

Anne C. Steinemann

Program Manager and Visiting Researcher
Scripps Institution of Oceanography
University of California, San Diego

Professor
Civil and Environmental Engineering, and Public Affairs
University of Washington

Educational History

Ph.D., 1993, Stanford University, Civil and Environmental Engineering
M.S., 1985, U.C.L.A., Civil and Environmental Engineering
B.S., 1984, U.C. Irvine, Civil and Environmental Engineering, Magna cum Laude

Employment History

Visiting Researcher Climate, Atmospheric Science, and Physical Oceanography Program Manager, California Nevada Applications Program Scripps Institution of Oceanography U.C. San Diego	2012-present
Professor Civil and Environmental Engineering, and Public Affairs University of Washington	2004-present
Director The Water Center University of Washington	2004-2008
Research Associate Visiting Scientist Climate Research Division, Scripps Institution of Oceanography	2004-2012 2003-2004
Visiting Professor Civil and Environmental Engineering, Stanford University	2010-2011
Associate Professor Assistant Professor City and Regional Planning Program, Georgia Institute of Technology	2000-2004 1995-2000
Adjunct Professor School of Public Policy, Georgia Institute of Technology	1998-2004
Adjunct Professor Marine and Environmental Systems, Florida Institute of Technology	2001-2004

Postdoctoral Scholar Dept. of Civil and Environmental Engineering, Stanford University	1993-1995
Associate Director Center for Teaching and Learning, Stanford University	1990-1992
Visiting Faculty Department of Computer Science, Linköping University, Sweden	1988-1989
Engineering Hydrologist U.S. Geological Survey, Menlo Park and San Diego, California	1985-1988

Awards and Honors

Featured as "Engineer of the New Millennium," National Science Foundation, 2011

Appointed, Seattle Mayor's Green Ribbon Commission
 Developed Climate Action Plan, adopted by more than 1,000 mayors in the U.S.
 Presented plan to Al Gore.

American Water Resources Association, Outstanding Chapter of the Year, 2006
 Faculty adviser to AWRA student chapter

Appointed, Special Adviser to Governor of Georgia on water issues, 2000

Appointed, President's National Drought Policy Commission, workgroups, 2000

Hesburgh Award (Highest national honor for university teaching programs), 1999

Junior Faculty Teacher of the Year (Highest University Award), Georgia Tech, 1997

Outstanding Teacher of the Year (Highest College Award), Georgia Tech, 1996

National Science Foundation CAREER Award, 1998

American Association of University Women Scholar, 1993

Rotary Foundation International Scholar, 1998

University of California Regents Scholar, 1985

University of California Chancellor's Scholar, 1984

Female Engineer of the Year, University of California, Irvine, 1984

Civil Engineer of the Year, University of California, Irvine, 1984

Tau Beta Pi, Engineering Honor Society

Publications

Refereed archival journal publications

Rosenberg, E.A., Wood, A.W., Steinemann, A.C., "Informing hydrometric network design for statistical seasonal streamflow forecasts." *Journal of Hydrometeorology* (in press)

Rosenberg, E.A., Clark, E.A., Steinemann, A.C., and Lettenmaier, D.P. "On the contribution of groundwater storage to interannual streamflow anomalies in the Colorado River Basin." *Hydrology and Earth System Sciences* 9: 13191-13230, 2012.

Fontaine, M.M., Steinemann, A.C., Hayes, M.J. "State Drought Programs: Lessons and Recommendations from the Western U.S." *ASCE Natural Hazards Review* 9, 2012.

Steinemann, A., Corsi, R. "Climate Change and Indoor Air Pollution: Exploring the Connections." *Atmospheric Environment* (in revision).

Steinemann, A.C., MacGregor, I.C., Gordon, S.M., Gallagher, L.G., Davis, A.L., Ribeiro, D.S., Wallace, L.A. "Fragranced Consumer Products: Chemicals Emitted, Ingredients Unlisted." *Environmental Impact Assessment Review* 31(3): 328–333, 2011.

Rosenberg, E.A., Wood, A.W., Steinemann, A.C. "Statistical Applications of Physically Based Hydrologic Models to Seasonal Streamflow Forecasts." *Water Resources Research* 47, 2011.

