

## Amy Katherine Snover

Director, Climate Impacts Group  
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I aim to improve society's resilience to natural and human-caused fluctuations in climate by bridging the gap between science and decision-making. I draw on the natural and social sciences to assess the vulnerability of natural and human systems to climate variability and change and to inform the development of climate adaptation strategies. I work with decision makers to develop science-based climate change planning and adaptation guidance and to assess their climate information needs in order to develop priorities for research, tool development, and outreach. I frequently advise on strategies for adapting planning and decision-making processes in light of a changing climate and collaborate with legal, economics and communications scholars to apply climate impacts science to legal analyses, economic assessments, and research on overcoming communication challenges.

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### EDUCATIONAL HISTORY

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- Ph.D. Analytical/Environmental Chemistry, University of Washington, 1998.  
Dissertation: *Stable Isotope Biogeochemistry of Atmospheric Methane*.  
Advisors: Paul Quay & Richard Gammon  
Study Areas: Global Environmental Change, Biogeochemical Cycles, Environmental Policy
- M. S. Analytical/Environmental Chemistry, University of Washington, 1993.
- B. A. Chemistry, Carleton College, *magna cum laude*, 1990.  
Senior Comprehensive Project: The chemistry and politics of stratospheric ozone depletion and the research of F. Sherwood Rowland.

### CONTINUING EDUCATION

Summer Policy Colloquium, American Meteorological Society, Washington, DC, 2002.

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### PROFESSIONAL EXPERIENCE

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**Assistant Dean for Applied Research** **2013-present**  
**University of Washington, College of the Environment.**  
Connecting science and decision making to tackle today's pressing environmental challenges.

**Director** **2013-present**  
**Climate Impacts Group, UW College of the Environment.** [www.cses.washington.edu/cig](http://www.cses.washington.edu/cig).  
Linking interdisciplinary, cutting edge science with the real needs of resource managers, planners and policy makers to build resilience to climate variability and change in and beyond the Pacific Northwest.

**Co-Director****2010-2012**

*Building regional awareness and supporting regional action towards reducing climate vulnerabilities.* Provided strategic leadership for research and stakeholder engagement efforts; managed external relationships with research partners, funders, and stakeholders; secured \$1.7m in private and public grants and contracts to support research and outreach activities; advanced research on climate vulnerability assessment, successful adaptation processes and outcomes, and adaptation planning; oversaw 15-20 state, federal and university core and research budgets totaling \$1-1.5m at any one time; hired, supervised and evaluated ~10 students, research scientists, technical, outreach and administrative staff.

**Associate Director****2009-2010**

- Initiated the University of Washington team to develop a (successful) proposal to co-host the new Department of Interior Northwest Climate Science Center in collaboration with six other academic institutions and national laboratories in the region.

**Assistant Director****2006-2009**

- Led the acquisition of \$1.1m in funding for the 2009 Washington Climate Change Impacts Assessment (WACCIA). The WACCIA report is notable for being one of a select few comprehensive scientific assessments of climate change impacts on a state's resources.
- Lead author for the internationally recognized climate change adaptation guidebook, *Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments*, in a collaboration with King County (Washington) and ICLEI-Local Governments for Sustainability. With more than 3000 copies of the guidebook provided worldwide, the guidebook has also served as a template for climate-change planning documents and training curricula developed by NOAA, the World Bank, and others.

**Research Scientist****2000-2006**

- Facilitated the integration, across disciplines, of analyses on climate sensitivities into a holistic analysis of the regional importance of climate variability and change (see, for example, Miles et al. 2000, winner of the JAWRA award).
- Negotiation and oversight of contract with King County to deliver downscaled climate information and technical input to the 2005 Washington Climate Impacts conference.

**Post-doctoral Research Associate****1999-2000**

- Conducted research on vertically- and horizontally-integrated assessment of climate impacts on the water, forests, fish and coasts of the Pacific Northwest.

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**HONORS & AWARDS**

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*Bulletin of the American Meteorological Society* Editor's Award. 2012.

University of Washington College of the Environment Outstanding Community Collaborator Award. Received as Co-Director of Climate Impacts Group. 2011.

King County (Washington) Green Globe Award for Leaders in Climate Science. Received as member of Climate Impacts Group. 2007.

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

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: ΦBK, 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.

