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EDUCATION**PROFESSIONAL EXPERIENCE****AREAS OF RESEARCH****PROFESSIONAL ACTIVITIES****PUBLICATIONS**

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EDUCATION

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B.S. 1975 University of California, Davis Environmental Science, Highest Honors
 M.S. 1978 University of California, Davis Ecology (Biological Ecology)
 Ph.D. 1986 University of California, Davis Ecology (Physical Ecology)

PROFESSIONAL EXPERIENCE

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Current Positions

2002-present Research Affiliate, Institute of Arctic and Alpine Research ([INSTAAR](#)), Univ of Colorado at Boulder. Research Associate, Univ of Colorado at Boulder. 2004-2005.

1997-present Research Scientist, Natural Resource Ecology Laboratory ([NREL](#)), Colorado State Univ, Ft. Collins. Research Scientist I 1997-2002; Research Scientist III, 2002-present.

2006-present Lecturer, Semester at Sea, Institute for Shipboard Education, Pittsburgh, PA (in affiliation with the Univ of Virginia, Charlottesville). For Fall 2006 voyage.
[TEACHING EXPERIENCE](#)

Prior Experience

1976 Lecturer, Sierra Nevada College, Incline Village, NV.

1977-1983 Research Assistant and Teaching Assistant, Division of Environmental Studies and Dept of Land, Air, and Water Resources, Univ of California, Davis.

1984 Lecturer, Department of Land, Air, and Water Resources, Univ of California, Davis.

- 1985-1986 Postdoctoral Fellow, Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State Univ, Ft. Collins.
- 1987-1990 Research Associate, Cooperative Institute for Research in the Atmosphere, Colorado State Univ, Ft. Collins.
- 1987-1997 Research Associate, Natural Resource Ecology Laboratory (NREL), Colorado State Univ.
- 1991-1997 Scientific Visitor, Climate and Global Dynamics Division, National Center for Atmospheric Research (NCAR), Boulder.
- 1991-1996 Deputy Project Scientist, Climate System Modeling Program, University Corporation for Atmospheric Research (UCAR), Boulder, CO.
- 1997-2002 Scientist, Climate and Global Dynamics Division, National Center for Atmospheric Research, Boulder, CO. Ecosystem Dynamics and the Atmosphere Section and Terrestrial Sciences Section.
- 1998-1999 / 1999-2001 Deputy Section Head / Acting Section Head, Ecosystem Dynamics and the Atmosphere Section, Climate and Global Dynamics Division, National Center for Atmospheric Research, Boulder.
- 2000-2005 Instructor, Center for Environmental Research and Conservation ([CERC](#)), Columbia University, New York. Summer Ecosystem Experiences for Undergraduates Program (SEE-U). 2000-2001, on location at Biosphere 2 Center, AZ. 2002-2005, on location at Instituto de Pesquisas Ecológicas ([IPÊ](#)), SP, Brazil. 2005, also on location in the Dominican Republic.
- 2005 Lecturer, Dept of Ecology and Evolutionary Biology, Univ of Colorado, Boulder, CO. Sept-Dec 2005.
- 2005-2006 Lecturer, Mountain Research Station, Univ of Colorado, Nederland, CO. Feb-Mar 2005 & 2006 ♦ [TEACHING EXPERIENCE](#)

■ AREAS OF RESEARCH

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Disciplinary Areas —

- Vegetation Geography
- Climate Analysis and Dynamics

Integrative Areas: Biogeosciences —

- Global Environmental Change
 - Terrestrial Biosphere Response to Climate Change
 - Coupled Climate-Land System Response to Altered Forcing
- Ecological Dynamics – Interannual/Decadal Ecological Response to Climate Variability

■ PROFESSIONAL ACTIVITIES — RESEARCH, SERVICE, AND PUBLICATIONS

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SPONSORED RESEARCH (n=17)

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 [RESEARCH OVERVIEWS](#)

Grants as Principal Investigator

VEMAP Phase 2 Input Dataset Development and Model Output Synthesis. Vegetation/Ecosystem Modeling and Analysis Project ([VEMAP](#)). NASA Mission to Planet Earth. Jan 1996-Aug 2002. \$1.25M/5.5y+\$276K/1y extension. Funding in part to support the US National Assessment. ([Principal Investigator](#), with D. Schimel, NCAR)  [VEMAP OVERVIEW](#) | [VEMAP WEBSITE](#)

Development of a 90-year High Resolution Climate Data Set for the Continental United States. Joint NOAA/NASA Climate Change Enhanced Data Set Project. Sept 1997-June 2002. \$325K/4.5+y. ([Principal Investigator](#), with C. Daly and G. Taylor, Oregon State Univ, A. McNab, NCDC)

Climate Change in the Colorado Rocky Mountains: Bounding Projected Changes in Regional Climate. USGS Biological Resources Division (formerly NBS and NPS) Global Change Research Program. 1991-1999, \$550K/8y. ([Principal Investigator](#), with R.A. Pielke, Sr., Colorado State Univ)

