

SARAH ELIZABETH WOLFE, Associate Professor
School of Environment, Resources and Sustainability
University of Waterloo (Canada)

Rationale: Water is essential to our existence – ecological, biological and cultural – and our ability to ‘solve’ water problems is a litmus test for our society’s capacity to address other environmental challenges.

Focus: I explore the social-psychological variables of water decisions and governance within a context of climate change, flooding and drought. Using SSHRC funding, I mentor a team of emerging student scholars as we examine the ways that individuals, including citizens and water policy-makers, make decisions outside of formal institutional rules, processes and policies. We examine individuals’ values, beliefs and emotions (e.g., fear and awe) that are socio-culturally derived, often implicit and not readily quantifiable by standard metrics. We use mixed qualitative and quantitative methods to better explain how individuals and institutions make their water decisions during uncertain or crisis conditions. Our research helps to surface the foundation assumptions underpinning the necessary-but-insufficient explanations of political will, economic incentives, policies or regulations.

1. EMPLOYMENT & EDUCATION

- 2019 - Associate Director of Undergraduate Studies, School of Environment, Resources and Sustainability (SERS)
- 2017 - Associate Professor: School of Environment, Resources and Sustainability (SERS), University of Waterloo
- 2012-17 Assistant Professor (Tenure-track Appointment): School of Environment, Resources and Sustainability (SERS, formerly ERS as below), University of Waterloo. Note: My tenure clock started in 2012; tenure decision in April 2017.
- 2009-11 Assistant Professor (Contractually Limited Term Appointment): Department of Environment and Resource Studies, University of Waterloo

- 2006-9 Post-doctoral Researcher: Department of Environment and Resource Studies, University of Waterloo.
- 2002-6 Doctor of Philosophy – degree conferred in 2007, Department of Geography, University of Guelph. Dissertation: Commitment and Collaboration: Social networks and tacit knowledge in southern African and Canadian water demand management.
- 2004 Visiting Researcher: International Development Research Centre - The Middle East Regional Office. Cairo, Egypt.
- 2004 Visiting Researcher: International Union for the Conservation of Nature - South Africa Office. Pretoria, South Africa.

- 2001-2 Consultant, Food and Agriculture Organization (United Nations), Water Policy, Development and Management Service. Rome, Italy.
- 2001 Rapporteur, Walkerton Inquiry – Part II. Toronto, Canada.
- 2001 Intern Researcher, People, Land and Water Program, International Development Research Centre. Ottawa, Canada
- 2000-1 Junior Professional, Food and Agriculture Organization (U.N.) – Water Policy, Development and Management Service. Rome, Italy.
- 2000 Master of Arts - Collaborative program in Political Science and Environmental Studies, University of Toronto
- 1995-9 Bachelor of Arts – Collaborative Program in International Development in ‘Biophysical Environment’ stream, 1999, University of Guelph

2. RESEARCH ACTIVITIES

2.1. PUBLICATIONS

2.1.1. Under Review Articles

Ross, H.C. and S.E. **Wolfe** (status: submitted). "Mortality awareness and lawn watering: Using terror management theory to understand residential water consumption."

Hammond, R., Lewis, G. and **Wolfe**, S.E. (status: submitted). "Green Versus Blue Roofs: A Suggested Decision Tool"

2.1.2. Articles in refereed journals (*undergraduate; **graduate)

Wolfe, S.E. and A. Tubi (2018). "Terror Management Theory and Mortality Awareness: A Missing Link in Climate Response Studies?" *WIREs Climate Change*.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/wcc.566>

Cote**, S. A., H. C. Ross**, K. David**, and S. E. **Wolfe** (2017). "Walkerton revisited: how our psychological defenses may influence responses to water crises." *Ecology and Society* 22(3):32.

<https://www.ecologyandsociety.org/vol22/iss3/art32/>

Cote**, S.A. and S.E. **Wolfe** (2017). "Evidence of mortality salience and psychological defenses in bottled water campaigns." *Applied Environmental Education & Communication*,

doi.org/10.1080/1533015X.2017.1399836

Wolfe, S.E. (2017). "Fear, Anger and Responsibility: Using emotions and Terror Management Theory to assess historic speeches about water and policy." *Water History*. DOI 10.1007/s12685-016-0189-3

Wolfe, S.E. and D. Brooks (2016). "Mortality awareness and water decisions: A social psychological analysis of supply management, demand management and soft path paradigms." *Water International*.

