

Steven A Conrad, Ph.D.

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Education

SIMON FRASER UNIVERSITY, Burnaby, British Columbia
Ph.D. **Resource & Environmental Management**

ARIZONA STATE UNIVERSITY, Tempe, Arizona
M.S. **Environmental Technology Management**

THE UNIVERSITY OF ARIZONA, Tucson, Arizona
B.S. **Optical Engineering**
B.S. **Psychology (Cognitive)**

OTHER

Certificate, Sustainable Design, University of Illinois at Urbana-Champaign
Certificate, Small Group Training and Instructor Services, University of Arizona
Certificate, Instructor of Post Secondary Education, Pima Community College

Professional History

- 2017 – **University of British Columbia**, Institute for Resources, Environment and Sustainability, Faculty of Science
Associate Research Professor (non tenure adjunct), 2017 -
- 2010 – **Simon Fraser University**, School of Resource and Environmental Management, Faculty of the Environment
Associate Director, Pacific Water Research Centre, 2015 – 2017
Chair, REM Water Research Group, 2010 –
Instructor, 2011 –
Pacific Institute for Climate Solutions Research Fellow, 2011-2014
Research Associate, 2013-2016
- 2009 – 2012 **Resilient Consulting Group, Inc.**
Managing Partner
- 2009 – 2010 **University of British Columbia**, Faculty of Applied Science
Instructor
- 2006 – 2008 **EMA Canada, Inc.**
Western Canada Program Manager, 2006-2008
- 2000 – 2006 **EMA Group, Inc.**
Director of Sustainability Services, 2005-2006
Senior Water and Energy Program Engineer, 2000-2005
- 1997 – 2000 **Tracer Research Corporation**
Director of Strategic Research Development
- 1995 – 1996 **EMA Services, Inc.**
Water Engineer
- 1992 – 1994 **Abelard Controls, Inc.**
Systems Engineer
- 1991 – 1992 **Donnelly Corporation, Inc. Advanced Technology Center**
Research Engineer
- 1990 – 1992 **University of Arizona**, College of Engineering
Teaching Assistant, 1990-1992
Research Fellow, Honours Centre, 1991-1992

Professional Affiliations

American Water Works Association
BC Water and Waste Association
International Society for Ecological Economics
International Water Association

Honours and Awards

2015 Featured Researcher, Office of the Vice-President, Research, Simon Fraser University
2015 Simon Fraser University Community Engagement Fund, \$5,000
2013 Department of Graduate Studies Travel Research Award, \$2,500
2010 – 2013 3-year Pacific Institute for Climate Solutions Graduate Fellowship, \$18,000 per year
2011 BC Water and Waste Association Honoured Member
2010 Simon Fraser University President's PhD Research Stipend, \$6,500
2009 Faculty of Applied Science Graduate Fellowship, \$6,250
2008 Faculty of Applied Science Graduate Fellowship, \$6,250
2007 – 2008 2-year Pacific Century Graduate Scholarship, \$5,000 per year
2007 Faculty of Applied Science Graduate Fellowship, \$6,250
1990 – 98 Multiple Academic Distinction Awards for 3.5 GPA or better, College of Engineering
Dean's List Awards and National Dean's List Awards, University of Arizona
1992 Honours Center, University of Arizona, Research Award, \$2,500
1990 Inducted, Golden Key International Honour Society
1990 Inducted Phi Eta Sigma National Honor Society
(President University of Arizona Chapter, 1991-92)

Research Awards

2016 – Research Title: *Opportunities and Barriers for Distributed Energy Resource Development at Water and Wastewater Utilities*
Role: **co-Principal Investigator**
Grantor: Water Environment Research Foundation, Water Research Foundation, \$369,275
2014 – Research Title: *Public perceptions of water reservoir operations and conditions to inform the Campbell River Water Use Plan*
Role: **co-Principal Investigator**
Grantor: BC Hydro, \$737,477
2013 – 16 Research Title: *Water and Electric Utility Integrated Planning*
Role: **Principal Investigator**
Grantor: American Water Works Association, NY State Energy Research and Development Authority, Water Research Foundation, \$447,243
2013 – 14 Research Title: *Policy outcomes from behaviourally informed decision-making in the Okanagan*
Role: **Principal Investigator**
Grantor: Real Estate Foundation of BC, \$80,375
2011 – 12 Research Title: *Assessing Water User Preferences to Water Conservation Policy and Implementation Strategies*
Role: **Principal Investigator**
Grantor: Natural Resources Canada & Agriculture & Environment Wildlife Fund, \$180,363

