

James J. Hack

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Education and Training

Lyndon State College, Lyndonville, VT B.S. Meteorology (Honors), 1974
Colorado State University, Fort Collins, CO M.S. Atmospheric Dynamics, 1977
Colorado State University, Fort Collins, CO Ph.D. Atmospheric Dynamics, 1980

Research and Professional Experience

2007 – Present Director, National Center for Computational Sciences, Oak Ridge National Laboratory, Oak Ridge, Tennessee
2004 – 2007 Deputy Director, Climate and Global Dynamics Division, National Center for Atmospheric Research, Boulder, Colorado
2001 – 2007 Section Head, Climate Modeling Section, National Center for Atmospheric Research, Boulder, Colorado
1999 – 2010 Senior Scientist, Climate Modeling Section, National Center for Atmospheric Research, Boulder, Colorado
1990 – 1999 Scientist III, Climate Modeling Section, National Center for Atmospheric Research, Boulder, Colorado
1991 – 1995 Professor Adjoint, University of Colorado at Boulder, Boulder, Colorado
2003 – 2008
1987 – 1990 Scientist II, Climate Modeling Section, National Center for Atmospheric Research, Boulder, Colorado
1984 – 1987 Scientist I, Climate Modeling Section, National Center for Atmospheric Research, Boulder, Colorado
1981 – 1984 Research Staff Member, IBM Thomas J. Watson Research Center, Yorktown Heights, New York
1980 – 1981 Postdoctoral Fellow, Department of Atmospheric Science, Colorado State University, Fort Collins, Colorado

Publications

1. Williamson, D. L., J. B. Drake, J. J. Hack, R. Jakob, and P. N. Swarztrauber, 1992: A Standard Test Set for Numerical Approximations to the Shallow Water Equations in Spherical Geometry, *J. Comp. Phys.*, **102**, 211--224.
2. Hack, J. J., 1994: Parameterization of Moist Convection in the National Center for Atmospheric Research Community Climate Model (CCM2). *J. Geophys. Res.*, **99**, 5551-5568.
3. Hack, J. J., B. A. Boville, J. T. Kiehl, P. J. Rasch, and D. L. Williamson, 1994: Climate Statistics from the NCAR Community Climate Model (CCM2). *J. Geophys. Res.*, **99**, 20785-20813.
4. Hack, J. J., J. M. Rosinski, D. L. Williamson, Byron A. Boville, and John E. Truesdale, 1995: Computational Design of the NCAR Community Climate Model. *Parallel Computing*, **21**, 1545-1569.
5. Hack, J. J., J. T. Kiehl, and J. W. Hurrell, 1998: The Hydrologic and Thermodynamic Characteristics of the NCAR CCM3. *J. Climate*, **11**, 1179-1206.
6. Hack, J. J., 1998: Sensitivity of the Simulated Climate to a Diagnostic Formulation for Cloud Liquid Water. *J. Climate*, **11**, 1497-1515.
7. Hack, J. J., and J. A. Pedretti, 2000: Assessment of solution uncertainties in single-column modeling frameworks. *J. Climate*, **13**, 352-365.

8. Hack, J. J., J. M. Caron, S. G. Yeager, K. W. Oleson, M. M. Holland, J. E. Truesdale, and P. J. Rasch, 2006: Simulation of the Global Hydrological Cycle in the CCSM Community Atmosphere Model Version 3 (CAM3): Mean Features. *J. Climate*, **19**, 2199–2221.
9. Hack, J. J., J. M. Caron, G. Danabasoglu, K. W. Oleson, C. Bitz, and J. E. Truesdale, 2006: CCSM-CAM3 Climate Simulation Sensitivity to Changes in Horizontal Resolution. *J. Climate*, **19**, 2267–2289.
10. Hurrell, J.W., J.J. Hack, D. Shea, J.M. Caron, and J. Rosinski, 2008: A new sea surface temperature and sea ice boundary data set for the Community Atmosphere Model. *J. Climate*, **21**, 5145-5153, DOI: 10.1175/2008JCLI2292.1

Synergistic Activities

1. Founding member of DOE Computational Science Graduate Fellowship Program. Member of the Advisory and Review Panels, 1990-present.
2. Member of Joint Scientific Committee (JSC) for the World Climate Research Programme and the WMO Commission for Atmospheric Sciences (CAS) JSC/CAS Working Group on Numerical Experimentation (WGNE), 1 January 2006-present.
3. Member of Department of Energy Advanced Scientific Computing Advisory Committee (appointment by the Secretary of Energy), 2003-present.
4. Editor, *Journal of Climate*, 1998-2001.
5. Member of the following computational and multidisciplinary advisory committees/panels:
 - NCAR Scientific Computing Division (SCD) Advisory Panel, 1985-1988, 1994-1998;
 - NSF Institutional Infrastructure Program Evaluation and Review Panels, 1988-1989;
 - NSF Division of Advanced Scientific Computing (DASC) Supercomputer Center Review and Site Visit Panels, 1989;
 - JASON/MITRE Studies, 1990, 1991, 1994, 1998, 2000;
 - NSF DASC Program Plan Review Panel, 1990-1991;
 - DOE OPA Review Panel, 1994;
 - NSF Multidisciplinary Challenge Pre-Proposal and Final Review Panels, 1995;
 - NSF Program for Advanced Computational Infrastructure Review Panels, 1996.

Graduate and Postdoctoral Advisors

Wayne H. Schubert	Department of Atmospheric Sciences, Colorado State University	Thesis Advisor and Postgraduate-Scholar Sponsor
Ruediger Jakob	University of Colorado	Ph.D. Thesis Advisor
Mahandra Kharki	Florida State University	Ph.D. Co-Advisor
Alice Gilliland	Georgia Tech	Ph.D.Co-Advisor
Ping Zhu	U. Miami	Ph.D.Co-Advisor
Jon Petch	Meteorological Office, U.K.	NCAR postdoctoral visitor
Jingbo Wu	State University of New York, Stony Brook	Ph.D. Committee