<https://doi.org/10.1080/02508060.2016.1248093>

Mann*, C. and S.E. **Wolfe** (2016). "Risk perceptions and Terror Management Theory: assessing public responses to urban flooding in Toronto, Canada." *Water Resources Management*. 30(8): 2651-2670

Ross*, H. and S.E. **Wolfe** (2016). 'Life after death: evidence of the Hoover Dam as a hero project that defends against mortality reminders'. *Water History*, 1-19

Wolfe, S.E. (2014). "Women's choices and Canadian water research and policy: a study of professionals' careers, mentorship and experiential knowledge." *Environmental Practice*. 16: 37-51

Cote*, S. and **Wolfe**, S.E. (2014). "Assessing the Social and Economic Barriers to Permeable Surface Utilization for Residential Driveways in Kitchener" *Environmental Practice*.16: 6-18

Wolfe, S.E., S. Davidson** and T. Reid* (2013). "Mentorship, knowledge transmission and female professionals in Canadian water research and policy." *Water Policy*. 15:610-627

Wolfe, S.E. (2012) "Water cognition and cognitive affective mapping: identifying priority clusters within a Canadian water efficiency community." *Water Resources Management*. 26(10): 2991-3004

Elton*, K. and S.E. **Wolfe** (2011). "Water Efficiency and the Professional Plumbing Sector: How capacity and capability influence knowledge acquisition and innovation." *Water Resources Management*. 26(2): 595-608

Wolfe, S.E and E. Hendriks** (2011). "Building Towards Water Efficiency: The influence of capacity and capability on innovation adoption in the Canadian home-building and resale industries." *Journal of Housing and Built Environment*. 26(1): 47-72

Wolfe, S.E. (2010). "Beyond a Pipe Dream – The role of social capital in the development of a community's water efficiency strategy." *Environmental Practice*. 12 (3): 214-226

Wolfe, S.E. (2009). "What's your story? Practitioners' tacit knowledge and water demand management policies in Southern Africa and Canada." *Water Policy*.11: 489-503.

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2.1.2. *Articles in refereed journals continued (*undergraduate; **graduate)*

- Wolfe**, S.E. (2009). "A Social Innovation Framework for Water Demand Management Policy: Practitioners' capabilities, capacity, collaboration and commitment." *Society and Natural Resources*. 22(5): 474-483
- Wolfe**, S.E. (2008). "Capacity, capability, collaboration and commitment: How social networks influence practitioners of municipal water demand management policy in Ontario, Canada." *Environmental Practice*. 10(2): 42-52
- Wolfe**, S.E. and D.B. Brooks (2003). "Water Scarcity: an alternative view and its implications for policy and for capacity building." *Natural Resources Forum*. 27(1): 99-107

2.1.3. *Chapters (**graduate)*

- Brooks, David and S.E. **Wolfe** (2011). "Gains, Gaps and Institutional Change." Chapter in: Hammou Laamrani, Joshua Paglia and Lamia El-Fattal (Eds.). *Water Demand Management in the Middle East and North Africa: Policy, Practice and Power*. International Development Research Centre. Cairo, Egypt and Ottawa, Canada. pp. 15-34
- Wolfe**, S.E. and K. Elton** (2009). "Pushing the boundaries: shifting water soft paths philosophy toward hard policy in municipal water management." Chapter in: Brooks, David, Oliver Brandes, and Stephen Gurman (Eds.). *Making the Most of the Water We Have: The Soft Path Approach to Water Management*. EarthScan, London, UK. pp. 165-181
- Brooks, D. and S. **Wolfe** (2007). "Water Demand Management as Governance: Lessons from the Middle East and South Africa." Chapter in: Shuval, Hillel and Hassan Dweik (Eds.). *Water Resources in the Middle East: Israel-Palestinian Water Issues – From Conflict to Cooperation*. Hexagon Series on Human and Environmental Security and Peace, Vol. 2. Springer-Verlag. pp. 311-324

2.1.4. *Other publications: News Articles, Trade, and New Media (*undergraduate; **graduate)*