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## PUBLICATIONS

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### JOURNAL ARTICLES

Snover, A.K., M. Alexander, N.J. Mantua, J.S. Littell, M. McClure, J. Nye, 2013. [Choosing and using climate-change scenarios for ecological-impact assessments and conservation decisions](#), *Conservation Biology* 27(6): 1147-1157, doi: 10.1111/cobi.12163.

McClure, M., M.A. Alexander, D. Borggaard, D. Boughton, L.G. Crozier, R. Griffis, J.C. Jorgensen, S.T. Lindley, J. Nye, M.J. Rowland, E.E. Seney, A.K. Snover, C. Toole, and K. van Houtan. 2013. [Incorporating climate science in applications of the U.S. Endangered Species Act for aquatic species](#). *Conservation Biology* 27(6): 1222-1233, doi: 10.1111/cobi.12166.

Mohrig, J. R., D. G. Alberg, C. H. Cartwright, M. K. H. Pflum, J. S. Aldrich, J. K. Anderson, S. R. Anderson, R. L. Fimmen, A. K. Snover, 2008. Stereochemistry of 1,2-Elimination Reactions at the E2-E1cB Interface – tert-Butyl 3-Tosyloxybutanoate and its Thioester, *Organic and Biomolecular Chemistry* 6:1641-1646.

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. **Winner of the American Water Resources Association W.R. Boggess Award for the best paper published in the Journal of the American Water Resources Association in 2000.**

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.

### BOOKS, CHAPTERS, WHITE PAPERS, REPORTS, ETC.

Mote, P.W., A.K. Snover, S.M. Capalbo, S. Eigenbrode, P. Glick, J.S. Littell, R. Raymondi, and S. Reeder. 2014. [Northwest](#), Chapter 21 of J.M. Melillo, T.C. Richmond, and G.W. Yohe, Eds., [Climate Change Impacts in the United States: The Third National Climate Assessment](#). U.S. Global Change Research Program, 841 pp. doi:10.7930/J0Z31WJ2.

- Snover, A.K., G.S. Mauger, L.C. Whitely Binder, M. Krosby, and I. Tohver. 2013. [\*Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers\*](#). State of Knowledge Report prepared for the Washington State Department of Ecology. Climate Impacts Group, University of Washington, Seattle.
- Dalton, M.M., P.W. Mote, and A.K. Snover, (Editors) 2013. [\*Climate Change in the Northwest: Implications for our Landscapes, Waters, and Communities\*](#). Washington, D.C.: Island Press, 271 pp.
- Snover, A.K., P. Glick, and S.M. Capalbo. 2013. Introduction: The changing Northwest. Chapter 1, pp 1-24. In M.M. Dalton, P.W. Mote, and A.K. Snover (eds.) [\*Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities\*](#), Washington D.C.: Island Press.
- Reeder, W.S., P. Ruggiero, S.L. Shafer, A.K. Snover, L.L. Houston, P. Glick, J.A. Newton, and S.M. Capalbo. 2013. Coasts: Complex changes affecting the Northwest's diverse shorelines. Chapter 4, pp 67-109. In M.M. Dalton, P.W. Mote, and A.K. Snover (eds.) [\*Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities\*](#), Washington D.C.: Island Press.
- Binder, L.W., C. Shishido, and A.K. Snover, 2013. Key Considerations for Moving Forward with Adaptation in OCNMS, Chapter 5, in [\*Climate Change and the Olympic Coast National Marine Sanctuary: Interpreting Potential Futures\*](#), A report of the Office of National Marine Sanctuaries, U.S. Department of Commerce.
- Hansen, L., R.M. Gregg, V. Arroyo, S. Ellsworth, L. Jackson and A. Snover. 2012. [\*The State of Adaptation in the United States\*](#). Report for the MacArthur Foundation.
- Hamlet, A.F., S.Y. Lee, N.J. Mantua, E.P. Salathé, A.K. Snover, R. Steed, and I. Tohver. 2010. [\*Seattle City Light Climate Change Analysis: Climate Change Impacts on Regional Climate, Climate Extremes, Streamflow, Water Temperature, and Hydrologic Extremes\*](#). Prepared for The City of Seattle, Seattle City Light 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. June.
- Littell, J.S., M.M. Elsner, L.C. Whitely Binder, and A.K. Snover. (Editors) 2009. [\*The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate - Executive Summary\*](#). In [\*The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate\*](#), Climate Impacts Group, University of Washington, Seattle, Washington.
- Snover, A.K., L. Whitely Binder, J. Lopez, E. Willmott, J. Kay, D. Howell, and J. Simmonds. 2007. [\*Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments\*](#). In association with and published by ICLEI – Local Governments for Sustainability, Oakland, CA.
- 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).

