

AMY KATHERINE SNOVER

Research Scientist, Climate Impacts Group
Assistant Director, Center for Science in the Earth System

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EDUCATION

Ph. D.	Analytical/Environmental Chemistry	University of Washington (1998)
M. S.	Analytical/Environmental Chemistry	University of Washington (1993)
B. A.	Chemistry, <i>magna cum laude</i>	Carleton College (1990)

CONTINUING EDUCATION

Summer Policy Colloquium, American Meteorological Society, Washington, DC (2002)

EMPLOYMENT HISTORY

Assistant Director 2006-present
Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington

Research Scientist 2000-present
Post-doctoral Research Associate 1999-2000
Climate Impacts Group, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington

HONORS & AWARDS

American Water Resources Association W.R. Boggess Award: best paper published in the *Journal of the American Water Resources Association* in 2000 (Miles et al., "Pacific Northwest Regional Assessment: The impacts of climate variability and climate change on the water resources of the Columbia River Basin.") (2001).

Graduate Fellowship, US Department of Energy, Graduate Fellowships for Global Change (1992-1998).

Immunex Fellow, Achievement Rewards for College Scientists (ARCS) (1991-1993).

Carleton College: Φ BK, Distinction in Major, Distinction in senior comprehensive exercise (1990), Dean's List (1987-1990), CRC outstanding freshman chemistry award (1987), William H. Carleton Scholar (1986), National Merit Scholar.

TEACHING

“Climate Impacts on the Pacific Northwest: Using Climate Information in Natural Resource Management,” University of Washington graduate course co-listed by Atmospheric Science, Earth System Science, Program on the Environment, and School of Marine Affairs (ATSCI/ESS/ENVIR/SMA 585) (Winter 2001, 2002, Spring 2003, Winter 2005, Winter 2007). *This course examines current and future patterns of PNW climate and impacts on regional natural resources and the natural, economic, and institutional contexts in which resource management decisions are made and identifies real-world opportunities for using this information to improve regional natural resource management. Co-developed and taught with Nathan Mantua (University of Washington College of Ocean and Fisheries Sciences).* www.cses.washington.edu/cig/outreach/classes/585

“The Role of Scientific Information in Environmental Decisions”, University of Washington graduate course co-listed by The Evans School of Public Affairs (PBAF 595) and Program on the Environment (ENVIR 500A) (Winter 2003, Spring 2005, Spring 2006). *This course examines how science contributes to decisions that involve the natural environment: how science and scientists help frame debates and decisions; how scientific findings are incorporated into decision-making processes; and how scientists and nonscientists deal with uncertainty about scientific questions. This course was co-developed and taught with Alison Cullen (University of Washington Evans School of Public Affairs) as a core science-based course for the UW graduate certificate program in Environmental Management and as a quantitative Evans School course.* www.cses.washington.edu/cig/outreach/classes/595

“Consequences of Climate Change and Climate Variability for Pacific Northwest Forests” (assisted in course development and oversight). University of Washington College of Forest Resources graduate seminar (ESC 521A) (Winter 2004). *This graduate seminar surveyed the rapidly growing body of regional, national, and international research to examine the roles of variability, uncertainty, and complexity in determining the adaptability of forest ecosystems to environmental change within the construct of human natural resources management efforts and policy. Each participant developed a fact sheet focusing on a specific aspect of climate impacts on forest ecosystems for use by the CIG outreach team. Assisted with course development and oversight.* www.cses.washington.edu/cig/outreach/classes/521A_Forests.pdf

“Decision Making in the Face of Uncertainty: Practitioner Views on Environmental Resource Management Challenges,” University of Washington graduate seminar (PBAF 598H) (Spring 2003). *This university-wide seminar on risk-based decision-making in public sector natural resources management brought speakers from a variety of natural resource sectors to campus to discuss how their agencies approach decisions affected by uncertainty. Topics included uncertainty in federal and state level policy making, managing urban water supplies for people and fish; nuclear waste management. Co-developed and led with Alison Cullen (University of Washington Evans School of Public Affairs) and Lara Whitely Binder (Climate Impacts Group).* www.cses.washington.edu/cig/outreach/classes/uncertaintysem03

“The Science and Policy of Global Climate Change,” Oregon State University’s Hatfield Marine Science Summer Program, Newport, Oregon (August 2003).