- Wolfe**, S.E. (2018). How to change the way we value, use and manage water. *Invited Commentary for OpenCanada.org*. <https://www.opencanada.org/features/how-change-way-we-value-use-and-manage-water/>
- Lynes, J. and S.E. **Wolfe** (2017). "It's time to rethink our messaging about environmental change" *Globe and Mail*. May 7, 2017 <https://www.theglobeandmail.com/report-on-business/rob-commentary/its-time-to-rethink-our-messaging-about-environmental-change/article34914924/>
- Wolfe**, S.E. (2016). "Sounding the water alarm will backfire thanks to human nature." *Globe and Mail*. March 22, 2016 (World Water Day) <https://www.theglobeandmail.com/opinion/sounding-the-water-alarm-will-backfire-thanks-to-human-nature/article29315519/>
- Wolfe**, S.E., S. Cote** and H. Ross* (2015). "It came from the water." *Alternatives Journal*. 41(4): 44-47
- Wolfe**, S.E. and S. Wismer (2010). "Gender and Careers in the Canadian Water Policy Community." *Women and Environments International Magazine*. Special Issue, 82-83
- Wolfe**, S.E. and E. Hendriks** (2010). "Building Toward Water Efficiency in Canada – Policy Innovation and Education in New and Existing Homes." *Water Efficiency: The journal for water resource management*. Jan/Feb 2010
- Wolfe**, S.E. and A. Craig (2010). "What are you doing today? Mentoring, gendered work, and an academic career." Invited submission to the *Canadian Federation of Social Sciences and Humanities – Equity Matters* <https://www.ideas-idees.ca/blog/mentoring-gendered-work-and-academic-career>
- Wolfe**, S.E. (2009). "How to keep women on the career ladder." *Globe and Mail*. December 23rd: A23. <https://www.theglobeandmail.com/opinion/how-to-keep-women-on-the-career-ladder/article1206161/>

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2.1.4. Other publications: News Articles, Trade, and New Media continued (*undergraduate; **graduate)

- Homer-Dixon, T. and S.E. **Wolfe** (2008). "Everything is not Peachy." *Globe and Mail*. August 18th: A21
<https://www.theglobeandmail.com/opinion/everything-is-not-peachy/article794050/>
- Wolfe**, S.E. (2007). "Reforming and Rebuilding: Water Efficiency Initiatives in Hermanus, South Africa."
Water Efficiency: The journal for water resource management. Nov/Dec - 2(6)
- Wolfe**, S.E. and T. Homer-Dixon (2003). "The matrix of our troubles." *Globe and Mail*. August 16th:A23
<https://www.theglobeandmail.com/opinion/the-matrix-of-our-troubles/article794051/>
- Wolfe**, S.E. (2003). "Networks." Invited paper for the *UN Chronicle Magazine* (Water Resources Special Issue). XL (1): 33-35

2.1.5. Other publications: Technical Reports

- Maas, C. and S.E. **Wolfe** (2012). "Building Professional Capacity for a Water-Sensitive Future in Ontario."
Water Sustainability Project - POLIS Project on Ecological Governance
- Wolfe**, S.E. (2009). "Final Report, Recommendations and Policy Action Strategy: Beyond a Pipe Dream – The role of social capital in the development of a community's water demand management strategy."
Final Report to the Canada Mortgage and Housing Corporation and the Canadian Water and Wastewater Association's Water Efficiency Network
- Wolfe**, S.E. (2007). "Introduction." *Water Demand Management Research Report Series*. International Development Research Centre (IDRC) – Middle East Regional Office
- Brooks, David and Sarah **Wolfe** (2007). Institutional Challenges for Effective Implementation of Water Demand Management and Institutional Assessment for Capacity Development. *Water Demand Management Research Series*. IDRC – Middle East Regional Office.
- Brooks, D., S.E. **Wolfe**, and T. Shames (2001). *Local Water Supply and Management: A compendium of 30 years of IDRC-Funded Research*. International Development Research Centre, Ottawa
- Wolfe**, Sarah (ed.) (2000). *Proceedings from the Regional Training Workshop on Policy and Implementation of Water Demand Management (Western Asia)*. Beirut, Lebanon. Food and Agriculture Organization, Middle East Office (Internal)

