
Dr. Noah Suresh Diffenbaugh

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August 2009

EDUCATION

Ph.D., Earth Sciences, University of California, Santa Cruz, 2000 – 2003
M.S., Earth Systems (Biosphere track), Stanford University, 1992 – 1997
B.S., Earth Systems (Biosphere track), Stanford University, 1992 – 1997

EMPLOYMENT HISTORY

Associate Professor of Earth and Atmospheric Sciences, Purdue University, 8/2008 –
Assistant Professor of Earth and Atmospheric Sciences, Purdue University, 7/2004 – 8/2008
Postgraduate Research Earth Scientist, University of California, Santa Cruz, 9/2003 – 6/2004
Graduate Research and Teaching Assistant, University of California, Santa Cruz, 9/2000 – 8/2003

OTHER APPOINTMENTS

Editor, *Geophysical Research Letters*, 5/2009 –
Interim Director, Purdue Climate Change Research Center, 9/2008 –
Short Term Visitor, Abdus Salam International Centre for Theoretical Physics, 5/2006 – 6/2008

ACADEMIC INTERESTS

Climate Change, Biosphere-Atmosphere Interactions, Paleoclimatology, Earth System Modeling

AWARDS

University Faculty Scholar, Purdue University, 2009-2014
James R. Holton Award, Atmospheric Sciences Section, AGU, 2006
ARCS Foundation Scholar, 2002-2003
University of California Regents Fellowship, 2000-2001

OTHER HONORS

“Best of 2008,” *Environmental Research Letters*, Diffenbaugh et al., *ERL*, 2008
“Best of 2008,” *Environmental Research Letters*, Jackson et al., *ERL*, 2008
NSF Highlight of significant achievement toward strategic outcome goals, Trapp et al., *PNAS*, 2007
Purdue President’s Nominee, Fellowship for Science and Engineering, David and Lucile Packard Foundation, 2007
Department of Earth and Atmospheric Sciences Teaching Honor Roll, Purdue University, Spring 2006, Fall 2006, Fall 2007, Spring 2008, Fall 2008, Spring 2009

FUNDED RESEARCH PROJECTS

Total at all collaborating institutions = \$3,422,241

The Response of Convective Precipitating Storms to Anthropogenically Enhanced Global Radiative Forcing, National Science Foundation, Award #0756624, September 1, 2008 to August 31, 2011, \$616,110. (co-PI)

Impacts of High Resolution Extreme Events on U.S. Energy Demand and CO₂ Emissions in the 21st Century, Department of Energy, August 15, 2008 to August 14, 2011, \$332,593. (PI)

Climate Variability and the Poor in Southern and Eastern Africa, The World Bank TFESSD, July 1, 2008 to November 30, 2010, \$500,000. (Co-PI)

Collaborative Research: Water Balance of Western North America: Dynamics of the Miocene Summer Monsoon, National Science Foundation, Award #0450221, February 15, 2005 to January 31, 2009, \$230,060. (PI)

Sub-Daily Scale Extreme Precipitation in Future Climate-Change Scenarios: A Pilot Study, National Science Foundation, Award #0402054, February 1, 2006 to January 31, 2009, \$275,075. (Co-PI)

Collaborative Research: Investigation of Holocene Seasonality and Inter-Annual Variability Along the California Current System, National Science Foundation, Award #0402054, May 1, 2004 to April 30, 2008, \$148,897. (PI)

Collaborative Research: Surface-Atmosphere Feedbacks and Holocene Climate Variations in Eastern North America: Linkages, Impacts, and Governing Mechanisms, National Science Foundation, Award #0315677. Subcontract with University of California, Santa Cruz, July 1, 2004 to September 30, 2007, \$179,750. (Subcontract)

PEER-REVIEWED PUBLICATIONS (underline denotes advisee)

Total citations = 424; > 30 citations = 4; H = 12

2009 Ahmed, S.A., **N.S. Diffenbaugh** and T. Hertel, Impact of climate volatility on global poverty, *Environmental Research Letters*, in press.

Walker, M.D. and **N.S. Diffenbaugh**, Evaluation of high-resolution simulations of daily-scale temperature and precipitation over the United States, *Climate Dynamics*, 10.1007/s00382-009-0603-y, 2009.

Diffenbaugh, N.S., Influence of modern land cover on the climate of the United States, *Climate Dynamics*, 10.1007/s00382-009-0566-z, 2009.

Steiner, A.L., J.S. Pal, S.A. Rauscher, J.L. Bell, **N.S. Diffenbaugh**, F. Giorgi and L.C. Sloan, Land surface coupling in regional climate simulations of the west African monsoon, *Climate Dynamics*, 10.1007/s00382-009-0543-6, 2009.

Ashfaq, M., Y. Shi, W.-w. Tung, R.J. Trapp, X. Gao, J.S. Pal and **N.S. Diffenbaugh**, Suppression of South Asian summer monsoon precipitation in the 21st century, *Geophysical Research Letters*, 36, L01704, doi:10.1029/2008GL036500, 2009.

Trapp, R.J., **N.S. Diffenbaugh** and A. Gluhovsky, Projected trends in severe, extratropical thunderstorm forcing, *Geophysical Research Letters*, 36, L01703, doi:10.1029/2008GL036203, 2009.

2008 **Diffenbaugh, N.S.**, R.J. Trapp and H.E. Brooks, Does global warming influence tornado activity?, *Eos*, 89(53), 553-554, 2008.

