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** (Electrical) **Engineering**
B.S. **Psychology** (Cognitive)

OTHER
Certificate, Sustainable Community Design *and* Planning, 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

2021 – **Colorado State University**, Systems Engineering, Walter Scott Jr. College of Engineering
Associate Professor, *2021 -*

2017 – 2020 **University of British Columbia**, Institute for Resources, Environment and Sustainability, Faculty of Science
UBC Future Waters Research Excellence Cluster Chair, 2019 – 2020
Associate Research Professor, 2017 – 2020

2010 – 2020 **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 – 2019
Instructor, 2011 – 2020
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

2000 – 2008 **EMA Group, Inc., EMA Canada, Inc.**
Western Canada Program Manager, 2006-2008
Director of Sustainability Services, 2005-2006
Senior Water and Energy Research 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

Professional Affiliations

American Water Works Association, BC Water and Waste Association, International Water Association, Water Environment Foundation, BC Sustainable Energy Association.

Service Honours and Awards

2023	Nominee – Honors Advisor of the Year, Colorado State University
2023	Office for Undergraduate Research and Artistry Mentored Scholars Award, Colorado State University
2022	Planning for a water-energy Urban design challenge spanning four international universities, Office Vice President for Research, Colorado State University, $10,132
2021	George Warren Fuller Award, American Water Works Association
2021	Sustainability Curriculum Innovation award, School of Global Environmental Sustainability, Colorado State University, $4,500
2020	Grants for Catalyzing Research Clusters, Vice-President, Research & Innovation and the Provost & Vice-President, Academic, University of British Columbia, $115,000
2020	Stanley S. Copp Service Award, BC Water and Waste Association
2019	5S Merit Award, Water Environment Federation
2015	Featured Researcher, Office of the Vice-President, Research, Simon Fraser University
2015	Simon Fraser University Community Engagement Award, $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

2024 – 27	Research Title: *AO2 Optimizing Electric and Water Grid Coordination under Technical, Operational, and Environmental Considerations* Role: **Principal Investigator** Grantor: Department of Energy through NAWI, $900,224
2024 – 26	Research Title: *AO2 Optimizing Electric and Water Grid Coordination under Technical, Operational, and Environmental Considerations* Role: **Principal Investigator** Grantor: Department of Energy through NAWI, $900,224
2023 – 24	Research Title: CCTSI: AI for EHR Documentation in Emergency Depts Role: **Principal Investigator** Grantor: Colorado Clinical and Translational Sciences Institute, $30,000
2014 – 24	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, $1,234,477
2023 – 26	Research Title: *Algal Biorefinery Conversion of Utility CO2 to High-Value Products (ABC-UC)*

Role: **co-Principal Investigator**
Grantor: US Department of Energy, $2,544,257

2023 Research Title: *Prototyping AI Processes at the Scottsbluff Manufacturing facility*
Role: **Principal Investigator**
Grantor: Western Sugar, $25,000

2022 Research Title: *Analysis of the AI Opportunity for Process Fault Detection and Sensor Placement at the Scottsbluff Manufacturing facility*
Role: **Principal Investigator**
Grantor: Western Sugar, $5,000

2021 Research Title: *Energy Efficiency Labels for Rental Listings*
Role: **Principal Investigator**
Grantor: American Council for an Energy-Efficient Economy, Energy Institute, $16,000

2020 Research Title: *Distributed and Renewable Energy, from science to policy workshop*
Role: **Principal Investigator**
Grantor: Water Research Foundation, $75,250

2016 – 19 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

2013 – 16 Research Title: *Water and Electric Utility Integrated Planning*
Role: **Principal Investigator**
Grantor: NY State Energy Research and Development Authority, American Water Works Association, 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, $97,908

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

2005 – 07 Research Title: *Water Consumption Forecasting to Improve Energy Efficiency*
Role: Contributing researcher
Grantor: AWWA Research Foundation, $441,098

2002 – 05 Research Title: *Optimizing Operations at JEA's Water System*
Role: **co-Principal Investigator**
Grantor: AWWA Research Foundation, $602,400