2.2. RECORD OF FUNDING APPLICATIONS

2.2.1. Associate Professor Research – 2017 ongoing

- 2019 "Stronger than fear: awe, ritual, identity and water decisions", \$73 574; Social Science and Humanities Research Council: **Insight Development Grant** (PI; results pending spring 2019).
Summary: my proposed research challenges the conventional explanation that more information will be sufficient to change people's water use behaviours. I propose that something else is happening—something more fundamental to the human condition. Cognitive science researchers have shown that emotions guide our thought, albeit often unconsciously. Psychology researchers have shown that awe emotions have positive and powerful influence on our sense of wellbeing, connectedness and willingness to act. Sociologists and anthropologists have documented ritual's role in individual and community while research on religious conversion has identified distinct processes that fundamentally change an individual's identity. Previous mortality fear research has shown why the conventional water approaches (regulations, incentives, education) aren't working as well as they must. To change our entrenched water behaviours we need something more powerful than fear. I propose four sub-hypotheses: (1) a 'powerful something' could be awe; (2) a sense of awe could be sparked by ritual; (3) accepted and sustained ritual would need to be contextualized and supported by environmental identities; and (4) robust identities could be generated through aspects of a conversion processes.

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2018 “Do mortality reminders influence our water decisions? A new variable for the era of climate change, drought and uncertainty”, \$125 650; **SSHRC Insight Grant** (PI; 100% funded). **Note: I ranked 4th of 49 Established Scholar applicants in the ‘Geography’ committee.**

Summary: Departing from conventional social science water research, I use TMT to examine the relationship between mortality awareness and water decision-making. I propose that mortality awareness, arising from exposure to conscious and unconscious death reminders, including climate change, helps explain why individuals and societies make particular water decisions. Specifically, three decades of TMT evidence indicates that efforts to repress mortality awareness results in predictable responses. These defense responses motivate humans to, for example, control nature, over-extract or consume resources and be less willing to share scarce resources. These defenses also allow people to deny their connection to nature and to limit awareness of their own physical vulnerability, protecting them from the discomfort of mortality awareness but perpetuating environmental degradation.

2.2.2. CLTA & TT Assistant Professor Research – Total Successful grants \$232 704 (2009-2016)

2014 “Cognition and Terror Management Theory in water decision-making on policy and infrastructure development”, \$22 000; **SSHRC Connection Grant** (PI; 100% funded).

“Something in the water: using TMT to explore and explain the decisions we make about water”,

- \$8 000, Waterloo International: UW International Research Partnership Grant (PI; 100% funded); \$3 000, Halbert Centre for Canadian Studies, Hebrew University, Israel (PI; 100% funded); \$1 000, Faculty of Environment – UW: Faculty support (PI; 100% funded)

2013 “Thinking about Water: what, why and how we teach to engage the next generation of interdisciplinary water leaders”, \$15 000; Water Institute - UW: Interdisciplinary Water Workshops or Symposia Grant (PI; 100% funded).

2012 “Cognition and Terror Management Theory in water decision-making on policy and infrastructure development”, \$74 884, **SSHRC Insight Development Grant** (PI; 100% funded). **Note: I ranked 3rd of 61 Emerging Scholar applicants in the ‘Geography’ committee.**

“Research Seed/Start Up Grant”, \$15 000, Faculty of Environment, University of Waterloo

“Graduate Student Support by New Faculty Members Award”, \$5 500, Faculty of Environment, University of Waterloo

“Governing water in the face of uncertainty, proposal for a Canada-Israel Workshop”, including \$11 550; University of Waterloo: International Research Partnership Grant, (Co-applicant with P. Kay; 100% funded; 40% proposal contribution by Wolfe); \$12 000, Halbert Centre for Canadian Studies, Hebrew University, Israel (Co-applicant with P. Kay; 100% funded; 40% proposal contribution by Wolfe)

2011 “Song my paddle sings: gender, work and practices in the Canadian water policy community”, \$41 770, **SSHRC Standard Research Grant** (PI; 28.5% funded)
“University of Haifa Research Stipend”, \$10 000, University of Waterloo (PI; 100% funded)

2009 “Social capital assessment of the Water Master Plan process in the Township of Centre Wellington”, \$13 000; Grand River Conservation Authority: Grant (PI; 100% funded)

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2.2.3. *Post-doctoral Research - Total Successful grants \$234 010 (2006-2008)*

