

Fereidoun Rezanezhad

Research Assistant Professor
Environmental Physics, aquatic-terrestrial biogeochemistry & Ecohydrology
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Education

- **PhD**, Environmental Physics, Institute of Environmental Physics, University of Heidelberg, Germany (2007)
- **MSc**, Physics, University of Sistan and Baluchestan, Zahedan, Iran (2000)
- **BSc**, Physics, University of Tabriz, Iran (1998)

Appointments

- **Research Assistant Professor (Full-time Faculty)**, Department of Earth and Environmental Science, University of Waterloo, Canada, (May 2013- present)
- **Research Associate**, Ecohydrology Research Group, Department of Earth and Environmental Science, University of Waterloo, Canada, (July 2011- April 2013)
- **Instructor (Part-time Faculty)**, Wilfrid Laurier University, Department of Geography and Environmental Studies, Waterloo, Canada, (January 2011- present)
- **Post-doctoral Fellow**, Wetlands Hydrology Research group, Department of Geography and Environmental Management, University of Waterloo, Waterloo, Canada, (January 2009- June 2011)
- **Adjunct Research Associate**, Cold Regions Research Centre (CRRC), Department of Geography and Environmental Studies, Wilfrid Laurier University, Waterloo, Canada, (July 2009- present)
- **Post-doctoral Fellow**, Cold Regions Research Centre (CRRC), Department of Geography and Environmental Studies, Wilfrid Laurier University, Waterloo, Canada, (August 2007-June 2009)
- **Research Assistant**, Institute of Environmental Physics, University of Heidelberg, Germany. (2003-2007)

Research Interests

- Hydrogeochemical processes of aquatic-terrestrial interfaces
- Biogeochemical cycles of nutrients
- Biogeochemical reactive interfaces in soils
- Terrestrial ecosystem processes
- Groundwater-surface water interactions
- Hydrological and biogeochemical processes of peatlands and wetlands
- Seasonal freeze/thaw dynamics
- CO₂, N₂O and CH₄ production and fluxes
- Peatland carbon cycle dynamics and climatic connection
- Flow and transport in porous media (particularly in complex dual-porosity)
- HydroBioGeoPhysics: Geophysical methods to assess subsurface biogeochemical processes

Awards and Fellowships

- Mercator Fellow in Baltic TRANSCOAST research training group funded by German Research Foundation (DFG) (2015-2020)
- Suncor Energy Inc. Postdoctoral Fellowship. Fen Creation Research Project. University of Waterloo, Canada. (2009- 2011)
- IP3 Post-doctoral Fellowship, Wilfrid Laurier University, Waterloo, Canada, Cold Regions Research Centre (CRRRC), Improved Processes and Parameterisation for Prediction in Cold Regions (IP3) network funded by Canadian Foundation for Climate and Atmospheric Sciences (CFCAS). (2007- 2009)
- Outstanding Paper of the Conference for the Best Scientific Poster (2004), Eurosoil2004, Freiburg, Germany.
- DFG Ph.D. Scholarship and Research Award, University of Heidelberg, Germany, Institute of Environmental Physics. (2003-2007)

Teaching

Undergraduate Level

- Flow through porous media (Earth 359). Department of Earth and Environmental Sciences, University Waterloo. (Fall 2016)
- Hydrology (GG381), Wilfrid Laurier University, Waterloo, Department of Geography and Environmental studies. (Winter 2011, Fall 2011)
- Guest Lecturer. Flow through porous media (Earth 359). Department of Earth and Environmental Sciences, University Waterloo. (Fall 2011, Fall 2013)
- Guest Lecturer. Physical Geography (GG101). Department of Geography and Environmental studies, Wilfrid Laurier University, Waterloo. (Fall 2011, Winter 2012)
- Introduction to Physics, Payam-e-Noor University, Iran. (1999-2002, 4 Semesters)
- Introduction to Physics, Shahed University, Iran. (1999-2002, 4 Semesters)

Graduate level

- Earth691/692, Biogeochemical processes in cold regions (Special Studies). University of Waterloo, Department of Earth and Environmental Sciences. (Fall 2015)
- Earth691, Image Processing and Visualization: Applications in Environmental Sciences (Special Studies). University of Waterloo, Department of Earth and Environmental Sciences. (Fall 2014)
- Earth691, Hydro-geochemical processes of Groundwater-Surface Water Interaction (Special Studies). University of Waterloo, Department of Earth and Environmental Sciences. (Fall 2013)
- Earth691/692, Soil Biogeochemical Responses to Freezing and Thawing Cycles (Special Studies). University of Waterloo, Department of Earth and Environmental Sciences. (Winter 2013)

Reactive Transport Modeling Course

CREATE Training toward Environmentally Responsible Resource program. University of Waterloo, May 2-13, 2016. 21 participants (MSc, PhD and PDF)

CREATE Training toward Environmentally Responsible Resource program. University of Waterloo, February 17-27, 2015. 22 participants (MSc, PhD and PDF)

Supervision/Co-Supervision

Graduate Students:

Adrian Mellage, (PhD), University of Waterloo (2015-2018)
Zahra Akbarzadeh (PhD), University of Waterloo (2013-2016)
Gianna Marschmann (PhD), University of Tübingen (2015-2018)
Amanda Niederkorn (MSc), University of Waterloo (2012-2015)
Danny Oh (MSc), University of Waterloo (2015-2017)
Tatjana Milojevic (MSc), University of Waterloo (2014-2016)
Yu Xia (MSc), University of Heidelberg (2006-2007)

Undergraduate Students (Honour Thesis):

Heather Rose Townsend (BSc in Earth Science), University of Waterloo (2017)
Jiawei Pan (BSc in Earth Science), University of Waterloo (2016-2017)
Linden Fairbairn (BSc in Biology), University of Waterloo (2016-2017)
Stephanie Slowinski (BSc in Earth Science), University of Waterloo (2015-2016)
Danny Oh (BSc in Earth Science), University of Waterloo (2014-2015)
Krista Thrasher (BSc in Earth Science), University of Waterloo (2013-2014)
Tatjana Milojevic (BSc in Earth Science), University of Waterloo (2013-2014)
Eric Mcquay (BSc in Earth Science), University of Waterloo (2012-2013)
Gulia Spina (BSc in Physics), University of Heidelberg (2004)

Undergraduate Students (Co-op & Research Assistant):

Riley Mills (Fall 2016, Spring 2017; NSERC USRA), Linden Fairbairn (Winter, Spring 2016; NSERC USRA), Stephanie Slowinski (Winter, Spring 2015), Joseph Jargstorf (Winter 2014), Tatjana Milojevic (Spring 2014; NSERC USRA), Mitch Verbuyst (Fall 2013), Joseph Salerno (Spring 2013), Bo Truong Lam (Winter 2013), Meg Rashev (Spring 2012), Rachele Fischer (2012-2013), Radmila Kovac (2011, 2014; NSERC USRA)

