

October 24, 2017

CURRICULUM VITAE

Francis William Zwiers

1 Personal

Born April 21, 1951, in the Netherlands.
Canadian Citizen, married, 3 children.

2 Academic Credentials

Ph.D., Dalhousie University, 1980, Department of Mathematics, Statistics (Time Series Analysis)
M.Sc., Acadia University, 1976, Department of Mathematics, Statistics (Sampling Theory)
B. Math., University of Waterloo, 1974, Faculty of Mathematics, Statistics and Computer Science

3 Employment Record

2010-present, Director and Professor, Pacific Climate Impacts Consortium, University of Victoria
2006-2010, Director, Climate Research Division, Environment Canada
1984-2006, Research Scientist, Environment Canada
1981-1984, Assistant Professor, Department of Mathematics, University of Saskatchewan
1980-1981, NSERC Visiting Fellow, CCRN, Canadian Climate Centre, Environment Canada
1975-1976, Programmer/Analyst, Mount St. Vincent University, Halifax, N.S.
1972-1974, Research Assistant, University of Waterloo

4 Appointments and Promotions

Director and Professor, 2010- , Pacific Climate Impacts Consortium, University of Victoria
Adjunct Professor, 2010- , Department of Mathematics and Statistics, University of Victoria
Adjunct Professor, 2016- , Department of Statistics and Actuarial Science, Western University
Adjunct Professor, 2010- , Department of Statistics and Actuarial Science, Simon Fraser University
Adjunct Professor, 2007-2010, Department of Physics, University of Toronto.
Director (EX-02), 2006-2010, Climate Research Division, Environment Canada. CRD consists of 5 sections (the Climate Data Analysis Section, the Climate Processes Research Section, the Climate Chemistry Measurement and Research Section, the Canadian Centre for Climate Modelling and Analysis, and the Adaptation and Impacts Research Section), and has approximately 120 employees.
Senior Scientist (RES-05), 2002-2006, Canadian Centre for Climate Modelling and Analysis (CCCma), Climate Research Division, Environment Canada
Chief, 2001-2006, Canadian Centre for Climate Modelling and Analysis (CCCma), Climate Research Division, Environment Canada. CCCma develops and applies the Canadian coupled climate model and employs approximately 30-35 scientists, post-doctoral researchers and support people at any one time.
Acting Chief, 2000-2001, Climate Monitoring and Data Interpretation Division¹, Climate Research Branch², Environment Canada
Adjunct Professor, 1999-2006, School of Earth and Ocean Sciences, University of Victoria.
Acting Chief, 1997-2000, CCCma, Climate Research Branch, Environment Canada
Research Scientist (RES-04), 1997-2002, CCCma, Climate Research Branch, Environment Canada
Adjunct Professor, 1995-2008, Department of Mathematics and Statistics, University of Victoria
Research Scientist (RES-03), 1991-1997, Numerical Modelling Division³ (CCRN), Canadian Climate Centre, Environment Canada
Research Scientist (RES-02), 1984-1991, CCRN, Canadian Climate Centre, Environment Canada
Assistant Professor, 1981-1984, Department of Mathematics, University of Saskatchewan

¹Predecessor of the Climate Data and Analysis Section

²Predecessor of the Climate Research Division

³Predecessor of CCCma

5 Recognition

5.1 Awards

Honorary Research Professor, Faculty of Science, University of Victoria, 2017-
Thompson-Reuters High Cited Researcher, 2016
Canadian Meteorological and Oceanographic Society Tour Speaker, 2016
Alumni Achievement Award, Faculty of Mathematics, University of Waterloo, 2015
President's Distinguished Service Award - Team Award for Innovation, University of Victoria, 2015
Doctor of Science, Honoris Causa, Western University, 2014
Queen Elizabeth II Diamond Jubilee Medal, 2013
Impact Award, Statistical Society of Canada, 2011
WMO Award for Exceptionally Long Term Service to the Commission for Climatology, 2010
Environment Canada Citation of Excellence for Teamwork, 2008
University of Victoria Craigdarroch Research Award for Societal Contributions, 2008
Patterson Distinguished Service Medal, Meteorological Service of Canada, 2007
International Meetings on Statistical Climatology Achievement Award, 2007
Fellow of the American Meteorological Society, 2006
Citation for Excellence in Refereeing for Geophys. Res. Lett., American Geophysical Union 2005
Fellow, Royal Society of Canada, 2004
Equinox Award, Climate Research Branch, 2002
President's Prize, Canadian Meteorological and Oceanographic Society, 2000
Citation of Excellence, Canadian Climate Centre, 1992
Reviewer of the Year, Canadian Meteorological and Oceanographic Society, 1989
NSERC Visiting Fellowship, Environment Canada, 1980-81
Killam Graduate Scholarship, Dalhousie University, 1977-79