Projecting Climate and Vegetation Change for the Central Grasslands Region. USGS Biological Resources Division (formerly NBS and NPS) Global Change Research Program. 1992-1999, \$950K/7y. ([Principal Investigator](#), with W. Reiners, Univ of Wyoming, R. Neilson, USFS/Corvallis, and R.A. Pielke, Sr., Colorado State Univ)

VEMAP Phase 1 Integrated Data Base and Model Output Synthesis. Vegetation/Ecosystem Modeling and Analysis Project (VEMAP). EPRI, USFS, and NASA. Aug 1993-Dec 1995. \$225K/2.3y. ([Principal Investigator](#), with D. Schimel, NCAR)

Grassland/Atmosphere Response to Changing Climate: Coupling of Regional and Local Scales. Department of Energy, Theoretical Ecology Program. Sept 1989-Nov 1992. \$210K/3y. ([Principal Investigator](#), with M. Coughenour, Colorado State Univ)

As Co-Principal Investigator/Co-Investigator

The Impacts of Climate Change on Alaskan Coastal Arctic Tundra. The Nature Conservancy, Global Climate Change Initiative. 2002-2003. (B. Baker, PI, TNC)

Spatial Data and Scaling Methods for Assessment of Agricultural Impacts of Climate: Managing Multiple Sources of Uncertainty over Space. NSF Methods and Models for Integrated Assessment. 2000-2003. \$725K/3y. ([Co-Investigator](#); L. Mearns, PI, NCAR)

Understanding Coupled Climatic, Hydrological and Ecosystem Responses to Global Change in the Colorado Rockies Biogeographic Area: Phase II. USGS Global Change Research Program. 1999-2003. \$225K/yr for 3 yrs. ([Co-Principal Investigator](#); T. Stohlgren, Lead PI, Colorado State Univ)

Integrated Research Challenges: Biological Controls of Terrestrial Carbon Fluxes. NSF Integrated Research

Challenges Program. 1999-2004. \$2.8M/4y. (Co-Principal Investigator; D. Ojima, Lead PI, Colorado State Univ).

A Climatic Analysis of Long-Term Ecological Research Sites. NSF Long-Term Ecological Research (LTER) Program. 1994-1996. \$100K/2y. (Co-Principal Investigator, with D. Greenland, Univ of Oregon)

Dynamic Land Surface/Atmospheric Parameterization at Different Spatial Scales for the South Platte River Drainage. NOAA Global Change Program. 1993-1995. (Co-Investigator; R. Pielke, J. Baron, W. Parton, PIs, Colorado State Univ)

Responses of Hydrologic and Aquatic Ecosystem Processes to Potential Climate Change on Watershed, Drainage Basin, and Regional Scales. USGS Biological Resources Division (formerly NBS and NPS) Global Change Research Program. 1991-1999. (Co-Principal Investigator; J. Baron, Lead PI, Colorado State Univ)

A Scientific GIS for Global Change Research. IBM Independent Research and Development Project. 1990-1994. (Collaborator; L. Knapp and A. Beller, IBM, Project Leaders)

Using Multi-Sensor Data to Model Factors Limiting Carbon Balance in Global Arid and Semiarid Lands. NASA, Earth Observing System (EOS) Program, Interdisciplinary Science. 1989-2000. (Co-Investigator; D. Schimel, PI, Colorado State Univ & NCAR)

Response of a Temperate Grassland Ecosystem to Climate Change: Importance of Biotic Interactions and Feedbacks. Ecosystems Studies Program, NSF. 1989-1994. (Co-Investigator; H.W. Hunt, PI, Colorado State Univ)

Biophysical Constraints over Gas Exchange in a Tallgrass Prairie. NASA, FIFE: First ISLSCP (International Satellite Land Surface Climatology Project) Field Experiment. 1987-1992. (Co-Principal Investigator; D. Schimel, PI, NCAR)

PROFESSIONAL SOCIETY MEMBERSHIP AND ACTIVITIES

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Current Membership

American Geophysical Union

Professional Society Activities

* Society member at time of service

➔ [PROFESSIONAL SERVICE — MEETING SESSIONS ORGANIZED OR CHAIRED](#) (follow link for details)

*American Geophysical Union

*Association of American Geographers

*Ecological Society of America

International Association of Meteorology and Atmospheric Sciences

*International Association for Landscape Ecology (US-IALE)

➔ [PROFESSIONAL SERVICE — PEER REVIEW](#) (follow link for details)

American Institute of Biological Sciences

*American Geophysical Union

*Ecological Society of America

Society for Range Management

➔ Professional society workshop participant

International Association of Hydrological Sciences (IAHS): Global Data Bases Workshop, Birmingham, UK. July 1999.

Natural Areas Association (NAA): Cuban Bird Conservation and Natural Areas Workshop, Central and Western Cuba. Nov 2001.