- 2011 – 12 Research Title: *Addressing Climate Change by Applying Adaptive Management Techniques to Infrastructure Management*.
Role: **Principal Investigator**
Grantor: Water Research Foundation, \$80,946
- 2012 – 13 Research Title: *Effective Communication About Climate Change to Water Utility Stakeholders*
Role: Contributing researcher, Grantor: Water Research Foundation, \$525,447
- 2010 – 12 Research Title: *Building a Climate-Ready Regulatory System*
Role: Contributing researcher
Grantor: Water Research Foundation, \$390,072
- 2007 – 11 Research Title: *Decision Support System for Sustainable Energy Management*
Role: **Principal Investigator**
Grantor: Water Research Foundation and Water Environment Research Foundation, \$642,955
- 2003 – 04 Research Title: *Water Consumption Forecasting to Improve Energy Efficiency*
Role: Contributing researcher
Grantor: AWWA Research Foundation, \$250,000
- 2000 – 03 Research Title: *Optimizing Operations at JEA's Water System*
Role: **Co-Principal Investigator**
Grantor: AWWA Research Foundation, \$150,000
- 1997 – 99 Research Title: *Implementing a Prototype Energy and Water Quality System*
Role: Contributing researcher
Grantor: AWWA Research Foundation, \$250,000

Other Research Contributions

Project advisory committee member: *Optimization of Energy and Water Quality Management Systems for Drinking Water Utilities*, Water Research Foundation, *Compendium of Energy Management Best Practices*, Water Research Foundation, *Consumer Perceptions and Attitudes Towards EDCs and PPCPs in Drinking Water*, Water Research Foundation, *Okanagan Hydrological Connectivity Study*, Okanagan Basin Water Board, *Water Utility Planning Strategies to Mitigate Impacts of Climate Change in Central Ohio*, City of Columbus Department of Public Utilities and Mid-Ohio Regional Planning Commission.

Industry Projects and Collaborations

- *Drinking Water and Emergency Management Best Practices Audit*. Office of the Auditor General for Local Government, British Columbia.
- *Water Use Measuring and Reporting Practices*. British Columbia Ministry of Environment and Climate Change Strategy.
- *Auto Buyers' Valuation Of Fuel Economy: A Randomized Stated Choice Experiment*. Consumers Union.
- *Quantifying and Optimizing Energy and Water Utilization in Asian Development Bank's Water Supply, Sanitation, and Wastewater Management Projects*. Asian Development Bank. Under contract to International Water Centre, Brisbane Australia.
- *Identifying and Amalgamating Local Data to Inform Water Allocation Decisions*. BC Ministry of Environment and Climate Change Strategy.
- *Water-energy carbon analysis*. Southeast Queensland Water. Under contract to University of Queensland.
- *Technical Analysis to Support Metro Vancouver's Water Conservation Initiatives*. Metro Vancouver. Under contract with Urban Systems.
- *Floodplain Mapping Action Plan Implementation*. BC Real Estate Association.

- *Evaluation of the Smart Planning for Communities program*, Fraser Basin Council. Under contract with Junxion Strategies, Vancouver.
- *GHG Emission Management Opportunities in the Water Utility Sector*, Ledcor/Offsetters.
- *Industrial Energy Conservation Program*. FortisBC (formerly Terasen Gas).
- *Evaluation of the standards, conducting the gap analysis and making recommendations for developing a certificate management program for the RiverWiseBC program*. Pacific Salmon Foundation.
- *Stakeholder Engagement Strategy and Development of a Food Innovation Centre*. BC Ministry of Agriculture and Lands.
- *Development of an Area of Low Pesticide Prevalence Policy*. BC Fruit Growers Association. Under contract to Junxion Strategies, Vancouver.
- *Comparative Analysis of Policy and Regulatory Developments on Carbon Capture and Storage in Canada*, British Consulate. Under contract with Junxion Strategies & Mark Jaccard and Associates.
- *Water and Energy Management and Operations Optimization*. Greater Vancouver Regional District, BC. Under EMA Group, Inc.
- *Water Pumping Efficiency in the development of a Technology Incentive Program for San Diego Gas and Electric*. Under EMA Group, Inc.
- *Sustainable Water Operations for Seattle Public Utilities, WA*, Under EMA Group, Inc.
- *Operations Optimization Requirements Plan*. City of Phoenix Water Department, AZ. Under EMA Group, Inc.
- *Design and Implementation of the Technical Constructs for Operations Optimization for the City of San Diego Water Department. Energy, Water Supply and Quality System*. Under EMA Group, Inc.
- *Water Supply Management Simulation*. Colorado Springs Utilities, CO. Under EMA Group, Inc.
- *City of Albuquerque Water Utility Division Water Operations Management System*. Under EMA Services.
- *City of Tucson, AZ, Tucson Water Department System Operations Optimization Assessment*. Under EMA Services.