5.2 Bibliometrics

Google Scholar: 22674 citations, h-67

5.3 Memberships in Professional and Scientific Societies

American Geophysical Union, 2008-
Royal Society of Canada, 2004-
American Meteorological Society, 2000-
Canadian Meteorological and Oceanographic Society, 1978-
Statistical Society of Canada, 1978-
American Statistical Association, 1978-2000

5.4 Service

2011-present

, Co-chief Editor, Advances in Statistical Climatology, Meteorology and Oceanography, 2018-
Member, Statistical Society of Canada Awards Committee, 2017-
Member, Standards Council of Canada Advisory Committee for the review of the Climate Change Hazards Information Portal, 2017
Member, National Research Council Advisory Panel of Experts on Climatic Loads, 2017-
Member, Proposal Review Panel, NOAA Modeling, Analysis, Predictions, and Projections (MAPP) Program, 2017
Member, External Advisory Panel, A Hierarchical Evaluation Framework for Assessing Climate Simulations Relevant to the Energy-Water-Land (EWL) Nexus, a large US DOE funded project, 2016-
Member, External Advisory Panel, CliCCS (Climate, Climatic Change and Society) Proposal Development Team, University Hamburg, 2016
Member, National Academy of Sciences Committee on Extreme Weather Events and Climate Change Attribution, 2015-2016
Member, Statistical Society of Canada Impact Award Selection Committee, 2015-2017
Member, Independent Science Panel, New Zealand Deep South National Science Challenge, 2015-

Member, Reverse Site Visit Panel, Lawrence Livermore National Laboratory Climate Change Research Scientific Focus Area Proposal, US Department of Energy, 2015

Member, Editorial Advisory Board, Mathematics of Climate and Weather Forecasting, 2015-

Member, Science Oversight Committee, Climate Central World Weather Attribution Program, 2014-

Member, Advisory Board, Oxford Research Encyclopaedia of Climate Science, 2014-

Co-chair, World Climate Research Programme Summer School on Extremes (21 July - 1 August 2014), 2014

Member, Decadal Climate Prediction Project panel, World Climate Research Programme, 2014-

Member, External Advisory Panel, The European Climate and Weather Events: Interpretation and Attribution (EUCLEIA) Project, 2014-2017

Member, Scientific Steering Committee Canadian Snow and Sea Ice Evolution Network, 2013-

Member, Scientific Steering Committee, Canadian Network for Regional Climate and Weather Processes, 2013-

Associate Editor, Journal of Geophysical Research - Atmospheres, 2012-

Member, Canadian Statistical Science Institute (CanSSI) Board of Directors, 2012-

Member, MEOPAR NCE Research Management Committee, 2012-2016

Member, NOAA Science Advisory Board's Data Archiving and Access Requirements Working Group (DAARWG), 2012-2013

Member, International Review Panel, UK Natural Environment Research Council RAPID program, 2012.

Member, Ouranos Board of Directors (conseil d'administration), 2011-

Member, MEOPAR NCE bid development team (LOI and full proposal), 2011

Member, Expert Review Panel, Instituto Nacional de Ecologia (of Mexico), evaluation of methodology used to develop statistically downscaled climate change scenarios for Mexico, 2011

Member, NOAA Climate Change Data and Detection program proposal review panel, 2011 (Note that the panel was formed but did not meet due to funding reductions at NOAA).

Member, Patterson Medal Nomination Evaluation Committee, 2011-2014

Member, Pacific Climate Impacts Consortium Board of Directors, 2010-

Member, Joint WMO CCI/CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices, 2010-2013

Member, Scientific Advisory Committee, Beijing Climate Centre, 2009-2013

Member, External Advisory Board, Integrated Climate System Analysis and Prediction Cluster of Excellence, University of Hamburg, 2009-

Vice Chair, Working Group 1, Intergovernmental Panel on Climate Change, 2008-2015

Member, Ouranos Conseil Scientifique, 2006-2011

Associate Editor, Journal of Climate, 2005-

Chairman, Steering Committee, International Meetings on Statistical Climatology, 1992-2013

Member, Steering Committee, International Meetings on Statistical Climatology, 2013-

Prior to 2011

42 additional items ending prior to 2011.