1999 – 01 Research Title: *Implementing a Prototype Energy and Water Quality System*
Role: Contributing researcher
Grantor: AWWA Research Foundation, $415,000

Other Research Contributions

Project advisory committee service: *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. *Real Time Carbon Management of Water Resource Recovery Facilities using In-Situ Bio-Electrochemical Sensors,* Water Research Foundation

Industry Projects and Collaborations

- *Xeriscape Design Decision-Making: Environmental Requirements and Aesthetic Appeal.* Poudre School District, Fort Collins, CO. USA.
- *Packaged effects on home energy retrofits effects.* American Council for an Energy-Efficient Economy, Washington DC. USA
- *Choice experiment survey to estimate the economic value of visibility improvement for Canadians – Improvement to the willingness to pay estimates to better reflect scope effects.* Environment and Climate Change Canada (ECCC), Government of Canada. Ottawa, Ontario, Canada.
- *Economic analysis of climate change adaptation measures.* BC Climate Action Secretariat. Under contract with Swift Creek Consulting, Victoria, British Columbia, Canada.
- *Localized deep learning for autonomous pumping and water system optimization*. City of Chilliwack, British Columbia. Canada
- *Assessing significance of home energy information in residential real estate purchases.* American Council for an Energy-Efficient Economy, Washington DC. USA
- *Choice experiment survey to estimate the economic value of visibility improvement for Canadians.* Environment and Climate Change Canada (ECCC), Government of Canada. Ottawa, Ontario, Canada.
- *Drinking Water and Emergency Management Best Practices Audit.* Office of the Auditor General for Local Government, British Columbia, Canada.
- *Water Use Measuring and Reporting Practices.* British Columbia Ministry of Environment and Climate Change Strategy, British Columbia, Canada.
- *Auto Buyers' Valuation of Fuel Economy: A Randomized Stated Choice Experiment.* Consumers Union. USA.
- *Quantifying and Optimizing Energy and Water Utilization in Asian Development Bank's Water Supply, Sanitation, and Wastewater Management Projects.* Asian Development Bank. Under contract with the International Water Centre, Brisbane Australia.
- *Identifying and Amalgamating Local Data to Inform Water Allocation Decisions.* BC Ministry of Environment and Climate Change Strategy, British Columbia, Canada.
- *Water-energy carbon analysis.* Southeast Queensland Water. Under contract to University of Queensland, Australia.
- *Technical Analysis to Support Metro Vancouver's Water Conservation Initiatives.* Metro Vancouver. Under contract with Urban Systems. Vancouver, British Columbia, Canada.
- *Floodplain Mapping Action Plan Implementation.* BC Real Estate Association. Vancouver, British Columbia, Canada.
- *Evaluation of the Smart Planning for Communities program,* Fraser Basin Council. Under contract with Junxion Strategies, Vancouver, British Columbia, Canada.
- *GHG Emission Management Opportunities in the Water Utility Sector,* Ledcor/Offsetters. Vancouver, British Columbia, Canada.

- *Industrial Energy Conservation Program.* FortisBC (formerly Terasen Gas). Vancouver, British Columbia, Canada.
- *Evaluation of the standards, conducting the gap analysis and making recommendations for developing a certificate management program for the RiverWiseBC program.* Pacific Salmon Foundation. Vancouver, British Columbia, Canada.
- *Stakeholder Engagement Strategy and Development of a Food Innovation Centre.* BC Ministry of Agriculture and Lands. Victoria, British Columbia, Canada.
- *Development of an Area of Low Pesticide Prevalence Policy.* BC Fruit Growers Association. Under contract with Junxion Strategies, Vancouver, British Columbia, Canada.
- *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. Vancouver, British Columbia, Canada.
- *Water and Energy Management and Operations Optimization.* Greater Vancouver Regional District, BC. Under EMA Group, Inc. Vancouver, British Columbia, Canada.
- *Water Pumping Efficiency in the development of a Technology Incentive Program for San Diego Gas and Electric.* Under EMA Group, Inc. St. Paul, MN, USA.
- *Sustainable Water Operations for Seattle Public Utilities, WA,* Under EMA Group, Inc. St. Paul, MN, USA.
- *Operations Optimization Requirements Plan.* City of Phoenix Water Department, AZ. Under EMA Group, Inc. St. Paul, MN, USA.
- *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. St. Paul, MN, USA.
- *Water Supply Management Simulation*. Colorado Springs Utilities, CO. Under EMA Group, Inc. St. Paul, MN, USA.
- *City of Albuquerque Water Utility Division Water Operations Management System.* Under EMA Services. St. Paul, MN, USA.
- *City of Tucson, AZ, Tucson Water Department System Operations Optimization Assessment.* Under EMA Services. St. Paul, MN, USA.

