SAM D. FAULSTICH

RESEARCH INTERESTS

Atmospheric rivers, aerosol from wildfires, fire emissions inventories, modeling smoke plumes, atmospheric transport of aerosol, air quality modeling, air quality sensing, remote sensing.

EDUCATION

UNIVERSITY OF UTAH – PHD CHEMICAL ENGINEERING, EXPECTED MAY 2024.
Advised by Dr. Heather A. Holmes.

UNIVERSITY OF NEVADA, RENO – MS ATMOSPHERIC SCIENCE, AUGUST 2021.
Advised by Dr. Heather A. Holmes. "Evaluating Fire Emissions Inventories to Model Smoke Exposure in the Western United States"

UNIVERSITY OF NEVADA, RENO – BS PHYSICS, BS ATMOSPHERIC SCIENCE, MINOR IN MATHEMATICS, DECEMBER 2018.
Advised by Dr. W. Patrick Arnott + Dr. Michael Kaplan. "A Case Study of two Atmospheric River Events on the West Coast of the United States in 2017"

JOURNAL ARTICLES

JANUARY 2023.
Anna M. Murveit, Sonia Delphin, Carlie Domingues, Shawn D. Bourque , **Sam D. Faulstich,** Gregg M. Garfin, Nancy Huntly, Alison M. Meadow, Vikki Preston. Stories as Data: Indigenous Research Sovereignty and the "Intentional Fire" Podcast. *Environment and Planning F – Indigenous Research Sovereignty special issue.* https://doi.org/10.1177/26349825221142293

FEBRUARY 2022
Sam D. Faulstich, A. Grant Schissler, Matthew J. Strickland, and Heather A. Holmes. 2022. "Statistical Comparison and Assessment of Four Fire Emissions Inventories for 2013 and a Large Wildfire in the Western United States." *Fire* 5 (1): 27. https://doi.org/10.3390/fire5010027

EXPERIENCE

GRADUATE RESEARCH ASSISTANT, UNIVERSITY OF UTAH; SALT LAKE CITY, UT – 2021 - PRESENT.
PhD candidate. Advised by Dr. Heather A. Holmes in the Chemical Engineering department. Research on atmospheric dispersion of wildfire smoke.

TEACHING ASSISTANT, UNIVERSITY OF UTAH; SALT LAKE CITY, UT – 2023
Instructor in charge, applied atmospheric modeling laboratory. One combined graduate/undergraduate section, 8 students.

GRADUATE RESEARCH ASSISTANT, UNIVERSITY OF NEVADA, RENO; RENO, NV – 2019 - 2021.
Advised by Dr. Heather A. Holmes in the Atmospheric Sciences wing of the Physics department.

GRADING ASSISTANT, UNDERGRADUATE PHYSICS CLASSES. UNIVERSITY OF NEVADA, RENO; RENO, NV – 2020 - 2021

TEACHING ASSISTANT, UNIVERSITY OF NEVADA, RENO; RENO, NV – 2019
Instructor in charge, general physics laboratory II. Two sections, 60 students.

RESEARCH

EPIDEMIOLOGICAL STUDY; 2019 – PRESENT
Interdisciplinary NIH project on determining human health effects from wildfire smoke.

LANDSCAPE SCALE DISTURBANCES; 2020-2021

An interdisciplinary study on the recovery of ecosystems after landscape-scale disturbances. Incorporated Traditional Ecological Knowledge + Indigenous storytelling as a form of data into an analysis of how land management impacts landscape recovery after large fires.

ATMOSPHERIC RIVERS; 2018

A case study of two atmospheric rivers, one that included potential impacts of aerosol from a wildfire.

RESEARCH SKILLS

Computing: HYSPLIT, R, Linux, Python, bash shell scripting, supercomputing, LaTeX, C++, Matlab.
Managing interdisciplinary research projects. IRB process. Ethically collaborating with Indigenous communities.

PRESENTATIONS

"Keynote Talk: Leveraging the Edge-Cloud Continuum to Manage the Impact of Wildfires on Air Quality" Daniel Balouek-Thomert, Ismael Perez, **Sam D. Faulstich**, Heather A Holmes, Ilkay Altintas, Manish Parashar. IEEE International Conference on Pervasive Computing and Communications - Cloud2Things Workshop. Peer reviewed conference paper.

"Integrating Fire Emissions Inventories and Atmospheric Dispersion Models to Improve Smoke Exposure Estimates" **Sam D. Faulstich**, Matthew J. Strickland, Heather A. Holmes. American Geophysical Union, Fall 2022. Poster.

"Dispersion Modeling to Estimate Wildfire Smoke Transport Over Mountainous Terrain in the Western United States." **Sam D. Faulstich**, Heather A. Holmes. American Meteorological Society Mountain Meteorology Conference, June 2022. Presentation.

"Dispersion Modeling to Estimate Wildfire Smoke Transport During the Yosemite Rim Fire." **Sam D. Faulstich**, Heather A. Holmes. Air Quality: Science for Solutions Conference, April 2022. Poster.

"Evaluating Fire Emissions Inventories in the Western U.S. With the Development of a Bayesian Model." **Sam D. Faulstich**, Xia Sun, A. Grant Schissler, Matthew J. Strickland, Heather A. Holmes. Community Modeling and Analysis System Conference, October 2020. Virtual presentation.

"Evaluating Fire Emissions Inventories for Modeling Smoke Transport in the Sierra Nevada Mountains." **Sam D. Faulstich**, Xia Sun, Matthew J. Strickland, Heather A. Holmes. American Geophysical Union Conference, December 2019. Poster.

"Modeling Wildfire Smoke Exposure from the 2013 California Rim Fire Using CMAQ and HYSPLIT." Xia Sun, Cesunica Ivey, **Sam D. Faulstich**, Matthew J. Strickland, Heather A. Holmes. American Geophysical Union Conference, December 2019. Poster.

AWARDS

Wilkes Center for Climate Science & Policy Travel Award, Fall 2022.
E.B. Christiansen Endowed Fellowship, University of Utah College of Engineering, Fall 2021.
Fellowship, Southwest Climate Adaptation Science Center Natural Resources Workforce Development Fellowship. September 2020 - September 2021
Scholarship recipient, Air & Waste Management Association, Easter Sierra Chapter. June 2020.
Second place, Introduction to Bayesian Statistics Poster Competition, May 2020. Presented a poster titled "Evaluating Fire Emissions Inventories for Modeling Smoke Transport in the Sierra Nevada Mountains Using Bayesian Statistics."

AFFILIATIONS

American Geophysical Union; American Meteorological Society; American Physics Society; Air & Waste Management Association, Eastern Sierra Chapter; Climate Adaptation Science Center, South West Chapter