- 2008-2006 “Building toward water efficiency: policy innovations and education in new and existing home builders” (total: \$194 010; consisting of \$24 505, British Columbia Real Estate Foundation: Research Grant (PI; 100% funded; 2008); \$24 505, Alberta Real Estate Foundation: Research Grant (PI; 100% funded; 2008); \$100 000, Walter and Duncan Gordon Foundation: Research Grant (PI; 100% funded; 2007); \$ 20 000, Canadian Water and Wastewater Association: Grant for Post-Doctorate (PI; 100% funded; 2006); \$ 25 000, Canada Mortgage and Housing Corporation: Grant for Post-Doctorate (PI; 100% funded; 2006)
- 2007 Thinking about the soft path for water: from idea to implementation (workshop), \$25 000, Walter and Duncan Gordon Foundation: Research Grant (PI; 100% funded)
- 2006 “Post-Doctoral Fellowship”, \$15 000, Walter and Duncan Gordon Foundation

2.2.4. *Young Professional & Graduate Research – Total Successful grants \$124 581 (2001-2004)*

- 2004 “Canadian Window on International Development Award: Renewal”, \$9 581, International Development Research Centre (IDRC) (100% funded)
- 2003 “Doctoral Research Award”, \$59 000, **Social Sciences and Humanities Research Council**
- “Canadian Window on International Development Award”, \$20 000, IDRC
- 2002 “Ontario Graduate Scholarship in Science and Technology”, \$5 000, University of Guelph
- 2001 “Centre Internship - Water”, \$31 000, International Development Research Centre

2.3. **PRESENTATIONS *speaker**

- 2013 Craig, AK* and S.E. **Wolfe**. “Are you my mentor? Daily strategies for symbiotic mentorship between academic mothers”. Motherhood Initiative for Research and Community Involvement Conference. Toronto, ON
- 2010 **Wolfe**, S.E. “The cognitive-affective sciences and water governance” Invited Lecture to the International Development Research Centre, Ottawa.
- 2010 **Wolfe**, S.E. and E. Hendriks*. “Chasing the Dream: the myth of work-life balance in the water sector”. Invited Keynote to the 2010 Young Professionals Summit, Water Environment Federation and the American Water Works Association. San Juan, Puerto Rico.
- 2009 **Wolfe**, S.E. and E. Hendriks*. “Building towards Water Efficiency: Policy Innovation and Education in New and Existing Homes.” WaterSmart Innovations Conference, Las Vegas, Nevada.
- 2009 **Wolfe**, S.E. and E. Hendriks*. “Building towards Water Efficiency - Research Findings”. National Conference on Water Efficiency and Conservation, Canadian Water & Wastewater Association.
- 2008 **Wolfe**, S.E. “Social Capital in Community-Level Water Efficiency Programs: Reports from South Africa and Canada.” 2nd National Conference and Policy Forum on Water Efficiency and Conservation. Canadian Water & Wastewater Association, Waterloo, ON.
- 2006 **Wolfe**, S.E. “Commitment and Collaboration: Social networks and tacit knowledge in southern African and Canadian water demand management.” Canadian Water Resources Association’s National Conference. Toronto, ON.

3. TEACHING ACTIVITIES

3.1. GRADUATE TEACHING & ADVISOR

3.1.1. Graduate Courses

As service to the university's Water Institute, I co-teach WATER 601. This course is the first of two core, campus-wide courses in the Collaborative Water Program for masters and doctoral students (67 students in 2019). By co-teaching across faculties – my colleague is in civil/environmental engineering – we successfully model the challenges and victories of collaborative water problem-solving. A highly interactive, 3-hour teaching block, we introduce students from civil and chemical engineering, biology, chemistry, geography, architecture, public health etc to concepts of inter/transdisciplinary water research and practice, complexity, and global/local water ethics. I am deeply committed to the training of interdisciplinary water researchers and practitioners.

3.1.2 Current Graduate Students (as Advisor)

1. David, Karine. ABD in the School of Environment, Resource and Sustainability (SERS). 2015 – ongoing
 - Dean's Doctoral Initiative - \$90 000, 2015-2019; Ontario Graduate Scholarship, \$15 000; President's Graduate Scholarship, \$5 000; Briarhurst Travel and Research Award, \$1 500; RBC Water Scholarship, \$10 000; Provost Doctoral Entrance Award for Women, \$5 000
2. Kroetsch, Sam. MES thesis student in SERS.
3. Smith, Lauren. SERS doctoral student. Fall 2018 – ongoing
 - Deans Doctoral Initiative \$122 000, 2018-2022; SERS Entrance Scholarship, \$2 000; Exceptional Doctoral Award, \$10 000