Refereed Publications

- Oberg, G., Metson, G., Kuwayama, Y., Conrad, S. (submitted under review). "Mental lock-in to the 19th century model exacerbates the sanitation crisis." *Nature Sustainability*.
- Conrad, S., Pipher, J., Haider, W. (2019) "How current lawn attributes affect the preferences of water conserving lawn options: An individualized choice experiment in Kelowna, British Columbia." *Landscape and Urban Planning*. 193, 147-156.
- Conrad, S., Yates, D. (2018). "Coupling stated preferences with a hydrological water resource model to inform water policies for residential areas in the Okanagan Basin, Canada." *Journal of Hydrology*. 564, 846–858.
- Conrad, S.A., Rutherford, M.B., Haider, W. (2017). Profiling Farmers' Preferences about Drought Response Policies Using a Choice Experiment in the Okanagan Basin, Canada. *Water Resources Management* 31, 2837–2851.
- Kenway S., McMahon J., Elmer V., Conrad S., Rosenblum J. (2013). "Managing water-related energy in future cities - A research and policy roadmap". *Journal of Water and Climate Change*. 4 (3): 161-175.
- Conrad, S. (2011) "Decision support for the water-energy nexus: examining decision-making in the American west", in Kenney, D. (2011) *The Water-Energy Nexus in the American West*. Edgar

- Conrad, S., Hall, M., Cook, S. (2010) “Key Decisions for Sustainable Utility Energy Management”, *Water Science & Technology: Water Supply*, 10 (5): 721–729
- Conrad, S. (2010) “Energy and Greenhouse Gas Management Options in the Water Utility Sector” in Welch, C. (2010) "The Green Utility: A Practical Guide to Sustainability", American Water Works Association Publishing.
- Jentgen, L., Conrad, S. et. al (2007) “Energy Management Strategies Use Short-Term Water Consumption Forecasting to Minimize Cost of Pumping Operations.” *J. AWWA*, 99 (6): 86-94
- Jentgen, L. and Conrad, S. (2006) “Operations Optimization Systems: A Substantial, Sustainable Opportunity for Water Utilities”, *J. AWWA*, 98 (2).
- Jentgen, L., Conrad, S., Lee, T., (2005) “Optimizing System Operations.” *J. AWWA*, 97 (8): 58-65
- Barnett, M., Lee, T., Jentgen, L., Conrad, S., Kidder, H., Wooschlager, J., Lozano, E.C., Kelly, S., Eaton, M., Hollifield, D. Groff, C., (2004). “Real-time automation of water supply and distribution for the city of Jacksonville, Florida, USA.” *EICA*, 9 (3), pp.15-29.
- Referred Conference Papers*
- Kenway, S., Conrad, S., Jawad, M., McIntosh, B. (2016), “Water and Energy Integrated Planning and Capacity Building.” proceedings of the International Water Association World Water Congress, Brisbane, Australia, 9-14 October 2016.
- Kenway, S., McMahon, J., Conrad, S., Rosenblum, J. and Elmer, V. (2012). , In: World Congress on Water Climate and Energy (International Water Association, ed.), May 2012, International Water Association, Dublin. (2012) Managing water-related energy in future cities- A research and policy roadmap, IWA World Congress on Water Climate and Energy, May 13-18, Dublin, Ireland
- Conrad, S., Geisenhoff, J., Brueck, T., Volna, M., Hall, M. (2011). “Case studies in utilizing a decision support system for sustainable energy management”, proceedings of the Water Environment Federation - Energy and Water Conference. Chicago, IL, July 31-August 3.
- Conrad, S. et. al (2010) “A Framework of Support for Utility Sustainable Energy Management”, proceedings of the 2010 Water Environment Federation Utility Management Conference, San Francisco, CA, February.
- Conrad, S. et. al. (2010) “Water Governance Considerations for Sustainable Energy Management.”, proceedings of the International Water Association World Water Congress, Montreal, Québec, 14-19 September.
- Conrad, S., Hall, M., Cook, S., Geisenhoff, J. (2009) “Key Energy Decisions for Sustainable Utility Energy Management.” Proceedings of the 5th IWA Specialists Conference on Efficient Use and Management of Urban Water, Sydney, Australia.
- Conrad, S. (2009). “New Tools that Support Greater Energy Efficiency and More Sustainable Energy Management Decisions.” Proceedings of the American Water Works Association Annual Conference, 14-18, June 2009.
- Conrad, S., (2009). “Effectiveness of the Organic Market: Influences on the North American Food System”, proceedings of the Canadian Society for Ecological Economics Annual Conference, Vancouver, Canada, October 2009.
- Conrad, S and Kelly, S., Hollifield, D., Groff, C., Eaton, M., Jentgen, L., Barnett, M., (2004) “JEA Develops Smart Technologies to Optimize the Operational Management of its Water Supply and Quality.” proceedings of the IWA World Water Congress, Marrakech, Morocco, 20 - 24 September 2004.

Hill, R., Conrad, S., Kidder, R., Riddle, R., Jentgen, L., (2005) “Optimal Control of Water Distribution.” proceedings of the 2nd International Water Association Conference on Instrumentation, Control and Automation, Busan, Korea, May 29 – June 2, 2005.

Jentgen, L., Conrad, S., et al. (2001). “Energy and Water Quality Management Systems Promise Significant Energy and Water Quality Benefits.” Proceedings of the 2001 World of Water Conference, Las Vegas, NV, December.