Steinemann, A.C., Gallagher, L.G., Davis, A.L., MacGregor, I.C. "Chemical Emissions from Residential Dryer Vents During Use of Fragranced Laundry Products." *Air Quality, Atmosphere & Health*, 2011.

Shukla, S., Steinemann, A.C., Lettenmaier, D.P. "Drought Monitoring System for Washington State: Indicators and Applications." *Journal of Hydrometeorology* 12(1): 66-83, 2011.

Rosenberg, E.A., Keys, P.W., Booth, D.B., Hartley, D., Burkey, J., Steinemann, A.C., Lettenmaier, D.P. "Precipitation Extremes and the Impacts of Climate Change on Stormwater Infrastructure in Washington State." *Climatic Change* 102(1-2): 319-349, 2010.

Visitacion, B., Booth, D.B., Steinemann, A.C. "Costs and Benefits of Stormwater Management." *ASCE Journal of Urban Planning and Development* 135(4): 150-158, 2009.

Caress, S.M., Steinemann, A.C. "Prevalence of Fragrance Sensitivity in the American Population." *Journal of Environmental Health* 71(7): 46-50, 2009.

Caress, S.M., Steinemann, A.C. "Asthma and Chemical Hypersensitivity: Prevalence, Etiology, and Age of Onset." *Toxicology and Industrial Health* 25: 71-78, 2009.

Steinemann, A.C. "Fragranced Consumer Products and Undisclosed Ingredients." *Environmental Impact Assessment Review* 29: 32-38, 2009.

Fontaine, M., Steinemann, A.C. "Assessing Vulnerability to Natural Hazards: An Impact-Based Method and Application to Drought in Washington State." *Natural Hazards Review* 10(1): 11-18, 2009.

Padgett, J.P., Steinemann, A.C., Clarke, J.H., Vandenberg, M.P. "A Comparison of Carbon Calculators." *Environmental Impact Assessment Review* 28: 106-115, 2008.

Vandenberg, M.P., Steinemann, A.C. "The Carbon-Neutral Individual." *New York University Law Review* 82(6): 1673-1745, 2007.

Steinemann, A. "Using Climate Forecasts for Drought Water Management." *Journal of Applied Meteorology and Climatology* 45(10): 1353-1361, 2006.

Steinemann, A., Cavalcanti, L. "Developing Multiple Indicators and Triggers for Drought Plans." *ASCE Journal of Water Resources Planning and Management* 132(3): 164-174, 2006.

Alfaro, E., Pierce, D., Steinemann, A., Gershunov, A. "Relationships Between the Irrigation-Pumping Electrical Loads and the Local Climate in Climate Division 9, Idaho." *Journal of Applied Meteorology* 44(12): 1972-1978, 2005.

Caress, S., Steinemann, A. "National Prevalence of Asthma and Chemical Hypersensitivity: An Examination of Potential Overlap." *Journal of Occupational and Environmental Medicine* 47(5):518-522, 2005.

Alfaro, E., Gershunov, A., Cayan, D., Steinemann, A., Pierce, D., Barnett, T. "A Method for Prediction of California Summer Air Surface Temperatures." *EOS, Transactions American Geophysical Union* 85: 553, 557-558, 2004.

Caress, S., Steinemann, A. "A National Population Study of the Prevalence of Multiple Chemical Sensitivity." *Archives of Environmental Health* 59(6): 300-305, 2004.

Steinemann, A. "Human Exposure, Health Hazards, and Environmental Regulations." *Environmental Impact Assessment Review* 24(7/8): 695-710, 2004.

Caress, S., Steinemann, A. "Prevalence of Multiple Chemical Sensitivities: A population-based study in the Southeastern United States." *American Journal of Public Health* 94(5): 746-747, 2004.

Steinemann, A. "Drought Indicators and Triggers: A Stochastic Approach to Evaluation." *Journal of the American Water Resources Association* 39(5): 1217-1234, 2003.

Steinemann, A. "Implementing Sustainable Development: Pedagogy and Practice." *ASCE Journal of Professional Issues in Education and Practice* 129(4): 216-224, 2003.

Beck, M.B., Fath B.D., Parker A.K., Osidele O.O., Cowie G.M., Rasmussen T.C., Patten B.C., Norton B.G., Steinemann A., Borrett S.R. "Developing a Concept of Adaptive Community Learning: Case Study of a Rapidly Urbanizing Watershed." *Integrated Assessment* 3(4): 299-307, 2003.