Teaching Assistant, Department of Chemistry, University of Washington, Freshman Chemistry, Analytical Chemistry Laboratory (1991-1992).

Teaching Assistant, Department of Chemistry, Carleton College, Organic Chemistry, Laboratory (1989-1990).

FUNDED RESEARCH

As a Principal on the Climate Impacts Group research team and Assistant Director of the Center for Science in the Earth System, I am responsible for assisting with proposal writing, preparing funding progress reports, and coordinating periodic research reviews by the funding agency. I have performed this role for the following grants:

Sponsor: National Oceanic and Atmospheric Administration
 Title: Center for Science in the Earth System
 PI: Edward Sarachik
 Amount: \$1,395,000

Sponsor: ICLEI-Local Governments for Sustainability
 Title: Publication of Adaptation Guidebook (MOU)
 Amount: \$15,000

Sponsor: King County Department of Natural Resources and Parks
 Title: King County Climate Change Conference
 PI: Edward Miles
 Amount: \$50,138

Sponsor: Puget Sound Action Team
 Title: Puget Sound Action Team Interagency Agreement
 PI: Philip Mote
 Amount: \$18,925

In addition, I am spearheading efforts to institute state funding of Climate Impacts Group research. This has resulted in two new funding opportunities currently under negotiation:

Sponsor: Washington Department of Ecology
 Title: A Comprehensive Hydrologic Data Base Incorporating IPCC Climate Change Scenarios to Support Long-Range Water Planning in the Columbia River Basin
 Amount: \$450,000

Sponsor: Washington Department of Ecology
 Title: Climate Change Impacts on Water Resources, Water Management, and Salmon Habitat in Washington State
 Amount: \$1,100,000

PUBLICATIONS**REFEREED****JOURNAL ARTICLES**

Miles, E. L., A. K. Snover, L. C. Whitely Binder, E. Sarachik, P. W. Mote, and N. J. Mantua, 2006. An approach to designing a National Climate Service. *Proceedings of the National Academies of Sciences* 103(52): 19616-19623.

Mote, P. W., E. A. Parson, A. F. Hamlet, K. N. Ideker, W. S. Keeton, D. P. Lettenmaier, N. J. Mantua, E. L. Miles, D. W. Peterson, D. L. Peterson, R. Slaughter, and A. K. Snover, 2003. Preparing for climatic change: The water, salmon, and forests of the Pacific Northwest. *Climatic Change* 61:45-88.

Miles, E. L., A. K. Snover, A. F. Hamlet, B. Callahan, and D. Fluharty, 2000. Pacific Northwest Regional Assessment: The impacts of climate variability and climate change on the water resources of the Columbia River Basin, *Journal of the American Water Resources Association* 36(2): 399-420.

Snover, A. K. and P. D. Quay, 2000. Hydrogen and carbon kinetic isotope effects during soil uptake of atmospheric methane, *Global Biogeochemical Cycles* 14: 25-39.

Snover, A. K., P. D. Quay, and W. M. Hao, 2000. The D/H content of methane emitted from biomass burning, *Global Biogeochemical Cycles* 14: 11-24.

Quay, P. D., J. L. Stutsman, D. O. Wilbur, A. K. Snover, E. J. Dlugokencky, and T. A. Brown, 1999. The isotopic composition of atmospheric methane, *Global Biogeochemical Cycles* 13: 445-461.

Goyet, C. and A. K. Snover, 1993. High-accuracy measurements of total dissolved inorganic carbon in the ocean: Comparison of alternate detection methods, *Marine Chemistry* 44: 235-242.