- 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.
- 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.
- 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).
- 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.
- Snover, A. K. and P. D. Quay, 1996. Time series of atmospheric CH<sub>4</sub> concentration and stable isotopic composition at two North American temperate sites, *EOS Transactions*, 77, F107.

## PRESENTATIONS

- The Science of Climate Change*. Interview by KUOW's Steve Scher, Seattle Rotary, Seattle 14 May 2014 (invited).
- Urban Issues in Research*. Panel discussion at University of Washington's 2014 Symposium, The Centrality of Urban in the Anthropocene: Implications for Graduate Research and Education. Seattle, 6 May 2014 (invited).
- Successful Adaptation to Coastal Climate Change: Insights from science and practice*, Salish Sea Ecosystem Conference, Seattle, 2 May 2014.

*Climate Science 101*. Panel discussion moderated by KING5's Jeff Renner, Part 1 of the Climate Series sponsored by the Seattle Chamber of Commerce and the Washington Clean Technology Alliance, Seattle, 28 April 2014 (invited).

*Pacific Northwest Climate Change: Implications for public health*. Washington State Department of Health, Tumwater, 11 April 2014 (invited).

*The Future of Winter in the Pacific Northwest*, Pacific Northwest Snowpack Forum hosted by Point B, CH2M Hill, and Sustainable Seattle, Seattle, 27 March 2014 (invited).

*Climate impacts on Washington State: An overview of key risks*. Presentation to the WA House of Representatives Environment Committee, Olympia Washington, 5 March 2014 (invited).

*Preparing for a changing climate in Washington – what can we expect?* Seattle Metropolitan Chamber of Commerce Community Development Roundtable, Seattle, 3 March 2014 (invited).

*Climate impacts on Washington State: An overview of key risks*. Presentation to the WA Senate Energy, Environment & Telecommunications Committee, Olympia Washington, 28 January (invited).

*Evaluating climate risks and opportunities: operational and strategic considerations*, Executive Forum on Business and Climate, Washington DC, 5 November 2013 (invited).

*Climate change is here*. Panel discussion at: Climate Change and the Bottom Line Conference, co-sponsored by Sustainable Seattle, Seattle Metropolitan Chamber of Commerce, UW Foster School of Business, UW Buerk Center for Entrepreneurship, Seattle, 31 October 2013 (invited).

*Identifying actionable adaptation pathways for aquatic ecosystem management within the Pacific Northwest Region of the USFS*, Fourth Annual Pacific Northwest Climate Conference, Portland Oregon, 6 September 2013.

[\*Successful adaptation to coastal climate change: Insights from science & practice\*](#), Fourth Annual Pacific Northwest Climate Conference, Portland Oregon, 5 September 2013.

*Understanding climate change impacts on water resources: What we know, what we don't*, Water Law in Washington Continuing Legal Education Seminar, Seattle Washington, 24 June 2013 (invited).

*Climate impacts on WA state: Update on the science*, Washington Office of the Attorney General Continuing Legal Education Seminar, Tumwater Washington, 17 June 2013 (invited).

*Moving forward: Linking science and decision making for climate adaptation*, Climate Change Adaptation for States, Tribes and Local Governments Webinar, 12 June 2013 (invited).

*Implications of climate change and ocean acidification: Resources for planning in WA state*, Presentation to the Washington Department of Ecology, 10 June 2013 (invited).

*Expect the unexpected: Climate change, the Pacific Northwest, and new planning paradigms*, Leadership Tomorrow Environment Challenge Day, Seattle Washington, 9 Ma2013 (invited)y.

*Actions speak louder: Getting serious about climate change*. Panel discussion at GoGreen Seattle 2013 Conference, Seattle, 24 April 2013 (invited).

*Successful adaptation to climate change in the coastal context of Washington state*, National Adaptation Forum, Denver Colorado, 4 April 2013.

[\*Climate change in the Northwest: Draft National Climate Assessment findings\*](#), NCA Northwest Town Hall, Portland Oregon, 12 March 2013 (invited).

*Climate change impacts on water resources and flooding in Washington state*, House Capital Budget Committee, Olympia Washington, 8 March 2013 (invited).

Snover, A.K. 2013. [\*Climate change in the Pacific Northwest: An overview of the draft National Climate Assessment\*](#), C3 Webinar, 5 March 2013 (invited).

