http://cgrudz.github.io Colin Grudzien cgrudz@gmail.com

EXPERIENCE

Nansen Environmental and Remote Sensing Center – Postdoc Aug. 2016 – Present
Bergen, Norway

- Developing dimensional reduction methodology for Bayesian data assimilation in physical systems to produce novel prediction techniques.
- Constructing an innovative algorithmic framework for big data in complex physical problems.

Math and Climate Research Network – Cyber-infrastructure Volunteer Oct. 2014 – Present
https://mcrn.hubzero.org/

- Maintaining educational and research oriented resources on the MCRN to promote scientific literacy and broader impacts with MCRN products.

Los Alamos National Laboratory – Graduate Research Assistant June 2015 – Aug. 2015
Los Alamos, NM

- Worked in an interdisciplinary team of engineers, physicists, and computer scientists to produce a reduced dimensional model for electric grid transmission.
- Utilized Javascript libraries and Matlab data structures to design reduction and visualization algorithms for large network data sets.

EDUCATION

PhD Mathematics – **Applied Dynamical Systems** Aug. 2011 **–** May 2016
University of North Carolina at Chapel Hill – Chapel Hill, NC

- UNC Off Campus Dissertation Fellowship, 2015-2016
- Future Faculty Fellowship Program – Center for Faculty Excellence, 2013

B.S. Magna Cum Laude, Mathematics and History April 2006 – June 2011
College of Arts and Sciences, University of Oregon – Eugene, OR

- Oregon Six Elect, 2010-2011
- Phi Beta Kappa, 2010-2011
- Lane Community College Transfer credit, April 2006 – June 2008

LANGUAGES

- Python, Matlab, LaTeX (Proficient)
- Bash, JavaScript, HTML & CSS (Novice)
- Spanish Limited Working Proficiency

PAPERS

- *Degenerate Kalman filter error covariances and their convergence onto the unstable subspace*, SIAM/ ASA Journal on Uncertainty Quantification 2016
- *Rank deficiency of Kalman error covariance matrices in linear time-varying system with deterministic evolution*, SICON 2016
- *Geometric Phase in the Hopf Bundle and the Stability of Non-linear Waves,* Physica D 2016
- *Instability of the Hocking-Stewartson Pulse and its Geometric Phase in the Hopf Bundle*, JCAM 2016