BOOK CHAPTERS

Gamble, J. L., J. Furlow, A. K. Snover, A. F. Hamlet, B. J. Morehouse, H. Hartmann, and T. Pagano, 2003. Assessing Regional Water Resources: The Implications for Stakeholders of Climate Variability and Change, Chapter 16, in *Water: Science, Policy, and Management*, Water Resources Monograph 16, American Geophysical Union.

REPORTS

Parson, E. A., P. W. Mote, A. F. Hamlet, N. Mantua, A. Snover, W. Keeton, E. Miles, D. Canning, and K. G. Ideker, 2000. Potential consequences of climate variations and change for the Pacific Northwest. Chapter 9 in *National Assessment of Climate Change Impacts on the United States: The potential consequences of climate variability and change*, A report of the National Assessment Synthesis Team, U.S. Global Change Research Program (USGCRP).

IN PREPARATION

Snover, A. K., E. L. Miles and the Climate Impacts Group, *Rhythms of Change: Climate Impacts on the Pacific Northwest*. Eleven chapter book-length manuscript in revision for MIT Press.

Snover, A. K. and N. J. Mantua: Choices and Change (Chapter 1).

Snover, A. K. and E. L. Miles: Regional Integrated Climate Impacts Assessment (Chapter 2).

Hamlet, A. F., P. W. Mote, A. K. Snover, and E. L. Miles: Climate, Water Cycles, and Water Resources Management in the Pacific Northwest (Chapter 6).

Huppert, D., J. Kaje, A. F. Hamlet, E. L. Miles, and A. K. Snover: Using Climate Forecasts in Natural Resource Management (Chapter 10).

Snover, A. K. and E. L. Miles: The Integrated Assessment: The sensitivity, adaptability, and vulnerability of the Pacific Northwest to Climate Variability and Change (Chapter 11).

Contributing author to D. Canning and P. Mote: Climate Impacts on the Coasts of the Pacific Northwest (Chapter 9).

The Climate Impacts Group and King County, *Preparing for global warming: A guidebook for local governments* (provisional title). To be published by ICLEI-Local Governments for Sustainability.

Peterson, D. L., N. J. Mantua, P. W. Mote, A. K. Snover, Z. M. Gedalof, and S. R. Hare. The Pacific Decadal Oscillation and natural resources in northwestern North America, for submission to *Bioscience*.

REPORTS AND NON-REFERRED PAPERS

Snover, A.K., P.W. Mote, L. Whitely Binder, A.F. Hamlet, and N.J. Mantua, 2005. *Uncertain Future: Climate change and its effects on Puget Sound*. A report for the Puget Sound Action team by the Climate Impacts Group (Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle).

Mote, P. W., A. K. Snover, L. Whitely Binder, A.F. Hamlet, and N.J. Mantua, 2005. *Uncertain Future: Climate change and its effects on Puget Sound*. A report for the Puget Sound Action team by the Climate Impacts Group (Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean, University of Washington).

Casola, J.H., J.E. Kay, A.K. Snover, R.A. Norheim, L. C. Whitely Binder and the Climate Impacts Group, 2005. *Climate Impacts on Washington's Hydropower, Water Supply, Forests, Fish, and Agriculture*. A report prepared for King County (Washington) by the Climate Impacts Group (Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle).

Snover, A. K., E. L. Miles, and A. F. Hamlet, 2003. Learning from and adapting to climate variability in the Pacific Northwest. Background Paper for: *Insights and Tools for Adaptation: Learning from Climate Variability*, Washington, DC, 18-20 November (pp. 167-179). NOAA/OAR Office of Global Programs Climate and Societal Interactions.

Snover, A. K., A. F. Hamlet, and D. P. Lettenmaier, 2003. Climate change scenarios for water planning studies. *Bulletin of the American Meteorological Society* 84(11): 1513-1518.

Snover, A. K., 2002. The Climate Impacts Group: Piloting climate services for the Pacific Northwest. Paper prepared for *Climate Prediction Assessments Workshop: Research and Applications on Use and Impacts*, NOAA/National Weather Service/Climate Services, Alexandria, Virginia, 28-30 October.