- Cook, E.R., P.J. Bartlein, **N. Diffenbaugh**, R. Seager, B.N. Shuman, R.S. Webb, J.W. Williams, and C. Woodhouse, 2008: Hydrological variability and change. In: *Abrupt Climate Change*. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. Geological Survey, Reston, VA, pp. 143–257.
- Diffenbaugh, N.S.**, C.H. Krupke, M.A. White and C.E. Alexander, Global warming presents new challenges for maize pest management, *Environmental Research Letters*, doi: 10.1088/1748-9326/3/4/044007, 2008.
- Jackson, R.B., J.T. Randerson, J.G. Canadell, R.A. Anderson, R. Avissar, D.D. Baldocchi, G.B. Bonan, K. Caldeira, **N.S. Diffenbaugh**, C.B. Field, B.A. Hungate, L.M. Kueppers and D.E. Pataki, Protecting climate with forests, *Environmental Research Letters*, doi:10.1088/1748-9326/3/4/044006, 2008.
- Giorgi, F., **N.S. Diffenbaugh**, X.J. Gao, E. Coppola, S.K. Dash, O. Frumento, I. Seidou Sanda, S. Rauscher, A. Remedio, A. Steiner, B. Sylla and A. Zakey, The regional climate change hypermatrix framework, *Eos*, 89(45), 445-446, 2008.
- Diffenbaugh, N.S.**, F. Giorgi and J.S. Pal, Climate change hotspots in the United States, *Geophysical Research Letters*, 35, L16709, doi:10.1029/2008GL035075, 2008.
- Rauscher, S.A., J.S. Pal, **N.S. Diffenbaugh** and M. Benedetti, Future changes in runoff timing over the western United States, *Geophysical Research Letters*, 35, L16703, doi:10.1029/2008GL034424, 2008.
- Giorgi, F. and **N. Diffenbaugh**, Developing regional climate change scenarios for use in assessment of effects on human health and disease, *Climate Research*, 36(2), 141–151, 2008.
- Rauscher, S.A., F. Giorgi, **N.S. Diffenbaugh**, and A. Seth, Extension and intensification of the Meso-American mid-summer drought in the 21st century, *Climate Dynamics*, DOI 10.1007/s00382-007-0359-1, 2008.
- 2007 **Diffenbaugh, N.S.**, F. Giorgi, L. Raymond and X. Bi, Indicators of 21st century socioclimatic exposure, *Proceedings of the National Academy of Sciences*, 104(51), 20195-20198, 2007.
- Trapp, R.J., **N.S. Diffenbaugh**, H.E. Brooks, M. Baldwin, E.D. Robinson, and J.S. Pal, Changes in severe thunderstorm environment frequency in the 21st century due to anthropogenically enhanced global radiative forcing, *Proceedings of the National Academy of Sciences*, 104(50), 19719-19723, 2007.
- Trapp, R.J., B. A. Halvorson and **N.S. Diffenbaugh**, Telescoping, multi-model approaches to evaluate extreme convective weather under future climates, *Journal of Geophysical Research-Atmospheres*, 112, D20109, doi:10.1029/2006JD008345, 2007.
- Pal, J.S., F. Giorgi, X. Bi, N. Elguindi, F. Solmon, X. Gao, Sara A. Rauscher, R. Francisco, A. Zakey, J. Winter, M. Ashfaq, F.S. Syed, J.L. Bell, **N.S. Diffenbaugh**, J. Karmacharya, A. Konare, D. Martinez, R.P. da Rocha, L.C. Sloan and A. Steiner, Regional climate modeling for the developing world: The ICTP RegCM3 and RegCNET, *Bulletin of the American Meteorological Society*, 88(9), 1395-1409, 2007.
- Diffenbaugh, N.S.**, and M. Ashfaq, Response of California Current forcing to mid-Holocene changes in insolation and sea surface temperature, *Paleoceanography*, 22, PA3101, doi:10.1029/2006PA001382, 2007.
- Diffenbaugh, N.S.**, J.S. Pal, F. Giorgi and X. Gao, Heat stress intensification in the Mediterranean climate change hotspot, *Geophysical Research Letters*, 34, L11706, doi:10.1029/2007GL030000, 2007.

- 2006 **Diffenbaugh, N.S.**, M. Ashfaq, B. Shuman, J.W. Williams and P.J. Bartlein, Summer aridity in the United States: Response to mid-Holocene changes in insolation and sea surface temperature, *Geophysical Research Letters*, 33, L22712, doi:10.1029/2006GL028012, 2006.
- White, M.A., **N.S. Diffenbaugh**, G.V. Jones, J.S. Pal and F. Giorgi, Extreme heat reduces and shifts United States premium wine production in the 21st century, *Proceedings of the National Academy of Sciences*, 103(30), 11217-11222, 2006.
- Diffenbaugh, N.S.**, J.L. Bell and L.C. Sloan, Simulated changes in extreme temperature and precipitation events at 6 ka, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 236(1-2), 151-168, 2006.
- 2005 **Diffenbaugh, N.S.**, J.S. Pal, R.J. Trapp and F. Giorgi, Fine-scale processes regulate the response of extreme events to global climate change, *Proceedings of the National Academy of Sciences*, 102(44), 15774-15778, 2005.
- Diffenbaugh, N.S.**, Response of large-scale eastern boundary current forcing in the 21st century, *Geophysical Research Letters*, 32, L19718, doi:10.1029/2005GL023905, 2005.
- Diffenbaugh, N.S.**, Sensitivity of extreme climate events to CO₂-induced biophysical atmosphere-vegetation feedbacks in the western United States, *Geophysical Research Letters*, 32, L07702, doi:10.1029/2004GL022184, 2005.
- Diffenbaugh, N.S.**, Atmosphere-land cover feedbacks alter the response of surface temperature to CO₂ forcing in the western United States, *Climate Dynamics*, 24(2-3), 237-251, 2005.
- 2004 **Diffenbaugh, N.S.** and L.C. Sloan, Mid-Holocene orbital forcing of regional-scale climate: a case study of western North America using a high-resolution RCM, *Journal of Climate*, 17(15), 2927-2937, 2004.
- Koch, P.L., **N.S. Diffenbaugh** and K.A. Hoppe, The effect of Late Quaternary climate and pCO₂ change on C₄ plant abundance in the south-central United States, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 207(3-4), 331-357, 2004.
- Diffenbaugh, N.S.**, M.A. Snyder and L.C. Sloan, Could CO₂-induced land cover feedbacks alter near-shore upwelling regimes?, *Proceedings of the National Academy of Sciences*, 101(1), 27-31, 2004.
- 2003 Snyder, M.A., L.C. Sloan, **N.S. Diffenbaugh** and J.L. Bell, Future climate change and upwelling in the California Current, *Geophysical Research Letters*, 30(15), 1823, 10.1029/2003GL017647, 2003.
- Diffenbaugh, N.S.**, L.C. Sloan and M.A. Snyder, Orbital suppression of wind driven upwelling in the California Current at 6 ka, *Paleoceanography*, 18(2), 1051, 10.1019/2002PA000865, 2003.
- Diffenbaugh, N.S.**, L.C. Sloan, M.A. Snyder, J.L. Bell, J.O. Kaplan, S.L. Shafer and P.J. Bartlein, Vegetation sensitivity to global anthropogenic carbon dioxide emissions in a topographically complex region, *Global Biogeochemical Cycles*, 18(2), 1067, 10.1029/2002GB001974, 2003.
- 2002 **Diffenbaugh, N.S.** and L.C. Sloan, Global climate sensitivity to land surface change: The Mid Holocene revisited, *Geophysical Research Letters*, 29(10), 1476, 10.1029/2002GL014880, 2002.