6 Cumulative Productivity

6.1 Refereed and Equivalent Publications

1. Kharin, V.V., G.M. Flato, X. Zhang, N.P. Gillett, F.W. Zwiers, K. Anderson, 2017: Risks from climate extremes change differently from 1.5C to 2.0C depending on rarity. Submitted, *Nature Communications*.
2. Sillmann, J., T.L. Thoranisdottir, N. Schaller, L. Alexander, G.C. Hegerl, S.I. Seneviratne, R. Vautard, X. Zhang, F.W. Zwiers, 2017: Understanding, modeling and predicting weather and climate extremes: Challenges and opportunities. Submitted, *Weather and Climate Extremes*.
3. Naveau, P., A. Ribes, F.W. Zwiers, A. Hannart, A. Tuel, P. Yiou, 2017: Revising return periods for record events in the climate event attribution context. Submitted, *Journal of Climate*.
4. Li, G., X. Zhang, A. Cannon, T. Murdock, S. Sobie, F.W. Zwiers, K. Anderson, B. Qian, 2016: Indices of Canada's future climate for general and agricultural adaptation applications. In revision, *Climatic Change*.
5. Ben Alaya, M.A., F.W. Zwiers, X. Zhang, 2017: Probable maximum precipitation: its estimation and uncertainty quantification using bivariate extreme value analysis. In revision, *Journal of Hydrometeorology*.

6. Mueller, B.L., N.P. Gillett, A. Monahan, F.W. Zwiers, 2017: Attribution of Arctic sea ice decline from 1953 to 2012 to influences from natural, greenhouse-gas and anthropogenic aerosol forcing. In revision, *Journal of Climate*.
7. Wan, H., X. Zhang, F.W. Zwiers, 2017: Human influence on Canadian temperatures. In revision, *Climate Dynamics*.
8. Curry, C.L. and F.W. Zwiers, 2017: Examining controls on peak annual streamflow and floods in the Fraser River Basin of British Columbia. *Hydrol. Earth Syst. Sci*, doi:10.5194/hess-2017-531, published for discussion (under review).
9. Kushner, P.J., L. Mudryk, W. Merryfield, J.T. Ambadan, A. Berg, A. Bichet, R. Brown, C.P. Dersken, S.J. Dery, A. Dirkson, G. Flato, C. Fletcher, J. Fyfe, N. Gillett, C. Haas, S. Howell, F. Laliberte, K. McCusker, M. Sigmund, R. Sospedra-Alfonso, N. Tandon, C. Thackeray, B. Tremblay, F.W. Zwiers, 2017: Assessment of Snow, Sea Ice, and Related Climate Processes in Canadas Earth System Model and Climate Prediction System. *The Cryosphere*, doi:10.5194/tc-2017-157, published for discussion (under review).
10. Li, C., X. Zhang, F.W. Zwiers, Y. Fang, A.M. Michalak, 2017: Recent very hot summers in northern hemispheric land areas measured by wet bulb globe temperature will be the norm within 20 years. Accepted, *Earth's Future*.
11. Shrestha, R., A.J. Cannon, M.A. Schnorbus, F.W. Zwiers, 2017: Projecting future nonstationary extreme streamflow for the Fraser River, Canada. Accepted, *Climatic Change*.
12. Najafi, M.R., F.W. Zwiers and N.P. Gillett, 2016: Attribution of Observed Streamflow Changes in key British Columbia Drainage Basins. Accepted, *Geophysical Research Letters*.
13. Pingree-Shippee, K., F.W. Zwiers, D. Atkinson, 2017: Representation of Canadian Coastal Storm Activity by Six Global Reanalyses. Accepted, *International Journal of Climatology*.
14. Stott, P.A., D.J. Karoly, F.W. Zwiers, 2017: Is the choice of statistical paradigm critical in extreme event attribution studies? *Climatic Change*, **144**, 143-150, doi:10.1007/s10584-017-2049-2