Snover, A. K. and P. Mote, 2002. Climate Impacts on the Natural Resources of the Pacific Northwest, *The Climate Report* 3(2): 7-11.

Huppert, D., J. Kaje, A. F. Hamlet, E. L. Miles, and A. K. Snover, 2002. Applications of climate forecasts in natural resources management: Implications for industry, *The Climate Report* 3(2): 12-22.

JISAO/SMA Climate Impacts Group, 1999. *Impacts of Climate Variability and Change: Pacific Northwest*, (A. K. Snover, contributing author), A Report of the Pacific Northwest Regional Assessment Group for the U.S. Global Change Research Program, November.

Snover, A. K., E. Miles, and B. Henry, 1998. *Impacts of Global Climate Change on the Pacific Northwest*, Final report of the OSTP/USGCRP Regional Workshop, NOAA Climate & Global Change Program, Special Report #11.

Snover, A. K., 1997. Impacts of Global Climate Change on the Pacific Northwest, *White Paper prepared for the OSTP/USGCRP Pacific Northwest Regional Climate Change Workshop*, Seattle, Washington.

Doherty, S., R. Roth and A. K. Snover, 1997. *Global Warming and the Pacific Northwest: Vulnerabilities to global climate change*, published by The Atmosphere Alliance, Olympia, Washington.

MEETING PRESENTATIONS AND PUBLISHED ABSTRACTS

Snover, A. K., 2006. Strategies for preparing for climate change: A handbook for local governments. *Third International Conference on Climate Impacts Assessment (TICCLA)*. Cairns, Australia, 24-27 July.

Miles, E. L. and A. K. Snover, 2006. Gaps in Science and Policy: Climate, Multiple Stresses, and Adaptive Capacity – The Case of the Columbia River Basin. *AAAS Annual Meeting*. St. Louis, Missouri, 16-20 February.

Snover, A. K., 2006. Preparing for Climate Change in Washington State. *The Water Center: Annual Review of Research*. Seattle, Washington, 16 February.

Miles, E. L., P. W. Mote, A. F. Hamlet, N. Mantua, D. P. Lettenmaier, R. N. Palmer, and A. K. Snover(*), 2004. Developing pilot climate services for the Pacific Northwest: The University of Washington Climate Impacts Group. *Second Annual Users Conference, 84th American Meteorological Society Annual Meeting*, Seattle, Washington, 11-15 January.

Snover, A. K., 2002. The Climate Impacts Group: Piloting climate services for the Pacific Northwest. *Climate Prediction Assessments Workshop: Research and Applications on Use and Impacts*, NOAA/National Weather Service/Climate Services, Alexandria, Virginia, 28-30 October.

Snover, A. K. and the Climate Impacts Group, 2002. The Climate Impacts Group: Evaluating the impacts of climate variability and change on the U.S. Pacific Northwest, *International Workshop on Regional Integrated Assessment of Climate Impacts*, Castelvecchio Pascoli, Italy, September.

Snover, A. K., E. L. Miles, A. F. Hamlet, D. P. Lettenmaier, 2002. Integrating Natural and Social Science for Regional Assessment of Climate Impacts on the Pacific Northwest. *Mississippi River Climate and Hydrology Conference* special science session on Regional Integrated Sciences and Assessments, New Orleans, Louisiana, May.

Snover, A. K., E. Miles, D. Lettenmaier, A. F. Hamlet, R. Francis, J. Franklin, W. F. Keeton, D. Canning, P. Mote, 2001. The Climate Impacts Group: Evaluating the Impacts of Climate Variability and Change on the U.S. Pacific Northwest, *Global Change Open Science Conference: Challenges of a Changing Earth*, Amsterdam, the Netherlands, July.

Snover, A. K., E. Miles, and A. F. Hamlet, 2001. An Integrated Assessment of the Impacts of Climate Variability and Change on the Columbia River Basin (U.S.), *Global Change Open Science Conference: Challenges of a Changing Earth*, Amsterdam, the Netherlands, July.