BOOKS AND BOOK CHAPTERS

White, M.A., G.V. Jones and **N.S. Diffenbaugh**, Climate variability, climate change, and wine production in the western United States, in F.H. Wagner (ed.), *Climate Change in Western North America: Evidence and Environmental Effects*, University of Utah Press, 288 pp, 2009.

OTHER PUBLICATIONS

Harshvardhan, G. and N. Diffenbaugh, Diffenbaugh Receives 2006 James R. Holton Junior Scientist Award, *Eos Trans. AGU*, 88(9), 111, doi:10.1029/2007EO090011, 2007.

Diffenbaugh, N.S., C.M. Eakin, B.L. Otto-Bliesner and M. Zhao, Introduction to the special issue “Glacial-Interglacial Climate of the Past 160,000 Years: New Insights from Data and Models,” *Palaeogeography, Palaeoclimatology, Palaeoecology*, 236(1-2), 1-4, 2006.

PROFESSIONAL MEMBERSHIPS

American Geophysical Union, 2000 –
American Meteorological Society, 2006 –
Ecological Society of America, 2004 –

REVIEWS, PANELS, AND EDITORIAL

Journal Manuscript Referee – *Agricultural and Forest Meteorology, Atmospheric Research, Climate Dynamics, Climate Research, Climatic Change, Earth Interactions, Eos, Geology, Geophysical Research Letters, Global and Planetary Change, International Journal of Climatology, International Journal of Environmental Research and Public Health, Journal of Applied Meteorology and Climatology, Journal of Climate, Journal of Geophysical Research – Atmospheres, Journal of Hydrometeorology, Limnology and Oceanography, Meteorological Applications, Nature, Paleoceanography, Proceedings of the National Academy of Sciences, Quaternary International, Quaternary Research, Quaternary Science Reviews, Theoretical and Applied Climatology, Water Resources Management.*

Book Chapter Referee – *Climate Impact Hotspots: Key Vulnerable Regions and Climate Change*

Report Referee – *California Energy Commission, State of Washington*

Proposal Referee – *National Science Foundation* (Climate and Large-Scale Dynamics, Earth System History, Ecosystem Studies Program, Geography and Regional Science, Instrumentation and Facilities, Office of Polar Programs, Marine Geology and Geophysics, Paleoclimate, Partnerships for International Research and Education, Sedimentary Geology and Paleobiology); *Government of Chile* (FONDECYT); AAAS (EPSCoR; Canon National Parks Science Scholars Program)

Proposal Panelist – *NASA* (Modeling, Analysis, and Prediction); *U.S. CLIVAR* (Drought in Coupled Models Project); *NSF* (CDI-II); *DOE* (National Lab Climate Change Scientific Focus Areas)

Editor, *Geophysical Research Letters*, 2009 – 2011

Atmospheric Science Section Representative, *Eos* Advisory Board, American Geophysical Union, 2008 –

Co-Guest Editor, Glacial-Interglacial Climate of the Past 160,000 Years: New Insights from Data and Models, Special Issue, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 236(1-2), 1-168, 2006.

WORKSHOPS AND CONFERENCE SESSIONS

Co-Director, Fifth ICTP Workshop on the Theory and Use of Regional Climate Models, May, 2010, Trieste, Italy.

Co-Chair, *Paleoceanography and Paleoclimatology General Contributions*, 2009 American Geophysical Union Joint Assembly, May 24-29, 2009, Toronto, Canada.

Co-Chair, *Transitioning Out of the Mid-Holocene Climate: An Evaluation of Land-Ocean Proxy Records and Model Simulations*, AGU Fall Meeting, San Francisco, CA, December 15-19, 2008.

Co-Chair, *Regional-Scale Forcing of Climate*, AGU Fall Meeting, San Francisco, CA, December 15-19, 2008.

Co-Chair, *Climate of the Last Glacial-Interglacial Cycle: New Insights From Models and Data*, AGU Fall Meeting, San Francisco, CA, December 8-12, 2003.

PROFESSIONAL ACTIVITIES

Executive Committee, Atmospheric Sciences Section, American Geophysical Union, 2008 –

Member, Terrestrial Ecosystems and Climate Policy Working Group, National Center for Ecological Analysis and Synthesis

Contributing Author, CCSP Synthesis and Assessment Product 3.4, Abrupt Climate Change, *Hydrologic Variability and Change*, Chapter 3.

Coordinating Lead Author, *Climate Change in Indiana: Initial Analyses of Impacts and Opportunities*, an analysis of S.2191 prepared at the request of U.S. Senator Richard Lugar's office (February, 2008).

Contributor, Agency Technical Working Group, Potential Effects of Climate Change on New Mexico, State of New Mexico.

Briefing for Indiana Congressional Delegation, April 27, 2009.

Briefing for Indiana Governor Mitch Daniels, April 20, 2009.

Keynote Lecture, Legislative Agricultural Chairs Summit '07, January 26-28, 2007, Washington, D.C.