*State of the science: Climate change scenarios on global, national and regional scales*, Continuing Legal Education Seminar on the Endangered Species Act, Seattle, 24 January 2013 (invited).

*Climate change impacts and adaptation in Washington state*, Senate Environment Committee, Olympia Washington, 30 November 2012 (invited).

*Climate change on the west coast*, Successful Adaptation in the Coastal Sector: Scientists Workshop, Menlo Park, California, 16 October 2012.

*Choosing, Measuring and Learning: Toward a civic culture of resilience*. Panel discussion for Institute for Sustainable Communities' Climate Leadership Academy, Adaptation & Resilience 2.0, Portland Oregon, 5 October 2012 (invited).

*Urban Adaptation and Resilience v1.0 – What have we learned? Where are we now? What does v2.0 look like?* Panel discussion for Institute for Sustainable Communities' Climate Leadership Academy, Adaptation & Resilience 2.0, Portland Oregon, 3 October 2012 (invited).

[Assessing climate change vulnerability: Components, approaches and examples](#). Carpe Diem Webinar – Vulnerability Assessment Take Two, 20 September 2012 (invited).

*Building climate resilience via a science + decision making community of practice*. Workshop on “A Community for Building Urban Climate Change Resilience in Asia” sponsored by the Adaptation Partnership, USAID and US State Department, Bangkok. 1 August 2012 (invited).

*Climate impacts on coastal marine resources in the Northwest: Linking research with stakeholder engagement*. Seminar for Korean Research Fellows (KOSTI), Seattle, 26 July 2012 (invited).

*Mind the gap: Bridging research and practice to build climate resilience in the Northwest*. Fourth International Conference on Climate Change, Seattle, 12 July 2012 (invited; co-authors: N.J. Mantua, L.C. Whitely Binder, A.F. Hamlet and J.S. Littell).

*At which geographic scale should climate change adaptation efforts be focused? An overview of recent case studies from the Pacific Northwest region of North America*, Adaptation Futures, Tucson Arizona, 30 June 2012 (co-authors: A.F. Hamlet and L.C. Whitely Binder).

*Climate science programs under the USGCRP: The chronology and development of the climate science program in the PNW*. EPA Region X TMDL climate change pilot workshop, Seattle, 25 June 2012 (invited).

*Protecting and recovering Puget Sound in a changing climate: Thoughts on incorporating knowledge of climate variability and change into the work of the Puget Sound Partnership*. Briefings to the Science Panel and Leadership Council of the PSP, Seattle, 15 and 19 June 2012 (invited).

*The Case for Focusing Climate Change Adaptation Efforts on Smaller Geographic Scales: An Overview of Recent Case Studies in the Pacific Northwest Region of North America*. Planet Under Pressure, London, 28 March 2012 (co-authors: A.F. Hamlet and L.C. Whitely Binder).

*Lessons learned from 15 years of interdisciplinary climate impacts research, applications, and stakeholder engagement in the US Pacific Northwest*. Planet Under Pressure, London, 28 March 2012 (co-authors: N.J. Mantua, J.S. Littell, L.C. Whitely Binder, A.F. Hamlet, E.P. Salathé).

*Communicating climate change: From awareness to action*. Planet Under Pressure, London, 28 March 2012 (poster; co-authors L.C. Whitely Binder, N.J. Mantua, J.S. Littell, A.F. Hamlet,).

*Becoming Climate Smart: Climate Change, Climate Impacts, and Accounting for Climate Risks*. EPA – Region 10, Seattle, 7 March 2012 (invited).

*Climate Change Scenarios on Global, National & Regional Scales Understanding and coping with uncertainty*. 19th Annual Endangered Species Act conference, Continuing Legal Education Certification, Seattle, Washington, 26 January 2012 (invited).

*Not Just Useful to, but Used by: Lessons from 15 years at the interface of climate science and decision making*. Regional Climate Services Workshop, Pacific Climate Impacts Consortium, University of Victoria, 21 November 2011 (invited).

*Climate Impacts on Coastal Marine Resources in the PNW: Linking research with stakeholder engagement.* UW School of Marine & Environmental Affairs (SMEA 550) Practitioner Speaker Series, 10 November 2011 (guest lecture).

*Overview of Climate Change Science and Importance of Climate Change for Planning.* Olympic National Park Workshop. Port Angeles, Washington, 9 November 2011 (invited).