Referred Publications In Progress

Conrad, S. (manuscript in progress) “Balancing water supply and efficiency investments through continuous choice experiment in the Okanagan, BC.” *Climate Change*

Conrad, S. (manuscript in progress) “Informing policy through a coupled water and energy systems dynamic model.” *Advances in Water Resources*

Conrad, S. (manuscript in progress) “A structural framework for coupling human behaviour and water system hydrology in water management models.” *Environmental Modelling and Software*

Refereed Conference Presentations

Conrad, S. (2018). “Do you run when you see fire? Climate impacts on emergency best practices for preserving water services.” Keynote presentation at the Yukon Water and Wastewater Conference, Whitehorse, BC. 24-25 October.

Conrad, S and Kenway, S. (2017). “Utilizing Game Theory to Encourage Integrated Water and Electric Utility Planning” presented at the BC Water and Waste Association Annual Conference, Victoria, BC. 29 – 30 May.

Conrad, S. (2016). “Seeking Pathways for Water and Electric Utility Integrated Planning.” presented at the American Water Works Association Water Sustainability Conference, Providence, RI, 8-10 March.

Conrad, S. (2015). “Climate change attitudes”, presented at the Canadian Water Works Association annual conference, Whistler, BC, 27-29 October.

Conrad, S. (2015). “Envisioning a new model of water research”, presented at the Canadian Water Works Association annual conference, Whistler, BC, 27-29 October.

Conrad, S. (2015) “Okanagan Water Allocation Policies: Drought Response Planning”, presented at the BC Branch CWRA Conference: Vancouver, BC, 18-19 November.

Conrad, S. (2014) “Achieving carbon neutrality in BC”, presented at the BC Water and Waste Association Conference, Whistler, BC, 4– 6 May.

Conrad, S. (2013). “Carbon Neutral in BC: If You Can Do It Here, You Can Do It Anywhere!”, presented at the American Water Works Association Annual Conference, Denver, CO, 10 – 13 June.

Conrad, S. (2013). “Assessing The Effectiveness Of Climate Change Adaptation Policies: A Survey Of Residential Water Use Preferences”, presented at the American Water Works Association Annual conference, Denver, CO, 10 – 13 June.

Conrad, S. (2013). “Assessing the Effectiveness of Climate Change Adaptation Policies: Residential Water Use Choices ”, presented at the BC Water and Waste Association Conference, Kelowna, BC, 20 – 24 April.

Conrad, S. (2013). “Building A Coupled Social-Hydrological Model For Assessing The Effectiveness Of Climate Change Adaptation Policies”, presented at the BC Branch Canadian Water Resources Association Annual Conference: Vancouver, BC, 5-7 March.

- Conrad, S, Raucher, B. (2012). “Addressing climate change uncertainty in utility infrastructure management”, presented at the American Water and Waste Association Annual Conference, Dallas, TX, June.
- Conrad, S. (2012). “Existing Research on Utility Energy Efficiency”, presented at the BC Water and Waste Annual Association. Penticton, BC, 20 – 23 April.
- Conrad, S. (2012). “Addressing Climate Change by Applying Adaptive Management Techniques to Infrastructure Management”, presented at the BC Water and Waste Association Annual Conference, Penticton, BC, 20 – 23 April.
- Conrad, S. (2011). “Energy management decision support system (DSS) to help water utilities make better decisions for sustainable energy management”, presented at the California Nevada Section American Water Works Association Annual Conference, Long Beach, CA, March.
- Conrad, S. (2010). “Energy Management and Decisions at Water and Wastewater Utilities,” presented at the Water Research Foundation & Water District #1 - Technical Transfer Workshop, Lenexa, KS, 5 May.
- Conrad, S., Jentgen, L. (2010) “Energy Water Quality Management Systems: Background and Applications”, presented at the American Water Works Association Sustainable Water Specialty Conference, Albuquerque, NM, April.
- Conrad, S. Geisenhoff, J., Brueck, T., Hall, M. (2010) “A Decision Support System for Sustainable Energy Management”, presented at the American Water Works Association Sustainable Water Specialty Conference, Albuquerque, NM, April 6-9 2010.
- Conrad, S., Peters, S., (2007) “GVRD Employs Innovative Operational Decision Support Tools for Sustainable Water Management”, presented at the American Water Works Association Annual Conference, Toronto, Canada, June
- Kidder, H. Conrad, S. (2006). “Operations Optimization of Water Systems – The Economic Benefits”, presented at the Texas Water Conference. April 10-13, 2006.
- Jentgen, L, and Conrad, S, (2006) “Program-driven Operations: Forecasting & Planning of Daily Operations for Maximum Efficiency.” Presented at the American Water Works Association Distribution System Symposium, Phoenix, AZ, September 2006.
- Sederstrom, M., Conrad, S. (2005). “Sustainability Toolkit creates a Pathway for Success for the Water Industry.” Presented at the American Water Works Association Annual Conference, San Francisco, CA, June.
- Conrad, S. & Cooke, W. (2005). “Meeting and Exceeding Performance Measures in San Diego Using Water System Optimization.” Presented at the American Water Works Association Annual Conference, San Francisco, CA, June.
- Jentgen, L., Conrad, S., et al. (2004). “JEA’s Operations Optimization System From Concept to Operating Reality in 13 Months.” Presented at the American Water Works Association Annual Conference, Orlando, FL, June.
- Jentgen, L., Conrad, S., et al. (2003). “JEA Prototypes Operations Optimization System in Six Months.” Presented at the Florida American Water Works Association Annual Conference, Orlando, FL, November.
- Conrad, S., et al. (2003). “Strategies for Implementing Software Tools for Energy Optimization.” Presented at the American Water Works Association Annual Conference, Anaheim, CA, June.
- Jentgen, L., Conrad, S., et al. (2002). “New Software Tools for Real-Time Energy Optimization for Water Utilities.” Presented at the American Water Works Association IMTech Conference, Kansas City, MO, April.