Advisory Committee Member:

Gabriel Bacca- Cortes (PhD), University of Waterloo (2012-2016)
Behnam Bahrami (PhD), University of Mohaghegh Ardabili (2014-2017)
Kimberly Van Meter (PhD), University of Waterloo (2013-2016)
Jennifer Hansen (MSc), University of Waterloo (2012-2014)
Melisa Hollingham (MSc), University of Waterloo (2011-2013)

Postdoctoral Fellow:

Dr. Avid Banihashemi, University of Waterloo (2014-2015)

Visiting Researcher:

Christian Kleimeier (University of Rostock, Germany), (March-May, 2013)
Fei Jiang (Visiting Mitacs student, Nanjing University) (May-August 2014)

Publications

Peer-reviewed Publications

- F. Rezanezhad**, J. S. Price, W. L. Quinton, B. Lennartz, T. Milojevic, P. Van Cappellen. 2016. Structure of peat soils and implications for water storage, flow and solute transport: A review update for geochemists. *Chemical Geology*, 429, 75-84.
- F. Rezanezhad**, R.-M. Couture, R. Kovac, D. O'Connell, P. Van Cappellen. 2014. An automated fluctuating water table column system to study soil biogeochemistry under redox-dynamic conditions. *Journal of Hydrology*, 509, 245-256.

- F. Rezanezhad**, J.S. Price, J.R. Craig. 2012a. The Effects of Dual Porosity on Transport and Retardation in Peat: A Laboratory Experiment. *Canadian Journal of Soil Science*, 92: 723-732.
- F. Rezanezhad**, R. Andersen, R. Pouliot, J.S. Price, L. Rochefort, M. Graf. 2012b. How fen vegetation structure affects the transport of oil sands process-affected waters. *Wetlands*, 32 (3), 557-570.
- M.H.B. Nasser, **F. Rezanezhad**, P.R. Young. 2011. Analysis of fracture damage zone in anisotropic granitic rock using 3D X-ray CT scanning techniques. *International Journal of Fracture*, 168 (1), 1-13.
- F. Rezanezhad**, J.S. Price, L. Rochefort, R. Pouliot, R. Andersen, C. Daly. 2010. Oil sands process-affected water contamination transport through peat soils: Laboratory and greenhouse study. Conference proceeding Book, 2nd IOSTC, Editors: David Segó and Nicholas Beier, Geotechnical center and Oil Sands Tailing Research Facility, University of Alberta, pages:177-184.
- F. Rezanezhad**, W.L. Quinton, J.S. Price, D. Elrick, T. Elliot, K.R. Shook. 2010. Influence of pore size and geometry on peat unsaturated hydraulic conductivity computed from 3D computed tomography image analysis. *Hydrological Processes*, 24, 2983-2994.
- F. Rezanezhad**, W.L. Quinton, J.S. Price, D. Elrick, T. Elliot and R. Heck. 2009. Examining the effect of pore size distribution and shape on flow through unsaturated peat using computed tomography. *Hydrol. Earth Syst. Sci.*, 13, 1993-2002, 2009.
- W.L. Quinton, T. Elliot, J.S. Price, **F. Rezanezhad**, and R. Heck. 2009. Measuring physical and hydraulic properties of peat from X-ray tomography. *Geoderma*, 153, 269-277.
- F. Rezanezhad**, H.-J. Vogel, K. Roth. 2006. Experimental study of fingered flow through initially dry sand. *Hydrology and Earth System Sciences*, 3, 2595-2620.
- H. Samavat, M. R. D. Seaward, S. M. R. Aghamiri, **F. Rezanezhad**. 2006. Radionuclide concentrations in the diet of residents in a high level natural radiation area in Iran. *Radiat. Environ. Biophys.* 45:301–306.
- M. Ghiassi-Nejad, M.M. Beitollahi, M. Asefi and **F. Rezanezhad**. 2003. Exposure to ²²⁶Ra from consumption of vegetables in the high level natural radiation area of Ramsar- Iran. *Journal of Environmental Radioactivity*, 66(3): 215-225.

Book Chapters

- C. Daly, J.S. Price, L. Rochefort, **F. Rezanezhad**, R. Pouliot, M.D. Graf, and J. Hornung. Initiatives in oil sand reclamation: Considerations for building a fen peatland in a post-mined oil sands landscape. Cambridge University Press, ISBN:9781107015715, 2012.
- P. Bastian, O. Ippisch, **F. Rezanezhad**, H.J. Vogel and K. Roth: Numerical Simulation and Experimental Studies of Unsaturated water Flow in Heterogeneous Systems. In R. Rannacher *et al.*, editor, Reactive Flows, Diffusion and Transport. Published in *SFB Project Book*, Springer, Berlin-Heidelberg, 2005.

Reports

- Interim Project Report, 2010. Fen creation in the Athabasca oil sands region, Suncor Energy Inc. 2010. 78 pages.
- Final Project Report, 2011. Fen creation in the Athabasca oil sands region, Suncor Energy Inc., 2011. 178 pages.