Snover, A. K., E. L. Miles, A. F. Hamlet, D. P. Lettenmaier, B. Callahan, D. Fluharty, 2001. The sensitivity, adaptability, and vulnerability of Columbia Basin water resources to natural and anthropogenic climate change,” 12th Symposium on Global Change and Climate Variations, 81st American Meteorological Society annual meeting, Albuquerque, New Mexico, January.

Snover, A. K., 2000. Climate variability and change in the Pacific Northwest. *Atmospheric and Oceanographic Sciences Symposium on Climatic and Oceanographic Variability and Change in the Pacific Basin*, 81st annual meeting of the AAAS: Pacific Division, Southern Oregon University, Ashland, Oregon, June.

Miles, E. L., A. K. Snover, and A. Hamlet, 2000. Pacific Northwest Regional Assessment: The Impacts of Climate Variability and Change on the Water Resources of the Columbia River Basin, H22C-03 (invited), *American Geophysical Union Spring Meeting*, Washington, D.C., May.

Miles, E. L., A. K. Snover, A. Hamlet, B. Callahan, D. L. Fluharty, 2000. Pacific Northwest Integrated Assessment of the Impacts of Climate Variability and Change: The potential role of spatial comparisons and synthesis, *Proceedings of the Sixteenth Annual Pacific Climate Workshop*, Wrigley Institute for Environmental Studies, Santa Catalina Island, California, May 24-27, 1999 and Technical Report 65 of the Interagency Ecological Program for the Sacramento-San Joaquin Delta, May.

Kaje, J., E. L. Miles, Z. Johnson, D. Fluharty, E. Arden, A. K. Snover, D. Canning, B. Callahan, A. Hamlet, D. Huppert, K. Gray, M. Hershman, S. Willard, V. Sundaraman, 1999. Economic and Human Dimensions of Climate Variability and Climate Change: Insights from the First Three Years of Research, *NOAA Economics and Human Dimensions Meeting*, Tucson, Arizona, April.

Miles, E., A. Hamlet, A. K. Snover, B. Callahan, and D. Fluharty, 1998. The Sensitivity and Vulnerability of the Pacific Northwest (USA) to Climate Variability and Change: A Human Dimensions Perspective, *IHDP/GECHS Workshop on Water and Human Security in Southeast Asia and Oceania*, Canberra Australia National University, November.

Snover, A. K. and P. D. Quay, 1996. Stable isotope biogeochemistry of atmospheric methane: North American temperate and biomass burning sources, *Graduate Fellowships for Global Change Conference*, Oak Ridge, Tennessee, October.

Snover, A. K. and P. D. Quay, 1996. Time series of atmospheric CH₄ concentration and stable isotopic composition at two North American temperate sites, *EOS Transactions*, 77, F107.

PROFESSIONAL ACTIVITIES

PROFESSIONAL SERVICE

Science Advisor, Economic Assessments of Climate Change Impacts On Washington State (November 2006) and Oregon State (2005).

Organizing Committee and Session Chair, Second and Third International Conferences on Climate Impacts Assessment, Cairns, Australia (July 2006) and Grainau, Germany (June 2004).

Organizing Committee and Session Chair, International Workshop on Regional Integrated Assessment of Climate Impacts, Castelvechchio Pascoli, Italy (September 2002).

PROFESSIONAL MEMBERSHIPS

American Geophysical Union

American Meteorological Society

REFEREE

Journal of American Water Resources Association

Bulletin of the American Meteorological Society

Monthly Weather Review

Journal of Environmental Planning and Management

Avoiding Dangerous Climate Change, H. J. Schnellhuber et al. (eds.), Cambridge Univ. Press, 2006.
California Climate Change Center.

SPONSORED RESEARCH REVIEWER

National Oceanic and Atmospheric Administration: Human Dimensions Program

National Oceanic and Atmospheric Administration: Climate Transition Program

OTHER REVIEWS

Impacts of Climate Change on Washington's Economy: A preliminary assessment of risks and opportunities," Washington Economic Steering Committee and the Climate Leadership Initiative, Institute for a Sustainable Environment, University of Oregon, forthcoming.