Refereed Publications

Chireh, V., Honey-Rosés, J., Conrad, S., Harris, L. M. (in review), "The equity implications of water demand management: A synthesis review", *Water Resources Management*

Sheehan, M. Nesbit, S., Byrne, E., Kunz, N., Conrad, S., O'Brien, K. (in review), "Educating for sustainability as the antidote to global crises: it's more important and easier than you might think", *One Earth*

Coburn, T., Conrad, S., Bradley, T., Lynch, A., Amyx, I. (in Review) "Equity and Justice Implications of Agrivoltaics Development and Deployment", *Proceedings of the AgriVoltaics World Conference 2024*, Denver, CO.

Whiting, K., Conrad, S., Bradley, T., Coburn, T. (In Review) "A Comprehensive Life Cycle Assessment Framework for Agrivoltaics Systems", *Proceedings of the AgriVoltaics World Conference 2024,* Denver, CO.

Bond, C., Killingsworth, J., Elliott, J., Schaller, S., Conrad, S. (In Press) "Wood Waste Reduction Through Volumetric Modular Building Techniques", *Clean Waste Systems*

Rodriguez, J., Conrad, S., Sanan, O. (In Review) "A Comparative Study of Deductive Coding Methods for Enhancing Urban System Management with Large Language Models", *Proceedings of 13th International Conference on Prestigious Applications of Intelligent Systems,* Santiago De Compostela, Spain, October 2024.

Call, D., Herber, D., Conrad, S. (in Press) "The Effects of the Assessed Perceptions of MBSE on Adoption", *Systems Engineering*

O'Neil, R., K., Oikonomou, Tidwell, V., Voisin, N., Kerby, J., Hou, J., Parvania, M., Ali, T., Panteli, M., Conrad, S., Brekken, T. (2024) "Global Research Priorities for Holistic Integration of Water and Power Systems", *Journal of Power and Energy*. doi: 10.1109/OAJPE.2024.3457448

Gilmore, E., Conrad, S. (2024) "A Systems Perspective and VOSviewer Network Analysis of Fall Fatalities in Construction.", *Proceedings of the American Society for Engineering Management 2024 International Annual Conference and 45th Annual Meeting,* Virginia Beach, VA.

Call, D., Herber, D., Conrad, S. (2024) "The Effects of the Assessed Perceptions of MBSE on Adoption", *Proceedings of the 2024 INCOSE International Symposium*, Dublin, Ireland.

Conrad, S. A., Sussman, R., Kormos, C., Park, C., & Cooper, E. (2024). Impact of energy efficiency information on homebuying searches: evidence from a visual choice experiment in the USA. *Energy Efficiency*, *17*(1), 1-18.

Hunu, K., Conrad, S, DePue, M. (2024). "Accounting for climate change in the water infrastructure design: evaluating approaches and recommending a hybrid framework", *Journal of Water and Climate Change* 15 (1): 89–103.

Stan, S., Coburn, T., Conrad, S. (2024) "Urban Impacts and System Interdependence" *2024 IEEE International Systems Conference*, Montreal, CA

Hunu K., Conrad, S., Grigg, N. (2024) "Systems Engineering Views on Adaptive Management Frameworks for Water Infrastructure", *Proceedings of the 2024 Conference on Systems Engineering Research*, Tucson AZ.