Participant, NCAR CCSM Working Groups, 2001 – present

Participant, Abdus Salam ICTP Regional Climate Network (RegCNET), 2003 – present

NCL for RegCM3 (<http://es.ucsc.edu/~msnyder/NCL>). A website dedicated to data processing and visualization for RegCM3, launched and maintained in collaboration with Mark Snyder (UCSC).

Response to queries from local, national and international media outlets (print, radio, television and internet – 179 total queries since 10/05). Coverage includes *CBS News* television, *NBC News* television, *CNN News* television, *The Weather Channel*, *National Public Radio*, *AP Radio News*, *Voice of America* radio, the *Washington Post*, the *Los Angeles Times*, the *Melbourne Herald-Sun*, *Business Week*, *Nature Reports*, *Science Magazine*, *Der Spiegel*, *Repubblica*, *ScienceNOW*, and *National Geographic News*.

INVITED SEMINARS

Lamont Doherty Earth Observatory, Columbia University, November 20, 2009

Department of Environmental Earth System Science, Stanford University, November 12, 2008

Berkeley Atmospheric Sciences Center, UC Berkeley, October 14, 2008

Atmospheric Sciences Division, Lawrence Livermore National Laboratory, October 13, 2008

Distinguished Lecture, Department of Geology and Geophysics, University of Wyoming, March 24, 2008

Department of Geography, UC Santa Barbara, February 28, 2008.

Department of Geology, Indiana University-Purdue University Indianapolis, September 27, 2007

Institute for Atmospheric and Climate Science, ETH Zurich, June 22, 2007

Scripps Institution of Oceanography, UC San Diego, May 22, 2007

Department of Geography, University of Indiana – Bloomington, April 27, 2007
Climate and Global Dynamics Division, National Center for Atmospheric Research, March 21, 2007
Center for Climate Research, University of Wisconsin – Madison, November 3, 2006
Quaternary Paleoecology Program, University of Minnesota, September 27, 2006
Department of Earth and Atmospheric Sciences, Georgia Institute of Technology, September 22, 2006
School of Earth Sciences and Woods Institute for the Environment, Stanford University, April 24, 2006
Department of Atmospheric Sciences, University of Illinois Urbana-Champaign, September 21, 2005
Atmospheric Sciences Division, Lawrence Livermore National Laboratory, July 20, 2005
Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory, July 7, 2005
Department of Geography, Geology, and Anthropology, Indiana State University, April 11, 2005
Ecolunch Seminar, Department of Biological Sciences, Purdue University, February 2, 2005
Computing Research Institute, Purdue University, October 27, 2004
Department of Geology, Indiana University-Purdue University Indianapolis, October 26, 2004
Department of Atmospheric and Oceanic Sciences, UC Los Angeles, October 14, 2004
Department of Earth and Atmospheric Sciences, Purdue University, August 26, 2004
NOAA/NMFS Pacific Environmental Lab, August 14, 2003
Department of Atmospheric and Oceanic Sciences, University of Wisconsin, May 8, 2003
Department of Earth and Atmospheric Sciences, Purdue University, April 22, 2003
Department of Geological Sciences, University of Michigan, February 17, 2003

INVITED WORKSHOP PARTICIPATION

Simulating the Spatial-Temporal Patterns of Anthropogenic Climate Change, July 20-22, 2009, Santa Fe, NM.
WCRP Workshop on Evaluating and Improving Regional Climate Projections, February 11-13, 2009, Toulouse, France.
Linking carbon storage in terrestrial ecosystems with other climate forcing agents: A synthesis allowing for effective carbon dioxide stabilization policies, January 27-29, 2009, Santa Barbara, CA.
Purdue Symposium on Global Infectious Diseases, Research, and Interventions, January 21, 2009, West Lafayette, IN.
2nd USA National Phenology Network (USA-NPN) Research Coordination Network (RCN), Annual Meeting, September 15-19, 2008, Milwaukee, WI.
Fourth ICTP Workshop on the Theory and Use of Regional Climate Models, March 3-14, 2008, Trieste, Italy.
Linking carbon storage in terrestrial ecosystems with other climate forcing agents: A synthesis allowing for effective carbon dioxide stabilization policies, January 22-24, 2008, Santa Barbara, CA.
NSF Workshop on Science Education in Computational Thinking, November 15-16, 2007, West Lafayette, IN.
9th Biennial Conference of Research on the Colorado Plateau, October 29-November 2, 2007, Flagstaff, AZ.
NSF Climate Over Landscapes workshop, October 1-2, 2007, Boulder, CO.
ICSU Global Scientific Challenges: Perspectives from Young Scientists, April 4-6, 2007, Lindau, Germany.
ASICTP/NCP International Conference on Global Change, November 13-17, 2006, Islamabad, Pakistan.

EPA Workshop to Develop a Strategy for Characterizing, Quantifying, and Communicating Uncertainties: Assessment of the Effects of Global Change on U.S. Regional Air Quality, November 1-2, 2006, Research Triangle Park, NC.

NWS/NOAA Sub-Regional Climate Services Workshop, July 18-19, 2006, West Lafayette, IN.

Third ICTP Workshop on the Theory and Use of Regional Climate Models, May 29-June 9, 2006, Trieste, Italy.

NCAR/UCAR Junior Faculty Forum on Future Science Directions, July 27-29, 2005, Boulder, CO.

Tenth Annual CCSM Workshop, June 21-23, 2005, Breckenridge, CO.

NSF Earth System History Holocene PI's Meeting, May 17-19, 2005, Washington, D.C.

Paleoclimate Modeling Intercomparison Project (PMIP2) Workshop, April 3-8, 2005, Giens, France.

Research Needs and Directions of Regional Climate Modeling Using WRF and CCSM, March 22-23, 2005, Boulder, CO.

University of California Pacific Rim Research Program, International Workshop on Northern Fur Seal Ecology, Biogeography, and Management in Historic Perspective, April 15-17, 2004, Santa Cruz, CA.