"Climate change will impact the Seattle Department of Transportation," Office of the City Auditor - City of Seattle, 2005.

"The Economic Impacts of Climate Change in Oregon: A preliminary assessment," Resource Innovations, Institute for a Sustainable Environment, University of Oregon, 2005.

UNIVERSITY SERVICE

Invited presentation, "Climate change and marine ecosystems," for the Roundtable discussion with members of the Pacific fishing industry hosted by Dean Arthur Nowell, "Climate Change: Impacts on Fish Stocks," 30 November 2006.

Presented the research of the Climate Impacts Group for the University of Washington CEO Summit, "ideas 2 innovation," September 2006.

Graduate Student mentor for the UW Faculty and Graduate Mentoring Program (2006–).

Informal mentor for numerous University of Washington graduate students interested in combining interests in science and policy (2001–).

Steering Committee, University of Washington Environmental Management Graduate Certificate Program (2000–).

Planning Committee, University of Washington Program on Climate Change 2006 Summer Institute, "Regional Policy Levers and Solutions."

OUTREACH AND PUBLIC SERVICE ACTIVITIES

I work closely with decision makers and stakeholders – natural resource managers, policymakers, elected officials, and representatives of private industry – with the objective of ensuring that (a) decision making processes are informed by understanding of the impacts of natural climate variability and human-caused global warming and (b) climate impacts research is informed by the needs of the ultimate users of that information.

I have advised or otherwise consulted with the following entities (*media in italics*):

International	Australian Greenhouse Office (Department of the Environment and Heritage, Australia) Great Barrier Reef Marine Park Authority Greater London Authority Instituto Geofísico del Perú The Clean Air Partnership (Canada) Sinclair Knight Merz Consulting (Australia)
National	ICLEI-Local Governments for Sustainability Multi State Working Group on Environmental Performance NOAA Coastal Storms Initiative NOAA Office of Global Programs Office of Science and Technology Policy US Department of Energy Global Change Education Program <i>Christian Science Monitor</i> <i>U.S. News & World Report</i>
Regional	Northwest Independent Power Producers' Coalition
State	Association of Washington Businesses Economic Impacts Assessments for Washington and Oregon Puget Sound Action Team Puget Sound Regional Council Washington State Department of Community, Trade and Economic Development Washington State Department of Ecology Washington State Legislators Washington State University Center for Sustaining Agriculture and Natural Resources Washington State University Extension Washington State Water Resources Association Weyerhaeuser Corporation
Local	American Water Resources Association (local chapter) Climate Solutions City of Keene, New Hampshire King County Council King County Office of the Executive King County Department of Natural Resources King County Regional Water Planning Initiative Puget Sound Clean Air Agency Seattle City Auditor Seattle Mayor's Urban Sustainability Advisory Panel Tacoma City Council Yakima Basin Storage Alliance <i>Various print, radio, and television</i>

UNIVERSITY SEMINARS AND LECTURES

“Global Change: Local Impacts,” UW SIS 495 (Geopolitics of Global Warming), 1 March 2006.

“Climate change impacts on the Pacific Northwest,” UW POE 203, 20 April 2005.

“Defining ‘vulnerability’ and ‘integrated assessment’ ”, UW ESC 521 (Consequences of Climate Change and Climate Variability for Pacific Northwest Forests), 26 January 2004.

“Vulnerability Assessment ‘In Action’ ”, UW Climate Impacts Group Seminar, 25 November 2003.

“The Impacts of Climate Change on the Pacific Northwest,” UW WashPIRG, 28 May 2003.

“The Role of Climate in Natural and Human Systems of the Pacific Northwest: Research and Assessment in the Climate Impacts Group,” UW Chemical Oceanography Seminar, 9 May 2003.

“The Impacts of Climate Change on the Pacific Northwest,” UW ENVR 203 (Responding to Global Climate Change), 16 April 2003.

“The Impacts of Climate Change on the Pacific Northwest,” UW CEE500 (Graduate Seminar in Civil and Environmental Engineering), 30 January 2003.