Stan, S., Coburn, T., Conrad, S. (2024) "An examination of urban infrastructure system interdependence to enable secondary impact analysis", *Proceedings of the 2024 Conference on Systems Engineering Research*, Tucson AZ.

Turgeon, J., Conrad, S., Vanrolleghem, P., (2022). "Decarbonization policies and water sector opportunities", In *Pathways to Water Sector Decarbonization, Carbon Capture and Utilization*. Ren, J., Pagilla, K. International Water Association.

Ricole A. Johnson, Erika E. Miller & Steven Conrad (2022). "Technology Adoption and Acceptance of Urban Air Mobility Systems: Identifying Public Perceptions and Integration Factors", *The International Journal of Aerospace Psychology*,

Robbins, C. A., Du, X., Bradley, T. H., Quinn, J. C., Bandhauer, T. M., Conrad, S. A., Carlson, K. H., ... Tong, T. (2022). Beyond treatment technology: Understanding motivations and barriers for wastewater treatment and reuse in unconventional energy production. *Resources, Conservation and Recycling*, 177, 106011.

Sussman, R., Conrad, S., Kormos, C., Park, C., Cooper, E. (2022) "Context and Meaningfulness in Energy Efficiency Label: Real Estate Listings " *Journal of Environmental Psychology*

Strazzabosco, A., Kenway, S., Conrad, S., Lant, P., (2021). "Renewable electricity generation in the Australian water industry: lessons learned and challenges for the future" *Renewable and Sustainable Energy Reviews, 147, 111236*

Strazzabosco, A., Conrad, S., Kenway, S., Lant, P., (2020). "Expert opinion on influential factors driving renewable energy adoption in the water industry: An Australian study." *Renewable Energy 162, 754–765.*

Oberg, G., Metson, G., Kuwayama, Y., Conrad, S. (2020). "Conventional sewer systems are too time-consuming, costly and inflexible to meet the challenges of the 21st century." *Sustainability,* 12(16), 6518

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., 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., 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.

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", proceedings of the IWA World Congress on Water Climate and Energy, May 13-18, Dublin, Ireland

Lazarova, V.; Lefebvre, O.; Conrad, S.; Liu, Y.; Cornel, P.; Choo, K.-H. (2012): Summary and concluding remarks – solving the water-energy nexus for tomorrow, in: Water-Energy Interactions in Water Reuse, pp 315-322, Hrsg.: Lazarova, V. , Choo, K.-H. und Cornel, P., ISBN: 9781843395416

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. (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.

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. et. al (2010) "A Framework of Support for Utility Sustainable Energy Management", proceedings of the Water Environment Federation Utility Management Conference, San Francisco, CA, February.

Conrad, S., Hall, M., Cook, S., Geinsenhoff, 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.

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

Kidder, H. Conrad, S. (2006). "Operations Optimization of Water Systems – The Economic Benefits", Proceedings of the Texas Water Conference. April 10-13, 2006.

Jentgen, L. and Conrad, S. (2006) "Operations Optimization Systems: A Substantial, Sustainable Opportunity for Water Utilities", *J. AWWA*, 98 (2).

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., Lee, T., (2005) "Optimizing System Operations.*" J. AWWA*, 97 (8): 58-65

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.

Barnett, M., Lee, T., Jentgen, L., Conrad, S., Kidder, H., Woolschlager, 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.

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.

Refereed Conference Presentations

Coburn, T., Conrad, S., Bradley, T., Lynch, A., Amyx, I. (2024) "Equity and Justice Implications of Agrivoltaics Development and Deployment", Presented at the AgriVoltaics World Conference 2024, Denver, CO.

Rodriguez, J., Conrad, S. (2024) "Synchronized Swimming: Defining the Digital Twin for Urban Water Systems", Presented at the WaterSmart Innovations Conference, Las Vegas, NV, September 2024.