Caress, S., Steinemann, A. "A Review of a Two-Phase Population Study of Multiple Chemical Sensitivities." *Environmental Health Perspectives* 111(12): 1490-1497, 2003.

- Steinemann, A. "Improving Alternatives for Environmental Impact Assessment." *Environmental Impact Assessment Review* 21: 3-21, 2001. "Most Downloaded Article" of Journal.
- Keysar, E., Steinemann, A. "Integrating Environmental Impact Assessment with Master Planning: Lessons From the U.S. Army." *Environmental Impact Assessment Review* 22(6): 583-609, 2002.
- Caress, S., Steinemann, A., Waddick, C. "Symptomatology and Etiology of Multiple Chemical Sensitivities in the Southeastern United States." *Archives of Environmental Health: An International Journal* 57(5): 429-436, 2002.
- Steinemann, A. "Rethinking Human Health Impact Assessment." *Environmental Impact Assessment Review* 20: 627-645, 2000.
- Norton, B., Steinemann, A. "Environmental Values and Adaptive Management." *Environmental Values* 10(4): 473-506, 2001.
- Gilbreath, J., Steinemann, A. "Hazardous Pesticides in Developing Countries: A Case Study of Zambia, Africa." *Environmental Practice* 2: 311-317, 2000.
- Simon, K., Steinemann, A. "Soil Bioengineering for Erosion Control and Slope Stabilization: Challenges for Planning and Engineering." *ASCE Journal of Urban Planning and Development* 126(2): 89-102, 2000.
- Cosgriff, B., Steinemann, A. "Industrial Ecology for Sustainable Communities." *Journal of Environmental Planning and Management* 41(6): 661-672, 1998.
- Shepherd (Steinemann), A. "Drought Planning: Evaluating the Effectiveness of Plans." *ASCE Journal of Water Resources Planning and Management* 124(5): 246-251, 1998.
- Shepherd (Steinemann), A., Cosgriff, B. "Problem-Based Learning in Planning Education." *Journal of Planning Education and Research* 17(4): 348-357, 1998.
- Coffin, S., Shepherd (Steinemann), A. "Barriers to Brownfield Development: Lessons From Two Great Lakes States." *Journal of Public Works Management and Policy* 2(3): 258-266, 1998.
- Shepherd (Steinemann), A. "Knowledge-Based Expert Systems: Critiquing versus Conventional Approaches." *International Journal of Expert Systems with Applications* 433-441, 1998.
- Shepherd (Steinemann), A., Bowler, C. "Beyond the Requirements: Improving Public Participation in EIA." *Journal of Environmental Planning and Management* 40(6): 725-738, 1997.
- Shepherd (Steinemann), A. "Interactive Implementation: Improving Acceptance of Expert Systems." *Computers, Environment, and Urban Systems* 21(5): 317-333, 1997.
- Shepherd (Steinemann), A., Ortolano, L. "Organizational Change and EIA at the Electricity Generating Authority of Thailand." *Environmental Impact Assessment Review* 17: 329-356, 1997.
- Shepherd (Steinemann), A., Ortolano, L. "Strategic Environmental Assessment for Sustainable Urban Development." *Environmental Impact Assessment Review* 16: 321-335, 1996.

Shepherd (Steinemann), A., Ortolano, L. "Water Supply System Operations: Critiquing Expert System Approach." *ASCE Journal of Water Resources Planning and Management* 122(5): 348-355, 1996.

Ortolano, L., Shepherd (Steinemann), A. "Environmental Impact Assessment: Challenges and Opportunities." *Impact Assessment* 13(1): 3-30, 1995.

Shepherd (Steinemann), A., Ortolano, L. "Critiquing Expert Systems for Planning and Management." *Computers, Environment, and Urban Systems* 18(5): 305-314, 1994.

Waern, Y., Hägglund, S., Löwgren, J., Rankin, I., Sokolnicki, T., Steinemann, A., "Communication Knowledge for Knowledge Communication." *International Journal of Man-Machine Studies* 37: 215-239, 1992.

Ortolano, L., Steinemann, A. "New Expert Systems in Environmental Engineering." *ASCE Journal of Computing in Civil Engineering* 1(4): 298-302, 1987.