Conference Abstracts and Presentations

- S. Natali, H. Genet, B. Abbott, M. Björkman, G. Celis, C. Christiansen, R. Commane, E. Cooper, C. Czimczik, S. Davydov, A. Davydova, B. Elberling, E. Euskirchen, T. Friborg, M. Goeckede, E. Jafarov, J. Jastrow, Y. Kim, M. Lara, M. Loranty, K. Larsen, S. Ludwig, M. Lupascu, A. Malhotra, J. McFarland, W. Oechel, **F. Rezanezhad**, D. Risk, K. Schaefer, A. Selbmann, P. Semenchuk, P. Sullivan, C. Treat, M. Waldrop, Q. Zhuang, D. Zona. A Pan-Arctic Synthesis of Cold Season Carbon Emissions. American Geophysical Union Fall Annual Meeting, San Francisco, CA, USA, 12-16 December, 2016. **(Invited Talk)**
- F. Rezanezhad**, T. Milojevic, D. Oh, C.T. Parsons, C. M. Smeaton and P. Van Cappellen. Freeze-Thaw Cycles and Soil Biogeochemistry: Implications for Greenhouse Gas emission. American Geophysical Union Fall Annual Meeting, San Francisco, CA, USA, 12-16 December, 2016. **(Invited Talk)**
- G. J. Pronk, A. Mellage, T. Milojevic, **F. Rezanezhad**, P. Van Cappellen. Soil Organic Matter Development during Water Table Fluctuations in an Artificial Soil Column Incubation. Workshop "SOMmic – Microbial Contribution and Impact on Soil Organic Matter, Structure and Genesis". Leipzig, Germany, November 9-11, 2016.
- F. Rezanezhad**, T. Milojevic, A. Mellage, G. J. Pronk, P. Van Cappellen. Groundwater table fluctuation zone: A hot-spot for biogeochemical activities. 54th Meeting of the University Consortium for Field Focused Groundwater Research, Colorado State University, Fort Collins Colorado, October 12-13 2016.
- X. R. Ding, **F. Rezanezhad**, P. Van Cappellen, E. Passeur. Effect of Freeze Thaw Cycles on Nutrient Removal in Stormwater Bioretention Cells. EcoSummit 2016. August 29-September 1, 2016, Montpellier, France.
- F. Rezanezhad**, J. S. Price, W. L. Quinton, B. Lennartz, T. Milojevic, P. Van Cappellen. Structure of peatland soils and implications for water storage, flow and solute transport. EcoSummit 2016. August 29-September 1, 2016, Montpellier, France.
- A. Mellage, G. J. Pronk, T. Milojevic, **F. Rezanezhad**, A.L. Endres, E.A. Atekwana, A. Furman, P. Van Cappellen. Non-invasive geophysical monitoring of subsurface biogeochemical processes under redox oscillating conditions. IP2016/4th International Workshop on Induced Polarization. 6-8 June, 2016, Aarhus, Denmark.
- B. Gharedaghloo, **F. Rezanezhad**, J. S. Price. Micro-scale characterization of peat hydraulic properties using pore network modeling and X-ray computed tomography. Canadian Geophysical Union (CGU) 2016 Annual Meeting, Fredericton, New Brunswick, Canada, May 29-June 2, 2016 (Campbell Scientific Award for Best Student Poster in Hydrology)
- A. Mellage, **F. Rezanezhad**, P. Van Cappellen. Hydrobiogeophysics. 2016 Canada Excellence Research Chairs Summit. April 11-12, 2016. University of Ottawa. Ottawa, Canada.
- S. Natali, A. Selbmann, B.W. Abbott, M. Björkman, C. Czimczik, S. Davydov, A. Davydova, B. Elberling, H. Genet, M. Goeckede, E. Jafarov, J. Jastrow, Y. Kim, M. Lara, M. Lupascu, **F. Rezanezhad**, D. Risk. A Pan-Arctic Synthesis of Carbon Emissions During the Nongrowing Season. 11th International Conference on Permafrost (ICOP 2016), Potsdam, Germany, 20-24 June 2016.
- T. Maavara, S. Slowinski, **F. Rezanezhad**, P. Van Cappellen. Nutrient Stoichiometry in the Grand River Watershed: The Role of Groundwater Silicon. 2016 IAGLR Annual Meeting, June 6-10, 2016, Guelph, Canada.
- F. Rezanezhad**, A. Niederkorn, C. T. Parsons and P. Van Cappellen. Seasonal biogeochemical processing of nutrients in a groundwater-fed stream. 2016 IAGLR Annual Meeting, June 6-10, 2016, Guelph, Canada.

- G. J. Pronk, A. Mellage, T. Milojevic, **F. Rezanezhad**, P. Van Cappellen. Linking Water Table Dynamics to Carbon Cycling Using an Artificial Soil Column Incubation. European Geosciences Union General Assembly 2016, 17–22 April 2016, Vienna, Austria.
- X. R. Ding, **F. Rezanezhad**, P. Van Cappellen, E. Passeport. Effect of Freeze Thaw Cycles on Nutrient Removal in Stormwater Bioretention Cells. 5th Annual TRIECA Conference, March 23 - 24, 2016, Brampton, Ontario, Canada.
- Z. Akbarzadeh**, A. Laverman, M. Raimonet, **F. Rezanezhad** and P. Van Cappellen. Reactive transport modeling of nitrogen in Seine River sediments. The 2016 Ocean Sciences Meeting, 21-26 February 2016, New Orleans.
- X. R. Ding, **F. Rezanezhad**, P. Van Cappellen, E. Passeport. Effect of Freeze Thaw Cycles on Nutrient Removal in Stormwater Bioretention Cells. Canadian Association on Water Quality (CAWQ), February 23-25, 2016, Ryerson University, Toronto, Ontario, Canada.
- S. Slowinski, T. Maavara, **F. Rezanezhad**, P. Van Cappellen. Dynamic nutrient limitation in a major tributary to Eastern Lake Erie: the role of groundwater silicon. World Wetlands day Symposium, Waterloo, Canada, February 2, 2016. (Received the Best Student Poster)
- A. Mellage, G. J. Pronk, T. Milojevic, **F. Rezanezhad** and P. Van Cappellen. Non-Invasive geophysical monitoring of subsurface biogeochemical processes under redox oscillating conditions. 2016 Canadian Geophysical Union- Eastern Section Student Conference. February, 6, 2016. Waterloo, Canada.
- T. Milojevic, **F. Rezanezhad**, C.T. Parsons, C. M. Smeaton and P. Van Cappellen. Soil oxygen dynamics: Implications for dynamic hydrological and climatic drivers. 2016 Canadian Geophysical Union- Eastern Section Student Conference. February, 6, 2016. Waterloo, Canada.
- F. Rezanezhad**, A. Niederkorn, C. T. Parsons and P. Van Cappellen. Stream-subsurface nutrient dynamics in a groundwater-fed stream. American Geophysical Union Fall Annual Meeting, San Francisco, CA, USA, 14-18 December, 2015.
- T. Milojevic, **F. Rezanezhad**, C.T. Parsons, C. M. Smeaton and P. Van Cappellen. Impact of Freezing and Thawing on Soil Oxygen Dynamics and Nutrient Fluxes. American Geophysical Union Fall Annual Meeting, San Francisco, CA, USA, 14-18 December, 2015.
- S. Slowinski, T. Maavara, **F. Rezanezhad**, P. Van Cappellen. Dynamic nutrient limitation in a major tributary to Eastern Lake Erie: the role of groundwater silicon. American Geophysical Union Fall Annual Meeting, San Francisco, CA, USA, 14-18 December, 2015.
- T. Milojevic, **F. Rezanezhad**, C.T. Parsons, C. M. Smeaton and P. Van Cappellen. Effect of freeze-thaw cycles on soil oxygen dynamics. IAH-CNC 2015 Waterloo, October 27-30, 2015.
- D. Hyumin Oh, A. Banihashemi, R. Kovac, **F. Rezanezhad**, C. M. Smeaton, C. Robinson and P. Van Cappellen. The influence of water table fluctuation on nutrient dynamics in sand from a freshwater beach environment. IAH-CNC 2015 Waterloo, October 27-30, 2015.
- B. M. Bajracharya, C. Parsons, C. Smeaton, **F. Rezanezhad**, O. Cripka, P. Van Cappellen. Do Fluctuating Redox Conditions Increase Rates of Soil Organic Matter Degradation. 5th International Symposium on Soil Organic Matter. September 20-24 2015, Göttingen, Germany.
- A. Banihashemi, R. Kovac, **F. Rezanezhad**, D. Hyumin Oh, C. M. Smeaton, C. Robinson and P. Van Cappellen. Interaction between the microbial processes and nutrient transformations in beach sediments under dynamic flow regimes. Soil interfaces for sustainable development (ISMOM 2015), 5-10 July 2015. Montreal, Canada.
- F. Rezanezhad**. Biogeochemistry of Redox-dynamic Environments. HydroBioGeoPhysics Workshop, June 1-2, 2015. University of Waterloo, Waterloo, Canada.