Joint meeting of the CCSM Paleoclimate and Climate Variability Working Groups, February 2-3, 2004, Boulder, CO.

PRESENTATIONS (Presenter in bold)

Diffenbaugh, N.S., Dynamics and impacts of fine-scale climate change: lessons learned and future challenges, Simulating the Spatial-Temporal Patterns of Anthropogenic Climate Change, July 20-22, 2009, Santa Fe, NM. *INVITED*

Diffenbaugh, N.S., A multi-member, high-resolution, transient simulation of 20th and 21st century climate in the United States, 2009 American Geophysical Union Joint Assembly, May 24-29, 2009, Toronto, Canada. *INVITED*

Diffenbaugh, N.S., Quantifying the costs of no-action: high-resolution impacts analysis for the United States, Climate Change: Global Risks, Challenges and Decisions: International Scientific Congress on Climate Change, March 10-12, 2009, Copenhagen, Denmark.

Diffenbaugh, N.S., A multi-member, high-resolution, transient simulation of 20th and 21st century climate in the United States, Climate Change: Global Risks, Challenges and Decisions: International Scientific Congress on Climate Change, March 10-12, 2009, Copenhagen, Denmark.

Diffenbaugh, N.S., Socio-climatic analysis, modeling, and prediction, Climate Change: Global Risks, Challenges and Decisions: International Scientific Congress on Climate Change, March 10-12, 2009, Copenhagen, Denmark.

Diffenbaugh, N.S., Climate change and human health, Purdue Symposium on Global Infectious Diseases, Research, and Interventions, January 21, 2009, West Lafayette, IN. *INVITED*

Williams, J.W., B. Shuman, P. Bartlein, N.S. Diffenbaugh, Rapid and Time-Transgressive Responses to Early Holocene Drying in the North American Mid-Continent, American Geophysical Union Fall Meeting, December 15-19, 2008, San Francisco, CA. *INVITED*

Diffenbaugh, N.S., and M. Ashfaq, Response of South Asian summer Monsoon to 21st century changes in greenhouse forcing and SST feedbacks, American Geophysical Union Fall Meeting, December 15-19, 2008, San Francisco, CA.

Walker, M.D. and **N.S. Diffenbaugh**, Evaluation of high-resolution simulations of temperature and precipitation extremes over the United States, American Geophysical Union Fall Meeting, December 15-19, 2008, San Francisco, CA.

Ashfaq, M., L.C. Bowling, K.A. Cherkauer, J.S. Pal, N.S. Diffenbaugh, Bias-correction of high-resolution, daily-scale, climate simulations, American Geophysical Union Fall Meeting, December 15-19, 2008, San Francisco, CA.

Ashfaq M. and N.S. Diffenbaugh, Role of SST biases in future climate projections, International Workshop on Teleconnections in the Atmosphere, November 17-20, 2008, Trieste, Italy.

Trapp, R.J., N. S. Diffenbaugh and A. Gluhovsky, Transient response of severe convective storm forcing associated with global increases in greenhouse gas concentrations, 24th Conference on Severe Local Storms, October 27-31, 2008, Savannah, GA.

Diffenbaugh, N.S., Capability of GCMs to predict phenology-related climatic variables, 2nd USA National Phenology Network (USA-NPN) Research Coordination Network (RCN), Annual Meeting, September 15-19, 2008, Milwaukee, WI. *INVITED*

Williams, J.W., B.N. Shuman, P.J. Bartlein and N.S. Diffenbaugh, Abrupt but non-synchronous vegetation responses to early Holocene mid-continental drying in North America, 93rd ESA Annual Meeting, August 3-8, 2008, Milwaukee, WI.

Ashfaq, M. and N.S. Diffenbaugh, Dynamics governing 21st century South Asian summer monsoon changes in a multi-member CAM3 ensemble experiment, 13th Annual CCSM Workshop, June 17-19 2008, Breckenridge, CO.

Rauscher, S.A., F. Giorgi, and N.S. Diffenbaugh, Regional-scale processes associated with future summer drying over Central America, European Geosciences Union General Assembly, April 13-18, 2008, Vienna, Austria.

Diffenbaugh, N.S., The importance of fine-scale feedbacks in regional climate change projections, Fourth ICTP Workshop on the Theory and Use of Regional Climate Models, March 3-14, 2008, Trieste, Italy. *INVITED*

Ashfaq, M., W.-w. Tung, S. Ying, R. J. Trapp, X. Gao, J. S. Pal, N.S. Diffenbaugh, Suppression of South Asian summer monsoon in the 21st century, Purdue University Department of Earth and Atmospheric Sciences Graduate Student Expo, February 23, 2008, West Lafayette, IN.

Diffenbaugh, N.S., Fine-scale climate-land cover interactions in the United States, Linking carbon storage in terrestrial ecosystems with other climate forcing agents: A synthesis allowing for effective carbon dioxide stabilization policies, January 22-24, 2008, Santa Barbara, CA. *INVITED*

Rauscher, S.A., F. Giorgi and N.S. Diffenbaugh, Regional-scale processes associated with future summer drying over Central America, 88th AMS Annual Meeting, January 20-24, 2008, New Orleans, LA.

Diffenbaugh, N.S., and M. Ashfaq, Response of California Current forcing to mid-Holocene changes in insolation and sea surface temperature, American Geophysical Union Fall Meeting, December 10-14, 2007, San Francisco, CA.

Ashfaq, M., S. Ying, W.-w. Tung, R.J. Trapp, X. Gao, J.S. Pal and N.S. Diffenbaugh, South Asian summer monsoon dynamics in a high-resolution nested climate model, American Geophysical Union Fall Meeting, December 10-14, 2007, San Francisco, CA.

Steiner, A.L., J.S. Pal, J.L. Bell, N.S. Diffenbaugh, S.A. Rauscher, F. Giorgi and L.C. Sloan, Land surface coupling in regional climate simulations of tropical monsoon systems, American Geophysical Union Fall Meeting, December 10-14, 2007, San Francisco, CA.