Refereed monographs

Steinemann, A. "Nonpotable Ground Water in the Desert Area of Southeast California for Powerplant Cooling." *U.S. Geological Survey Water Supply Paper* no. 2343, 1989.

Farrar, C.D., Sorey, M.L., Steinemann, A. "Hydrologic and Geochemical Monitoring in Long Valley Caldera, Mono County, California." *U.S. Geological Survey Open File Report* 80-4033, 1989.

Articles in professional journals

Shepherd (Steinemann), A., Hausser, W. "Project XL: Reinventing Environmental Regulation by Building New Partnerships." *National Association of Environmental Professionals News* 22(1):10-11, 1997.

Shepherd (Steinemann), A., Simm, S. "The Integration of Environmental Impact Assessment with Major Investment Studies for Highway Planning." *Environmental Planning Quarterly* 14(2): 3-10, 1997.

Books

Steinemann, A.C., *Microeconomics for Public Decisions*. Menlo Park, CA: Askmar Publishing, 2011.

Ott, W., Steinemann, A., Wallace, L., eds. *Exposure Analysis*. Boca Raton, FL: CRC Press, 2007.

Steinemann, A.C., Apgar, W.C., Brown, H.J. *Microeconomics for Public Decisions*. Cincinnati, OH: South-Western, 2005.

Chapters in books

Steinemann, A., Walsh, N. "Environmental Laws and Exposure Analysis." In *Exposure Analysis*, ed. Ott, W., Steinemann, A., Wallace, L. Boca Raton, FL: CRC Press, pp. 487-513, 2007.

Steinemann, A., Hayes, M., Cavalcanti, L. "Drought Indicators and Triggers." In *Drought and Water Crises: Science, Technology, and Management Issues*, ed. Wilhite, D. Boca Raton, FL: CRC Press, pp. 71-92, 2005.

Norton, B., Steinemann, A. "Environmental Values and Adaptive Management." In *Searching for Sustainability*, ed. Norton, B. Cambridge, U.K: Cambridge University Press, pp. 514-547, 2002.

Shepherd (Steinemann), A. "Post Project Monitoring and Impact Assessment." In *Environmental Methods Review: Retooling Impact Assessment for the New Century*, ed. Fittipaldi, J. and Porter, A. Washington, D.C.: Army Environmental Policy Institute, 1998.

Ortolano, L., Shepherd (Steinemann), A. "Environmental Impact Assessment." In *Social and Environmental Impact Assessment*, ed. Vanclay, F. Chichester, U.K: John Wiley & Sons, pp. 3-30, 1995.

Research Activities

Funded Research

Sponsor: National Oceanic and Atmospheric Administration
Title: National Integrated Drought Information System (NIDIS) Pilot for California
Amount: \$309,918
Position: Principal Investigator
Dates: 2010-2013
Purpose: To develop and implement a drought early warning system to reduce drought impacts and costs, working with agencies, industries, tribes, organizations, and other stakeholders.

Sponsor: National Oceanic and Atmospheric Administration
Title: California and Nevada Droughts
Amount: \$40,000
Position: Principal Investigator
Dates: 2011-2016
Purpose: To analyze drought indicators, and the use of climate and hydrologic information for drought decision-making.

Sponsor: National Oceanic and Atmospheric Administration
Title: Southern California NIDIS Pilot Activity
Amount: \$55,000
Position: Principal Investigator
Dates: 2011
Purpose: To develop an experimental drought monitoring system and forecast indicators for the Southern California region, working with stakeholders.

Sponsor: National Oceanic and Atmospheric Administration
Title: Droughts in California and Nevada
Amount: \$30,516
Position: Principal Investigator
Dates: 2010-2011
Purpose: To examine historical droughts in California and Nevada, compare physically based drought indicators with impacts, and incorporate results into drought plans.

Sponsor: National Oceanic and Atmospheric Administration—SeaGrant
Title: SoundCitizen: Students and Citizens Working Together to Evaluate Sources and Fates of Emerging Pollutants in Puget Sound
Amount: \$220,000
Position: Co-Principal Investigator
Dates: 2010-2011
Purpose: To trace emerging pollutants from households, to stormwater, surface water, and wastewater, and into Puget Sound and other water bodies.