3.1.3 Current Doctoral and Masters Graduate Students (as Committee Member)

1. Andrews, Evan (Armitage, SERS): Comprehensive exam and dissertation committee 2016 – ongoing
2. Coore, Danielle (Dresher, SEED): Masters thesis committee 2017 – ongoing
3. Davy, Barbara (Quilley, SERS): Comprehensive exam and dissertation committee 2016 – ongoing
4. Philpot, Simone (Johnson, GEOG): Comprehensive exam and dissertation committee 2014 – ongoing

3.1.4 Completed Masters Graduate Students (as Advisor)

1. Anderson, Sarah. "Remembering Water: Immigrant water narratives in Waterloo Region". MES thesis in the Department of Environment and Resource Studies (ERS). 2009 – 2015. SSHRC: Joseph-Armand Bombardier Canada Graduate Scholarship (\$17 500, 2011); University of Waterloo: President's Graduate Scholarship (\$4 998, 2011)
2. Cote, Stephanie. "Applying Terror Management Theory to Understand Canadians Water Consumption Decisions and Improve Environmental Campaigns that Aim to Motivate Sustainable Behaviours" MES major research project in ERS. 2013 – 2015. University of Waterloo Awards: Environmental Studies Graduate Experience Award (\$2 000; 2014); University of Waterloo Graduate Scholarship (\$1 000, 2014); UW Special Graduate Student Entrance Award (\$2 750, 2013)
3. Fortier, Julia (co-supervisor with Kay). "Social, technical and economic assessment of residential cistern use in the Region of Waterloo." MES thesis in ERS. 2007 –2010.
4. Kerr, Meghann. Society be Dammed! A Terror Management Analysis of Water Infrastructure as a Conduit to Immortality. MES thesis in ERS. 2013–2016.

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5. Kimantas, Janet (co-supervisor with McAllister). “Sustainable buildings and equity in Waterloo” MES major research project in ERS. 2014 – 2016
6. Patch, William (co-supervisor with Kay). “Examining the institutional structures for implementation of water soft paths in Canada.” MES thesis in ERS. 2008 –2010.
7. Ross, Hanna. M.E.S. major research project in the School of Environment, Resource and Sustainability (SERS). 2015 – 2017. University of Waterloo Graduate Scholarship, \$2 000, University of Waterloo, 2016
8. Wilkes, Taylor. “Hydro-psychology in Water Governance: how knowledge and identity influence professional behaviours in Israel” MES thesis in ERS. 2011 – 2016. University of Waterloo Awards: David Johnson International Experience Award (\$2 500, 2012); The Water Institute: ARCADIS Graduate Scholarship (\$5 000, 2012)
9. Yessie, Steven. “Policy and Performance of Public Water Agencies: How current demographic transitions are affecting workplace knowledge and skill.” MES thesis in ERS. 2010 – 2012.

3.1.5 Completed Masters Graduate Theses (as Committee Member)

1. Carter, Blair (Armitage). “Water and Social Well-Being in the Northwest Territories” MES thesis in ERS. 2013 –2014.
2. Cotcheire, Heather (Larson). “The efficacy of voluntary initiatives for reducing horticultural introductions of invasive species” MES thesis in the Department of Geography and Environmental Management. 2010 – 2012.
3. Creelman, Kyle (Larson). “The effect of education about invasive species on adolescent’s relationship with nature” MES thesis in ERS. 2010 –2011.
4. Davis, Heather (Murphy). “Testing the application of a community resilience assessment: a case study of the Town of Huntsville, Ontario” MES thesis in ERS. 2010 –2011.
5. Hendriks, Elizabeth (Kay). “Water Soft-path Application in Industrial Systems: A Pulp and Paper Case Study” MES thesis in ERS. 2007-2008
6. Leighton, Catherine (Wismer). “Bottled Water and Packaging Waste: Policy Options and Instruments for Ontario.” MES thesis in ERS. 2009.
7. Roth, Alyssa (deLoe). MES thesis in ERS. 2013 –2014.

3.1.6 Completed Doctoral Graduate Comprehensive Exam and/or Theses (as Committee Member)

1. Hooykaas, Amanda (McAllister). “Enduring Gardens: Woven by Friends into the Fabric of the Canadian Community” Doctoral dissertation in the Department of Geography and Environmental Management. 2010 –2012.
2. Rathwell, Kaitlyn (Armitage). “Inuit art and environmental change: Examining the significance of artworks and artistic process to bridge knowledge systems”. Doctoral dissertation in ERS 2015 – 2016
3. Whitney, Stephanie (Lynes, SEED); Rowlands, ERS): Comprehensive exam committee. 2014–2015.

