Biosketch

Name/Affiliation: John W. POMEROY, PhD, University of Saskatchewan

Education/Training

1988   PhD   Department of Agricultural Engineering, University of Saskatchewan (UofS)
1983   BSc Hons. Department of Geography, University of Saskatchewan

Employment/Affiliations

2003-Present   Tier 1 Canada Research Chair in Water Resources and Climate Change, UofS
2003-Present   Full-time, tenured Professor, Department of Geography and Planning, UofS
2013-Present   Visiting Professor, Chinese Academy of Sciences, Lanzhou, China
2007-Present   Institute Professor, Biogeoscience Institute, University of Calgary
2004-Present   Honorary Professor, Dept. of Geography & Earth Sciences, Aberystwyth University, UK
2000-2003   Professor (Personal Chair), Institute of Geography & Earth Sciences, University of Wales
1989-2000   Research Scientist, National Hydrology Research Institute, Environment Canada
1988-1989   Hydrologist, Rocky Mountain Forest & Range Experiment Station, USDA Forest Service

KEY AWARDS: 2013 Fellow of American Geophysical Union; 2004 Fellow of Royal Geographical Society, UK; 1997 Citation of Excellence, Environment Canada; 1998 NATO Science Fellowship, North Atlantic Treaty Organization

DISTINCTION: 2014-Present Lead and founder of the International Network for Alpine Research Catchment Hydrology, Global Water and Energy Exchanges Project, World Climate Research Programme; 2011-2012 Member of Expert Panel on Sustainable Management of Water in Agriculture, Council of Canadian Academies; 2009-Present Member of the Canadian Commission for UNESCO, Ottawa; 2009-2011 Chair of International Decade for Prediction in Ungauged Basins, PUB, International Association of Hydrological Sciences, International Union of Geodesy and Geophysics (IUGG); 2005-2013 President and founder of International Commission on Snow and Ice Hydrology, International Association of Hydrological Sciences, IUGG; 2007-2009 President of Canadian Geophysical Union; 2007-2009 Member of Expert Committee on Groundwater, Council of Canadian Academies, 2006-2011 PI IP3 Cold Regions Hydrology Network, 2005-2011 Co-PI Drought Research Initiative (DRI). He has more than 200 refereed publications (>9037 citations) and an h-index of 49 (Google Scholar®).

Research Funding

Over the last four years, Dr. Pomeroy has been responsible for grant funding totaling more than $4.76M.
- Recommendations for Sask Hydrological Modelling, Water Security Agency, 2015-2016, $50K
- Expanded Testing & Development of the Prairie Hydrol. Model, Ducks Unlimited, 2015-2018, $382K
- Sensitivity of Dempster Highway to Climate Warming, Yukon Government, 2014-2016, $134K
- Snow Hydrology, NSERC Discovery Grant, 2014-2019, $350K
- Snowmelt Observation System, NSERC Research Tools & Instruments, 2013, $142K
- Rocky Mountain Hydrology, Alberta Government, 2005-2016, $530K
- Water Knowledge Application Network CRHM Development, Canadian Water Network, $58K
- Yukon Climate Change, Yukon Government, 2013-2015, $107K
- Changing Cold Regions Network, NSERC FCAR, 2013-2018, $374K
- Canada Research Chair Tier 1 in Water Resources and Climate Change, Federal and Institutional Funding, 2010-2017, $1,800K

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- Canadian Rockies Hydrological Observatory, Canada Foundation for Innovation, 2012, $835K

Most Significant Contributions (up to five)

Dr. Pomeroy is a Tier 1 Canada Research Chair in Water Resources and Climate Change. Dr. Pomeroy's research focuses on the effects of variable climate on water supply, cold land hydrological processes, snowmelt flooding and the release of snow contaminants. He will be leading research critical to Pillar 2-Theme 1 and co-leading Pillar 1-Theme 2.