Whiting, K,. Conrad, S., Bradley, T., Coburn, T. (2024) "A Comprehensive Life Cycle Assessment Framework for Agrivoltaics Systems", Presented at the AgriVoltaics World Conference 2024, Denver, CO, June 2023.

Conrad, S., (2023) "Valuing Visibility: Assessing Canadians' Willingness to Pay for Air Quality Improvements", Presented at the Behavior and Environment Climate Change Conference, Sacramento, CA, November 2023.

Conrad, S., Perry, H., (2023) "Managing the continuity of Human biases in AI SE applications", Presented at the AI for SE Workshop, George Washington University, Washington DC., September 28, 2023

Conrad, S., (2023) "Unifying the views of ecological and engineering resilience in applications of coupled human systems modelling for sustainable development", Presented at the Europe and Africa INCOSE Symposium and Workshop, Sevilla, Spain, April, 2023.

Conrad, S., Song, A., Stonecipher, G., Wcislo, D. (2023) "Unravelling water system resilience", Presented at the Western Water Conference, Loveland, CO, September 11, 2023

Conrad, S. (2021), "Contemporary perspectives of efficiency across three major water-using sectors", Presented at the SRI Conference as part of the session on The entanglements of efficiency: Lessons for sustainable water management. Virtual Conference, June 2021

Conrad, S., Crozier, A. (2021). "Defining water resilience - lessons for 2030" presented virtually at the BC Water and Waste Association Annual Conference, Penticton, BC. May 31- June 2

Conrad, S., Kenway, S., Strazzabosco, A. (2020). "Enabling pathways for water/wastewater utilities to contribute to a renewable energy future" presented at the AIChE 4th Water Conference, Virtual, 10-12 December

Conrad, S., Sobczak, C., Wilson, J. (2020). "Autonomous water system optimization through smart water systems" presented at the BC Water and Waste Association Annual Conference, Penticton, BC. 2 – 4 November

Conrad, S., Rodina, L., Hsu, H., Demsar, T.. (2020) "Unravelling water system resilience", presented at the BC Water and Waste Association Annual Conference, Penticton, BC. 2 – 4 November

Conrad, S and Kenway, S., McCall, J. (2020). "Opportunities and Barriers for Implementing Distributed Energy Resources at Water and Wastewater Utilities" presented at the Sustainable Water Management Conference, Minneapolis, MN. 29 March – 1 April.

Conrad, S and Kenway, S. (2019). "Navigating the opportunities for distributed energy recovery and generation" presented at the BC Water and Waste Association Annual Conference, Victoria, BC. 27 – 29 May. DOI: 10.13140/RG.2.2.16764.97925

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

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

O'Neil, R., Parvania, M., Oikonomou, K., Tidwell, V., Taleb Al-Awami, A., Goharian, E., Conrad, S., Brekken, T., Panteli, M. (2023). *Integrated Water Power Systems: Research Roadmap and Technical Report*. Piscataway, NJ: Institute of Electrical and Electronics Engineers

Ballard, T., Bousselot, J., Conrad, S., Gornick, B., Hayes, C., Hickey, T., Meyer, R., and Uchanski, M. (2023). *Agrivoltaics in Colorado*. *CSU Extension Agrivoltaics Fact Sheet Draft.* Fort Collins, CO: Colorado State University.

Sussman, R., H. Bastian, S. Conrad, E. Cooper, E. Tong, A. Sherpa, and S. Pourfalatoun. (2022*). Energy Labels Affect Behavior on Rental Listing Websites: A Controlled Experiment*. Washington, DC: American Council for an Energy-Efficient Economy. www.aceee.org/research-report/b2204

Conrad, S., Kenway, S., Strazzabosco, A. (2021). *A Distributed Renewable Energy Opportunities and Policy Workshop*. Water Research Foundation, Denver, CO.

Kenway, S., Conrad, S., Jawad, M. (2019), "Renewable and Distributed Energy Resource Development" *Advances in Water Research Magazine,* Volume 29, Number 3, Summer. Denver, CO: Water Research Foundation.