➔ Other society activities

*International Association for Vegetation Science (IAVS): Vegetation of South Africa Excursion. Sept-Oct 1996.

Professional Society Honors

*American Association for the Advancement of Science (AAAS): Award for Excellence, Pacific Division, Atmospheric and Hydrospheric Science Section. 1984.

■ AWARDS AND HONORS

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Postdoctoral Fellowship, Cooperative Institute for Research in the Atmosphere, Colorado State Univ. 1985.

Award for Excellence, American Association for the Advancement of Science,

Pacific Division, Atmospheric and Hydrospheric Science Section. 1984.

Sigma Xi Scientific Research Society. Elected to membership, 1978.

Phi Kappa Phi Honor Society. Elected to membership, 1975.

Departmental Citation, Division of Environmental Studies, University of California, Davis. 1975.

Research Fellowship, Foresta Institute for Ocean and Mountain Studies, Carson City, NV. 1972.

■ PROFESSIONAL SERVICE — NATIONAL AND INTERNATIONAL COMMITTEES AND SCIENCE TEAMS (18)

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International

Vegetation/Ecosystem Modeling Analysis Project ([VEMAP](#); an IGBP/GAIM core project). Co-Leader, Data and Analysis Group. Member, Steering Committee. Phase 1: 1993-95; Phase 2: 1996-2002.

Model Evaluation Consortium for Climate Assessment (MECCA) Analysis Team. 1992-1995.

First ISLSCP (International Satellite Land Surface Climatology Project) Field Experiment (FIFE) Science Team. 1987-1992.

Lake Titicaca Limnological Research Expedition, Peru. 1972-73. University of California, Davis, and University of the Pacific, Stockton, CA. Under sponsorship of the National Geographical Society and el Instituto del Mar del Perú (IMARPE), Lima.

National

Scientific Advisory Committee, Greater Yellowstone Network, USDI National Park Service. 2002-2006.

Steering Committee, U.S. Workshop on Climate Projections, Scenarios and Assessment. 2002.

National Technical Advisory Committee, DOE National Institute for Global Environmental Change (NIGEC). 1996-1998, 2001-2002. Executive Committee Member and NTAC Secretary, 2002.

National Center for Atmospheric Research (NCAR) Community Climate System Model ([CCSM](#)) [Biogeochemistry Working Group](#). 1998-2002.

Co-Leader, Ecosystems Scenario Development Team, U.S. National Assessment of the Potential Consequences of Climate Variability and Change. 1998-2001. (with J. Melillo and D. Schimel) [[on-line information](#)]

Climate Variability and Change Scenario Development Team, U.S. National Assessment of the Potential Consequences of Climate Variability and Change. 1998-2001.

Central Great Plains Assessment Steering Committee. U.S. National Assessment of the Potential Consequences of Climate Variability and Change. 1998-2001. [[on-line information](#)]

Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC) User Working Group (UWG). 1997-1999. UWG Climate Committee. 1998-1999.

Climate Scenario Task Force, USDA Forest Service Global Change Research Program. 1994-1997.

NASA EOS Algorithm Theoretical Basis Document (ATBD) Review Panel. 1997.

NASA EOS Pathfinder AVHRR Land Surface Science Working Group. 1992-1994.

Climate System Modeling Program (CSMP) Science Team, University Corporation for Atmospheric Research (UCAR). 1991-1996.

Long-Term Ecological Research Program (NSF/LTER) Climate Committee. 1990-1996, 2002-2003.

Hatch Fund Panel, Agricultural Experiment Station, University of Nevada, Reno. 1989, 1990.

PROFESSIONAL SERVICE — WORKSHOPS & MEETING SESSIONS ORGANIZED OR CHAIRED (14)

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International

Invited Session on "Terrestrial Ecosystem Carbon and Vegetation Dynamics: PIK/NPP and VEMAP2 Model Intercomparisons." IAMAS (International Association of Meteorology and Atmospheric Sciences) Symposium on Improvements and Intercomparisons of Climate System Models and Their Component Models, IUGG 99, 15-21 July 1999, Birmingham, UK. (Convener, with K. Hibbard, Univ. of New Hampshire).

VEMAP2 Fast-Track Experiment Results Workshop, 6-10 April 1999, Breckenridge, CO. (Organizer, with D. Schimel)

VEMAP2 Preliminary Modeling Results Workshop, 21-22 Oct 1998, Biosphere2, Oracle, AZ. (Organizer, with D. Schimel)

VEMAP2 Experimental Design Workshop, April 1998, Ft. Collins, CO. (Organizer, with D. Schimel)

Steering Committee, 2nd International Conference on Integrating GIS and Environmental Modeling, National Center for Geographical Information and Analysis (NCGIA). 1992-1993.