3.1.7 Completed Graduate Masters Theses or Doctoral Dissertations (as External Examiner/Reader)

1. Dawson, Elizabeth. MES. Geography and Environmental Management, Waterloo. 2010.
2. Folifac, Fidelis. Ph.D. School of Urban Planning, McGill University. 2013.
3. Kingsbury, Janet. MES. Geography and Environmental Management, Waterloo. 2014.
4. Shannon, Alexandrina. MES. SERS, Waterloo 2015
5. Spurgeon, Joslyn. MES (paper). Geography and Environmental Management., Waterloo. 2012.
6. Turner, Scott (M. Arch). School of Architecture, Waterloo. 2016.

3.2. UNDERGRADUATE TEACHING

ERS 101 (new 2018 - ongoing): Conceptual and Practical Approaches to Decision Making for the Environment, Resources and Sustainability (120 students).

Instructor median scores: 4.6/5 (2018 first offering); Course median scores: 4.5/5 (2018 first offering)

ERS 111: Interdisciplinary Analysis and Problem Solving for Environmental Studies: Water (80+ students)

Instructor median scores: 5/5 (2016; 2014; 2013); sabbatical 2015; 4/5 (2012; 2011)

Course median scores: 5/5 (2016); sabbatical 2015; 4/5 (2014; 2013; 2012; 2011)

ERS 265 - Environmental and Social History of Water (25-30 students)

Instructor median scores: 4.5/5 (2017); 5/5 (2016; 2014; 2013; 2011); sabbatical 2015; release (2012)

Course median scores: 4.4/5 (2017); 5/5 (2016; 2014); sabbatical 2015; 4/5 (2013; 2011); release (2012)

ERS 316 - Integrated Urban Water and Wastewater Systems (50-75+ students; cross listed for 1) campus-wide Urban Studies minor & 2) Environmental Sciences, Water specialization)

Instructor median scores: 4.7/5 (2017); release (2016); 4.5/5 (2015); 5/5 (2014; 2013); release (2012)

Course median scores: 4.6/5 (2017); release (2016); 4/5 (2015; 2014; 2011); 5/5 (2013); release (2012)

3.4. UNDERGRADUATE ADVISOR

My philosophy is to ‘invest early and often’ in my undergraduate researchers. I have completed over 40 UG thesis (two semesters) students since 2011. I have experimented with various approaches to advising senior theses – optional one-on-one meetings, class-based ‘working sessions’, required set one-on-one consultation times. What I’ve found most effective is to meet with my students weekly, provide mini-lectures and working sessions, and use a marking scheme that includes both graded assignments and required milestones to support the thesis process. This approach is effective because that majority of students submit high quality theses on time, do well in their final presentations and self-report much less “stress” toward the end of the writing process.

Three undergraduate theses have now been published (Cote and Wolfe 2014; Mann and Wolfe 2016; Ross and Wolfe 2016). For these exceptional students, I provide financial support to help them extend their research project, and ongoing mentorship to help them build core research (design/analysis) and writing skills. One of my UG thesis students was awarded an Academic Achievement Award (2014). My students have also received scholarships for their graduate studies at institutions such as UBC, Concordia (Joseph-Armand Bombardier CGS Master's Scholarship, \$17 500), Dalhousie (\$6 000 scholarships), McMaster (\$16 000 funding) York and Western.

In addition to undergraduate thesis supervision, I have funded 17 undergraduate research assistant positions since 2009. These positions have included co-op positions, fieldwork and data collection, research searches and workshop organization.