Ashfaq, M., S. Ying, X. Gao, W.-w. Tung, J. S. Pal, N.S. Diffenbaugh, South Asian monsoon in a warming world, 2nd Annual Purdue University Ecological Sciences and Engineering Symposium, Dec 6, 2007, West Lafayette, IN.

Diffenbaugh, N.S., Computational Earth and Atmospheric Sciences, NSF Workshop on Science Education in Computational Thinking, November 15-16, 2007, West Lafayette, IN. *INVITED*

Kilpatrick, A.M., M.M. Meola, R.M. Moudy, N.S. Diffenbaugh and L.D. Kramer, Climate, evolution, and the transmission of West Nile virus in mosquitoes, 56th Annual Meeting of the American Society of Tropical Medicine and Hygiene, November 4-8, Philadelphia, PA.

Diffenbaugh, N.S., J.S. Pal, R.J. Trapp and F. Giorgi, Fine-scale processes regulate the response of extreme events to global climate change, 9th Biennial Conference of Research on the Colorado Plateau, October 29-November 2, 2007, Flagstaff, AZ. *INVITED*

Ashfaq, M., W.-w. Tung, S. Ying, R. J. Trapp, X. Gao, J. S. Pal, Noah S. Diffenbaugh, South Asian summer monsoon dynamics in a high resolution nested climate model, NSF Climate Over Landscapes workshop, October 1-2, 2007, Boulder, CO.

Diffenbaugh, N.S., High-resolution paleoclimate modeling, NSF Climate Over Landscapes workshop, October 1-2, 2007, Boulder, CO. *INVITED*

Trapp, R.J., N.S. Diffenbaugh, H. Brooks, M. Baldwin and J.S. Pal, Environments of extreme thunderstorms in the 21st century, European Conference on Severe Storms, September 10-14, 2007, Trieste, Italy.

Trapp, R.J., N.S. Diffenbaugh, H. Brooks, M. Baldwin and J.S. Pal, Environments of extreme thunderstorms in the 21st century, Second International Conference on Earth System Modelling (ICESM), August 27-31, 2007, Hamburg, Germany.

Pal, J.S., F. Giorgi and N.S. Diffenbaugh, Modeling regional climate change and its impacts, 1st Ibero-American Workshop on Climate Dynamics, Climate Change and Regional Climate Modeling, August 20-23, 2007, Sao Paulo, Brazil. *INVITED*

Pal, J.S., S.A. Rauscher, and N.S. Diffenbaugh, Impacts of climate change on water resources in North America, XXIV IUGG General Assembly, July 2-13, 2007, Perugia, Italy.

Ashfaq, M., S. Ying, X. Gao, W.-w. Tung, J. S. Pal, Noah S. Diffenbaugh, South Asian Monsoon in a Warming World, Purdue University Department of Earth and Atmospheric Sciences 40th Anniversary Research Symposium, April 13, 2007, West Lafayette, IN.

Ashfaq, M., L.C. Bowling, J.S. Pal, Noah S. Diffenbaugh, Coupling of a hydrological Model (VIC) with a high resolution regional climate model (RegCM3) for climate change studies, 1st Purdue University HP-Community Poster Session, April 5, 2007, West Lafayette, IN. *STUDENT RUNNER-UP AWARD*

Rauscher, S.A., F. Giorgi and N.S. Diffenbaugh, Changes in 21st century summer rainfall over Central America in the IPCC AR4 simulations, Workshop on Climate Change and Tropical Cloud Forest Conservation, March 21-23, 2007, San Jose, Costa Rica. *INVITED*

Diffenbaugh, N.S., J.S. Pal, R.J. Trapp and F. Giorgi, Fine-scale processes regulate the response of extreme events to global climate change, AMS Forum on Climate Change Manifested by Changes in Weather, 87th AMS Annual Meeting, January 14–18, 2007, San Antonio, TX.

Trapp, R.J., B.A. Halvorson, N.S. Diffenbaugh and M.E. Baldwin, Severe convective storms in past and future climates using a scale-spanning, multi-model approach, AMS Forum on Climate Change Manifested by Changes in Weather, 87th AMS Annual Meeting, January 14–18, 2007, San Antonio, TX.

Diffenbaugh, N.S., M. Ashfaq, B. Shuman, J.W. Williams, P.J. Bartlein and L.C. Sloan, Summer aridity

in the United States: Response to mid-Holocene changes in insolation, ocean mean-state, and ocean variability, American Geophysical Union Fall Meeting, December 11-15, 2006, San Francisco, CA.

Shuman, B.N., J.W. Williams, N.S. Diffenbaugh, P.J. Bartlein and M. Ashfaq, Seasonal moisture patterns in North America during the mid-Holocene: Diagnosing the mechanisms of change, American Geophysical Union Fall Meeting, December 11-15, 2006, San Francisco, CA.

Ashfaq, M., L.C. Bowling, J.S. Pal and N.S. Diffenbaugh, Coupling of a hydrological model (VIC) with a high resolution regional climate model (RegCM3) for climate change studies, American Geophysical Union Fall Meeting, December 11-15, 2006, San Francisco, CA.

Rauscher, S.A., F. Giorgi and N.S. Diffenbaugh, Changes in 21st century summer rainfall over southern Mexico and Central America in the IPCC AR4 simulations, American Geophysical Union Fall Meeting, December 11-15, 2006, San Francisco, CA.

Ashfaq, M., L.C. Bowling, J.S. Pal and N.S. Diffenbaugh, Climate change impacts on regional hydrology, ASICTP/NCP International Conference on Global Change, November 13-17, 2006, Islamabad, Pakistan. *INVITED*

Diffenbaugh, N.S., J.S. Pal, R.J. Trapp and F. Giorgi, Fine-scale processes regulate the response of extreme events to global climate change, ASICTP/NCP International Conference on Global Change, November 13-17, 2006, Islamabad, Pakistan. *INVITED*

Trapp, R.J., B.A. Halvorson and N.S. Diffenbaugh, Telescoping model approaches to evaluate severe convective storms under future climates, 23rd Conference on Severe Local Storms, November 6-10, 2006, St. Louis, MO.

