

Education

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| PhD Statistics, Colorado School of Mines, GPA 4.00 | (in progress) |
| M.S. Statistics, Colorado School of Mines, GPA 4.00 | 2021 |
| B.S. Engineering Physics, Colorado School of Mines, GPA 3.99 | 2019 |

Research Projects

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| Monitoring Methane Emissions from Oil and Gas Operations | Apr 2020 - Present |
| <i>Colorado School of Mines, Department of Applied Mathematics and Statistics</i> | |

- Working on a variety of projects broadly seeking to more completely and accurately monitor methane emissions from the oil and gas industry.
- Developed a framework for emission detection and localization using continuous monitoring data.
- Created an empirical Bayesian hierarchical model to estimate daily methane fields on a very fine grid with uncertainty using coarsely “pixelated” satellite observations.

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| Modeling Atmospheric Carbon Monoxide | Aug 2019 - Present |
| <i>Colorado School of Mines, Department of Applied Mathematics and Statistics</i> | |

- Used lagged multiple linear regression to model atmospheric carbon monoxide from climate indices.
- Implemented a regularization method that preserves hierarchical model structure between main effects and interaction effects.
- Created a framework to highlight the optimally performing models over a range of complexities.

Selected Publications and Presentations

1. Jiayang (Lyra) Wang, **William S. Daniels**, Dorit M. Hammerling, Matthew Harrison, Kaylyn Burmaster, Fiji C. George, Arvind P. Ravikumar. Multi-scale methane measurements at oil and gas facilities reveal necessary framework for improved emissions accounting. *ChemRxiv*, doi:10.26434/chemrxiv-2022-9zh2v, (2022).
2. **William S. Daniels**, Rebecca R. Buchholz, Helen M. Worden, Fatimah Ahamad, Dorit M. Hammerling. Interpretable models capture the complex relationship between climate indices and fire season intensity in Maritime Southeast Asia. *Journal of Geophysical Research: Atmospheres*, 127, e2022JD036774, 10.1029/2022JD036774, (2022).
3. **William Daniels**, Meng Jia, Dorit Hammerling, Shyla Kupis, Nasr Alkadi, Anna Scott. Leveraging multiple continuous monitoring sensors for emissions alerting on oil and gas facilities. *AGU Fall Meeting*, (2021).
4. **William Daniels**, Dorit Hammerling, Rebecca Buchholz. regClimateChem: An R package for data driven variable selection applied to atmospheric carbon monoxide. *NCAR Technical Notes* (No. NCAR/TN-562+STR), doi:10.5065/e8xj-3k89, (2020).

Academic Achievements

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| Fellowships | Harvey Graduate Fellowship | 2019 - 2021 |
| | Mines Undergraduate Research Fellowship | 2017 - 2018 |
| Selected Awards | Highly Commended poster, IGAC Science Conference | 2021 |
| | Best Talk in Environmental Science Session, Mines GRADS | 2020 |
| | Mines Physics Department Distinguished Graduate | 2019 |
| | Outstanding Presentation Award, APS April Meeting | 2019 |