

# Nicholas M. Geyer

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- 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 – Present)  
Principal Investigators: A.S. Denning and Ken Davis  
Topic: Carbon Dioxide Distribution Implications using Explicit Convective Transport in A Climate Model
- ◇ **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** ◇ **Founder**, Geyer's Weather Forecasts, Fort Collins, CO (September 2008 – Present)
- 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 models code
  - Communicated findings via a scientific talk and a poster regarding work at two scientific conferences
- ◇ **Intern**, Arctic Region Supercomputing Center, University of Alaska, Fairbanks, AK (Summer 2009)
- Designed a Quality Assured/Quality Control protocol for use with regional weather observations of Alaska
  - Self-taught coding, multi-processing (MPI) and spatial frequentist statistics for big data problems
  - Submitted both a scientific talk and a report designed for non-meteorologist software scientists and engineers
- 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.
- ◇ **Alumni Advisor**, Theta Chi Fraternity, Colorado State University (May 2011 – Dec 2016)
- Helped to found and advise operations of a new chapter of organization at the Colorado State University.
- ◇ **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