15. Kirchmeier-Young, M., F.W. Zwiers, N.P. Gillett and A.J. Cannon, 2017: Attributing Extreme Fire Risk in Western Canada to Human Influences. *Climatic Change*, doi:10.1007/s10584-017-2030-0
16. Seiler, C., F.W. Zwiers, K.I. Hodges, J.F. Scinocca, 2017: How does dynamical downscaling affect model biases and future projections of explosive extratropical cyclones along North Americas Atlantic coast? *Climate Dynamics*, doi:10.1007/s00382-017-3634-9
17. Zhang, X., F.W. Zwiers, G. Li, H. Wan, A.J. Cannon, 2017: Complexity in estimating past and future extreme short-duration rainfall. *Nature Geosciences*, doi:10.1038/NGEO2911.
18. Najafi, M.R., F.W. Zwiers and N.P. Gillett, 2017: Attribution of the Observed Spring Snowpack Decline in British Columbia to Anthropogenic Climate Change. *Journal of Climate*, **30**, 4113-4130, doi:10.1175/JCLI-D-16-0189.1
19. Kirchmeier-Young, M.C., F.W. Zwiers, N.P. Gillett, 2017: Attribution of Extreme Events in Arctic Sea-Ice Extent. *Journal of Climate*, **30**, 553-571, doi:10.1175/JCLI-D-16-0412.1
20. Myhre, G., P.M. Forster, B.H. Samset, O. Hodnebrog, J. Sillmann, O. Boucher, G. Faluvegi, D. Flaschner, T. Iversen, M. Kasoar, V. Kharin, A. Kirkevag, J.-F. Lamarque, D. Olivie, T. Richardson, D. Shindell, K.P. Shine, C. Weum Stiern, T. Takemura, A. Voulgarakis, F.W. Zwiers, 2016: PDRMIP: A precipitation driver and response model intercomparison project, protocol and preliminary results. *Bulletin American Meteorological Society*, **xx**, 1185-1198, doi:1175/BAMS-D-16-0019.1.
21. Boer, G.J., D.M. Smith, C. Cassou, F. Doblas-Reyes, G. Danabasoglu, B. Kirtman, Y. Kushnir, M. Kimoto, G.A. Meehl, R. Msadek, W.A. Mueller, K. Taylor, F.W. Zwiers, 2016: The Decadal Climate Prediction Project. *Geoscientific Model Development*, doi:10.5194/gmd-2016-78.
22. Teufel, B., G.T. Diro, K. Whan, S.M. Milrad, D.I. Jeong, A. Ganji, O. Huziy, K. Winger, E. Montero, J.R. Gyakum, R. de Elia, F.W. Zwiers, L. Sushama, 2016: Investigation of the 2013 Alberta Flood from a weather/climate perspective. *Climate Dynamics*, doi:10.1007/s00382-016-3239-8.
23. Weller, E., S.-K. Min, W. Cai, F.W. Zwiers, Y.H. Kim and D. Lee, 2016: Human-caused Indo-Pacific warm pool expansion. *Science Advances*, doi: 10.1126/sciadv.1501719.
24. Whan, K. and F.W. Zwiers, 2016: The impact of ENSO and the NAO on extreme winter precipitation in North America in observations and regional climate models. *Climate Dynamics*, doi:10.1007/s00382-016-3148-x.
25. Kumar, S., F.W. Zwiers, P.A. Dirmeyer, D.M. Lawrence., R. Shrestha, and A. Werner, 2016: Terrestrial Contribution to the Heterogeneity in Hydrological Changes under Global Warming. *Water Resources Research*, doi:10.1002/2016WR018607
26. Schar, C., N. Ban, E.M. Fischer, J. Rajczak, J. Schmidli, C. Frei, F. Giorgi, T.R. Karl, E.J. Kendon, A.M.G. Klein Tank, P.A. O'Gorman, J Sillmann, X. Zhang, F.W. Zwiers, 2016: Percentile indices for assessing changes in heavy precipitation events. *Climatic Change*, doi:10.1007/s10584-016-1669-2.
27. Ribes, A., F.W. Zwiers, J.-M. Azais, P. Naveau, 2016: A new statistical approach to climate change detection and attribution. *Climate Dynamics*, doi:10.1007/s00382-016-3079-6.