Diffenbaugh, N.S., Extreme climate in the 21st century, NWS/NOAA Sub-Regional Climate Services Workshop, July 18-19, 2006, West Lafayette, IN. *INVITED*

Lyle, M., H. Palike, J. Backman, T.C. Moore, M. Huber, A. Olivarez Lyle, A.C. Ravelo and N.S. Diffenbaugh, Data-model integration for the Miocene: the need for more ocean drilling, Towards an Integrated Data-Modeling Perspective of Miocene Climate Change, Research Center Ocean Margins Workshop, June 19–22, 2006, Bremen, Germany.

Huber, M., M. Lyle, N. S. Diffenbaugh and A.C. Ravelo, Drying the American West in the Miocene, Towards an Integrated Data-Modeling Perspective of Miocene Climate Change, Research Center Ocean Margins Workshop, June 19–22, 2006, Bremen, Germany.

Amman, C.M., and CCSM-Paleoclimate Working Group, First impressions from a transient coupled simulation of the Mid- to Late-Holocene with the NCAR CCSM 3.0, HOLIVAR20006 Open Science Meeting, June 12-15, 2006, London, England.

Diffenbaugh, N.S., Extreme climate in the 21st century, Third Workshop on the Theory and Use of Regional Climate Models, May 29-June 9, 2006, Trieste, Italy. *INVITED*

Shuman, B, J.W. Williams, N.S. Diffenbaugh and P. Bartlein, Holocene paleoclimate reconstructions from the mid-continent of North America: a comparison with new regional climate model experiments, Association of American Geographers Annual Meeting, March 7-11, 2006, Chicago, IL.

Diffenbaugh, N.S., High-resolution paleoclimate modeling, Association of American Geographers Annual Meeting, March 7-11, 2006, Chicago, IL.

Halvorson, B.A., R.J. Trapp and N.S. Diffenbaugh, Simulations of extreme convective storms in future climates: proof-of-concept tests with a retrospective event, Symposium on the Challenges of Severe Convective Storms, 86th AMS Annual Meeting, January 29 – February 2, 2006, Atlanta, GA.

Shuman, B., J.W. Williams, N.S. Diffenbaugh and P.J. Bartlein, Holocene climatic change in the northern Midwest: a comparison of updated paleoclimate reconstructions and new regional climate model experiments, American Geophysical Union Fall Meeting, December 5-9, 2005, San Francisco, CA.

Diffenbaugh, N.S., Coupled climate model simulations of large-scale eastern boundary current forcing during the mid-Holocene and Last Glacial Maximum, American Geophysical Union Fall Meeting, December 5-9, 2005, San Francisco, CA.

Diffenbaugh, N.S., Stability of large-scale eastern boundary current forcing in the 21st century, Tenth Annual CCSM Workshop, June 21-23, 2005, Breckenridge, CO. *INVITED*

Diffenbaugh, N.S., Coupled AOGCMs: Equipped for Holocene forcings and feedbacks? NSF Earth System History Holocene PI's Meeting, May 17-19, 2005, Washington, D.C. *INVITED*

Diffenbaugh, N.S., C₃/C₄ grassland balance in the PMIP2 LGM simulations, PMIP2 Workshop, April 3-8, 2005, Giens, France. *INVITED*

Diffenbaugh, N.S., 6 ka and LGM variability and seasonal structure of large-scale eastern boundary current forcing, PMIP2 Workshop, April 3-8, 2005, Giens, France.

Diffenbaugh, N.S., Regional climate response to CO₂-induced vegetation feedbacks in the western U.S. and California Current, Research Needs and Directions of Regional Climate Modeling Using WRF and CCSM, March 22-23, 2005, Boulder, CO.

Diffenbaugh, N.S., Seasonality and variability of large-scale forcing of eastern boundary current regions: Initial results, Workshop on Analyses of Climate Model Simulations for the IPCC AR4, March 1-4, 2005, Honolulu, HI.

Bryant, S.E., L.C. Sloan, M.A. Snyder and N.S. Diffenbaugh Regional climate response to three different representations of preindustrial land cover in the western United States, The UCSC Plant Research Symposium, February 12, 2005, Santa Cruz, CA.

Diffenbaugh, N.S., M.A. Snyder and L.C. Sloan, Response of eastern boundary current upwelling to regional-scale atmosphere-land cover feedbacks induced by elevated atmospheric carbon dioxide concentrations, American Geophysical Union Fall Meeting, December 13-17, 2004, San Francisco, CA.

Bryant, S.E., L.C. Sloan, M.A. Snyder and N.S. Diffenbaugh, Regional climate response to three different representations of preindustrial land cover in the western United States, American Geophysical Union Fall Meeting, December 13-17, 2004, San Francisco, CA.

Koch, P.L., N.S. Diffenbaugh and K.A. Hoppe, The effect of Late Quaternary climate and pCO₂ change on C₄ plant abundance in the south-central United States, Geological Society of America Annual Meeting and Exposition, November 7-10, 2004, in Denver, CO.

Snyder, M.A., N.S. Diffenbaugh and L.C. Sloan, Future climate and responses by coastal upwelling systems along the west coast of North America, California Energy Commission's Annual Climate Change Conference, June 9-10, 2004, Sacramento, CA.

Sloan, L.C., M.A. Snyder, J.L. Bell, N.S. Diffenbaugh, J.O. Sewall, S. Bryant and L. Kueppers, Regional climate modeling at UCSC: Current work and new directions, 2nd Annual Regional Climate Modeling Workshop, May 31-June 9, 2004, Trieste, Italy. *INVITED*

Diffenbaugh, N.S., M.A. Snyder, R. Mendelsohn, J.A. Barron and L.C. Sloan, Can altered seasonal structure explain cool mid-Holocene sea surface temperatures in the California Current? PACLIM 2004, March 28-31, 2004, Pacific Grove, CA.