National

ILTER Workshop "Biogeographical and biogeochemical analysis of climate variability and change." Long Term Ecological Research Network All Scientist's Meeting 'Long-term Ecological Research in the New Millennium — Unifying Concepts and Global Applications' August 2000, Snowbird, Utah. ([Organizer](#), with D. Ojima, R. Neilson, W. Parton). [Program](#), [Abstract](#)

Contributed Paper and Poster Sessions Organizing Committee, 1996 Annual Combined Meeting, Ecological Society of America, August 1996, Providence, RI.

Joint Special Session on "Regional-Global Interactions." Atmospheric Sciences, Hydrology, and Ocean Sciences Sections, 1993 American Geophysical Union Fall Meeting, December 6-10, San Francisco. ([Convener](#), with R. Pielke and D. Schimel)

Global Climate Change and Regional Responses Workshop, Pingree Park, CO, Oct 1991. Climate System Modeling Program, University Corporation of Atmospheric Research. ([Organizer](#), with R. Pielke, D. Schimel, and F. Bretherton)

Forum on Observational Data and Analysis for Global Change. NOAA National Geophysical Data Center, IBM (Boulder), and Colorado State University. Boulder and Ft. Collins, CO. Apr 1991. ([Organizer](#), with J. Kineman).

4th Annual Landscape Ecology Symposium, Ft. Collins, CO. March 1989. Session Chair.

1989 Association of American Geographers Annual Meeting, Baltimore, MD. March 1989. Session Chair.

1988 Annual Meeting, Ecological Society of America, Davis, CA. Aug 1988. Session Chair.

Workshop on Monitoring Climate for the Effects of Increasing Greenhouse Gas Concentrations. Pingree Park, CO, Aug 1987. Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University. ([Organizer](#), with R. Pielke)

■ PROFESSIONAL SERVICE — PEER REVIEW

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Agency Program and Institutional Review

NASA EOS Data Assimilation System (DAS) Program Review. 1997.

DOE National Institute for Global Environmental Change (NIGEC) Regional Centers, NTAC Program Review. 1996, 1997, 1998, 2001, 2002.

Faculty promotion review. Oregon State University. 2003.

Publications Peer-review

Journals:

BioScience. 1992.

Climatic Change. 2001, 2002.

Climate Research. 1998.

Ecological Applications. 1997, 1998.

Ecology

Journal of Hydrometeorology. 2002.

Journal of Geophysical Research

Journal of Range Management

Meteorology and Atmospheric Physics

Tellus

Books:

Addison-Wesley Publishers: *Terrestrial Plant Ecology* (Barbour et al. 1998). 1998.
 Intergovernmental Panel on Climate Change (IPCC) Working Group II: *Climate Change 1995*. 1995.
Grassland Ecosystems of the Mongolian Steppe (proceedings volume)

Agency publications:

NOAA National Geophysical Data Center (Global Ecosystems Database CDROM)
 UCAR Office for Interdisciplinary Earth Studies (Global Change Institute proceedings). 1991, 1993.
 USDA Forest Service:
 National Global Change Research Program
 Southern Region Global Change Research Program
 Rocky Mountain Forest and Range Experiment Station
 Forest Sciences Laboratory, Pacific Northwest Research Station (Corvallis, OR). 1999.
 USDA Agricultural Research Service (Ft. Collins, CO)

Proposal Review

American Institute of Biological Sciences (AIBS)
 Biospherics Peer Review for NASA. 1992.
 Scientific Peer Review for National Commission on Science for Sustainable Forestry (NCSSF).
Panel Member. 2003, 2004.
 CALFED Bay-Delta (San Francisco Bay/Sacramento-San Joaquin Delta) Program. 2002.
 National Aeronautics and Space Administration, Earth Observing System (NASA/EOS)
 National Institute for Global Environmental Change (NIGEC), Department of Energy:
 National NIGEC Office. 1996, 1997, 1998, 1999, 2000.
 Great Plains Regional Center. 1997, 1998, 2001.
 Midwestern Regional Center.
 WESTGEC. 1997, 1998.
 National Oceanic and Atmospheric Administration (NOAA)
 Office of Global Programs. 2001.
 Office of Ocean Exploration. 2002.
 National Park Service (NPS), Global Change Research Program
 National Science Foundation (NSF):
 Climate Dynamics Program
 Long Term Studies in Environmental Biology Program
 Paleoclimate Program. 1997.
 U.S. Environmental Protection Agency, Environmental Research Laboratory, Corvallis, OR.
 U.S. Fish and Wildlife Service, National Ecology Research Center, Ft. Collins, CO.
 University of Nevada, Reno, Agricultural Experiment Station Hatch Fund. Panel Member. 1989, 1990.

