

Nicholas M. Geyer

640 Albany Ave.
Loveland, CO 80537

nmg5038@gmail.com | (970) 631-7393
www.linkedin.com/in/nicholasgeyer | nmg5038.github.io

- KEY SKILLS** ♦ **Computational (Experienced):** R, MATLAB, Python, Java, FORTRAN (77 - 00), C++, IDL, NCL, PERL, Linux, MacOSx, DOS, Git, Subversion, MS Office, LaTeX
- ♦ **Computational (Basic):** CSS, PHP, Javascript, SQL
- ♦ **Math and Science:** Differential Calculus, Bayesian Statistics, Numerical Modeling, Machine Learning
- EDUCATION** ♦ **Doctor of Philosophy in Atmospheric Science** (September 2018-Present)
Colorado State University, Fort Collins, CO
- ♦ **Master of Science in Atmospheric Science** (May 2015)
Colorado State University, Fort Collins, CO
Master's project: *Time-Filtered Inverse Modeling of Land-Atmosphere Carbon Exchange*.
- ♦ **Bachelor of Science in Meteorology with Option in Atmospheric Science** (December 2011)
The Pennsylvania State University, State College, PA
- RESEARCH PROJECTS** ♦ **Research Associate**, Colorado State University (August 2018 – November 2020)
Principal Investigators: A.S. Denning and Ken Davis
Topic: Carbon Dioxide Distribution Implications using Explicit Convective Transport in A Climate Model
- Implemented a tracer transport methodology within Cloud Resolving Models for use in the CESM2
 - Found that multiscale global models more have a significantly different global transport realization than traditional global models
 - Utilized satellite, in-situ, and airborne measurements to validate new tracer transport parameterization behavior at synoptic scales
- ♦ **Research Associate**, Colorado State University (May 2015 – August 2018)
Principal Investigators: A.S. Denning and A.E. Schuh
Topic: Statistical Inversions Using Satellite Observed Carbon Dioxide and Solar Induced Fluorescence
- Created a new framework capable estimating terrestrial constituent exchange by using Bayesian inversions and mechanistic models
 - Built a robust orthogonal regression scaling between plant assimilation and satellite-observed solar plant fluorescence
 - Found that the technique produces more robustly accurate estimates of terrestrial carbon dioxide
- ATMOS. SCIENCE WORK EXPERIENCE** ♦ **Associate Scientist II**, Aeris LLC, Louisville, CO (December 2020 – June 2021)
- Analyzed and validated output from several dispersion and LES models to create new products for clients needs regarding weather and climate.
 - Implemented GPU-based methods to increase efficiency of large eddy simulations in both resolution and size.
 - Assisted in the develop model interfaces for operational products used by the U.S. Department of Defense
- ♦ **Founder**, Geyer's Weather Forecasts, Fort Collins, CO (September 2008 – December 2020)
- Synthesized METAR, Skew-T, operational weather model, and weather station data to produce daily forecasts
 - Leveraged social media (Facebook, Twitter, etc.) to distribute forecasts over 100 followers
 - Gained useful experience in enterprise forecasting, communication and pattern recognition
- ♦ **Graduate Research Assistant**, Colorado State University (May 2011 – May 2015)
Thesis Research: *Time-Filtered Inverse Modeling of Land-Atmosphere Carbon Exchange*
- Developed a new statistical method for estimation of land-based carbon sources and sinks using harmonics
 - Found the performance of the algorithm to be more accurate and robust than other modern day estimation techniques
 - Strengthened skills in modeling, statistical filtering, data analysis, scientific communication and teamwork
- COMPUTING WORK EXPERIENCE** ♦ **Intern**, Center for Multiscale Modeling of Atmospheric Processes, Fort Collins, CO (Summer 2010)
- Analyzed various atmospheric data products in IDL and PYTHON for use in a model intercomparison project
 - Initiated a complete overhaul of the atmospheric model design by debugging the model's code
- HONORS** Chi Epsilon Pi National Honors Society, National Honors Society, Eagle Scout Rank, Order of the Arrow (B.S.A.)
- LEADERSHIP AND ACTIVITIES** ♦ **Member**, American Geophysical Union (August 2015 – Present)
- ♦ **Assistant Instructor**, CSU Judo (September 2011 – Present)
- Taught of about 10 new college-aged students about playing judo and fitness 2 times per week every semester
- ♦ **Assistant Instructor**, ISKF of CSU & Fort Collins Shotokan Karate (September 2011 – Present)
- Helped to teach over 30 from children to adults karate 2 or 3 times per week.
- ♦ **Associate Advisor**, B.S.A. Venture Crew 12, Fort Collins, CO (May 2011 – Dec 2016)
- Helped about 20 co-ed young adults develop interpersonal and survival skills