

Dani Bundy Coleman

Associate Scientist III

Atmosphere Modeling and Prediction Section, Climate and Global Dynamics Division
National Center for Atmospheric Research
P.O. Box 3000, Boulder, CO 80307-3000
303 497 1319, bundy@ucar.edu

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

Python, Fortran 90, Fortran 77 C, Shell scripting, XML, HTML, Yorick, NCL, IDL, Matlab, Mathematica, OpenMP, MPI, Subversion, CVS, GitHub 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.

Presentations

CESM/CCSM Tutorial at NCAR, Atmosphere Break-out Session Presenter, 2013 - 2020

Assistant tutor, 2008 - 2020

CCLiCS Workshop on Climate System Modeling, Academia Sinica, Taipei, Taiwan, Presenter, 2013

Tutorial: the Community Atmosphere Model, Presentation, The Art of Climate Modeling Summer Colloquium, June 2006, NCAR

Publications

- Clara Deser, et al. 2020: Isolating the evolving contributions of anthropogenic aerosols and greenhouse gases: A new CESM1 large ensemble community resource. *Journal of Climate* DOI: 10.1175/JCLI-D-20-0123.1
- ED Maloney, et al. 2019: Process-Oriented Evaluation of Climate and Weather Forecasting Model *Bulletin of the American Meteorological Society* 100 (9), 1665-1686 DOI: <https://doi.org/10.1175/BAMS-D-18-0042.1>
- AG Pendergrass, et al. 2019: Nonlinear response of extreme precipitation to warming in CESM1 *Geophysical Research Letters* 46 (17-18), 10551-10560 DOI: 10.1029/2019GL084826
- J Berner, et al. 2017: Stochastic parameterization: Toward a new view of weather and climate models *Bulletin of the American Meteorological Society* 98 (3), 565-588 DOI: 10.1175/BAMS-D-15-00268.1
- HM Christensen, et al. 2016: Stochastic parameterisation and the El Niño-Southern Oscillation, *Journal of Climate* 30 *Journal of Climate* 30 (1), 17-38 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.
- 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

Dr. Phil Rasch, NCAR, Climate and Global Dynamics Division
Phone: 303 497 1368, e-mail: pjr@ucar.edu

Dr. Natalie Mahowald, Cornell University, Cornell Geological Sciences Phone: 607 255 5166,
mahowald@cornell.edu

Dr. Bengt Fornberg, University of Colorado, Department of Applied Math
Phone: 303 492 5915, e-mail: bengt.fornberg@colorado.edu