Sponsor: National Oceanic and Atmospheric Administration
Title: State Drought Planning in the Western U.S.
Amount: \$98,248
Position: Principal Investigator
Dates: September 15, 2009 - September 14, 2010
Purpose: To develop and communicate drought monitoring and forecast information for improved drought planning and response in the Western U.S.

Sponsor: Seattle Public Utilities
Title: Toxic Chemicals from Household Consumer Products in Stormwater, Wastewater, and Puget Sound
Amount: \$219,626
Position: Principal Investigator
Dates: April 1, 2008 - December 31, 2010
Purpose: To investigate the relationships among chemicals in household consumer products, their presence in water systems and water bodies, and impacts.

Sponsor: State of Washington, Center for Trade and Economic Development
Title: Climate Impacts, Vulnerability, and Adaptations: Infrastructure Systems in Washington State
Amount: \$110,000
Position: Principal Investigator
Dates: July 16, 2007 - June 30, 2009
Purpose: To assess projected impacts of climate change on infrastructure systems, identify vulnerable regions and sectors, and develop adaptations.

Sponsor: U.S. Geological Survey
Title: West-Wide Drought Forecasting System: A Scientific Foundation for NIDIS
Amount: \$250,000
Position: Principal Investigator
Dates: September 1, 2006 - August 31, 2011
Purpose: To develop a drought forecast and nowcast system for the Western U.S., and to provide early warning capabilities and science-based indicators for NIDIS.

Sponsor: National Oceanic and Atmospheric Administration (NOAA)
Title: Using NOAA Climate Forecasts with Hydrologic Assessment to Reduce Drought Vulnerability and Improve Water Management in Washington State
Amount: \$293,283
Position: Principal Investigator
Dates: June 1, 2006-May 31, 2011
Purpose: To develop and implement climate and hydrologic forecasts for water management, and to assess the net economic benefits of this forecast information.

Sponsor: National Aeronautics and Space Administration (NASA)
Title: Improving Water Resources Management in the Western U.S. Through Use of Remote Sensing Data and Seasonal Climate Forecasts
Amount: \$1,200,000
Position: Co-Principal Investigator (with Dennis P. Lettenmaier)
Dates: 2006-2009
Purpose: To develop hydrologic and climate prediction models for use by three operational water management agencies: the Natural Resources Conservation Service, the U.S. Bureau of Reclamation, and the California Department of Water Resources.

Sponsor: State of Washington, Center for Trade and Economic Development
Title: Drought Impact Assessment and Mitigation
Amount: \$100,000
Position: Principal Investigator
Dates: September 1, 2005 - August 31, 2006
Purpose: To assess the impacts from recent droughts, identify vulnerable areas and sectors, and develop indicators to monitor and forecast drought conditions.

Sponsor: The Russell Family Foundation
Title: Shelf to Sound: Educational Outreach
Amount: \$40,000
Position: Co-Principal Investigator
Dates: 2010-2011
Purpose: To develop an educational outreach program, using results from the Shelf to Sound research project, and provide guidance on less-toxic products.

Sponsor: State of Washington, Department of Ecology
Title: State Drought Plan
Amount: \$80,000
Position: Principal Investigator
Dates: September 1, 2006 - August 31, 2007
Purpose: To evaluate and improve the State of Washington Drought Plan, including indicators and triggers, responses, and climate change adaptations.

Sponsor: National Oceanic and Atmospheric Administration (NOAA)
Title: Climate Forecasts for Improving Management of Energy and Hydropower Resources in the Western U.S.
Amount: \$200,000
Position: Co-Principal Investigator (with Timothy P. Barnett)
Dates: August 2005-August 2008
Purpose: Predict variations in water and energy supplies and demands across the Western U.S. on seasonal time scales, in order to improve joint management of resources.

Sponsor: Seattle Public Utilities
Title: Analysis of Endocrine Disrupting Chemicals from Consumer Products in Stormwater and Wastewater in an Urban, Residential Seattle Watershed
Amount: \$120,000
Position: Principal Investigator
Dates: January 2006 - June 2006
Purpose: To analyze the presence and sources of endocrine disrupting chemicals (EDCs) in surface waters and wastewaters of a residential watershed in Seattle.

