 2022 – August 2023

- Developing open source python code (a collection python notebooks and a related python package: climakitae) for the Cal-Adapt: Analytics Engine, a cloud-based climate data analytics platform for California's energy sector.

School of Public Health at the University of California, Berkeley Berkeley, CA
Junior Specialist (half-time) Jan 2021 – Feb 2022
Undergraduate Student Researcher Oct 2020 – Dec 2020

- Calibrated a wind erosion model in California using remote sensing-derived vegetation data.
- Performed data extractions and zonal statistics using python and R for various environmental datasets used in public health studies utilizing a high performance computing environment.

University of Maryland / NASA Goddard Space Flight Center Greenbelt, MD
Faculty Research Assistant (half-time, remote) Jan 2021 – Jan 2022
NASA Summer Intern (remote) June 2020 – Aug 2020

- Built an interactive Jupyter Book (a collection of python notebooks) to evaluate drivers of winter Arctic sea ice growth using gridded data from NASA's ICESat-2 satellite.
- Contributed to the development of a cloud-optimized python toolkit to streamline polar climate model validation using satellite data. Project emphasized interactive plotting techniques and data management with Google Cloud.

University of California, Berkeley, College of Natural Resources Berkeley, CA
Undergraduate Student Researcher Oct 2019 – Dec 2020

- Utilized eddy covariance flux measurements and a planetary boundary layer model to evaluate a drought index using python data science packages. Research contributed to my undergraduate honors thesis and a related publication.

PUBLICATIONS

Weaver, A., **Keeney, N.,** Head, J., Heaney, A., Camponuri, S., Collender, P., Bhattachan, A., Okin, G., Eisen, E., Sondermeyer-Cooksey, G., Yu, A., Vugia, D., Jain, A., Balmes, J., Taylor, J., Remais, J., Strickland, M. (2025), "Estimating the exposure-response relationship between fine mineral dust concentration and coccidioidomycosis incidence using speciated particulate matter data: A longitudinal surveillance study", *Environmental Health Perspectives*, doi:10.1289/EHP13875.

Petty A. A., **Keeney, N.**, Cabaj, A., Kushner, P., Bagnardi, M. (2023), "Winter Arctic sea ice thickness from ICESat-2: upgrades to freeboard and snow loading estimates and an assessment of the first three winters of data collection", *The Cryosphere*, doi:10.5194/tc-17-127-2023.

Baldocchi, D., **Keeney, N.**, Rey-Sanchez, C., and Fisher, J. (2021), "Atmospheric Humidity Deficits Tell Us How Soil Moisture Deficits Down-Regulate Ecosystem Evaporation", *Advances in Water Resources*, doi:10.1016/j.advwatres.2021.104100.

CONFERENCE PRESENTATIONS

Keeney, N., Petty, A., Simon, E., Andrews, L., Parker, C., Medley, B., and Boisvert, L. (2021). A Cloud Based Python Toolkit for Streamlining Polar Climate Model Assessments. *American Geophysical Union Fall Meeting*. [oral, virtual]

Bhattachan, A., **Keeney, N**., Zhou, B., and Okin, G. (2021). Calibration of a Wind Erosion and Dust Emission Model using Continental-Scale Geospatial Soil and Vegetation Datasets. *American Geophysical Union Fall Meeting*. [poster, virtual]

Keeney, N. and Petty, A. (2020). New Estimates of Winter Arctic Sea Ice Growth from NASA's ICESat-2. *American Geophysical Union Fall Meeting*. [poster, virtual]