- F. Rezanezhad**, C.T. Parsons, C. M. Smeaton, R. Kovac, T. Milojevic and P. Van Cappellen. Impact of soil freezing and thawing dynamics on greenhouse gas emission and nutrient fluxes. 2015 Joint Assembly meeting, 3-7 May 2015, Montreal, Canada. **(Invited Talk)**
- C.T. Parsons, **F. Rezanezhad**, D.O'Connell and P. Van Cappellen. Temporal Redox Fluctuations in Sediments: Pulsed Phosphorus Loadings in Freshwater Marsh Systems? 2015 Joint Assembly meeting, 3-7 May 2015, Montreal, Canada.
- T. Milojevic, **F. Rezanezhad** and P. Van Cappellen. Soil Oxygen Dynamics under Freeze-Thaw Cycles. 2015 Joint Assembly meeting, 3-7 May 2015, Montreal.
- A. Banihashemi, R. Kovac, **F. Rezanezhad**, D. Hyumin Oh, C. M. Smeaton, M. Mesquita, C. Robinson and P. Van Cappellen. Effect of Water Table Fluctuations on the Fate and Distribution of *Escherichia coli* in a Freshwater Beach Environment: An Experimental Study. 2015 Joint Assembly meeting, 3-7 May 2015, Montreal, Canada.
- F. Rezanezhad**, C.T. Parsons, C. M. Smeaton, R. Kovac, T. Milojevic and P. Van Cappellen. Soil biogeochemical dynamics under freezing and thawing cycles. 2015 IAGLR Annual Meeting, May 25-29, 2015, Burlington, Vermont, USA.
- C.T. Parsons, **F. Rezanezhad**, T. Maavara, D. O'Connell and P. Van Cappellen. Temporal Redox Fluctuations in Sediments: Pulsed Phosphorus Loadings in Freshwater Marsh Systems? 2015 IAGLR Annual Meeting, May 25-29, 2015, Burlington, Vermont, USA.
- F. Rezanezhad**, C. Parsons, C. Smeaton, P. Van Cappellen. Response of Soil Biogeochemistry to Freeze-thaw Cycles: Impacts on Greenhouse Gas Emission and Nutrient Fluxes. American Geophysical Union Fall Annual Meeting, AGU B13B-0183, San Francisco, CA, USA, 15-19 December, 2014.
- A. Banihashemi, **F. Rezanezhad**, C. Smeaton, M. Mesquita, R. Kovac, C. Robinson, P. Van Cappellen. *Escherichia coli* survival in Great Lakes beaches: effect of variable water saturation. 14th Annual Great Lakes Beach Association Conference, Toronto, Canada, 12-14 November, 2014.
- F. Rezanezhad**, P. Van Cappellen, C. Robinson, C. Smeaton, Gabriel Bacca-Cortes, S. Malott, D. O'Carroll. Groundwater quality at beaches of the Great Lakes: Characterization and processes. 2014 Geological Society of America Annual Meeting, Vancouver, British Columbia. October 19-22, 2014, GSA. Vol. 46, No. 6, p.205.
- C. Parsons, **F. Rezanezhad**, D. O'Connell, P. Van Cappellen. Mechanisms of Phosphorus Internal Loading in Coote's Paradise-West Pond. Hamilton Harbour Remedial Action Plan Technical Committee. Canadian Centre for Inland Waters, Burlington, Ontario Canada, 1st October, 2014.
- C. Parsons, **F. Rezanezhad**, D. O'Connell, P. Van Cappellen. Eutrophication in Coote's Paradise: Mechanisms and Temporal Dynamics of Nutrient Cycling (C, N, P, Si). Ecological Modeling Lab-University of Toronto, Scarborough. Ontario (Canada). September 26th 2014.
- F. Rezanezhad**, P. Van Cappellen. Peat: A Complex Soil with Dual-Porosity Media. Complex Soil Systems Conference, Berkeley, California. September 3-5, 2014.
- A. Niederkorn**, **F. Rezanezhad**, P. Van Cappellen. Stream-riparian-hyporheic connections. 2014 Farvolden Lecture Symposium, October 24, 2014, Waterloo, Canada. (Received the Best Student Poster).
- F. Rezanezhad**, C. Parsons, R-M. Couture, R. Kovac, D. W. O'Connell, P. Van Cappellen. Sulfur Cycling in Wetland Peat Soils. 8th International Symposium on Ecosystem Behaviour. BIOGEMON 2014 July 13-17, 2014. University of Bayreuth, Germany.
- C. Parsons, **F. Rezanezhad**, P. Van Cappellen. Sediment Nutrient Dynamics Under Redox Oscillating Conditions (Coote's Paradise, Ontario). 57th Annual Conference on Great Lakes Research, May 26-30, 2014, Hamilton, Canada.