HOME INSTITUTION SERVICE

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National Center for Atmospheric Research (1991-2002)

Steering Committee and Working Group, NCAR Weather and Climate Impact Assessment Science Initiative. 2001-2002.
 NCAR GIS Advisory Group. 2001-2002.
Acting Section Head, Ecosystem Dynamics and the Atmosphere Section, Climate and Global Dynamics Division. 1999-2001.
Deputy Section Head, Ecosystem Dynamics and the Atmosphere Section. 1998-1999.
 Biogeochemistry Working Group, NCAR Community Climate System Model (CCSM). 1998-2002.

Advanced Study Program Postdoctoral Fellow mentoring — D. Yates. 1997-1998.
 Advanced Study Program Postdoctoral Fellow Research Planning Committee — R.F. Cannon. 1997-1998.
Reviewer, postdoctoral fellowship applications, Advanced Study Program. 1998.
Reviewer, community requests for computing resources, Scientific Computing Division. 1997.
Seminar Series Coordinator, Climate and Global Dynamics Division. 1994-1995.
 In-house review of extramural proposals, Climate and Global Dynamics Division. 1994, 1995.

Colorado State University (1985-1994)

Member, Program for Ecological Studies. 1990-1994.
 Workshop Scholarship Committee, Program for Ecological Studies. 1990.
Instructor, *Global Change Graduate Seminar*, Program for Ecological Studies. 1989.
Co-organizer, Laird-Norton Forum on Global Change. 1989-1990.
Organizer, NREL-CIRA Joint Seminar Series on Global Change. 1987-1989.
Guest Lecturer, *Biogeochemistry*, Department of Range Science. 1989.
 Fellowship Selection Committee, Cooperative Institute for Research in the Atmosphere. 1986.

University of California, Davis (1977-1984)

Chancellor's Advisory Committee for the UC Davis Natural Reserve System. 1984.
 Ecology Seminar Series Committee, Institute of Ecology. 1982-1984.
Coordinator, Center for Environmental Design. 1985.
Instructor-in-Charge, *Ecology of Development in the Humid Tropics*, Division of Environmental Studies. 1982.
 Course Development Committee, Tropical Studies Group, Ecology Graduate Group. 1982.
Guest Lecturer, Division of Environmental Studies:
 Principles of Environmental Science. 1984.
 Field and Laboratory Methods in Ecology. 1983.
 Limnology Laboratory. 1980, 1981, 1983, and 1984.

■ COMMUNITY SERVICE — OUTREACH

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Graduate Student Committees

Ph.D. Qualifying Examination Committee (Nan Rosenbloom) and Affiliate Faculty Member, Department of Geological Sciences, University of Colorado, Boulder. 1994.

Outside of Home Institution Undergraduate Courses (see also ◆ [TEACHING EXPERIENCE](#))

Instructor, *Summer Ecosystem Experiences for Undergraduates (SEE-U)*, Center for Environmental Research and Conservation, Columbia University, New York. Lecture, field, and digital laboratory course: [Overview](#). Course taught at Biosphere 2 Center, Oracle, AZ, July-Aug 2000 and June-July 2001, and at Instituto de Pesquisas Ecológicas, Nazaré Paulista, São Paulo, Brazil, July-Sept 2002 and June-July and July-Aug 2003

Guest Lecturer, *Global Ecology*, Department of Environmental, Population, and Organismic Biology (EPOB), University of Colorado, Boulder. "Future Vegetation Change: Response of Ecosystem Structure and Distribution to Altered Forcing." April 2000.

Guest Lecturer, *GIS Applications in Ecological Modeling*, Dept. of Zoology and Physiology, Univ. of Wyoming, Laramie. "Development of Integrated Datasets for Regional Ecosystem Modeling." March 1994.

Guest Lecturer, *General Ecology*, Dept. of Biological Sciences, California State Univ., Sacramento. "Methods in Plant Ecology." March 1980.

Field Study Programs (8) (see also [INTERNATIONAL FIELD AND TRAVEL EXPERIENCE](#))

Volunteer Scientist, Guanacos of Patagonia Research Expedition, Chile. EarthWatch Expeditions. Dec 1977-Jan 1978.

Associate Scientist, Guanaco Behavioral Ecology Expedition, Peru. Educational Expeditions International (EarthWatch). April 1973.

Foresta Institute for Ocean and Mountain Studies, Carson City, NV.

Residential environmental education programs:

Assistant Field Director, Washoe Pines Ecology Program. July-Aug 1972.

Mountaineering Program Leader, Washoe Pines Ecology Program. July-Aug 1970, 1971, June-July 1975.

Field Instructor, NSF-High School Student Science Training Program (SSTP). June-July 1971, 1972.

Field Instructor, NSF-High School Teachers' In-Service Training Institute (TISI). Oct-Dec 1971.

Field Instructor, IUCN-UNESCO Joint International Environmental Education Conference, June-July 1970.

Volunteer Instructor, *The Study of Natural Areas*, Agora Alternative Education Program, Davis Senior High School. Apr-June 1975.

Outreach Presentations

Hidden Corners, Inc., Mongolian Magic Expedition, Mongolia. "Ecology of Lake Khövsgöl." July 1998.