*Adaptation in the PNW: Actors, Actions & Barriers.* UW School of Marine & Environmental Affairs (SMEA) 521: Governmental Responses to Global Climate Change, 26 October 2011 (guest lecture).

*Compelling and Credible Communication about Climate Change and Extreme Events.* A conversation with the NGO community. Sightline Institute, Seattle, 21 September 2011.

*Regional Climate: Influences, Trends and Implications.* Workshop on Exploring Traditional Ecological Knowledge's Role in Responding and Adapting to Climate Change and Variability, hosted by the Affiliated Tribes of Northwest Indians (ATNI). Seattle, Washington, 15 September 2011 (invited).

*Choosing and Using Climate Scenarios for Climate Impacts Assessment and Adaptation Planning: Helping users navigate the thicket.* Practical Solutions for a Warming World, American Meteorological Society First Conference on Climate Adaptation. Asheville, North Carolina, 18 July 2011 (co-authors N.J. Mantua, J.S.Littell).

*Vulnerability to Climate Change: Assessment methodology and key terms,* NOAA West/Washington Sea Grant/Climate Impacts Group Workshop on Assessing Vulnerability of West Coast Fisheries in a Changing Climate. Seattle, Washington, 25 May 2011.

*An Overview of Climate Change Science,* North Cascades Adaptation Partnership: Mount Baker Snoqualmie National Forest Climate Change Education. Everett, Washington, 28 April 2011 (invited).

*The Changing Climate of the Columbia Basin: Past and Future,* Bonneville Power Administration Annual All Managers' Meeting. Portland, Oregon, 6 April 2011 (invited).

*Thinking about climate change,* plenary discussion for Workshop for Envisioning a Healthy Puget Sound: Coordinated Regional Land and Water Management in Light of Climate Change and Population Growth. Hosted by the Tulalip Tribes and US Fish and Wildlife Service, Tulalip, Washington, 8 February 2011 (invited).

*Science, Scientific Information, and Peer Review,* Testimony to the House Environment Committee, Olympia, 4 February 2011 (invited).

*Communicating Climate Change: From Awareness to Action.* American Meteorological Society Annual Meeting. Seattle, 26 January 2011 (invited; co-authors L.C. Whitely Binder, A.F. Hamlet and J. Littell).

*Research & Engagement in support of climate resilience.* Panel Presentation: Local and Regional Climate Leaders: What is being done in the West about climate change? American Meteorological Society Annual Meeting. Seattle, 25 January 2011 (invited).

*Outreach & Engagement in support of climate resilience.* Special Communication Session on Integrating Communication, Weather and Climate: More than just 'talking about the weather!' American Meteorological Society Annual Meeting. Seattle, Washington, 22 January 2011 (invited).

*Local Impacts of Global Change,* Symposium on Climate Change Adaptation & the Law sponsored by the Center for Progressive Reform, Seattle University, 21 January 2011 (invited).

*From Global Climate Model Projections to Local Impacts Assessments: Analyses in Support of Planning for Climate Change.* American Geophysical Union Annual Meeting. San Francisco, California, 14



December 2010 (co-authors J.S. Littell, N.J. Mantua, E.P. Salathe, A.F. Hamlet, M.M. Elsner, I. Tohver, S.-Y. Lee).

*Bringing Global Climate Change Down to Scale: Using climate impacts science to inform policy and planning*, Rural Voices for Conservation Coalition Annual Policy Meeting: Policy and Practice Day, Troutdale, Oregon, 7 December 2010 (invited).

*Working at the Science/Policy Interface to Prepare Regional Water Resources for Climate Change*, UW Civil & Environmental Engineering 578 (Water Systems Management and Operations), 30 November 2010 (guest lecture).

*Evaluating Past and Future Conditions: Changes due to climate variability and change*, North Cascades and Mount Rainier National Parks Natural Resource Condition Assessment (NRCA) planning workshop, Seattle, Washington, 3 November 2010 (invited).

*Tools for Climate Change: Integrated Assessment*, UW School of Marine Affairs 521 (Governmental Responses to Global Climate Change), 18 October 2010 (guest lecture).

*Change Adaptation in Puget Sound*, Center for Progressive Reform, Seattle, Washington, 19 August 2010 (invited).

*Panel discussion on Pacific Northwest scientific research and influence on environmental policy*, Greenlaw, UW Student Association of Environmental Lawyers, 10 April 2010 (invited).