- F. Rezanezhad**, C. Parsons, R-M. Couture, R. Kovac, D. W. O'Connell, P. Van Cappellen. Sulfur cycling in wetland peat soil subject to water table fluctuation. Canadian Geophysical Union (CGU) 2014 Annual Meeting in Banff, Alberta, May 4-8, 2014.
- P. Van Cappellen, **F. Rezanezhad**, K. Van Meter and N. Basu. Soil Respiration in Wetlands – A Biogeochemical Perspective. Canadian Geophysical Union (CGU) 2014 Annual Meeting in Banff, Alberta, May 4-8, 2014.
- A. Niederkorn, **F. Rezanezhad**, P. Van Cappellen. Stream-riparian-hyporheic connections. 57th Annual Conference on Great Lakes Research, May 26-30, 2014, Hamilton, Canada.
- F. Rezanezhad**, P. Van Cappellen, C. Robinson, H. Dürr, C. Smeaton, M. Mesquita, K. Thrasher, G. Bacca-Cortes. Groundwater Quality at Beaches of the Great Lakes. 57th Annual Conference on Great Lakes Research, May 26-30, 2014, Hamilton, Canada.
- Mesquita M.M.F., R. Kovac, **F. Rezanezhad**, P. Van Cappellen. DNA fingerprinting of sand bacterial populations from four Great Lake beaches by PCR-DGGE. 57th Annual Conference on Great Lakes Research, May 26-30, 2014, Hamilton, Canada.
- C. Parsons, **F. Rezanezhad**, P. Van Cappellen. Sediment Nutrient Dynamics Under Redox-Oscillating Conditions. Joint Aquatic Sciences Meeting (JASM), 18-23, May 2014, Portland.
- F. Rezanezhad**, P. Van Cappellen. Carbon and nutrient cycling: Reactive interfaces in the landscape. 4th Annual Meeting of the Canada Excellence Research Chairs. April 15-16, 2014. Université Laval. Quebec City, Canada.
- T. Milojevic, **F. Rezanezhad**, P. Van Cappellen. The Role of Soil Organic Carbon on Denitrification Process. World Water Day Symposium, March 20, 2014, University of Waterloo.
- K. Thrasher, **F. Rezanezhad**, C. Smeaton, G. F. Bacca-Cortes, C. Robinson, P. Van Cappellen. Solid-phase Geochemical Investigation of Groundwater-Lake Interactions at Beaches of the Great Lakes. World Water Day Symposium, March 20, 2014, University of Waterloo.
- F. Rezanezhad**, P. Van Cappellen. Effects of Hydrological Conditions on the Biogeochemical Processes. Cold Regions Research Symposium March, 6, 2014. Wilfrid Laurier University.
- A. Niederkorn, **F. Rezanezhad**, J. Salerno, P. Van Cappellen. The influence of riparian and hyporheic zones on the hydrology and biogeochemical responses in a stream. GSA Annual Meeting, Denver, 27-30 October 2013.
- F. Rezanezhad**, P. Van Cappellen, C. Robinson, H. H. Dürr, C. Smeaton, G. F. Bacca-Cortes, J. Salerno, K. Thrasher. Biogeochemical investigation of groundwater – lake interactions at beaches of the Great Lakes: First results. 13th annual Great Lakes Beach Association Conference, 15-17 October 2013, Sheboygan, WI.
- C. Robinson, T. Edge, P. Van Cappellen, D. O'Carroll, **F. Rezanezhad**, Z. Staley, L. Vogel, S. Malott, G. F. Bacca-Cortes, J. Salerno, K. Thrasher. Characterization of the groundwater, nutrient and microbial conditions at four Great Lakes beaches. 13th annual Great Lakes Beach Association Conference, 15-17 October 2013, Sheboygan, WI.
- F. Rezanezhad**, R-M. Couture, C. Parsons, R. Kovac, D. O'Connell, P. Van Cappellen. Dependence of Sulfur Cycling and Mobility in Peat Soil on the Water Table Regime. *Mineralogical Magazine*, 77(5) 2054, Goldschmidt, 25-30 August, 2013, Florence, Italy.
- M. Holingham, R-M. Couture, **F. Rezanezhad**, P. Van Cappellen. Influence of different organic carbon substrates on denitrification rates in riparian sediment. *Mineralogical Magazine*, 77(5) 1312, Goldschmidt conference, 25-30 August, 2013, Florence, Italy.
- F. Rezanezhad**, R-M. Couture, R. Kovac, D. O'Connell, C. Parsons, P. Van Cappellen. An automated fluctuating water table column system to study soil biogeochemistry under redox-dynamic conditions. 4th International Multidisciplinary Conference on Hydrology and Ecology, HydroEco 2013, Rennes, France, 13-16 May 2013.

- F. Rezanezhad**, R-M. Couture, R. Kovac, D. O'Connell, C. Parsons, P. Van Cappellen. Water table dynamics and soil biogeochemistry: An experimental study using an automated fluctuating water table column system. Water Institute Research Symposium, May 2nd 2013. University of Waterloo.
- F. Rezanezhad**, A. Niederkorn, H. Durr, P. Van Cappellen. Biogeochemical and hydrological controls on fate and transport of nutrients at the watershed scale. 3rd *rare* Research Forum, Cambridge, April 27th, 2013.
- A. Niederkorn, **F. Rezanezhad**, P. Van Cappellen. Influence of riparian and hyporheic zones on stream hydrology and nutrient biogeochemistry. World Wetlands Day Symposium, February 2nd, 2013, University of Waterloo.
- F. Rezanezhad**, R-M. Couture, D. O'Connell, P. Van Cappellen. Effects of fluctuating water table on redox dynamics and gas emissions using a novel automated laboratory column system. IAH 2012 Congress, Niagara Falls, September 16-21, 2012.
- F. Rezanezhad**, R-M. Couture, D. O'Connell, R. Kovac, P. Van Cappellen. A novel automated fluctuating water table column system to study redox oscillations in saturated and unsaturated media. Geophysical Research Abstracts, Vol. 14, EGU2012-3287-1, EGU General Assembly. 22-27 April, 2012, Vienna, Austria.
- R. Kovac, **F. Rezanezhad**, R-M. Couture, P. Van Cappellen. The Influence of Water Table Fluctuation on CO₂ Emission and Redox Oscillations: A Laboratory Column Experiment. Ganougocon Conference. 3-5 February, 2012, Gananoque Conference, Ontario, Canada.
- F. Rezanezhad**, J.S. Price, L.Rochefort, and R. Pouliot. Transport of Oil Sands Process-affected Water through Peat Microcosms, and its Toxicity to Fen Plants. 37th annual meeting of the Canadian Geophysical Union (CGU), Banff, Canada, 15-18 May, 2011.
- F. Rezanezhad**, J.S.Price, L.Rochefort, R.Pouliot, R.Andersen, C.Daly. Response of Fen Plants on Peat Contaminated with Oil Sands Process-affected Waters. Annual Canadian Water Network (CWN) Oil Sands Research Meeting. Centre for Environmental and Information Technology, Waterloo. 5th January, 2011.
- C.A. Daly, J.S. Price, L.Rochefort, M. Graf, and **F. Rezanezhad**. 2010. Innovative Wetland Reclamation Design: The Suncor Fen and Pond 1 March. 103rd Annual Air & Waste Management Association Conference, Calgary, Alberta, Canada. June 22-25, 2010.
- C.A. Daly, J.Price, L.Rochefort, **F.Rezanezhad**, M.Graf, B.Russell. Innovative Wetland Reclamation Design Case Studies: The Suncor Pilot Fen and Pond 1 Marsh. Reclamation and Restoration of Boreal Peatland and Forest Ecosystems: Toward a Sustainable Future. 25-27 March, 2010. Edmonton, Alberta, Canada.
- J.S. Price, **F.Rezanezhad**, L.Rochefort. Fen Shui: Mastering Heaven and Earth to Create Peatlands. 16th Peatland Ecology Research Group's Workshop, February 16th, 2010, University Laval, Quebec City.
- F. Rezanezhad**, J.S.Price, M.Graf, L.Rochefort, R.Andersen, R. Pouliot, J. Barker, J. Headley. Contaminant Transport through Unsaturated Fen Peat: How Does Fen Vegetation React to a Realistic Contamination Scenario? Reclamation and Restoration of Boreal Peatland and Forest Ecosystems: Toward a Sustainable Future. 25-27 March, 2010. Edmonton, Canada.
- F. Rezanezhad**, M.Graf, R.Andersen, J.S.Price, L.Rochefort, J. Barker, J. Headley. Contaminant transport through unsaturated fen peat: Laboratory and greenhouse experiments for Suncor fen creation program in the Athabasca oil sands region. 16th Peatland Ecology Research Group's Workshop, February 16th, 2010, University Laval, Quebec City.
- F. Rezanezhad**, M.Graf, R.Andersen, J.S.Price, L.Rochefort, J.Barker, J. Headley. Contaminant Transport through Unsaturated Fen Peat: Laboratory and Greenhouse Experiments for Fen Creation. Annual Canadian Water Network (CWN) Oil Sands Research Meeting. Centre for Environmental and Information Technology, Waterloo. 5th January, 2010.