1. COLD REGIONS HYDROLOGICAL PROCESSES: Studies of snow redistribution, snowmelt energetics, turbulent transfer, chemical elution, snow-cover depletion and runoff generation have led to improved understanding of snow and frozen soils dynamics, which have been turned into numerical algorithms and used in climate change sensitivity analyses. These algorithms have been incorporated in most water and climate models around the world. Studies involve observations at my Canadian Rockies Hydrological Observatory and other instrumented basins in SK and YT as well as with collaborators in China, USA, Chile, Europe. [Pomeroy et al. (2015) Nature, 521, 32; Musselman et al. (2015) Hydrol. Proc., 29:3983-3999; Rasouli et al. (2015) Hydrol. Proc., 29: 2925-2940; Rasouli et al. (2014) Hydrol. Proc.; Reba et al. (2014) Hydrol. Proc., 28: 868-881; Marks et al. (2013) Adv. Water Res., 55: 98-110; Fang et al. (2013) Hydrol. Earth Syst. Sci., 17: 1635-1659.]

2. MODEL DEVELOPMENT FOR WATER PREDICTION: Dr. Pomeroy was one of the designers of the Prediction in Ungauged Basin (PUB) Decade of IAHS (IUGG) and was the recent international Chair of the global initiative. In support of this, Dr. Pomeroy was the primary scientist responsible for development of the Cold Regions Hydrological Model (CRHM), the first object-oriented, modular, physically based hydrological model in Canada. CRHM has been adopted by two research networks and has been introduced to over 100 students from across the country. It is used in Canada, USA, China, Chile, Argentina, Switzerland, Germany, Spain and UK for water resources assessments. [Krogh et al. (2015) J Hydrometeor., 16: 172-193; Williams et al. (2015) Hydrol. Proc., 29: 3954-3965; Zhou et al. (2014) J. Hydrol., 509: 13-24; Spence et al. (2013) Can Water Resource. J., 38(4): 253-262; Hrachowitz et al. (2013) Hydrol. Sci. J., 58(6): 1–58; Shook et al. (2013) Hydrol. Proc., 27(13): 1875-1889.]

3. NOVEL WATER RESOURCES MEASUREMENTS: Dr. Pomeroy has developed new techniques to measure the seasonal snowpack water equivalent using acoustic sounding and geophysical prospecting principles and have applied LiDAR and psychrometric thermodynamic techniques in novel ways to improve the estimation of remote mountain snow depth and precipitation phase. [Harder et al. (2016) The Cryosphere Discuss., doi:10.5194/tc-2016-9, 2016; Kinar and Pomeroy (2015) Reviews of Geophysics, 53: 481-544; Kinar and Pomeroy (2015) Hydrol. Proc. DOI: 10.1002/hyp.10535; Harder and Pomeroy. (2014) Hydrol. Proc. 28(14), 4311-4327; Grunewald et al. (2013) Hydrol. Earth Syst. Sci., 17: 3005-3021; Harder et al. (2013) Hydrol. Proc., 27(13): 1901-1914.]

4. FOREST, AGRICULTURAL AND ARCTIC WATER RESOURCES AND FLOODING: Research into causes of severe flooding in Alberta and Saskatchewan; research on accumulation of snow and energetics of snowmelt under forest canopies with particular attention to interception and sublimation from canopies and radiation under canopies has for the first time shown how topography and vegetation interact to influence streamflow response to forest cover loss. [Pomeroy et al. 2015. Can Water Resour. J.; Buttle et al. Can Water Resour. J., Musselman et al. (2015) Agric. & For. Meteorol., 207: 69-82; Shook et al., 2015, J. Hydrol., 521: 395-409; Dumanski et al. (2015) Hydrol. Proc. 29(18) 3894-3904. Harder et al. (2015) Hydrol. Proc., 29: 3905-3924; Armstrong et al. (2015) J. Hydrol., 521: 182-195; Menard et al. (2014) Hydrol. Earth Syst. Sci, 18: 2375-2392; Ellis et al. (2013) Water Resources Res., 49: 1-14.]

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