*Preparing for climate change: Vulnerability, planning, scenarios*, UW Urban Ecology Lab, 10 February 2010 (invited).

*What Next? Planning for Climate Change*, Olympic National Park/Olympic National Forest Workshop on planning for climate change, 10 November 2009 (invited).

*The Climate Impacts Group: Supporting regional adaptation to climate variability and change*, National Academy of Sciences Board on Atmospheric Sciences and Climate, Seattle, 9 November 2009 (invited).

*The Climate Impacts Group: Research and engagement to support adaptation across the landscape*, Puget Sound Federal Caucus, Seattle, 15 October 2009 (invited).

*The Climate Impacts Group: Working at the intersection of science and policy*, UW Program on Climate Change Summer Institute, Friday Harbor, Washington, 17 September 2009 (invited).

*Preparing for a Changing Climate: Building the capacity to cope with global warming*, Lyceum 2007 series, "Turning Up the Heat: Global warming and Puget Sound," Whidbey Island, 8 May 2007 (invited).

*What do we do now? Building capacity to cope with climate change*, Symposium on Cities and Climate Change sponsored by the Newkirk Center for Science and Policy, Beckman Center, University of California, Irvine, 27 April 2007 (invited).

*Global Warming in the Pacific Northwest: Impacts and Implications for Planning at Washington State Department of Ecology*, briefing for the Washington State Attorney General's Office, Ecology Division, Hood Canal, 26 April 2007 (invited).

*Panel discussant for film viewing of "The Great Warming,"* Hazel Wolf Environmental Film Festival, University of Washington, Seattle, 30 March 2007 (invited).

*Global climate change: Causes and local consequences*, Building Bioregional Literacy workshop for undergraduate educators, Pacific Lutheran University, 9 March 2007 (invited).

*Past and future consequences of global climate change*, briefing for Washington State House Agriculture and Natural Resources Committee, Olympia, Washington, 24 January 2007 (invited).

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

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

*Climate change in the Pacific Northwest: An overview*, briefing for King County Climate Change Action Team, Seattle, 17 November 2006 (invited).

*Change is coming: Implications of global warming for Washington State water resources*, Washington State Water Resources Association 2006 Annual Conference, Spokane, 9 November 2006 (invited).

*Global change, local impacts*, Tacoma City Council Study Session, Tacoma, Washington, 24 October 2006 (invited).

Research at the Climate Impacts Group, for the University of Washington CEO Summit, "ideas 2 innovation," September 2006 (invited).

*Strategies for preparing for climate change: A handbook for local governments*, ICLEI Climate Safe Communities Campaign Kick-off Event, Keene, New Hampshire, 23 August 2006 (invited).

*Rhythms of change: Preparing for global warming*, ICLEI Climate Safe Communities Campaign Kick-off Event, Keene, New Hampshire, 22 August 2006 (invited).

*Science and Politics of Climate Change*, Yakima Basin Storage Alliance Roundtable on Salmon Restoration, Yakima, Washington, 15 August 2006 (invited).

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

*Preparing for global warming*, ICLEI 2006 North American Congress, Chicago, Illinois, 13 July 2006 (invited).

*Rhythms of Change: Preparing for global warming*, Multi State Working Group 2006 Conference, Park City, Utah, 27 June 2006 (invited).

*Global Change: Local Impacts*, USDA/WSU Climate Friendly Farming public symposium, "Agriculture and Climate Change," Washington State University, Pullman, 21 June 2006 (invited).

*Climate change projections for Washington state economic impacts assessment*, Workshop on Economic Consequences of Climate Change in Washington, Seattle, Washington, 6 April 2006 (invited).

*Climate Change in Washington: Past and Future*, Climate Change Technical Subcommittee, Regional Water Supply Planning Process, Seattle, Washington, 8 March 2006 (invited).

*SRhythms 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 (invited).

*Global Change: Local Impacts*, UW SIS 495 (Geopolitics of Global Warming), 1 March 2006 (guest lecture).

*Preparing for Climate Change in Washington State*. The Water Center: Annual Review of Research. Seattle, Washington, 16 February 2006 (invited).

*Global Change: Local Impacts*, Washington State University Westside Agriculture and Natural Resource Research and Extension Days, Puyallup, Washington, 15 February 2006 (invited).

*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 (invited).

*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 (invited).

*Choices and change: Preparing for climate impacts*, 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 (invited).

*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 (invited).

*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 (invited).