28. Mueller, B., X. Zhang, F.W. Zwiers, 2016: Historically hottest summers projected to be the norm for more than half of the worlds population by 2034. *Environmental Research Letters*, doi:10.1088/1748-9326/11/4/044011.
29. Sun, Y., X. Zhang, G. Ren, F.W. Zwiers, T. Hu, 2016: Contribution of urbanization to warming in China. *Nature Climate Change*, doi:10.1038/NCLIMATE2956.
30. Najafi, M.R., F.W. Zwiers, N.P. Gillett, 2016: Attribution of the Spring Snow Cover Extent Decline in Northern Hemisphere, Eurasia and North America to Anthropogenic Influence. *Climatic Change*, doi:10.1007/s10584-016-1632-2.
31. Whan, K., F.W. Zwiers, J. Sillmann, 2016: The influence of atmospheric blocking on extreme winter minimum temperatures in North America. *Journal of Climate*, doi:10.1175/JCLI-D-15-0493.1.
32. Salimun, E., F. Tangang, L. Juneng, F.W. Zwiers, W.J Merryfield, 2016: Skill evaluation of CanCM4 for seasonal climate forecast over Malaysia during the early and late winter monsoon periods. *International Journal of Climatology*, **36**, 439-454, doi:10.1002/joc.4361.
33. Stott, P.A., N. Christidis, F. Otto, Y. Sun, J.-P. Vanderlinden, G.J. van Oldenborgh, R. Vautard, P. Walton, P. Yiou, F.W. Zwiers, 2016: Attribution of extreme climate events. *Wiley Interdisciplinary Reviews Climate Change*, **7**, 23-41, doi: 10.1002/wcc.380.
34. Kumar, S., R.P. Allan, F.W. Zwiers, D.M. Lawrence, P.A. Dirmeyer, 2015: Revisiting Trends in Wetness and Dryness in the Presence of Internal Climate Variability. *Geophysical Research Letters*, accepted, doi:10.1002/2015GL066858.
35. Whan, K., F.W. Zwiers, 2015: Evaluation of extreme rainfall and temperature over North American in CanRCM4 and CRCM5. *Climate Dynamics*, accepted, doi:10.1007/s00382-015-2807-7.
36. Seneviratne, S.I., F.W. Zwiers, 2015: Attribution and Prediction of Extreme Events: Editorial on the special issue. *Weather and Climate Extremes*, **9**, 2-5, doi:10.1016/j.wace.2015.08.003.
37. Seiler, C., F.W. Zwiers, 2015: How will climate change affect explosive cyclones in the extratropics of the Northern Hemisphere? *Climate Dynamics*, doi:10.1007/s00382-015-2791-y
38. Kim, Y.-H., S.-K. Min, X. Zhang, F.W. Zwiers, L.V. Alexander, M.G. Donat, Y.-S. Tung, 2015: Attribution of extreme temperature changes during 1951-2010. *Climate Dynamics*, doi:10.1007/s00382-015-2674-2.
39. Asrar, G., S. Bony, O. Boucher, A. Busalacchi, A. Cazenave, M. Dowell, G. Flato, G. Hegerl, E. Kallen, T. Nakajima, A. Ratier, R. Saunders, J. Slingo, B.-J. Sohn, J. Schmetz, B. Stevens, P. Zhang, F.W. Zwiers, 2014: Climate Symposium 2014 - Findings and Recommendations. *Bull. Amer. Meteor. Soc.*, **96**, ES145-ES147, doi:10.1175/BAMS-D-15-00003.1.
40. Mueller, B., M. Hauser, C. Iles, R. Rimi, F.W. Zwiers, H. Wan, 2015: Potential increase in wheat and maize production due to human-induced changes in growing season length. *Weather and Climate Extremes*, **9**, 47-56, doi:10.1016/j.wace.2015.04.001
41. Seiler, C., F.W. Zwiers, 2015: How well do CMIP5 climate models reproduce explosive cyclones in the extratropics of the Northern Hemisphere? *Climate Dynamics*, doi:10.1007/s00382-015-2642-x.
42. Ribes, A., N.P. Gillett, F.W. Zwiers, 2015: Designing detection and attribution simulations for CMIP6 to optimize the estimation of greenhouse-gas induced warming. *Journal of Climate*, **28**, 3435-3438, doi:10.1175/JCLI-D-14-00691.1.
43. Najafi, M.R., F.W. Zwiers, N.P. Gillett, 2015: Attribution of Arctic Temperature Change to Greenhouse Gas and Aerosol Influences. *Nature Climate Change*, **5**, 246-249, doi:10.1038/NCLIMATE2524.
44. Wan, H., X. Zhang, F.W. Zwiers, S.-K. Min, 2014: Attributing Northern high-latitude precipitation change over the period 1966-2005 to human influence. *Climate Dynamics*, doi:10.1007/s00382-014-2423-y.
45. Christidis, N., P.A. Stott, F.W. Zwiers, 2014: Fast track attribution assessments based on pre-computed estimates of changes in the odds of warm extremes. *Climate Dynamics*, doi:10.1007/s00382-014-2408-x.
46. Sun, Y., X. Zhang, F.W. Zwiers, L. Song, H. Wan, T. Hu, H. Yin, G. Ren, 2014: Rapid increase in the risk of extreme summer heat in Eastern China. *Nature Climate Change*, doi:10.1038/NCLIMATE2410.
47. Tencer, B., A.W. Weaver, F.W. Zwiers, 2014: Joint occurrence of daily temperature and precipitation extreme events over Canada. *Journal of Applied Meteorology and Climatology*, **53**, 2148-2162, doi:10.1175/JAMC-D-13-0361.1
48. Sillmann, J., M.G. Donat, J.C. Fyfe, F.W. Zwiers, 2014: Observed and simulated temperature extremes during the recent warming hiatus. *Environmental Research Letters*, **9**, 064023 (8pp), doi:10.1088/1748-9326/9/6/064023. Accompanied by a perspective - Wehner, M.F., 2014: A temporary hiatus in warming of extreme temperatures is not unusual, nor inconsistent with model simulations of human-induced climate change. *Environmental Research Letters*, **9**, 071001 (3pp), doi:10.1088/1748-9326/9/7/071001.