- C.A. Daly, J.S.Price, L.Rochefort, **F.Rezanezhad**, M.Graf. Can Fen Wetlands be Re-established in the Athabasca Oil Sands Region of Northern, Alberta, Canada? Human-Environment Interactions: Understanding Change in Dynamic Systems. SETAC 2009, New Orleans, USA, 19-23 November, 2009.
- J.S. Price, L.Rochefort, **F.Rezanezhad**, M. Graf. Fen creation in the oil sands of Northern Alberta. Suncor Fen Workshop, 9-10th November 2009.
- J.S. Price, **F. Rezanezhad**, M.Graf, L.Rochefort. Solute movement through unsaturated fen peat: Lab and greenhouse experiments for transport study of contaminants from Athabasca oil sands tailing pond water. Presented by **F. Rezanezhad**. Fall Annual Meeting, American Geophysical Union, AGUH31A-0761, San Francisco, CA, USA, 14-18 December, 2009.
- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot, K.R.Shook: Examining the Influence of Pore Size Distribution and Geometry on Flow through Unsaturated Peat using 3D Micro-CT Scanning. American Geophysical Union Fall Annual Meeting, AGUH11H-01, San Francisco, CA, USA, 14-18 December, 2009.
- M. Graf, J.Price, L.Rochefort and **F.Rezanezhad**. 2009. Creating peatlands in the oil sands region of Alberta: Challenges and opportunities. Paper presented in the 34th Annual Meeting and Conference of the Canadian Land Reclamation Association, Quebec City, Québec.
- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot, K.R.Shook: Measurement and Analysis of Physical and Hydraulic Properties of Unsaturated Peat Using 3D Micro- CT Scanning. AGU-CGU 2009 Joint Assembly, Toronto, May 24th-27th 2009.
- W.L. Quinton, M.Hayashi, L.Chasmer, **F.Rezanezhad**, Q. Che, A.Verma and A. Kenward. Oct 2009. Basin runoff prediction in the context of degrading permafrost. IP3 4th Annual Meeting and Workshop (with WC2N): Lake Louise, AB.
- M.H.B. Nasser, **F.Rezanezhad**, P.R.Young: 3D Observation and Evaluation of Induced Damaged Zones in Anisotropic Media. AGU-CGU 2009 Joint Assembly, Toronto, May 24-27th 2009.
- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot, K.R.Shook: Influence of pore size and geometry on peat unsaturated hydraulic conductivity measured from 3D computed tomography images. Ken Hewitt Symposium on Cold Regions and Water Science Research, March 2-3 2009, Wilfrid Laurier University.
- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot, K.R.Shook: Influence of Pore Size and Geometry on Peat Unsaturated Hydraulic Conductivity. 3rd Annual IP3 Meeting and Workshop, Whitehorse, Yukon, 12-15 Nov, 2008.
- M.H.B. Nasser, R. P.Young R.P, **F.Rezanezhad**, S.H.Cho. Application of 3D X-ray CT scanning techniques to evaluate fracture damage zone in anisotropic granitic rock, 3rd US-Canada rock mechanics symposium, Toronto, Canada, May 9th-14th 2009. Paper No. 4050, M. Diederichs and G. Grasselli, Eds.
- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot and R. Heck: Physical and Hydraulic Properties of Peat Soil Using X-ray Computed Tomography and Image Analysis. 3rd Annual IP3 Meeting and Workshop, Whitehorse, Yukon, 12-15 Nov, 2008.
- W.L. Quinton, S.Carey, M.Hayashi, N.Wright, E.D.Soulis, R.Heck, T.Elliot, L.Chasmer, R.Schincariol, R. Thorne, **F. Rezanezhad**, Y. Zhang, 2008. Advances in Processes and Parameterisation Studies at Scotty Creek. 3rd Annual IP3 Meeting and Workshop, Whitehorse, Yukon, 12-15 Nov, 2008.
- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot and R.Heck: Indirect Measurement of Unsaturated Hydraulic Conductivity through Peat Soils Using Pore Distribution Obtained by X-Ray Computed Tomography. 34th Annual meeting of the Canadian Geophysical Union, Banff, Canada, 11-14 May, 2008.