*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 (invited).

*Climate change impacts on the Pacific Northwest*, UW Program on the Environment 203, 20 April 2005 (guest lecture).

*Implications of global climate change for the Pacific Northwest*, City of Seattle, Mayor's Urban Sustainability Advisory Panel, Seattle, Washington, 15 December 2004 (invited).

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."]

*Defining 'vulnerability' and 'integrated assessment'*, UW ESC 521 (Consequences of Climate Change and Climate Variability for Pacific Northwest Forests), 26 January 2004 (guest lecture).

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

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

*Vulnerability Assessment 'In Action'*, UW Climate Impacts Group Seminar, 25 November 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 (invited).

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

*The Impacts of Climate Change on the Pacific Northwest*, UW WashPIRG, 28 May 2003 (invited).

*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 (guest lecture).

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

*Planning for climate change in the Pacific Northwest*, King County Council, Council of the Whole, Seattle, 27 January 2003 (invited).

*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 2002 (invited).

*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, Castelvechio Pascoli, Italy, September 2002.

*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 (invited).

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

*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, 2002 (co-authors E. L. Miles, A. F. Hamlet, D. P. Lettenmaier).

*Impacts of climate change on the Pacific Northwest*, Washington State University-Vancouver, Science Program Seminar, 8 April 2002 (invited).

*Impacts of climate change on the water resources of the Pacific Northwest*, Seattle area chapter of the American Water Resources Association, 28 February 2002 (invited).

*Human influences on atmospheric greenhouse gas concentrations in the 20<sup>th</sup> and 21<sup>st</sup> centuries*, UW Atmospheric Sciences 211, 28 February 2002 (guest lecture).

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

*Impacts of climate change on the Pacific Northwest*, Advisory Council of the Puget Sound Clean Air Agency, Seattle, September 2001 (invited).

*SImpacts of climate change on the Pacific Northwest*, Puget Sound Clean Air Agency Executive Board, Seattle, September 2001 (invited).

*Impacts of climate change on the water resources of the Pacific Northwest*, Public Water Forum, Issaquah Environmental Council, Issaquah, September 2001 (invited).

*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 2001 (co-authors E. Miles, D. Lettenmaier, A.F. Hamlet, R. Francis, J. Franklin, W.F. Keeton, D. Canning, P. Mote).

*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 2001 (co-authors E. Miles, A.F. Hamlet).

*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 (invited).

*The sensitivity, adaptability, and vulnerability of Columbia Basin water resources to natural and anthropogenic climate change*, 12<sup>th</sup> Symposium on Global Change and Climate Variations, 81<sup>st</sup>

American Meteorological Society annual meeting, Albuquerque, New Mexico, January 2001 (co-authors E.L. Miles, A.F. Hamlet, D.P. Lettenmaier, B. Callahan, D. Fluharty).

*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 (invited).

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

*Impacts of climate variability and change on the Pacific Northwest*, UW Environmental Management seminar, April 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 stable hydrogen isotopic composition of atmospheric methane*, UW School of Oceanography Departmental Seminar, December 1998.

*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.

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

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

*History of shipboard measurements of CO<sub>2</sub>: 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.

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## **PROFESSIONAL ACTIVITIES**

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### **PROFESSIONAL SERVICE**

Co-Chair, Expert Council on Climate Change for Washington State Commissioner for Public Lands and the Department of Natural Resources, 2013-present.

Convening Lead Author, U.S. National Climate Assessment, Northwest Regional Chapter, 2011-2014.

Advisory Board, Carpe Diem West, 2012-present.

Editorial Board, Encyclopedia of the Puget Sound, 2012-present.

Member, West Coast Governors' Association Climate Change Action Coordination Team, 2011-present.

Advisory Board, University of Washington Professional and Continuing Education Certificate in Decision Making for Climate Change, 2009-present.

Advisory Council, Washington State University Center for Sustaining Agriculture and Natural Resources, 2007 – present.

Steering Committee, University of Washington Environmental Management Graduate Certificate Program, 2000-present.

Advisory Board, University of Arizona Department of Geography & Climate Assessment for the Southwest (CLIMAS)'s UW project, "Knowledge to Action: An Assessment of the Transfer of Climate Science to Decision-Making", 2009-2014.

Program Committee, Pacific Northwest Climate Science Conference, including Program Chair, and Chair, Host Committee, Second Annual Pacific Northwest Climate Science Conference, Seattle, 2010-2012.