49. Stott, P.A., G.C. Hegerl, S.C. Herring, M.P. Hoerling, T.C. Peterson, X. Zhang, F.W. Zwiers, 2014: Introduction to explaining extreme events of 2013 from a climate perspective. In *Explaining Extremes of 2013 from a Climate Perspective*, Herring, S.C., M.P. Hoerling, T.C. Peterson, and P.A. Stott, Eds., *Bull. Amer. Meteor. Soc.*, **95**, S1-S2.
50. Sillmann, J., V.V. Kharin, F.W. Zwiers, X. Zhang, 2014: Evaluating model simulated variability in temperature extremes using modified percentile indices. *International Journal of Climatology*, **34**, 33043311, doi: 10.1002/joc.3899.
51. Shrestha, R.R., M.A. Schnorbus, A.T. Werner, F.W. Zwiers, 2014: Evaluating hydro-climatic change signals from statistically and dynamically downscaled GCMs and hydrologic models. *Journal of Hydrometeorology*, **15**, 844-860, doi:10.1175/JHM-D-13-030.1.
52. Donat, M.G., J. Sillmann, S. Wild, L.V. Alexander, T. Lippmann, F.W. Zwiers, 2013: Consistency of temperature and precipitation extremes across various global gridded insitu and reanalysis data sets. *Journal of Climate*, **27**, 5019-5035, doi:10.1175/JCLI-D-13-00405.1
53. Zhang, X., H. Wan, F.W. Zwiers, G.C. Hegerl, X. Min, 2013: Attributing intensification of precipitation extremes to human influence. *Geophysical Research Letters*, **40**, 5252-5257, doi:10.1002/grl.51010.
54. Fyfe, J.C., N.P. Gillett, F.W. Zwiers, 2013: The recent hiatus in global warming. *Nature Climate Change*, **3**, 767-769.
55. Min, S.-K., X. Zhang, F.W. Zwiers, H. Shiogama, Y.-S. Tung, M.F. Wehner, 2013: Multi-Model Detection and Attribution of Extreme Temperature Changes. *Journal of Climate*, **36**, 7430-7451, doi: 10.1175/JCLI-D-12-00551.1.
56. Min, S.-K., X. Zhang, F.W. Zwiers, G.C. Hegerl, 2013: Corrigendum: Human contribution to more-intense precipitation extremes. *Nature*, doi:10.1038/nature12197.
57. Wang, X.L., Y. Feng, G.P. Compo, F.W. Zwiers, R.J. Allan, V.R. Swail, and P.D. Sardeshmukh, 2013: Is the storminess in the Twentieth Century Reanalysis really inconsistent with observations? - A reply to the comment by Krueger et al. (2013b). *Climate Dynamics*, doi: 10.1007/s00382-013-1828-3.
58. Murdock, T.Q.M., S.R. Sobie, F.W. Zwiers, H.D. Eckstrand, 2013: Climate change and extremes in the Canadian Columbia Basin. *Atmosphere-Ocean*, **51**, 456-469, doi:10.1080/07055900.2013.816932.
59. Kharin, V.V., F.W. Zwiers, X. Zhang, M.F. Wehner, 2013: Changes in temperature and precipitation extremes in the CMIP5 ensemble. *Climatic Change*, **119**, 345357, doi:10.1007/s10584-013-0705-8.
60. Sillmann, J., V.V. Kharin, X. Zhang, F.W. Zwiers, 2013: Climate extreme indices in the CMIP5 multi-model ensemble. Part 1: Model evaluation in the present climate. *Journal of Geophysical Research*, **118**, doi:10.1002/jgrd.50203.
61. Sillmann, J., V.V. Kharin, F.W. Zwiers, X. Zhang, 2013: Climate extreme indices in the CMIP5 multi-model ensemble. Part 2: Future climate projections *Journal of Geophysical Research*, **118**, doi:10.1002/jgrd.50188.
62. Wan, H., X. Zhang, F.W. Zwiers, H. Shiogama, 2013: Effect of data coverage on the estimation of mean and variability of precipitation at global and regional scales. *Journal of Geophysical Research*, **118**, doi:10.1002/jgrd.50118.
63. Westra, S., L.V. Alexander, F.W. Zwiers, 2013: Global increasing trends in annual maximum daily precipitation. *Journal of Climate*, **26**, 3904-3918, doi:10.1175/JCLI-D-12-00502.1.
64. Flower, A., T.Q. Murdock, S.W. Taylor, F.W. Zwiers, 2013: Using an ensemble of downscaled climate model projections to assess impacts of climate change on the potential distribution of spruce and Douglas-fir forests in British Columbia. *Journal of Environmental Science and Policy*, **26**, 63-74, doi:10.1016/j.envsci.2012.07.024.
65. Murdock, T.Q., S.W. Taylor, A. Flower, A. Mehlenbacher, A. Montenegro, F.W. Zwiers, R. Alfaro, 2013: Pest outbreak distribution and forest management impacts in a changing climate in British Columbia. *Journal of Environmental Science and Policy*, **26**, 75-89, doi:10.1016/j.envsci.2012.07.026
66. Christidis, N., P.A. Stott, F.W. Zwiers, H. Shiogama, 2012: The contribution of anthropogenic forcings to regional changes in temperature during the last decade. *Climate Dynamics*, **39**, 12591274, doi:10.1007/s00382-011-1184-0.
67. von Storch, H., F.W. Zwiers, 2012: Testing ensembles of climate change scenarios for statistical significance. *Climatic Change*, 10.1007/s10584-012-0551-0
68. Vyushin, D.I., P.J. Kushner and F.W. Zwiers, 2012: Modelling and understanding persistence of natural climate variability. *Journal of Geophysical Research*, **117**, D21106, doi:10.1029/2012JD018240
69. Wang, X.L., Y. Feng, G. P. Compo, V.R. Swail, F.W. Zwiers, R.J. Allan, and P.D. Sardeshmukh, 2012: Trends and low frequency variability of extra-tropical cyclone activity in the ensemble of Twentieth Century Reanalysis, *Climate Dynamics*, doi:10.1007/s00382-012-1450-9.
70. Yu, B., F.W. Zwiers, G.J. Boer and M.F. Ting, 2012: Structure and variances of equatorial zonal circulation in a multimodel ensemble. *Climate Dynamics*, doi:10.1007/s00382-012-1372-6.
71. Zwiers, F.W., G.C. Hegerl, S.-K. Min, X. Zhang, 2012: Historical Context. In "Explaining Extreme Events of 2011 from a Climate Perspective", P.A. Stott and T.C. Peterson, eds., *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-D-12-00021.1.