- F. Rezanezhad**, W.L.Quinton, J.S.Price, D.Elrick, T.Elliot and R.Heck: Physical and Hydraulic Properties of Peat Soil Using X-ray Computed Tomography and Image Analysis. European Geosceince Union. Geophysical Research Abstracts, Vol. 10, EGU2008-A-00751, SRef-ID: 1607-7962/gra/EGU2008-A-00751, EGU General Assembly, Vienna.
- F. Rezanezhad**, K.Roth: Unstable Fingering Flow Visualization and Quantification Using Light Transmission Method. Geophysical Research Abstracts, Vol. 10, EGU2008-A-01591, SRef-ID: 1607-7962/gra/EGU2008-A-01591, EGU General Assembly, Vienna.
- F. Rezanezhad**, B.Quinton: Experimental Study of Physical and Hydraulic Properties of Peat Soil Using X-ray Tomography Imagery. 2nd Annual Northern Research Day. Cold Regions Research Centre, Wilfrid Laurier University, Waterloo, Canada, 6th February, 2008.
- F. Rezanezhad**, B.Quinton: 3D Quantification of the Peat Soil Properties Using X-ray Computed Tomography and Image Analysis Techniques. 2nd Annual Northern Research Day. Cold Regions Research Centre, Wilfrid Laurier University, Waterloo, Canada, 6th February, 2008.
- W.L. Quinton, M. Hayashi, N.Wright, E.D.Soulis, R.Heck, T.Elliot, L.Chasmer, R.Bemrose, R. Nagare, R. Schincariol, Y. Zhang, S. Carey, T. Myers, **F. Rezanezhad**, P. Whittington, 2007. Advances in Processes and Parameterisation Studies at Scotty Creek. 2nd Annual IP3 Meeting and Workshop, Cold Regions Research Centre, WLU, 8-10 Nov.
- F. Rezanezhad**, B.Quinton, T.Elliot, R.Heck, J.S.Price: 3D Computed Tomography for Measurements of Pores and Hydraulic Properties through Peat Soils. 2nd Annual IP3 Meeting and Workshop, Cold Regions Research Centre, WLU, 8-10 November, 2007.
- F. Rezanezhad**, K.Roth: Visualization and Quantification of Fingering Flow Using Light Transmission Method. Fall Annual Meeting, American Geophysical Union, San Francisco, 10-14 December, 2007.
- K. Roth, H.-J.Vogel, **F.Rezanezhad**: Scaling of Preferential Flow and Transport Processes in Soils. International Workshop on preferential flow and transport processes in soil conference. 4-9 November, 2006, Centro Stefano Franscini, Monte Verita Ascona, Switzerland.
- F. Rezanezhad**, H.-J.Vogel, K.Roth: Unstable Fingering Flow in Unsaturated Homogeneous Coarse-textured Sand. International Workshop on preferential flow and transport processes in soil conference. 4-9 Nov.2006, Centro Stefano Franscini, Monte Verita Ascona, Switzerland.
- F. Rezanezhad**, H.-J.Vogel, K.Roth: Unstable Gravity-driven Fingers Development and Persistence in Unsaturated Porous Media: Experimental Verification. International Workshop on preferential flow and transport processes in soil conference. 4-9 November 2006, Centro Stefano Franscini, Monte Verita Ascona, Switzerland.
- F. Rezanezhad**, H.-J.Vogel, K.Roth: Unstable Fingering Flow during Infiltration in Homogenous Sands. EGU06-A-01229, HS33-1WE4P-0325; P.339. Geophysical Research Abstract. European Geosceince Union. EGU, Vienna, Austria, 2006.
- F. Rezanezhad**, N.Smolyar, H.-J.Vogel, K.Roth: Unstable Gravity Water Fingering in Homogeneous Unsaturated Porous Media. Deutsche Physikalische Gesellschaft Abstract, DPG, P.51-52, Heidelberg, Germany, 2006.
- F. Rezanezhad**, G.Spina, H.-J.Vogel, K.Roth: Instabilities of wetting fronts during infiltration into Dry Porous Media. EGU05-A-02334;P.178. Geophysical Research Abstract. European Geosceince Union. EGU, Vienna, Austria, 2005.
- F. Rezanezhad**, H.-J.Vogel, K.Roth: Fingering Flow Through Initially Dry Porous Media. Eurosoil04-A, Soil Properties and Processes; P.276, Eurosoil 2004, Freiburg, Germany (Best Student Poster)

- F. Rezanezhad**, H.-J.Vogel, K.Roth: Experimental Study of Water Flow Through Porous Hele-Shaw Cell. EGU04-A-02245;HS25-ITU4P-0244;P.133. Geophysical Research Abstract. European Geoscience Union. EGU, Nice, France, 2004.
- P. Bastian, V.Reichenberger, **F.Rezanezhad**, K.Roth: Higher-order Methods for Multiphase flow in Porous Media.SFB 359 Colloquium 2004, 29 Sep-1 Oct 2004, Heidelberg, Germany.
- P. Bastian, K.Roth, **F.Rezanezhad**: Transport in Soils. SFB 359 Colloquium 2004, 29 Sep-1 Oct 2004, Heidelberg, Germany.
- F. Rezanezhad**, H.-J.Vogel, K.Roth: Fingered Flow Through Initially Dry Porous Media. SFB 359 Colloquium 2004,29 Sep-1 Oct 2004, Heidelberg, Germany.
- F. Rezanezhad**: Determination of Concentration Ratio for Radium-226 from Soil to Vegetables and Effective Dose due to Consumption of Vegetables in a High Level Natural Radiation Area of Ramsar-Iran. 3rd International Conference on the Effects of Low and Very Low Doses of Ionizing Radiation on Human Health. 21-23th October 2003, Tehran, Iran.
- M. Ghiassi-Nejad, M.M.Beitollahi, M.Asefi and **F.Rezanezhad**: Exposure to ^{226}Ra from Consumption of Vegetables in the High Level Natural Radiation Area of Ramsar, Iran. International Conference on Radiation and It's Role in Diagnosis and Treatment.18-20th October 2000, Tehran, Iran.
- M. Ghiassi-Nejad, M.M.Beitollahi, M.Asefi and **F.Rezanezhad**: ^{226}Ra Exposure in the High Level Natural Radiation Area of Ramsar. International Conference on High Level of Natural Radiation.4-7th September 2000, Munich, Germany.

Editorships and Review

- Associate Editor: Journal of Hydrology
- Reviewer for journals: Nature Communications, Hydrological Processes, Soil Science Society of America Journal, Hydrology and Earth System Sciences, Vadose Zone Journal, Journal of Contaminant Hydrology, Wetlands, Journal of Porous Media, Chemosphere, Geochimica et Cosmochimica Acta, Journal of Environmental Quality, Global Change Biology, Journal of Geophysical Research-Biogeoscience.
- Reviewer of research proposals and grants for NSERC, United States Department of Energy (DOE), Czech Science Foundation, Hungary Development and Innovation Office (NKFIH).
- DOE Panel Reviewer, Science Area: Hydrobiogeochemistry and Ecohydrology

Professional Activities

- Head of Canadian National Representatives to IAHS Commissions for Water Quality (2014-2017)
- Conference session organizer and convener, IAHS Scientific Assembly 2017, July 10-14, 2017 - Port Elizabeth, South Africa. Session 7: Measurements in the 21st century: innovation in hydrological observations.
- Conference session organizer and convener, 2015 AGU Fall meeting, 14-18 December 2015, San Francisco. Session 8049: Response of terrestrial ecosystems biogeochemistry to dynamic hydrological and climatic drivers.
- Organized a two-day workshop to develop the capacity in hydrobiogeophysics (HBGP) at the University of Waterloo, supported by a seed grant from the Water Institute.
- Conference session organizer and convener, 2015 Joint Assembly meeting, 3-7 May 2015, Montreal, Canada. Session B008: Groundwater-Surface Water Interactions.