Kenway, S.J., Conrad, S.A., Jawad, M., Gledhill, J., Bravo, R., McCall, J., Strazzabosco, A., Howe, C., (2019). *Opportunities and Barriers for Renewable and Distributed Energy Resource Development at Drinking Water and Wastewater Utilities*. Water Research Foundation, Denver, CO.

Kenway, S.J., Conrad, S.A., Jawad, M., Gledhill, J., Bravo, R., McCall, J., Strazzabosco, A., Howe, C., (2019). *Opportunities and Barriers for Renewable and Distributed Energy Resource Development at Drinking Water and Wastewater Utilities: Case Studies*. Water Research Foundation, Denver, CO. DOI: 10.13140/RG.2.2.22527.23201

Conrad, S., Belzile, J., Nelitz, M. (2018), *Water Use Measurement & Reporting: A Sample of Water Users' Perspectives and Cost Benefit Trade-offs*. Ministry of Environment, Victoria, BC.

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.
Conrad, S., Kenway, S., Jawad, M. (2017). *Water and Electric Utility Integrated Planning: Case Studies* Denver, CO: Water Research Foundation. DOI: 10.13140/RG.2.2.34782.46408
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. (2016). "Moving beyond the debate to focus on risk and resiliency." *Watermark*, Spring. Vancouver, BC: BCWWA
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. Project 4381.
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. doi: 10.13140/RG.2.2.31839.89762
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). *Okanagan Water Study Resident descriptive summary*. Burnaby, BC. Simon Fraser University. doi: 10.13140/RG.2.2.25967.87200
Conrad, S. (2012). *Assessing the effectiveness of climate change adaptation policies: a survey of residential preferences*. Ottawa, ON. Natural Resources Canada. DOI: 10.13140/RG.2.2.25882.67521
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., Barnett, M, Lee, T., Woolschlager, J. (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.

Invited Talks and other presentations

Conrad, S. (November, 2023), "Modelling Social Economic Preferences for Home Energy Retrofits", Invited Talk to Applied Engineering Economics, Colorado State University, Fort Collins, CO

Conrad, S. (October 20, 2023), "The Concept plan for journal structuring." CSU Writes Seminar, Colorado State University.

Conrad, S. (October 9, 2023), "Socio-technical modelling - humans are messy but they matter." Student seminar on academic performance, Colorado State University, Systems Engineering.

Conrad, S., Coburn, T., Bradley, T. (September 13, 2023), "Agrivoltaics Systems and Life Cycle Analysis.", Agrivoltaics Research Symposium, Colorado State University, CSU Spur.

Conrad, S. (September 8, 2023), "Survey development best practices and why most surveys are bad science." Student seminar on academic performance, Colorado State University, Systems Engineering.

Conrad, S., Oluwatumise, J. (January 19, 2023), "Analysis of the Al Opportunity for Process Fault Detection and Sensor Placement." Presentation to the Joint Research Council of Western Sugar, Fort Collins, Colorado

Conrad, S. (January 19, 2022), "Decision Theory and Psychology" (Guest Lecture to Guest Lecture to Dr. Ozbek's class on MCDA), Colorado State University, Fort Collins, CO

Conrad, S. (November 21, 2021), "Energy Efficiency Labeling and Real Estate Listings." Lunch & Learn presentation to Efficiency Works group of the City of Fort Collins, Colorado

Conrad, S. (November 8, 2021), "Water and Energy Systems" (Guest Lecture to Systems Thinking SYSE505), Colorado State University, Fort Collins, CO

Conrad, S. (October 8, 2021), "PhD Intensive Writing." Student seminar on academic performance, Colorado State University, Systems Engineering.

Conrad, S. (September 24, 2021), "How to Be an Academic Writer." Student seminar on academic performance, Colorado State University, Systems Engineering.

Conrad, S. (July 19, 2021), "Systems approaches for integrated water-energy planning, policy, and resource recovery." Guest panelist at the NARUC Committee on Water Panel | Water-Energy Nexus: Realizing and Distributing Benefits through Coordination and Innovation. Virtual Conference.