Guest Lecturer, National Park Service, Natural Resources Management Trainee Program, Denver, CO. "Global Change: Causes and Impacts." March 1991.

EarthWatch Expeditions, Ecology of Great Plains Grasslands Project, Pawnee National Grassland, CO. "Climate of Arid Lands: Global Distribution and Causes." July 1990.

Non-profits and Industry Outreach

The Nature Conservancy (TNC) —

Participant. TNC 4th Wetland Management Network (WETNET) Workshop: *From Science to Strategy: How to Put Lessons from Wetland Ecology into Practice*. 15-17 April 2003, Tulum, Mexico.

Contributor. Project on *The Impacts of Climate Change on Alaskan Coastal Arctic Tundra: A Synthesis of Possible Outcomes*. TNC Global Climate Change Initiative. 2002-2003.

Visitor (Invited). Application of global climate change assessments in nature preserve design. TNC Western Resource Office, Boulder, CO. Dec 2000.

University Liaison/Technical Advisor. *A Scientific GIS for Global Change Research*, an IBM Independent Research and Development Project. IBM, Boulder, CO. 1990-1994.

INVITED SEMINARS (7)

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Institute of Arctic and Alpine Research, University of Colorado at Boulder. "Historical and Future Climates of the US Rocky Mountains." Oct 2002.  [ABSTRACT](#) |  [PRESENTATION \(pdf file\)](#)

Climate and Global Dynamics Division, National Center for Atmospheric Research. "Bioclimate Datasets for

Assessment of Ecosystem Sensitivity to Climate Variability and Climate Change." Aug 1997.

Department of Botany, University of Wyoming. "Ecosystem Sensitivity to Climate and CO2 Change: The VEMAP Model Intercomparison." March 1995.

National Center for Atmospheric Research-Colorado State University-University of Colorado Front Range Biosphere-Atmosphere Interactions Group. "The VEMAP U.S. Dataset for Terrestrial Biosphere Modeling." Boulder, CO. April 1994.

Department of Botany, University of Wyoming. "Impacts of Global Change on Ecosystem Dynamics of the North American Central Grasslands." Nov 1989.

Organization for Tropical Studies (OTS), La Selva Biological Reserve, Costa Rica. "Global Climate Change: A Tropical Forest Perspective." June 1989.

Goddard Institute for Space Studies, New York, NY. "Large-Scale Relationships between General Circulation and the Distribution of Global Vegetation Zones." Aug 1986.

Natural Resource Ecology Laboratory, Colorado State University. "Large-Scale Atmospheric Processes Influencing the Distribution of Vegetation in North America." May 1986.

INVITED TALKS AT PROFESSIONAL MEETINGS AND WORKSHOPS (45)

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International

VEMAP2 Results and Planning Workshop. "The VEMAP Work Bench." Jena, Germany. June 2000. (S. Aulenbach, lead presenter)

IAMAS Symposium on Improvements and Intercomparisons of Climate System Models and Their Component Models. "Historical and Future Scenario Climate Datasets for the Conterminous United States and Alaska: Model Input Data for VEMAP Phase 2." IUGG99 22nd General Assembly, Birmingham, UK. 18-30 July 1999.

IAHS Global Data Bases Workshop. "Runoff in the Vegetation/Ecosystem Modeling and Analysis Project (VEMAP) Comparison with Observed Streamflow." IUGG99 22nd General Assembly, Birmingham, UK, 18-30 July 1999. (K. Hibbard, lead presenter)

VEMAP2 Fast-Track Experiment Results Workshop. "The VEMAP2 Conterminous U.S. and Alaskan Historical Climate and Scenario Datasets." Breckenridge, CO. 6-10 April 1999.

VEMAP2 Preliminary Modeling Results Workshop. "The VEMAP2 Transient Climate Scenarios." Biosphere2, Oracle, AZ. 21-22 Oct 1998.

VEMAP2 Experimental Design Workshop. "The VEMAP2 Historical Climate Dataset and Development of Transient Climate Scenarios." Ft. Collins, CO. April 1998.

International Workshop on Globally Gridded Transient Climate Data Sets for Biosphere Models, Potsdam Institute for Climate Impact Research. "Development of Topographically-Sensitive Gridded Historical Climate Data for the United States: The VEMAP Phase 2 database." Sponsored by EPRI. Potsdam, Germany. May 22-24, 1996.

VEMAP Phase 2 Planning Workshop. "Development of Gridded Historical Climate Data and Transient

Climate Scenarios for the United States: The VEMAP Phase 2 Database." Boulder, CO. Jan 15-17, 1996.

VEMAP Results Workshop I. "The VEMAP Dataset for Ecosystem/Vegetation Model Intercomparison and Climate/CO2 Sensitivity Studies." Boulder, CO. 20-21 April 1994.