Jentgen, L., Conrad, S., et al. (2001). "Progress Report on an Implementation Prototype Energy & Water Quality Management System." Presented at the AwwaRF Technology Transfer Conference, Long Beach, CA, October.

Jentgen, L., Conrad, S., et al. (2001). "Colorado Springs Adopts Electric Utility System Operations Model for Significant Energy/Water Quality Benefits." Presented at the American Water Works Association Annual Conference, Washington, DC, June.

Non-Refereed Publications

Kenway, S.J., Orams, P. Jawad, M., Conrad, S and Pascoe, M. (2017). *Energy Utilization Screening Methodology For ADB Municipal Water Projects*. Manila, Philippines: Asian Development Bank

Conrad, S., Kenway, S., Jawad, M. (2017), "How games help encourage water and electric utility integrated planning." *Watermark*, Summer. Vancouver, BC: BCWWA

Conrad, S., Kenway, S., Jawad, M. (2017), "Planning together to manage water and electric utility service delivery." *Advances in Water Research Magazine*, Spring. Denver, CO: Water Research Foundation.

Conrad, S. (2017). *Amalgamating Local Data to Inform Water Related Decisions: Summary Report*. Burnaby, BC: Pacific Water Research Centre, Simon Fraser University.

Conrad, S., Kenway, S., Jawad, M. (2017). *Water and Electric Utility Integrated Planning*. Denver, CO: Water Research Foundation.

Honey-Rosés, J., Bailey, J., Brandes, O., Conrad, S., Gill, D., Harris, L., Janmaat, J., Klein, D., Pareja, C., Schreier, H., Shah, S. (2016). Drought Preparedness in B.C.: Workshop Summary. Water Planning Lab. School of Community and Regional Planning. University of British Columbia. DOI: 10.14288/1.0300299

Conrad, S. (2016). Introduction: *Enough Water: A Guide to What We Have and How We Use It*. London, ON: Firefly Publishing

Conrad, S., Kenway, S., Jawad, M. (2015). *Joint Utility Planning Tournament: Summary Report*. Denver, CO: Water Research Foundation, Simon Fraser University

Raucher, R. Raucher, K. Leiserowitz, A., Conrad, S., Millan, M., Dugan, B. Horsch, E. (2014). *Effective Communication About Climate Change to Water Utility Stakeholders*. Denver, CO: Water Research Foundation.

Conrad, S., Olson, E. Raucher, S., Smith, J. (2013) *Opportunities for Managing Climate Change by Applying Adaptive Management*. Denver, CO: Water Research Foundation.

Conrad, S. (2013). *Assessing Water Use Preferences to Water Conservation Policy and Implementation Strategies*. Victoria, BC: Simon Fraser University & Investment Agriculture Foundation of British Columbia.

Conrad, S. (2013) "Understanding Kelowna BC residential attitudes about managing climate change and drought." *Watermark*, Summer. Vancouver, BC: BCWWA.

Conrad, S. (2012) (Contributing editor) "Water-Energy Interactions in Water Reuse", London, UK: IWA Publishing.

Conrad, S. (2012) "Science is not enough: communicating climate change", *PICSNews*, Fall 2012. Victoria, BC: PICS.

Conrad, S. (2012) "Messages from AAAS 2012: Communicating Climate Change". *Watermark*, Fall. Vancouver, BC: BCWWA.

Conrad, S. (2012). *Assessing the effectiveness of climate change adaptation policies: a survey of residential preferences*. Ottawa, ON. Natural Resources Canada.