Conrad, S. (March 10, 2021), "The Future of Resource Recovery in Wastewater." Invited Talk to Power Systems professionals, T&T Power Group, Virtual Webinar.

Conrad, S. (March 3, 2021), "Sustainable Resource Use and Urban Energy Systems" (Guest Lecture to Systems Thinking SYSE580), Colorado State University, Fort Collins, CO.

Conrad, S. (September 24, 2020), Guest Lecture on Principal Component Analysis – Integrated Urban Water Management (WATR7700), University of Queensland, Australia.

Conrad, S. (April 24, 2020), Guest Lecture on Systems Objective Functions – Integrated Urban Water Management (WATR7700), University of Queensland, Australia.

Conrad, S. (September 16, 2019), Guest Lecture on Water-Energy Optimization, Urban Metabolism - Resource and Energy Recovery Systems (WATR7700), University of Queensland, Australia.

Conrad, S. (June 21, 2019). "A global perspective on community water and energy planning." Research Seminar presented to the Advanced Water Management Centre, University of Queensland, Brisbane, Australia.

Conrad, S. (March 27, 2019). "Quantifying Energy, Water, and Human interactions: Pathways for building urban system sustainability." Research Seminar presented to Tecnológico de Monterrey, Monterrey, Mexico.

Conrad, S. (November 14, 2018), Guest Lecture on Informing energy water management and planning through decision support, Energy-Water-Food Nexus, University of British Columbia, Vancouver, BC.

Conrad, S. (November 5-7, 2018), Guest Lecture on Water energy implications and decision/Policy Support, IWME 504 Water and Wastewater Management Strategies, University of British Columbia, Vancouver, BC.

Conrad, S. (October 26, 2018). "Moving beyond quantifying climate change impacts: Pathways towards climate adaptation." Invited talk to Yukon Engineers, Whitehorse, Yukon.

Conrad, S. (September 24, 2018), Guest Lecture on Water-Energy Modelling, Urban Metabolism - Resource and Energy Recovery Systems (WATR7700), University of Queensland, Australia.

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. (September 27, 2017), Guest Lecture on Integrating understanding of urban water and metabolism, Water-Energy feedbacks and decisions, Urban Metabolism - Resource and Energy Recovery Systems (WATR7700), University of Queensland, Australia.

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. (March 18, 2015). “Coupling social sciences with physical system models”, Guest Lecture to REM 802, Simon Fraser University, Burnaby, BC.

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

Colorado State University

Special Topics – Water Energy Systems Urban Design Challenge (Annually each summer 2022-)
Lead a special summer weeklong session on integrated planning and urban design that brings together students from multiple disciplines across engineering, environmental science, economics, and policy and planning with industry to address the challenge of integrating water and energy systems into existing city infrastructure.

Sustainable Systems Engineering (Fall even years, 2024-)
Course developer and instructor of graduate course that establishes a foundation for sustainable systems engineering. Students will learn methodologies for analyzing multiple interlinked systems and their synergies with a sustainability lens and apply a systems engineering approach to sustainable development goals. Students apply their learning on systems thinking, dynamic lifecycle analysis, systems of systems assessment, and resiliency and adaptability in the systems engineering lifecycle to rethink a systems engineering final project.

AI Augmented Systems Engineering (Spring even years**,** 2024-)
Course developer and instructor of graduate course that Covers AI approaches such as machine learning, neural networks, and data science techniques that support human engineers in the system engineering effort. Students learn the conceptual architecture, challenges, and ethical debates that articulate employing AI as an assistant systems engineering engineer and apply this knowledge to specific applications in the systems engineering domain.

Modelling Human Systems Behaviour (Annually, Fall even years, summer odd years)
Course developer and instructor of graduate course that introduces human systems modeling to engineers and non-social science researchers. It is an entry point for students wishing to acquire and apply the rigorous methods of quantitative social science methods to their program of study and field of work. Students learn and apply the quantitative methods needed to understand and characterize human behavior, including experimental design, survey methods, modelling, and prediction with specific application to engineering systems and decision making.

