

## **Dani Bundy Coleman**

Associate Scientist III

Atmosphere Modeling and Prediction Section, Climate and Global Dynamics Division

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### **Education**

M.S. Applied Mathematics    University of Colorado    2000

B.S. Applied Mathematics    University of Colorado    1997

### **Scientific Interests**

Climate modeling, Software design

### **Technical Experience**

Fortran 90, Fortran 77 C, Shell scripting, Python, XML, HTML, Yorick, NCL, IDL, Matlab, Mathematica, OpenMP, MPI, Subversion, CVS, on: Unix, Linux, AIX, SunOS.

### **Professional Experience and Employment**

Associate Scientist III, National Center for Atmospheric Research (2000-present)

Provides scientific support for the use, diagnosis, and development of global numerical models of the atmosphere. Participates in the analysis of model results and observational data with the goal of improving the understanding of the climate system.

Develops computer programs for scientific research. Runs models (CESM, CCSM CAM), and analyze results of climate and chemical transport simulations. Assists in the software development and validation of computer programs on a variety of computer environments (workstations, Linux Clusters, and supercomputers). Optimizes and debugs codes for parallel computer environments.

Assists scientific staff, students, visitors, collaborators and model users with obtaining, modifying and executing models, and analyzing output. Manages development branches of model source code, coordinating efforts from all developers while keeping up-to-date with the main development efforts.

Writes tutorials and presents lectures in workshops on model use. Assists during tutorials on all model components. Develops web pages describing model use and model simulations for collaborative projects.

Intern, NSF Summer Institute in Japan, Tokyo Institute of Technology (Summer 2000)

Numerically modeled free-standing ferroelectric liquid crystal films in a rotating electric field to verify cause of experimentally-observed patterns.

Graduate Research Assistant, Department of Physics, University of Colorado (1998,1999-2000)

Modified a numerical model of free-standing ferroelectric liquid crystal films with different effective elastic constants.

Lead Graduate Teacher, Department of Applied Math, University of Colorado (1998-1999)

Led week-long orientation for incoming graduate student teaching assistants. Facilitated a 1-credit, weekly pedagogy course for teaching assistants.

Teaching Assistant, Department of Applied Math, University of Colorado (1997-1999)

## Presentations

- CESM/CCSM Tutorial at NCAR*, Atmosphere Break-out Session Presenter, 2008, 2013, 2014, 2015  
Assistant tutor, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015.
- CCliCS Workshop on Climate System Modeling, Academia Sinica, Taipei, Taiwan*, Presenter, 2013
- Simulations of Anisotropic Ring Formation in Free Standing SmC\* Liquid Crystal Films*, Poster,  
International Liquid Crystal Conference, Sendai, Japan, 2000.
- Collaborative Learning in Math and Science Recitations*, Presentation, Graduate Teacher Program  
Fall Intensive, Aug 1998, Aug 1999.
- Math Anxiety*, Presentation, Graduate Teacher Program Fall Intensive, Aug 1998.

## Publications

- Christensen, H., J. Berner, D.R. Coleman, T.N. Palmer 2016: Stochastic parameterisation and the El Nio-Southern Oscillation *Journal of Climate* DOI: 10.1175/JCLI-D-16-0122.1
- Rasch P.J., P.J. Crutzen, and D.B. Coleman. 2008: Exploring the Geoengineering of Climate Using Stratospheric Sulfate Aerosols: The Role of Particle Size. *Geophysical Research Letters* 35: Art. No. L02809.
- Tutorial: the Community Atmosphere Model*, Presentation, The Art of Climate Modeling Summer Colloquium, June 2006, NCAR
- Rasch P.J., P.J. Crutzen, and D.B. Coleman. 2008: Geo-Engineering Climate Change with Sulfate. *Geophysical Research Letters* 35:L02809.1-L02809.6
- Rasch, P. J., D. B. Coleman, N. Mahowald, D. L. Williamson, S.-J. Lin, B. A. Boville, and P. Hess, 2006: Characteristics of Atmospheric Transport Using Three Numerical Formulations for Atmospheric Dynamics in a Single GCM Framework. *J. Climate*, 19,11, pp2243-2266.
- Mahowald, N.M., M. Yoshioka, W.D. Collins, A.J. Conley, D.W. Fillmore, D.B. Coleman, 2006: Climate response and radiative forcing from mineral aerosols during the last glacial maximum, pre-industrial, current, and doubled-carbon dioxide climates. *GRL*, 33, L20705, doi:10.1029/2006GL026126, 2006.
- Yoshioka, M., N.M. Mahowald, A.J. Conley, W.D. Collins, D.W. Fillmore, C.S. Zender, and D.B. Coleman, 2005: Impact of desert dust radiative forcing on Sahel precipitation: Relative importance of dust compared to sea surface temperature variations, vegetation changes and greenhouse gas warming. *J. Climate*, 20, 1445-1467.
- Colwell, J. E., L. W. Esposito, D. Bundy, 2000: Fragmentation rates of small satellites in the outer solar system. *Journal of Geophysical Research*

## References

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