IPCC Working Group I Regional Climate Evaluation Workshop. "Regional Intercomparison of IPCC-Archived Coupled Model Runs." Sydney, Australia. 7-9 Feb 1994. (Presented by G. Meehl)

MECCA Principal Investigators Workshop. "Ecological Response to Climate Change: Uncertainties and Regional Assessments." Boulder, CO. Jan 1993.

MECCA Analysis Team Advisory Committee Meeting. "Terrestrial System Response and Feedbacks to Global Climate Change." Boulder, CO. July 1992.

MECCA Principal Investigators Workshop. "CSMP Assessment of Climate Change Impacts: Environmental Response and Feedbacks to Climate." Palo Alto, CA. Feb 1992.

MECCA Policy Committee Meeting. "Climate and Environmental/Socioeconomic Assessment Cycles: Dual Linked Strategies for MECCA Assessment." Palo Alto, CA. Feb 1992.

National

Spatial Data and Scaling Methods for Assessment of Agricultural Impacts of Climate, NCAR/Univ of Florida MMIA Project Planning Workshop. "VEMAP Soils, Land Cover, and Climate Datasets for the United States." Boulder, CO. 17-18 July 2000.

Geophysical Statistics Project at NCAR (GSP) External Advisory Panel Meeting. "Bioclimate Datasets for Assessment of Climate Impacts on Ecosystems: Spatio-temporal Statistical Infilling of Climate Fields." Boulder, CO. May 2000.

Geophysical Statistics Project at NCAR (GSP) NSF Probability and Statistics Program Visit. "VEMAP Datasets for Assessment of Climate Impacts: Spatio-temporal Statistical Infilling of Climate Fields." Boulder, CO. Nov 1999.

Central Great Plains Assessment Steering Committee Meeting. "VEMAP2 Historical Climate and Climate Scenarios for the U.S. National Assessment." USGCRP U.S. National Assessment of the Potential Consequences of Climate Variability and Change, Ft. Collins, CO. 9-10 Sept 1998.

USGCRP 1998 Summer Workshop of National Assessment Leaders. "VEMAP2 Gridded Climate Time Series for the U.S. National Assessment." Monterey, CA. 27-31 July 98. Invited talk and panel member.

EPRI Statistical Downscaling Meeting. "Development of the VEMAP2 Historical (1895-1993) Daily Bioclimate Dataset: Disaggregation of the Monthly Series." Boulder, CO. 5 Nov 97.

USGS/BRD Human-Induced Changes to Rocky Mountain Ecosystems Workshop. "100-yr Climate History of the Rocky Mountains." USGS/Biological Resources Division. Flathead Lake Biological Station, MT. 17-21 Sept 1997.

NSF Site Visit to the Geophysical Statistics Project at NCAR (GSP). "Historical Climate Reconstruction for the United States for the Last 100 years." Research Review. NCAR, Boulder, CO. 21-23 May, 1997.

U.S. Government Agency Briefing on VEMAP. "The VEMAP Phase 2 Historical Climate Database for the

United States." Arlington, VA. 20 May 1997.

NCEAS Workshops on Extrapolation of Arctic and Boreal Processes that Feedback to Climate. Workshop I: Changes in Vegetation and Energy Balance. "A Gridded, Historical Ecoclimate Dataset for the United States Including Alaska: The VEMAP Phase 2 Database." National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. April 6-13, 1997.

USGS/BRD Central Grasslands Global Change Research Program (CEGR) Principal Investigators Workshop. "Effects of Regional and Global Landuse Change on the Regional Climate of the U.S. Central Grasslands." Ft. Collins, CO. 25-26 Mar 1997.

USDA Forest Service Global Change Modelers Meeting. "Objectives and Status of the VEMAP Phase 2 Database: Historical Base Climate and Transient Climate Change Scenarios." Ft. Collins, CO. 17-18 Oct 1995.

ESA Symposium on The Past, Present, and Future of Rocky Mountain Ecosystems. "Colorado Rocky Mountain Climate: Trends and Sensitivities." Ecological Society of America Annual Meeting, Snowbird, UT, Aug 1995. (Presented by T.N. Chase)

EPRI Workshop on Estimating Impacts from Climate Change: Interim Results. "Intercomparison of the Climate and CO2 Sensitivity of Ecosystem Physiological Models and Biome Distribution Models: Results from VEMAP." Washington, DC. 3-4 Nov 1994.

USFS GCRP Climate Scenario Task Force Meeting. "The VEMAP Integrated Database Update and Phase II Plans: Interannual Variability and Transient Scenarios." USDA Forest Service Global Change Research Program. Boulder, CO. 5-6 Oct 1994.

USFS GCRP Program Managers Meeting. "The VEMAP Dataset for Ecosystem/Vegetation Model Intercomparison and Climate/CO2 Sensitivity Studies." Ft. Collins, CO. 8 June 1994.