Simulation, Modelling and Experiments (Fall odd years 2023-)
Graduate course that provides students with fundamental concepts of coupled systems modelling, simulation, and experimentation as a component of a systems approach to the engineering process and decision making. This course places emphases on verification and validation of discrete and dynamic computational models, on quantification and propagation of uncertainty, on systems analysis, and on synthesis and decision making.

Intelligent Engineering Decision Support Systems (Spring Odd years, 2022-)
Course developer and instructor of graduate course in Systems Engineering introducing engineering decision support systems through normative vs. descriptive approaches in decision analysis. Basic concepts include multi-objective analysis and decision making,

human behavior, decision making under risk and uncertainty, and AI decision surrogates.

Simon Fraser University

Environmental Modelling (Annually each Spring 2014-2020)
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.

Building Sustainable Communities: Concepts and Cases (Fall 2019, Summer 2020)
3rd year undergraduate course that explores and analyzes policy instruments, planning tools, and strategies from around the world for engaging people and institutions in building sustainable communities. Utilizes game theory and a tournament design challenge to engage students in understanding how to plan and cultivate sustainability at the community and city level, taking into consideration the environmental, economic, and social aspects of development.

Systems Thinking (Fall 2015, Fall 2016, Fall 2017, Fall 2018, Spring 2019, Fall 2019)
Course developer and instructor 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.

Global Change Distance - Course Developer/Supervisor (Three offerings annually, 2018 – 2020**)**
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 (Fall 2011, Spring 2012, Spring 2013, Spring 2015, Summer 2019)
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

2022 – ***Chair****, risk and resiliency committee,* Rocky Mountain Section of the American Water Works Association.

2021 – ***Task Lead,*** Policy and Economic Instruments, IEEE Task force on Water and Power Systems

2017 – 21 ***Chair*** Education Program, 2018, 2019, 2020, 2021 BC Water and Waste Association Annual Conference

2018 – 21 ***Board of Director****,* British Columbia Water and Waste Association.

2011 – 21 Member, **Chair** (2020-2021), Technical leadership council, BC Water and Waste Association.
2014 – 20 Member, professional advisory committee, SFU Action Climate Team.
2014 – 20 Member, climate change committee, Canadian Water Works Association and American Water Works Association.
2019 Member, organizing committee, IWA's LESAM (Leading Edge Strategic Asset Management) and PI (Performance Indicators) conferences, Vancouver, British Columbia
2015 – 18 ***Board of Director****,* American Water Works Association.
2015 – 18 Member*,* Canadian Affairs Committee, American Water Works Association.
2015 – 18 ***Co-chair****, risk and resiliency committee,* BC Water and Waste Association.
2016 – 17 ***Chair***, organizing committee, BCWWA climate change adaptation conference, Vancouver, Canada.
2016 – 17 Member, Fraser Basin Council's Watersheds and Water Resources Committee
2016 Advisory Panel, 2016 Canadian Water Summit, Toronto, Canada. 23 June
2015 ***Moderator and co-chair,*** organizing committee**,** Simon Fraser University, SFU BLUE: Blue Water Community Engage dialogue, Vancouver, Canada.
2011 – 15 ***Chair****,* climate change committee, BC Water and Waste Association.
2014 – 15 Judge, Student Design Competition, University of British Columbia, BC Water and Waste 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 – 14 Graduate representative, Faculty Executive, School of Resource and Environmental Management, Simon Fraser University.
2010 – 13 ***Chair***, Seminar Symposium Series, School of Resource and Environmental Management, Simon Fraser University.
2011 – 12 ***Co-chair****,* energy management subcommittee. International Water 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.
Ongoing Peer-review for academic Journals (incl. Water Research, Water Resources Research; Resources, Conservation & Recycling, Water and Climate, Landscape and Urban Planning, Water Resources Management, Water, Energy Efficiency, Renewable and Sustainable Energy Reviews).

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