“Impacts of Climate Change on the Pacific Northwest,” Washington State University’s Summer Workshop on The Science of Global Climate Change, Vancouver, Washington, 25 July 2002.

“The Importance of Climate Change to National Ocean Policy: Lessons from the Pacific Northwest,” UW School of Marine Affairs 550L (Ocean Governance for the 21st Century: In search of sustainability), 29 May 2002.

“Impacts of climate change on the Pacific Northwest,” Washington State University-Vancouver, Science Program Seminar, 8 April 2002.

“Human influences on atmospheric greenhouse gas concentrations in the 20th and 21st centuries,” UW Atmospheric Sciences 211, 28 February 2002.

“Impacts of climate change on the Puget Sound/Georgia Basin,” UW International Studies (Canada) 490, 29 November 2001.

“Impacts of climate variability and change on the Pacific Northwest,” UW Environmental Management seminar, April 2000.

“The stable hydrogen isotopic composition of atmospheric methane,” UW School of Oceanography Departmental Seminar, December 1998.

“The stable isotope geochemistry of atmospheric methane,” UW School of Oceanography Departmental Seminar, June 1995.

“History of shipboard measurements of CO₂: Detecting the anthropogenic signal,” UW Department of Chemistry Departmental Seminar, April 1993.

“Infrared analysis of dissolved inorganic carbon in seawater,” UW School of Oceanography Departmental Seminar, October 1992.

OTHER PRESENTATIONS

“Past and future consequences of global climate change,” briefing for Washington State House Agriculture and Natural Resources Committee, Olympia, Washington, 24 January 2007.

“Global climate change: Causes and local consequences,” briefing for Washington State Senate Committee on Water, Energy and Environment, Olympia, Washington, 19 January 2007.

“Climate change in the Pacific Northwest: An overview,” briefing for King County Climate Change Action Team, Seattle, 17 November 2006.

“Change is coming: Implications of global warming for Washington State water resources,” Keynote Presentation, Washington State Water Resources Association 2006 Annual Conference, Spokane, 9 November 2006.

“Global change, local impacts,” Tacoma City Council Study Session, Tacoma, Washington, 24 October 2006.

“Science and Politics of Climate Change,” Yakima Basin Storage Alliance Roundtable on Salmon Restoration, Yakima, Washington, 15 August 2006.

“Rhythms of change: Preparing for global warming” and “Strategies for preparing for climate change: A handbook for local governments,” ICLEI Climate Safe Communities Campaign Kick-off Event, Keene, New Hampshire, 22 and 23 August 2006.

“Preparing for global warming,” ICLEI 2006 North American Congress, Chicago, Illinois, 13 July 2006.

“Rhythms of Change: Preparing for global warming,” Multi State Working Group 2006 Conference, Park City, Utah, 27 June 2006.

“Global Change: Local Impacts,” Keynote Presentation at USDA/WSU Climate Friendly Farming public symposium, “Agriculture and Climate Change,” Washington State University, Pullman, 21 June 2006.

“Climate change projections for Washington state economic impacts assessment,” Workshop on Economic Consequences of Climate Change in Washington, Seattle, Washington, 6 April 2006.

“Climate Change in Washington: Past and Future,” Climate Change Technical Subcommittee, Regional Water Supply Planning Process, Seattle, Washington, 8 March 2006.

“Rhythms of Change: Climate Impacts on the Ocean,” In “The Pacific Ocean: Its Health & Human Impact,” sponsored by the Bainbridge Island Arts & Humanities Council and Islandwood, Bainbridge Island, Washington, 4 March 2006.

“Global Change: Local Impacts,” Washington State University Westside Agriculture and Natural Resource Research and Extension Days, Puyallup, Washington, 15 February 2006.

“Choices & Change: What does global climate change mean for the Pacific Northwest & How can we best prepare?” Semi-Annual Science Seminar, King County Department of Natural Resources, Seattle, Washington, 29 November 2005.