UCAR/OIES Workshop on Data Sets for Terrestrial Biosphere Modeling. "Development of Large Domain, Multi-Time Resolution Data Sets for Terrestrial Biosphere Modeling: The VEMAP Database as a Case Study." Boulder, CO. 9-11 May 1994.

UCAR/OIES Workshop on Data Sets for Terrestrial Biosphere Modeling. "Terrestrial Biosphere Model Strategies and Climate Data Requirements." Boulder, CO. 9-11 May 1994.

USFS GCRP Workshop, Climate Scenario Meeting. "The VEMAP Integrated Climate Database and Climate Change Scenarios." Ft. Collins, CO. 19 Jan 1994.

AGU Special session on Continental-Scale Hydrology-Climate Interaction. "A Physically-Consistent Database for Simulation of U.S. Ecosystem/Vegetation Responses to Global Change: The VEMAP dataset." American Geophysical Union Fall Meeting. San Francisco. Dec 1994. (Presented by N.A. Rosenbloom)

NPS Colorado Rockies Biogeographical Area Global Change Research Program Principal Investigators Workshop. "Regional Climate Change Scenarios for the Colorado Rocky Mountains." National Park Service Global Change Research Program. Estes Park, CO. Mar 1993.

EPRI Atmospheric Sciences Program Advisory Committee Meeting. "Assessing Terrestrial Ecosystem Response to Global Climate Change." Boulder, CO. Sept 1992.

Niwot Ridge LTER Research Workshop. "Regional Climate Change Scenarios for the Colorado Rocky Mountains." University of Colorado Mountain Research Station, CO. Aug 1992.

NPS Ozark Highlands Global Change Workshop. "Regional Climate and Vegetation Change Modeling for the Central Grasslands: Application to the Ozark Highlands." National Park Service Global Change Research Program. Buffalo National River, AR. April 1992.

Terrestrial Ecosystem Regional Research and Analysis Laboratory (TERRA) Climate Scenario Workshop. "Simulation of Regional Climatic and Ecological Change." Boulder, CO. Sponsored by USDA Forest Service and National Center for Atmospheric Research. Mar 1992.

Second Annual LWVS/WEBB/COLR Workshop and Planning Meeting. "Climatic Change in the Colorado Rocky Mountains: Bounding Projected Change in Regional Climate." Rocky Mountain National Park, Estes Park, CO. Mar 1992.

UCAR/CSMP Global Climate Change and Regional Responses Workshop. "Modeling Regional Biospheric Response to Global Change." Climate System Modeling Program, UCAR. Pingree Park, CO, Oct 1991.

'What is Scientific GIS?' Conference. "Temporal Analysis, GIS, and Environmental Research." Sponsored by IBM. Boulder, CO. Sept 1991. Invited speaker and panel member.




NPS Central Grasslands Global Change Workshop. "Simulation of Regional Climate Response to Global Climate Change." National Park Service Global Change Research Program. Wind Cave National Park, SD. June 1991.

UCAR/CSMP Natural Variability, Model Validation, and Greenhouse Warming Detection Workshop. "Natural Variability, Model Credibility, and the Biosphere." Sponsored by Climate System Modeling Program, UCAR. Boulder, CO. May 1991.

NASA Pre-BOREAS Modeling Workshop. "Mesoscale Atmospheric Modeling and BOREAS: Principles, Utility, and Research Needs." Flathead Lake, MT. Aug 1991.

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† Papers by a postdoctoral fellow directly advised


2005-2006



†Fuentes, M., T.G.F. Kittel, and D. Nychka. 2006. Sensitivity of ecological models to their climate drivers: Statistical ensembles for forcing. *Ecological Applications*, 16:99–116.  [ABSTRACT](#) |  [PAPER \(pdf file\)](#)

Bachelet D., J. Lenihan, R. Neilson, R. Drapek, and T. Kittel. 2005. Simulating the response of natural ecosystems and their fire regimes to climatic variability in Alaska. *Canadian Journal of Forest Research* 35: 2244–2257.  [ABSTRACT](#) |  [PAPER \(pdf file\)](#)

2001-2004

Kittel, T.G.F., N.A. Rosenbloom, J.A. Royle, C. Daly, W.P. Gibson, H.H. Fisher, P. Thornton, D. Yates, S. Aulenbach, C. Kaufman, R. McKeown, D. Bachelet, D.S. Schimel, and VEMAP2 Participants. 2004. The VEMAP Phase 2 bioclimatic database. I: A gridded historical (20th century) climate dataset for modeling ecosystem dynamics across the conterminous United States. *Climate Research* 27:151-170.  [ABSTRACT](#) |  [PAPER \(pdf file\)](#)



*Gordon, W.G., J.S. Famiglietti, N.A. Fowler, T.G.F. Kittel, and K. A. Hibbard. 2004. Validation of simulated runoff from VEMAP Phase II using observed streamflow: Results from six terrestrial ecosystem models. *Ecological Applications* 14:527-545.  [ABSTRACT](#)


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2002-2006


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