- Conrad, S., Geisenhoff, J., Brueck, T., Hall, M., Cook, S., Kenway, S., et al. (2011). *Decision support system for sustainable energy management*. Denver, CO: Water Research Foundation.
- Conrad, S. (2011) “Managing climate change through adaptive governance”, *Watermark*, Summer, Vancouver, BC: BCWWA.
- Conrad, S., (2011). “Reflections on water governance and climate change”. *Watermark*. Vancouver, BC: BCWWA.
- Conrad, S. (2011). “Decision support system for sustainable energy management”. *Drinking Water Research*. January-March. Denver, CO: Water Research Foundation.
- Conrad, S. (2010) GHG Emission Management Opportunities in the Water Utility Sector, Research Paper. Vancouver, BC: Simon Fraser University.
- Jentgen, L., Conrad, S., et. al, (2007). *Water Consumption Forecasting to Improve Energy Efficiency of Pumping Operations*. Denver, CO: American Water Works Association Research Foundation.
- Jentgen, L. A., Conrad, S., Kidder, H., Lee, T. (2005). *Optimizing Operations at JEA's Water System*. Denver: CO: American Water Works Association Research Foundation.
- Conrad, S., (2005). *An Exploratory Assessment on Applying the Precautionary Principle to Genetically Modified Foods*. Tempe, AZ: ASU Press.
- Jentgen, L. A., Conrad, S., Riddle, R., Sacken, E. V., Stone, K., Grayman, W., Ranade, S. (2003). *Implementing a prototype energy and water quality management system*, Denver, CO: American Water Works Association Research Foundation.
- Jentgen, L., Conrad, S., et al. (2002). *Colorado Springs EWQMS [Energy Water Quality Management System]*. Denver, CO: American Water Works Association Research Foundation.

Invited Talks

- Conrad, S. (October 26, 2018). “Moving beyond quantifying climate change impacts: Pathways towards climate adaptation.” Invited talk to Yukon Engineers, Whitehorse, Yukon.
- Conrad, S. (April 24, 2018). “Seeking pathways to quantify Water-Human system interactions affecting urban system sustainability.” Research Symposium, presented by invitation of East Carolina University, Faculty of Applied Science.
- Conrad, S. (April 3, 2018). “Quantifying Energy, Water, and Human interactions: Pathways for building urban system sustainability.” Research Symposium, presented by invitation of Arizona State University, Polytechnic College.
- Conrad, S. (February 1, 2018). “Why people matter: including water user preferences in water policymaking.” Presented at the Institute for Resources, Environment, and Sustainability seminar series.
- Conrad, S. & Kenway, S. (May 3, 2017). “A decade of water-energy research and implications for improved planning, and city resilience.” Presented by special invitation to the National Renewal Energy Laboratory, Golden, CO.
- Conrad, S. (January 23, 2017). “Groundwater, Perceptions, and Policy: the invisible factors affecting water resiliency in BC.” Keynote Talk given at the 2017 BCWWA Climate Change Adaptation Conference, Vancouver, BC.
- Conrad, S. (November 29, 2016). “Social Considerations about Water Conservation,” Presented at the 2016 Irrigation Industry Association of British Columbia Annual Conference, Kelowna, BC.
- Conrad, S. (October 27, 2016). “Addressing global water security locally: Managing the impacts of energy and food production.” Guest lecture, REM 660, Simon Fraser University, Burnaby, BC.

- Conrad, S. (November 29, 2016). “Participatory Policymaking: A Canadian Approach to Managing Environmental Issues and Uncertainty”, presented at the 2015 International Seminar on Environmental Policy, Tsukuba, Japan.
- Conrad, S. (September 27, 2016). “Community considerations in Local Stormwater Management.” Presented at the North Shore Cool Drinks Forum, Vancouver, BC.
- Conrad, S. (September 12, 2016). “Water and Electric Utility Integrated Planning: Research Considerations.” Presented to the Water Research Foundation’s Energy Technical Advisory Committee, Denver, CO.
- Conrad, S. (April 22, 2016). “Droughts, climate, and groundwater: A discussion of perceptions and factors affecting BC’s water”, presented to the City of Vancouver’s Division of Sustainability, Vancouver, BC.
- Conrad, S. (April 21, 2016). “Groundwater: friend? enemy? or unfortunate distraction to preparing for droughts in B.C.”, presented at the 2016 EMA Forum: Drought on the West Coast - A New Reality?, North Vancouver, BC,
- Conrad, S. (April 11, 2016). Guest Lecture on Water, Energy, and Food Systems, REM 100, Simon Fraser University, Burnaby, BC.
- Conrad, S. (March 10, 2016). Panellist University of British Columbia’s Forum on Drought Responses, Vancouver, BC.
- Conrad, S. (January 18, 2016). “Is water security a British Columbian issue?”, presented at the PWRC public forum on water security, Vancouver, BC,
- Conrad, S. (January 11, 2016). “Envisioning a new model of water research”, presented to the Real Estate Foundation of BC, Vancouver, BC,
- Conrad, S. (December 15, 2015). “Participatory Policymaking: A Canadian Approach to Managing Environmental Issues and Uncertainty”, presented at the 2015 International Seminar on Environmental Policy, Tsukuba, Japan.
- Conrad, S. (November 4, 2015). “Integrated Behavior Water Use Modelling”, presented to members of the American Water Works Association, Denver, CO.
- Conrad, S. (October 27, 2015). “Water conservation attitudes”, presented to the Simon Fraser University Sustainability Office.
- Conrad, S. (October 29, 2015). “Integrating stated preference modeling with water management modeling”, presented at the “Scientific Colloquium on Natural Resources and Societal Issues: Celebrating the Life and Career of Dr. Wolfgang Haider”, Burnaby, BC.
- Conrad, S. (June 24, 2015). “Community informed water policy in the Okanagan”, presented at the Simon Fraser University Blue Water Community Engage dialogue, Vancouver. BC.
- Conrad, S. (June 23, 2105). “Policy to address delivering water to a growing urban area that takes into account both engineering and human behaviour” presented at the Royal Canadian Institute’s “*Is our drinking water at risk from urban growth? Water challenges, water solutions in a changing landscape.*” water panel, Vancouver, BC.
- Conrad, S. (April 9, 2015). "Why people matter: including water user preferences in science centric policy-making", presented at the Resource and Environmental Management research seminar.
- Conrad, S. (October 24, 2014). “Agricultural drought response planning: exploring policy options with BC's Water Sustainability Act”, presented to University of British Columbia Land and Food Systems Symposium, Vancouver, BC.
- Conrad, S. (April 4, 2014). “Research in Action: Developing residential landscape preferences using a discrete choice experiment”, Guest Lecture to REM 651, Simon Fraser University, Burnaby, BC.