Sponsor: Puget Sound Action Team
Title: The Environmental, Economic, and Societal Costs of Stormwater Runoff in the Puget Sound Region
Amount: \$36,000
Position: Principal Investigator
Dates: January 2006 - August 2006
Purpose: To identify, analyze, and quantify the costs of stormwater runoff in the Puget Sound region, and the benefits of stormwater management.

Sponsor: Puget Sound Regional County Agencies
Title: Water and Watersheds Research Consortium
Amount: \$150,000
Position: Principal Investigator
Dates: January 2005-December 2008
Purpose: To address water issues in the region, such as low-impact development, drought, stormwater management, instream flows, and sustainability.

Sponsor: National Oceanic and Atmospheric Administration (NOAA)
Title: The Economic Benefit of Incorporating Weather and Climate Forecasts into Western Energy Production
Amount: \$1,938,100
Position: Co-Principal Investigator (with Timothy P. Barnett)
Dates: April 2003-August 2004
Purpose: Develop weather and climate forecasts for energy and water management in California, work with agencies and utilities to integrate forecasts into operations, and estimate the economic value of improved forecast information.

Sponsor: National Science Foundation, Civil and Mechanical Systems
Title: Interstate Drought Hazard Mitigation
Position: Principal Investigator
Amount: \$100,000
Dates: April 2004-March 2006
Purpose: Determine drought indicators for the ACT-ACF basin, and develop an interstate drought management plan for the states of Florida, Georgia, and Alabama.

Sponsor: National Science Foundation, CAREER Award
Title: Civil and Mechanical Systems, Hazard Reduction Program
Position: Reducing Drought Hazards by Improving Drought Plans
Principal Investigator
Amount: \$410,000
Dates: April 1, 1999-September 30, 2006
Purpose: Develop methods to analyze and mitigate risks of drought hazards.

Sponsor: Federal Highway Administration
Title: Consideration of Environmental Factors in Transportation Systems Planning
Position: Co-Principal Investigator (with Adjo Amekudzi)
Amount: \$250,000
Dates: April 2001-July 2002
Purpose: Develop methods for transportation agencies to address environmental requirements in strategic decisions and regional transportation plans.

Sponsor: Georgia Department of Natural Resources
Title: Drought Planning for the State of Georgia
Position: Principal Investigator
Amount: \$50,000
Dates: September 1999-September 2002
Purpose: Direct the drought planning process for Georgia, working with more than 100 stakeholders throughout the state. Develop and implement first state drought plan.

Sponsor: National Science Foundation-Environmental Protection Agency
Title: Community Values and the Long-Term Ecological Integrity of Rapidly Urbanizing Watersheds
Position: Co-Principal Investigator (with Bruce Beck)
Amount: \$850,000
Dates: January 1998-July 2001
Purpose: Develop watershed management methods for Lake Lanier, GA, integrating stakeholder objectives with scientific models.

Sponsor: National Science Foundation
Title: Decision-Making and Valuation for Environmental Policy
A Multi-Criteria, Dynamic, and Place-Based Approach to Ecosystem Valuation
Position: Co-Principal Investigator (with Bryan Norton)
Amount: \$94,997
Dates: August 1997-August 1998
Purpose: Design community-based methods for environmental valuation, assessing the intergenerational costs and benefits of development decisions.

Sponsor: National Science Foundation
Civil and Mechanical Systems, Hazard Reduction Program
Title: Evaluating the Effectiveness of Drought Response Strategies: A Knowledge-Based Approach
Position: Principal Investigator
Amount: \$18,000
Dates: June 1997-December 1998
Purpose: Design and implement knowledge-based system to improve drought planning processes and drought contingency plans.

Sponsor: Georgia Research Alliance
Title: Center for Urban and Regional Ecology
Position: Co-Principal Investigator (with Ron Pulliam)
Amount: \$300,000
Dates: June 1998-June 1999
Purpose: Investigate the interactions between human activities, ecological changes, and tools for managing the built and natural environment.

Sponsor: Georgia Research Alliance
Title: Environmentally Conscious Design and Construction of Infrastructure Projects
Position: Co-Principal Investigator (with Jorge Vanegas)
Amount: \$229,000
Dates: June 1996-September 1996
Purpose: Develop methods for sustainability in the planning, design, construction, and operation of urban infrastructure systems.