Snyder, M.A., N.S. Diffenbaugh and L.C. Sloan, Impact of future climate change on wind-driven upwelling in the California Current System, PACLIM 2004, March 28-31, 2004, Pacific Grove, CA. *INVITED*

Diffenbaugh, N.S., Mean state or variability: Using numerical models to decipher ambiguous records of paleoenvironmental change, Joint CCSM Climate Variability and Paleoclimate Working Group Meeting, February 2-3, 2004, Boulder, CO. *INVITED*

Diffenbaugh, N.S., J.L. Bell and L.C. Sloan, Simulated Changes in Extreme Temperature and Precipitation Events at 6 ka, American Geophysical Union Fall Meeting, December 8-12, 2003, San Francisco, CA.

Koch, P.L., N.S. Diffenbaugh and K.A. Hoppe, Isotopic records of Late Quaternary ecosystem change in Texas, 63rd Annual Meeting of the Society of Vertebrate Paleontology, October 15-18, 2003, St. Paul, MN.

Diffenbaugh, N.S., L.C. Sloan, J.A. Barron and M.A. Snyder, A longer, less vigorous Mid Holocene California Current coastal upwelling season? Data-model comparisons, XVI INQUA Congress, July 23-30, 2003, Reno, NV.

Diffenbaugh, N.S., L.C. Sloan, M.A. Snyder, J.L. Bell, J.O. Kaplan and P.J. Bartlein, Sensitivity of vegetation in the western United States to global anthropogenic changes in atmospheric carbon dioxide concentration: forcing and feedbacks in an RCM-EVM coupling, American Geophysical Union Fall Meeting, December 6-10, 2002, San Francisco, CA.

Diffenbaugh, N.S. and L.C. Sloan, Orbital forcing of Mid Holocene climate in the RegCM2 regional climate model: a case study of western North America, PMIP Workshop 4, June 22-26, 2002, Cambridge, U.K.

Diffenbaugh, N.S., L.C. Sloan, M.A. Snyder and J.L. Bell, Sensitivity of California vegetation to CO₂-induced climate change: a regional modeling study, PACLIM 2002, March 3-6, 2002, Monterey, CA.

Diffenbaugh, N.S. and L.C. Sloan, Sensitivity of Mid Holocene global climate to changes in vegetation reconstructed from the geologic record, American Geophysical Union Fall Meeting, December 10-14, 2001, San Francisco, CA.

Diffenbaugh, N.S. and V. Walbot, Cadmium uptake and distribution in maize inbred lines, 1996 Bay Area Maize Meeting, Stanford, CA.

TEACHING AND CURRICULUM DEVELOPMENT

EAS 106, *Geosciences in the Cinema*, Purdue University, Spring 2006, Fall 2006, Fall 2007, Spring 2008, Fall 2008, Spring 2009

EAS 591A, *Topics in Climate Change*, Purdue University, Fall 2008

EAS 591C, *Climate Analysis I*, Purdue University, Spring 2008

EAS 591M, *Writing Successful Science Proposals*, Purdue University, Fall 2005, Fall 2006, Fall 2007

EAS 591G, *Global Environmental Change*, Purdue University, Spring 2005

Teaching Assistant, *History of Life and Environmental Geology*, UCSC, 3/02 – 3/03

Varsity Volleyball Head Coach, Mount Madonna School (MMS), Watsonville, CA, 9/97 – 6/00

High School Chemistry and Physics Teacher, MMS, 9/97 – 6/99

Curriculum Development, Mount Madonna Center (MMC), Watsonville, CA, 7/98 – 8/99

Curriculum Development, MMS (Undergraduate Internship, Stanford University), 6/95 – 9/95

SELECTED UNIVERSITY SERVICE

Search Committee, Dean of Science, Purdue University, 2008 – 2009
Steering Committee, Computing Research Institute, Purdue University, 2007 – present
High Performance Computing Advisory Committee, Purdue University, 2006 – present
High Performance Computing Committee, Department of EAS, Purdue University, 2005 – present
Seminar Committee (Chair), Purdue Climate Change Research Center, 2005 – present
Executive Committee, Department of EAS, Purdue University, 2005 – 2006
Climate Change Standing Search Committee, College of Science, Purdue University, 2004 – present
Search Committee (Chair), BGC Measurements and Modeling, Purdue University, 2004 – 2005
Executive Committee, Purdue Climate Change Research Center, 2004 – 2005
Undergraduate Committee, Department of EAS, Purdue University, 2004 – 2005
Provost Advisory Committee for Facilities, UC Santa Cruz, 2001 – 2003

SELECTED PUBLIC OUTREACH

Forum, Lafayette Unitarian Universalist Church, July 12, 2007.

Lecture, Purdue REU Summer Brownbag, June 17, 2009.

Keynote Lecture, Mensa Education & Research Foundation *Colloquium 2009: Weather or Not*, February 27 - March 1, 2009, Atlanta, GA.

Panelist, Mensa Education & Research Foundation *Colloquium 2009: Weather or Not*, February 27 - March 1, 2009, Atlanta, GA.

The Great Global Warming Swindle screening and commentary, Lafayette Unitarian Universalist Church, November 16, 2008.

Lecture, Purdue Summer Undergraduate Research Fellowship (SURF) program, June 26, 2008.

Lecture, Purdue REU Summer Brownbag, June 20, 2008.

NCL Tutorial, Fourth ICTP Workshop on the Theory and Use of Regional Climate Models, March 3-14, 2008, Trieste, Italy.

Forum, Lafayette Unitarian Universalist Church, May 27, 2007.

An Inconvenient Truth screening and commentary, Purdue Student Pugwash, February 15, 2007.

NCL tutorial, Third Workshop on the Theory and Use of Regional Climate Models, May 29-June 9, 2006, Trieste, Italy.

Public Lecture, Purdue Student Pugwash, Purdue University, August 29, 2006.

Booth presentation, Purdue/Lugar Summit on Energy Security, August 29, 2006.

Purdue-Calumet Alumni Association Platinum Lecture, April 5, 2006.

Public Lecture, Purdue Student Pugwash organization for social responsibility in science and technology, Purdue University, November 2, 2005.