“Impacts of Global Climate Change on the Forests (and water resources, salmon & coasts) of the Pacific Northwest,” Weyerhaeuser Law Department meeting, Weyerhaeuser Headquarters, Federal Way, Washington, November 2005.

“Choices and change: Preparing for climate impacts,” Plenary presentation at the conference, “The Future Ain’t What it Used to Be: Planning for Climate Disruption,” sponsored by King County, Seattle, Washington, 27 October 2005.

“Preparing the Pacific Northwest for global climate change,” Panel on “Greenhouse Gases” at the 2005 Northwest Environmental Summit, Sponsored by the Association of Washington Businesses, Tacoma, Washington, 19 October 2005.

“Global climate change: The science, regional impacts, and implications for PNW power producers,” Panel discussion at the Northwest Independent Power Producers’ Coalition Annual Meeting, Union, Washington, 7 September 2005.

“Pacific Northwest Climate Impacts Group: Climate Science in the Public Interest,” NOAA Office of Global Programs Regional Integrated Science and Assessments seminar series, Silver Spring, Maryland, 11 May 2005.

“Implications of global climate change for the Pacific Northwest,” University of Oregon Program on Resource Innovations, Workshop on Economic Consequences of Climate Change in Oregon, Portland, Oregon, 3 May 2005.

“Implications of global climate change for the Pacific Northwest,” City of Seattle, Mayor’s Urban Sustainability Advisory Panel, Seattle, Washington, 15 December 2004.

Guest, Bob River’s show (KZOK 102.5 FM) 20 October 2004.
[<http://www.bobdrivers.com/show/audioclips/index.asp>, select "Giant squid and climate change."]

“Regional Assessments: Factors to consider, methods, and insights from the Pacific Northwest,” NOAA/OGP RISA Great Plains Scoping Workshop, Dallas/Fort Worth, December 2003.

“The Climate Impacts Group: Piloting climate services for the PNW,” NOAA Coastal Storms Initiative meeting, Astoria, Oregon, 8 October 2003.

“Bridging science and policy: Climate change research and outreach in the PNW,” US Department of Energy Global Change Education Program Orientation, Portland, Oregon, 12 June 2003.

“Issues in regional climate modeling and evaluating climate impacts,” Speaker and Panel Moderator at UW Program on Climate Change Retreat, Leavenworth, Washington, June 2003.

“Planning for climate change in the Pacific Northwest,” King County Council, Council of the Whole, Seattle, 27 January 2003.

“Impacts of climate change on the water resources of the Pacific Northwest,” Seattle area chapter of the American Water Resources Association, 28 February 2002.

“Impacts of climate change on the Pacific Northwest,” Advisory Council of the Puget Sound Clean Air Agency, Seattle, September 2001.

“Impacts of climate change on the water resources of the Pacific Northwest,” Public Water Forum, Issaquah Environmental Council, Issaquah, September 2001.

“Impacts of climate change on the Pacific Northwest,” Puget Sound Clean Air Agency Executive Board, Seattle, September 2001.

“Impacts of climate change on the water resources of the Pacific Northwest,” Interfaith Global Warming Conference (Oregon Interfaith Global Warming Campaign), The Dalles, Oregon, June 2001.

“Rhythms of Change: An integrated assessment of climate impacts at the regional scale,” Global Change Education Program Workshop, Oak Ridge Institute for Science and Education, Oak Ridge National Laboratory, Oak Ridge, Tennessee, August 2000.

“Impacts of climate variability and change on the Pacific Northwest,” Public lecture on release of the Pacific Northwest contribution to the US National Assessment of the Impacts of Climate Variability and Change, C. L. Booth Educational Center, Pasco, Washington, November 1999.

“Are we prepared for a changing climate?” Public lecture on release of the Pacific Northwest contribution to the US National Assessment of the Impacts of Climate Variability and Change, Kane Hall, University of Washington, November 1999.

“The global carbon cycle.” Panelist, Graduate Fellowships for Global Change Conference, “A forum for integrating multi-disciplinary research to advance the science of global change,” Oak Ridge, Tennessee, October 1996.