- Conference session organizer and convener, CGU 2014, 4-8 May 2014, Banff Park Lodge, Alberta, Canada, “Interacting Biogeochemical Cycles: Elemental Fluxes & Transformations in Terrestrial and Aquatic Ecosystems”. Biogeoscience, Session B5.
- Conference session organizer and convener, IAH 2012 Congress, Niagara Falls, September 16-21, 2012. Session 3, Groundwater-Surface Water Interactions.
- Conference session organizer and convener, CGU 2011, 15-18 May 2011, Banff Park Lodge, Alberta, Canada, “Wetland Ecohydrology” Hydrology, H3.
- Conference session organizer and convener, AGU 2009 Joint Assembly (24–27 May 2009, Toronto, Ontario, Canada), “Advances in Non-destructive and Image Processing Techniques for Hydrology and Environmental Studies” Hydrology, H16.

Professional Developments

- Participate in 2012 CONRAD Water Conference, March 21 and 22, 2012, Edmonton.
- Participate in Canadian Water Network Oil Sands Water Research Colloquium, Surface and Groundwater Management in the Oil Sands Industry, June 6, 2012, Calgary.

Invited Presentations

- Freeze-Thaw Cycles and Soil Biogeochemistry: Implications for Greenhouse Gas emission. Presented at AGU Fall Meeting 2016, 12-16 December 2016, San Francisco. Session #13891: Understanding Mechanisms Governing Ecosystem Biogeochemical Cycling in the Solid/Liquid/Gas Phase: Physiology vs. Physics and Chemistry.
- Groundwater table fluctuation zone: A hot-spot for biogeochemical activities. 54th Meeting of the University Consortium for Field Focused Groundwater Research, Colorado State University, Fort Collins Colorado, October 12-13 2016. Invited by Prof. John Cherry.
- Soil biogeochemical responses to dynamic hydrological and climatic drivers. Baltic TRANSCOAST research training group, June 22, 2016, University of Rostock. Invited by Prof. Bernd Lennartz.
- Response of soil processes to dynamic hydrological and climatic drivers. Bodenkundliches Kolloquium, July 11, 2016, University of Hohenheim, Germany. Invited by Prof. Thilo Streck and Dr. Holger Pagel.
- Response of soil processes to dynamic hydrological and climatic drivers. Soil and Water Conservation Seminar, Dec. 9, 2016, School of Environmental Sciences, University of Guelph, Canada.
- Impact of soil freezing and thawing dynamics on greenhouse gas emission and nutrient fluxes. 2015 Joint Assembly meeting, 3-7 May 2015, Montreal, Canada.
- Measurement and Analysis of Physical and Hydraulic Properties of Peat Using 3D Micro- CT Scanning. Department of Chemistry, Wilfrid Laurier University, Waterloo, Canada. September, 2008. Invited by Dr. Hind A. Al-Abadleh.
- Application of 3D Micro- CT Scanning to Understand the Behaviour of Geomaterials. Department of Civil Engineering, University of Toronto. June, 2008. Invited by Prof. Giovanni Grasselli and Dr. Farzin Nasserli.
- Unstable Gravity-driven Fingers Development and Persistence in Unsaturated Porous Media: Experimental Verification. International Workshop on preferential flow and transport processes in soil conference. 4-9 November 2006, Centro Stefano Franscini, Monte Verita Ascona, Switzerland. Invited by Prof. Hannes Fluhler, ETH Zurich, Switzerland.

- Experimental Study of Fingered Flow in Hele-Shaw cell Porous Media. Department of Earth Sciences; Utrecht University, Netherlands, Oct. 2004, Invited by Prof. S.M.Hassanizadeh.

International Short-Courses and Workshops

- IRTG Reactive Transport Modeling course, Sept. 30-Oct. 4, 2013, Bad Boll, Germany.
- Aquatic Microbial and Molecular Ecology Course, 5-23 August, 2013. Institute of Biology University of Southern Denmark.
- HYDRUS Short-Course, Advanced Modeling of Water Flow and Solute Transport in the Vadose Zone; Calgary University, Calgary, Canada. (March 2011).
- Short course on Ground Penetrating Radar (GPR) system training, Terraplus Inc., Richmond Hill, Ontario, Canada. (December 2009).
- CRHM Model Training short course and IP3 Theme 2 Parameterisation Workshop, Wilfrid Laurier University, Waterloo, Ontario, 16 and 17 June 2008. (June 2008).
- 5th Summer School of Environmental Physics, 4-7 August 2003, Institute of Environmental Physics Heidelberg, Germany. (August 2003).

Professional Affiliations/Memberships

- Member of Training toward Environmentally Responsible Resource Extraction (TERRE), NSERC's Collaborative Research and Training Experience (since 2014)
- Member of Scotty Creek Research Station (SCRS) (since 2007)
- Water Institute, University of Waterloo (since 2013)
- Critical Zone Exploration Network (CZEN) (since 2013)
- Geological Society of America (Since 2014)
- International Association of Hydrological Sciences (IAHS) (since 2008)
- Canadian Geophysical Union (CGU) (since 2008)
- Deutsch Physikalische Gesellschaft (DPG, German Physical Society) (2006-2007)
- American Geophysical Union (AGU) (since 2005)
- European Geosciences Union (EGU) (since 2003)
- Canadian Society of Soil Science (since 2012)

Department and Group Services

- Chair of Department Safety Committee (2016-present)
- Ecohydrology Research Group seminar organizer (2011-present)
- Water Institute 2016 Research Symposium Scientific Committee
- Co-op program coordinator of the Ecohydrology Research Group (2011-present)
- World Wetland Day symposium organizer, University of Waterloo. 2013-2017. Organizer of the 2012 NGWA Darcy Distinguished Lecture in the Department, lecture by Prof. Madjid Hassanizadeh, September, 13, 2012.
- Organizer of the 2014 NGWA Darcy Distinguished Lecture in the Department, Lecture by Dr. Dorthe Wildenschild, March 17, 2014.
- Organizer of the 2015 NGWA Darcy Distinguished Lecture in the Department, Lecture by Dr. Rainer H. Helmig, October 29, 2015.
- Organizer of the 2016 NGWA Darcy Distinguished Lecture in the Department, Lecture by Dr. Ty Ferre, September 30, 2016.
- Let's Talk Science outreach activity titled "The Hydro-LOGICAL Cycle" that is taken to local elementary and middle (junior high) schools.