72. Li, G., X. Zhang, F.W. Zwiers, and Q.H. Wen, 2012: Quantification of uncertainty in high resolution temperature scenarios for North America. *Journal of Climate*, **25**, 3373-3389, doi:10.1175/JCLI-D-11-00217.1
73. Zhang, X., L. Alexander, G.C. Hegerl, P. Jones, A. Klein-Tank, T.C. Peterson, B. Trewin, F.W. Zwiers, 2011: Indices for Monitoring Changes in Extremes based on Daily Temperature and Precipitation Data. *Wiley Interdisciplinary Reviews Climate Change*, doi:10.1002/wcc.147.
74. Hegerl, G.C., P.A. Stott, S. Solomon, F.W. Zwiers, 2011: Comment on Climate Science and the Uncertainty Monster by J. A. Curry and P. J. Webster. *Bulletin of the American Meteorological Society*, 2011, doi:10.1175/BAM-D-11-00191.1
75. Hegerl, G.C., F.W. Zwiers, C. Tebaldi, 2011: Patterns of change: whose fingerprint is seen in global warming? *Environmental Research Letters*, 2011, **6**, 044025, doi:10.1088/1748-9326/6/4/044025.
76. Wang, X.L., H. Wan, F.W. Zwiers, V.R. Swail, G.P. Compo, R.J. Allan, R.S. Vose, S. Jourdain, X. Yin, 2011: Trends and low-frequency variability of storminess over western Europe, 1878-2007. *Climate Dynamics*, **37**, 23552371, doi:10.1007/s00382-011-1107-0.
77. Yu B., G.J. Boer, and F. Zwiers, 2011: Surface heat flux feedback and SST variability. *Trans. Atmos. Sci.*, **34**, 1-7.
78. Hegerl, G.C., F.W. Zwiers, 2011: Use of models in detection and attribution of climate change, *Wiley Interdisciplinary Reviews Climate Change*, **2**, 570-591, DOI:10.1002/wcc.121.
79. Hoegh-Guldberg, O., G. Hegerl, T. Root, F. Zwiers, P. Stott, D. Pierce, M. Allen, 2011: Reply to: "Overstretching attribution" by Parmesan et al. (2011). *Nature Climate Change*, **1**, doi:10.1038/nclimate1107.
80. Min, S.-K., X. Zhang, F.W. Zwiers, G.C. Hegerl, 2011: Human contribution to more intense precipitation events. *Nature*, **470**, 378-381, doi:10.1038/nature09763, with online Supplementary Information at <http://www.nature.com/nature/journal/v470/n7334/full/nature09763.html#/supplementary-information> (40 pp).
81. Zwiers, F.W., X. Zhang, J. Feng, 2011: Anthropogenic influence on extreme daily temperatures at regional scales. *Journal of Climate*, **24**, 881-892, doi:10.1175/2010JCLI3908.1
82. Stott, P.A., G.S. Jones, N. Christidis, F.W. Zwiers, G.C. Hegerl, H. Shiogama, 2011: Single-step attribution of increasing probabilities of very warm regional temperatures to human influence. *Atmospheric Science Letters*, doi:10.1002/asl.315.
83. Zhang, X., J. Wang, F.W. Zwiers, P. Ya Groisman, 2010: The influence of large scale climate variability on winter maximum daily precipitation over North America. *Journal of Climate*, **23**, 2902-2915.
84. Yu, B., and F.W. Zwiers, 2010: Changes in equatorial atmospheric zonal circulations in recent decades. *Geophysical Research Letters*, **37**, L05701, doi:10.1029/2009GL042071.
85. Stott, P.A., N.P. Gillett, G.C. Hegerl, D. Karoly, D. Stone, X. Zhang, F.W. Zwiers, 2010: Detection and attribution of climate change: a regional perspective. *Wiley Interdisciplinary Reviews*, **1**, 192-211, DOI: 10.1002/wcc.34.