Science advisor, "Scenarios for Snohomish Basin 2060: Adapting to an uncertain future" project, University of Washington Urban Ecology Research Laboratory, August 2010-2013.

Technical advisor/member of the State of Washington "Ecosystems, Species, Habitats" Topic Advisory Group (TAG3) for the development of a State strategy for preparing for climate change, 2010-2011.

Advisory Board, State of Washington Climate Change Response Strategy, 2009-2011.

Participant and technical advisor, UW-NWS/UW project, "Responding to Climate Variability and Change: A Prototype for Trans-boundary Assessment and Services in the Columbia River Basin", 2009-2011.

Graduate Student mentor for the UW Faculty and Graduate Student Mentoring Program, 2006–2007.

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

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, Castelvecchio Pascoli, Italy, September 2002.

#### **PROFESSIONAL MEMBERSHIPS**

American Society of Adaptation Professionals

American Geophysical Union

American Meteorological Society

#### **REFEREE**

*Bulletin of the American Meteorological Society*

*Climatic Change*

*Earth Interactions*

*Frontiers in Ecology and the Environment*

*Global Environmental Change*

*Journal of Environmental Planning and Management*

*Journal of American Water Resources Association*

*Journal of Applied Meteorology and Climatology*

*Monthly Weather Review*

*Regional Environmental Change*

*US Forest Service, Rocky Mountain Research Station (General Technical Report)*

*U.S. National Climate Assessment, Forest Technical Input*

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

#### **SPONSORED RESEARCH REVIEWER**

National Oceanic and Atmospheric Administration: Human Dimensions Program

National Oceanic and Atmospheric Administration: Climate Transition Program

Oak Ridge Associated Universities: Nazarbayev University Review

#### **OUTREACH AND PUBLIC SERVICE ACTIVITIES**

I work closely with researchers, natural resource managers, urban planners, policymakers, elected officials, and representatives of private industry and non-governmental organizations – with the objective of ensuring that (1) decision making processes are informed by understanding of the impacts of natural climate variability and human-caused global warming and (2) climate impacts research is informed by the needs of the ultimate users of that information.

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

International	Greater London Authority Instituto Geofísico del Perú The Clean Air Partnership (Canada)
National	ICLEI-Local Governments for Sustainability Multi State Working Group on Environmental Performance NOAA Coastal Storms Initiative NOAA Office of Global Programs US Department of Energy Global Change Education Program <i>Christian Science Monitor</i> <i>U.S. News &amp; World Report</i> White House Office of Science and Technology Policy
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 Attorney General's Office Washington State Department of Community, Trade and Economic Development Washington State Department of Ecology Washington State Department of Fish & Wildlife 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, City Light, Office of Sustainability & Environment  
Seattle Mayor's Urban Sustainability Advisory Panel  
Tacoma City Council  
Yakima Basin Storage Alliance  
*Various print, radio, and television*

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## TEACHING & ADVISING

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### Graduate student committees:

Brittany Jones, MS (UW School of Aquatic and Fishery Sciences), 2014.  
*"Comprehensive Planning for Natural Adaptation and Restoration of Tidal Wetlands under Future Climate Change in Puget Sound"*

Hilary Papendick, MPA/MS (UW Evans School of Public Affairs/School of Forest Resources), Spring 2011  
*"Preparing for Rising Tides: Coastal Hazard Risk Perceptions and Support for Sea Level Rise Adaptation in Washington."*

### Postdoctoral advising:

Rita Yu, "Time of emergence of climate change signals in the Northwest: Linkages to management", 2013-present.

Shannon Hagerman, "Climate adaptation for aquatic habitats in the Pacific Northwest Region: Integrating biophysical and human dimensions", 2010-2012.

Informal mentor for various University of Washington graduate students interested in combining interests in science and policy, 2001-present.

"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, Spring 2009, Winter 2011).

*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](http://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](http://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](http://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](http://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).

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## SELECTED MEDIA

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[“Climate change is here, not on the way.”](#) Seattle Times Editorial (Lance Dickie), 8 May 2014.

[“Floods, insects, torrential downpours: Here’s what to expect from Northwest climate change.”](#) KUOW, Seattle, 6 May 2014.

[“Report: Climate-change effects are already apparent in NW.”](#) Seattle Times, 6 May 2014.

[“Climate change: mitigation, adaptation.”](#) Seattle Times Editorial (Lance Dickie), 13 February 2014.