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 Statisitics, 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 2010)
  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 Fluoresence
  - 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 fluoresence
  - 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
  - Levereged 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