- Conrad, S. (February, 19, 2014). Guest Lecture on Water Research Management, REM 200, Simon Fraser University, Burnaby, BC.
- Conrad, S. (December 10, 2013). “Virtual Water”, presented to the students of University Highlands Elementary, Burnaby, BC.
- Conrad, S. (November 13, 2013). "Measuring Agriculture's preferences for managing regional watersheds", presented at the Action for Climate Team Dinner, Vancouver, BC.
- Conrad, S. (October 10, 2013). “Worlds of Water”, presented to the students of Wally High School, Langley, BC.
- Conrad, S. (March 12, 2013). “Water, Climate, And Estimating The Effectiveness Of Climate Change Adaptation Policies”, Guest Lecture, REM 631, Simon Fraser University, Burnaby, BC.
- Conrad, S. (November 14, 2012). Panellist at the “Exploring New Collaborations amongst professions, to assist long term sustainability through the ‘lenses’ of food, energy and water-waste” workshop, hosted by the Adaptation to Climate change and Association for Professional Engineers and Geoscientists of BC. Vancouver, BC.
- Conrad, S. (September 14, 2012). “Integrated water-energy cities: Opportunities and Priorities”, Panellist and Speaker at the Professions in Progress Forum, Vancouver, BC, hosted by the Adaptation to Climate change and Association for Professional Engineers and Geoscientists of BC. Vancouver, BC.
- Conrad, S. (June 13, 2012). “Exploring Stakeholder Participation In Water Adaptation Policymaking: A Survey Of Residents In Kelowna British Columbia”, presented at the PICS Climate Change Solutions: The Road Ahead annual conference, Victoria, BC.
- Conrad, S. (April 2, 2012). “Informing water adaptation policies by eliciting water user preferences for drought response options” presented at the CCIRC student research day, Simon Fraser University, Burnaby, BC.
- Conrad, S. (March 29, 2012). Panellist at the Thompson-Okanagan Climate Action Exchange, Kelowna, BC, hosted by the BC Climate Action Secretariat.
- Conrad, S. (February 28, 2012). Keynote panellist at the Environmental Stewardship Forum, Vancouver, BC, hosted by Association for Professional Engineers and Geoscientists of BC.
- Conrad, S. (March 16, 2011). “Regulations affecting Climate Change responses”, presented at the *Building a Climate-Ready Regulatory System* workshop. Washington, DC.
- Conrad, S., Jentgen, L. (September 1, 2010). “Sustainable Water System Operations Yields Substantial Results.” Presented to the Sustainable Cities Network (SCN) Water and Wastewater Workgroup.
- Conrad, S., (April 10, 2009). “Water Research Foundation project 4090 - Decision Support System for Sustainable Energy Management”, presented at the 2nd Forum on Energy and Water Sustainability, Santa Barbara, California.

Teaching Experience

Simon Fraser University

Systems Thinking (Fall 2015, Fall 2016, Fall 2017, Fall 2018, Spring 2019)

Course development of 2nd year undergraduate course that provides an introduction to systems thinking in the context of environmental and sustainability challenges using system archetypes and system dynamics theory.

Environmental Modelling (Annually each Spring 2014-2019)

4th year undergraduate course on the application of systems dynamic theory to environmental and ecological systems. Students receive hands-on experience in the

construction and analysis of computer simulations across case studies of water, energy, population, fishery, biological, and economic systems.

Global Change Distance - Course Developer/Supervisor (Spring 2018, Summer 2018, Fall 2018)

Online offering of Global Change – Course development and framework for offering Global Change as a distance learning option within the Centre for Online and Distance Education.

Earth Systems and Global Change in Environmental Management (Spring 2017)

Graduate course in which students review how human and natural processes across earth systems and over a range of scales interact to affect the hydrological cycle, climate, and land surface processes that are relevant to resource management.