Teaching

Courses Taught at the University of Washington:

- Microeconomic Policy Analysis
- Sustainability: Principles and Practice
- Water Resources seminar
- Environmental Health seminar

Courses Taught at Georgia Tech:

- Water Resources Planning
- Environmental Impact Assessment
- Sustainable Development
- Microeconomics for Planning Policy
- Economic Analysis in Planning

Teaching Awards:

- Hesburgh Award (Highest national award for university teaching program), 1999
- Junior Faculty Teacher of the Year (Highest University Award), Georgia Tech, 1997
- Outstanding Teacher of the Year (Highest College Award), Georgia Tech, 1996

Additional Teaching Activities (selected examples):

- Director, The Water Center, an interdisciplinary university center for research and educational outreach. Guided students in service-learning projects. Generated an intercampus, interdisciplinary seminar course on water resources, with over 100 students each class. Directed annual symposium of water resources research, with 300-400 attendees each year.
- New Faculty Orientation and Teaching Seminars. Invited presenter, each year, at the Georgia Institute of Technology and the University of Washington. Developed sessions for faculty and Ph.D. students on topics such as balancing teaching, research, and service.
- Mentor. Through the National Science Foundation ADVANCE program, serving as mentor to high school students, undergraduates, graduate students, post-doctoral students, staff researchers, and junior faculty members.
- Authored the Peer Evaluation of Teaching guidelines for the Georgia Institute of Technology.
- "Sustainability: Principles and Practice": Developed new problem-based learning courses at UW and Georgia Tech. Students designed and implemented campus sustainability projects, working with campus officials, faculty, staff, students, and external partners. As a result of this course, sustainability became the central principle for the Georgia Tech Campus Master Plan.

Educational Outreach Activities

Significant Activities and Events

Media Coverage (television appearances, radio presentations, newspaper interviews, etc.):

Research covered by more than 1,000 newspapers, magazines, web publications, and radio and television stations, including the Wall Street Journal, Washington Post, National Public Radio, CBS News, ABC News, NBC News, Scientific American, USA Today, WebMD, Discovery Channel Magazine, Prevention Magazine, Daily Mail U.K., Hindustan Times, and Singapore National Radio.

International coverage spans six continents, including the countries of Canada, Australia, Vietnam, New Zealand, Germany, Singapore, Japan, United Kingdom, India, Pakistan, China, Mexico, Guyana, Philippines, Nigeria, Slovenia, Uganda, Spain, Ghana, Italy, and Indonesia.

Total readership for magazines and newspapers exceeds 100 million.

Conducted more than 100 media interviews in the past two years.

Research results used in legislation, policies, and practices:

U.S. S. 1697; Nevada, AB 234; Vermont, VSA Ch. 39; Missouri, RSMo, Ch. 161

More than fifty agencies, businesses, and schools have changed their policies and practices, based directly on my work with them, implementing research results.

Director of Public Outreach Activities:

The Water Center Annual Review, 2005, 2006, 2007, 2008 (300-400 attendees each year)

Environmental Health Lecture Series, 2007 (more than 300 attendees)

The Water Center Seminar Series (75-100 attendees each week)

The Watershed Review (quarterly research newsletter to more than 3,000 constituents)

Leadership and Administrative Experience

Director, The Water Center

University of Washington

2004-2008

Served as Director and research manager for a major interdisciplinary center for research, education, and public outreach.

Provided leadership for more than 35 faculty, 25 advisory board members, 25 researchers and postgraduate students, 6 direct-report staff, 20 affiliated staff, and interacted with external constituents from industry, agencies, organizations, and the public.

Developed and implemented a federally funded interdisciplinary research program on topics of water resources, climate science, policy, and environmental resources management.

Promoted wide dissemination and application of research program results through publications, presentations, and Water Center symposiums, seminars, and newsletters.

Managed a range of human resources activities, including hiring, performance evaluation, and compensation. Conducted significant development activities with donors.

Developed and implemented the Water Center's first Strategic Plan, the result of a two-year process with more than 200 affiliates.

Increased external research support for Center by more than 500%.

Program Manager

California Nevada Applications Program (CNAP)

Scripps Institution of Oceanography

2012-present

Provide direction and coordination for CNAP, a research consortium funded by the NOAA Regional Integrated Sciences and Assessment (RISA) Program.

Develop and apply climate science to societal problems. Evaluate and document the use and value of CNAP research. Provide expert guidance to national management.