4. SERVICE ACTIVITIES

4.1. COMMITTEES

4.1.1. University level

- Representative: Collaborative Water Program Committee, University of Waterloo Water Institute, 2018 – ongoing
- Reviewer: Water Institute, Graduate scholarships adjudication, 2011 - 2014
- Reviewer: UW/SSHRC, Small Grants Committee Reviewer, 2014

4.1.2. Faculty level

- Representative: ENV committee to develop a new MES in Sustainable Cities, 2019 ongoing
- Representative: Knowledge Integration Director hiring committee, 2018
- Representative: Faculty Tenure and Promotion Committee, 2017
- Representative: ENV Communications Group (UG curriculum review) 2014 – 2016
- Representative: Collaborative Water Management Program Sub-Committee, 2013 – 2014; 2018
- Representative: Arts Faculty Council. University of Waterloo, 2011 – 2014
- Representative: Academic Board of the Independent Studies Undergraduate Program. University of Waterloo, 2010 –2014
- Representative: Status of Women and Equity Committee. University of Waterloo, 2011- 2013
- Representative: President’s Advisory Committee for the mid-cycle review of the 6th Decade Plan. University of Waterloo, 2012

4.1.3. Department/School level

- SERS Associate Director – Undergraduate, 2019-2021 (also listed under employment)
- SERS Search and Hiring Committees x 2: Lecturer Position, 2017; Director, 2017
- SERS Communications Committee, 2017 – ongoing
- Program development – Accelerated Bachelors-to-Masters program option, 2015
- ERS Administrative Manager Hiring Committee, 2014
- ERS-WISER Hiring Committee, 2014
- Comprehensive Exam and Thesis Defense Chair: School of Environment, Resources and Sustainability, University of Waterloo, 2011 - ongoing
- Member: Undergraduate Curriculum Committee, School of Environment, Resources and Sustainability, University of Waterloo, 2010 - 2013
- Recruitment Open Houses, new student Welcome Weekends, Meet-the-Prof events, convocations

4.2. REVIEWS

4.2.1. Scholarly Article Reviewer: Journal of Business Research; Journal of Environmental Planning and Management; Journal of Business Research; Journal of Sustainable Tourism; International Journal of Water; Society and Natural Resources; Journal of Urban Sustainable Development; Alternatives (water issue); Journal of Environmental Planning Education and Research; International Journal of Water; Journal of Environmental Management; Environmental Management

4.2.2. Research Funding and Scholarship applications: External Grant Reviewer: SSHRC Connection Grant, 2012; External Scholarship Reviewer: Shastri Indo-Canadian Institute, 2009; 2010; Walter and Duncan Gordon Foundation “Water Fellowship” application proposals, 2007; 2008

4.3. COMMUNITY SERVICE

4.3.1. *Community Representative*

- Community representative (academic) to the Region of Waterloo's Urban Biosolids Master Plan Committee, 2016 – ongoing
- Community representative (academic) to the Region of Waterloo's Water Efficiency Advisory Committee (WEAC), 2016 – ongoing

4.3.2. *Research Advisory*

- “Save our Water” campaign in Fergus-Elora organizing against Nestle water taking permit in the community, 2015
- “Friends of Elora Water” on research perspective based on community activism against bottled water company and water extraction, 2015
- Grand River Conservation Authority (Etienne): perspectives on bottled water extraction and community activism, 2015
- High River Community Group (Fowler): perspective based on ‘water efficient residential builders’ research, 2014
- CGIAR Research program on climate change, agriculture and food security, Kenya office (water efficiency and irrigation issues), 2012
- Great Lakes United – knowledge management in water sector, 2012
- Policy and Priorities Directorate, Infrastructure Canada, 2011
- World Wildlife Foundation, water program, 2011
- UN Foundation (Washington, DC) gender, water-sanitation, developing world context, 2011
- Ministry of Environment on Water Opportunities Act speech, 2010

4.3.3. *Media Commentary*

- February 2018: coverage of the Cote and Wolfe (2017) article on terror management theory and bottled water. One-week impact numbers: <https://impact.meltwater.com/reports/v35TEIL8TakP> and coverage online, print, radio for example, CBC Marketplace (radio); CTV (video); Kitchener-Waterloo Record (print) <https://www.therecord.com/news-story/8105847-bottled-water-ads-tap-into-human-desire-for-immortality-uw-study/>; and various online sites such as
 - Motherboard: https://motherboard.vice.com/en_us/article/xw58dd/how-advertising-convinces-us-to-buy-bottled-water-nestle-evian;
 - Science Daily: https://www.sciencedaily.com/releases/2018/02/180201085749.htm?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+sciencedaily%2Fearth_climate%2Fwater+%28Water+Conservation+News+--+ScienceDaily%29 and
 - Research2Reality: <https://research2reality.com/science-society/the-fountain-of-youth-in-a-plastic-bottle/?hilite=Sarah+Wolfe>
- Canadian Broadcasting Corporation, Sept and Oct 2015 x 2 interviews