Ocean resources (Fall 2016)

3rd year undergraduate course that introduces the principles of oceanography, including ocean circulation, ocean carbon cycling, nutrients and biological productivity, oceans and the climate system, and ocean resource contributions to global food supply.

Global Change (Spring 2015, Fall 2011, Spring 2012, Spring 2013)

Large lecture format, 1st year undergraduate course that provides students with an overview of global environmental change and its causes from a social science perspective, historically and at the present time.

University of British Columbia

Organizational Sustainability (Fall 2009)

Graduate course providing a background on systems that address economics and resource efficiency, including steps to address environmental and social inefficiencies relating to energy, water, materials, employees and supply chain.

Academic and Professional Service

- 2017 – 19 **Chair** Education Program, 2018 & 2019 BCWWA Annual Conferences, Penticton/Victoria, Canada.
- 2018 – **Board of Director**, BC Water and Waste Association.
- 2016 – 17 **Chair**, organizing committee, BCWWA climate change adaptation conference, Vancouver, Canada.
- 2016 Member, Advisory Panel, 2016 Canadian Water Summit, Toronto, Canada. 23 June 2016.
- 2015 – 2018 **Board of Director**, American Water Works Association.
- 2015 – 2018 Member, Canadian Affairs Committee, American Water Works Association.
- 2015 – 2018 **Co-chair, risk and resiliency committee**, BC Water and Waste Association.
- 2015 **Moderator and co-chair**, organizing committee, Simon Fraser University, SFU BLUE: Blue Water Community Engage dialogue, Vancouver, Canada.
- 2014 – Member, professional advisory committee, SFU Action Climate Team.
- 2014 – 15 Judge, Student Design Competition, University of British Columbia, BC Water and Waste Association.
- 2014 – Member, climate change committee, Canadian Water Works Association and American Water Works Association.
- 2013 – 14 Selection Committee for the appointment of new Research Chair in Avalanche Risk Management, School of Resource and Environmental Management, Faculty of Environment, Simon Fraser University.

- 2013 **Chair and Moderator**, *Got Risk* workshop and communicating climate change and risk, School of Resource and Environmental Management, Faculty of Environment, Simon Fraser University, and BC Water and Waste Association.
- 2011 – 15 **Chair**, climate change committee, BC Water and Waste Association.
- 2011 – 14 Graduate representative, Faculty Executive, School of Resource and Environmental Management, Simon Fraser University.
- 2011 – 12 **Co-chair**, energy management sub committee. International Water Association.
- 2011 – Member, leadership council, BC Water and Waste Association.
- 2010 – 11 Graduate representative, Graduate Services Committee, School of Resource and Environmental Management, Simon Fraser University.
- 2010 Peer-review of paper submissions for the 2010 International Water Association World Water Congress, Montreal, Canada.
- 2010 – 13 **Chair**, Seminar Symposium Series, School of Resource and Environmental Management, Simon Fraser University.
- Ongoing Peer-review for academic Journals (incl. Water Resources Research; Resources, Conservation & Recycling, Water and Climate, Landscape and Urban Planning, Water Resources Management).

Media Coverage

- 2018 Yukon CBC Radio on Climate Adaptation Extremes in the Yukon
- 2017 Guest on CBC Radio – The current with Anna Maria Tremonti – on rebuilding Canada’s cities to adapt to extreme weather events.
- 2017 Interview with CBC on water system impacts from winter storm management and the use of salts.
- 2016 Interview with Bryce Tarling, Alive Magazine on global water shortage and understanding groundwater depletion. Available - <http://www.alive.com/lifestyle/water-supplies-from-the-ground-up/>
- 2016 Interview with Charles Mandel, National Observer, on water supply and drought in Canada.
- 2015 Interview with Jeff Lee, Vancouver Sun, re: Underground aquifers and City of Vancouver’s use of groundwater to water during droughts.
- 2015 Interview with Kiran Dhillon, CBC Radio, Vancouver responds to 2014 drought.
- 2015 Interview with Water Canada, Launch of the Pacific Water Research Centre.
- 2015 Interview with SFU Peak on water research in Canada.
- 2015 CBC Radio guest with Gloria Macarenko on Water research and water supply in Metro Vancouver.
- 2015 Vancouver Sun interview with Bethany Lindsay and Rob Shaw on lack of information on the state of underground aquifers challenge water decisions.
- 2015 Globe and Mail interview with Ian Bailey on how social science surveys can help tailor water restrictions in Vancouver.
- 2015 Global TV News guest to discuss the goals of the Canadian Water Summit underway in Vancouver.
- 2015 Interview with Radio Canada International with Marc Montgomery on Drought, water restrictions, and the Pacific Water Research Centre.
- 2015 Interview with Vancouver Sun on researching future water supplies and community responses to drought.

Personal Information

Citizenship United States of America, Canada

Languages English, Spanish

Policy Contributions

Citizen Panel for Water Resource Development, Tucson, AZ

Citizens for a Sustainable Arizona, Oro Valley, AZ

Development Planning Board, Oro Valley, AZ

Town Council Candidate, Oro Valley, AZ