Manage interdisciplinary project teams. Collaborate with stakeholders to develop information and tools for climate adaptation, to provide decision support, and to predict effects of climate change and climate variability on water and environmental resources.

Service

(selected examples)

Departmental Service:

Director, The Water Center, University of Washington, 2004-2008

Faculty Adviser, UW Student Chapter of the American Water Resources Association, 2004-2008.
Won "Outstanding Chapter of the Year" (highest national award) in 2006.

Chair, Endowed Professorships Committee, Civil and Environmental Engineering (CEE), 2008

Chair, Committee to the College of the Environment, CEE, 2007

Chair, Edward Wenk Jr. Endowed Lectureship Committee, CEE, 2007

Faculty Adviser, UW Student Chapter of Engineers Without Borders, 2004-2007

Faculty Mentor, Hubert H. Humphrey Fellows Program, CEE, 2006

Director, Dual Master's Degree Program in Water Resources Planning - M.S. Civil and Environmental Engineering / M.S. City and Regional Planning, Georgia Tech, 1996-2004

Director, Dual Master's Degree Program in Environmental Management - M.S. Civil and Environmental Engineering / M.S. City and Regional Planning, Georgia Tech, 1996-2004

Chair, Peer Evaluation of Teaching Committee, Georgia Tech, 2002-2003

College and University Service:

Faculty Mentoring Program, College of Engineering, University of Washington, 2004-2008

Steering Committee, Disability Studies Program, University of Washington 2007-2012

Chair of Civil and Environmental Engineering, Search Committee, 2007

Chair, College Awards and Scholarships Committee, Georgia Tech, 1995-2000

Chair, College Sustainability Work Group, Georgia Tech, 1998-2000

Chair, United Way Charitable Campaign, Georgia Tech, 1996-1998

Institute Student Honors Committee, Georgia Tech, 2000-2003

Director, Institute Committee for Peer Evaluation of Teaching, Georgia Tech, 2002-2004

Executive Board Member, elected position, highest level of faculty governance, Georgia Tech, 1996-1998.

Leader, Annual New Faculty Orientation, Georgia Tech, 1996-2000

Academic Senate, Georgia Tech, 1996-1998

Faculty Senate, Georgia Tech, 1996-1998

Government Appointments and Agency Service

American National Standards Institute (ANSI), National Committee for Health-Based Standards for Chemical Emissions from Consumer Products

National Science Foundation IGERT, External Advisory Board Member, Indoor Environmental Science and Engineering, 2009-present.

Appointed to Seattle Mayor's Green Ribbon Commission, 2005.

Appointed as Special Adviser on Water Resources to Governor of Georgia, 2000.

Appointed to President's National Drought Policy Commission workgroups, 2000.

Appointed to Water Allocation Study for the States of Florida, Georgia, and Alabama, 2000.

Editorial Board, *Environmental Impact Assessment Review*, 2001-present

Editorial Board, *PeerJ*, 2012-present

Pro Bono Public Service

Served as adviser to agencies and organizations (selected recent examples):

International	Australian Government, Department of Health and Aging Health Canada, Consumer Product Safety Bureau German Federal Institute of Risk Assessment
National	U.S. Environmental Protection Agency U.S. Food and Drug Administration U.S. Army Corps of Engineers U.S. Fish and Wildlife Service U.S. National Institutes of Health U.S. Green Building Council U.S. Department of Energy U.S. Department of Agriculture Western Governors' Association
State	California Energy Commission California Department of Water Resources California Attorney General's Office Arizona Department of Water Resources Florida Department of Environmental Protection Georgia Environmental Protection Division Illinois Department of Health Missouri Department of Primary and Secondary Education Nevada Department of Commerce and Labor Oregon Department of Environmental Quality Texas Division of Emergency Management Vermont General Assembly Washington Department of Ecology Washington Department of Health Washington Department of Community, Trade, and Economic Development Wisconsin Department of Safety and Professional Services
Local	City and County of San Francisco San Diego County County of Sonoma City and County of Spokane
Organizations	Physicians for Social Responsibility Environmental Working Group American Lung Association Breast Cancer Action Sierra Club Healthy House Institute David Suzuki Foundation Silent Spring Institute Women's Voices for the Earth Campaign for Safe Cosmetics Collaborative on Health and the Environment The Bullitt Foundation