86. Lee, T.C.K., M. Tsao, F.W. Zwiers, 2010: State-space model for proxy-based millennial reconstruction. *Canadian Journal of Statistics*, **38**, 488-505.
87. Christidis, N., P.A. Stott, F.W. Zwiers, H. Shiogama, T. Nozawa, 2009: Probabilistic estimates of recent changes in temperature forced by human activity: A multi-scale attribution analysis. *Climate Dynamics*, **34**, 1139-1156, DOI 10.1007/s00382-009-0615-7.
88. Yu, B., W.J. Merryfield, G.J. Boer, F.W. Zwiers, 2009: Covariability of SST and surface heat fluxes. *Climate Dynamics*, in press, DOI 10.1007/s00382-009-0669-6.
89. Kharin, V.V., Q. Teng, F.W. Zwiers, G.J. Boer, J.-S. Fontecilla, N. Gagnon, J. Derome, X. Zhang, 2009: Skill assessment of seasonal hindcasts from the Canadian Historical Forecast Project. *Atmosphere-Ocean*, **47**, 204-223.
90. Doherty, S.J. et al., 2009: Lessons learned from IPCC AR4: Future scientific developments needed to understand, predict and respond to climate change, *Bulletin of the American Meteorological Society*, **90**, 497-513, doi: 10.1175/2008BAMS2643.1.
91. Min, S.-K., X. Zhang, F.W. Zwiers, P. Friederichs, A. Hense, 2009: Signal detectability in extreme precipitation changes assessed from twentieth century climate simulations. *Climate Dynamics*, **32**, 95-111, doi: 10.1007/s00382-008-0376-8.
92. Wang, X., F.W. Zwiers, V.R. Swail, Y. Feng, 2009: Trends and Variability of Storminess in the Northeast Atlantic Region, 1874-2007. *Climate Dynamics*, **33**, 1179-1195, DOI 10.1007/s00382-008-0504-5.
93. Zhang, X., F.W. Zwiers, G.C. Hegerl, 2009: The influences of data precision on the calculation of temperature percentile indices. *International Journal of Climatology*, **29**, 321-327, doi: 10.1002/joc.1738.
94. Jones, P.J., et al., 2009: High-resolution paleoclimatology of the last millennium: a review of current status and future prospects. *The Holocene*, **19**, 3-49, doi: 10.1177/0959683608098952.

95. Wang, X.L., V.R. Swail, F.W. Zwiers, X. Zhang, Y. Feng, 2009: Detection of external influence on trends of atmospheric storminess and northern ocean wave heights. *Climate Dynamics*, **32**, 189-203, doi: 10.1007/s00382-008-0442-2.
96. Min, S.-K., X. Zhang, F.W. Zwiers, T. Agnew, 2008: Human influence on Arctic sea ice detectable from early 1990s onwards. *Geophys. Res. Lett.*, L21701, doi:10.1029/2008GL035725.
97. Zwiers, F.W., and G.C. Hegerl, 2008: Climate change: attributing cause and effect, *Nature*, **453**, 296-297.
98. Min, S.-K., X. Zhang, F.W. Zwiers, 2008: Human induced Arctic moistening. *Science*, **320**, 518-520, doi: 10.1126/science.1153468
99. Lee, T.C.K., F.W. Zwiers and M. Tsao, 2008: Evaluation of millennial proxy reconstruction methods. *Climate Dynamics*, **31**, 263-281, doi 10.1007/s00382-007-0351-9.
100. Forster, P., G.C. Hegerl, R. Knutti, V. Ramasamy, S. Solomon, T.F. Stocker, P.A. Stott, F.W. Zwiers, 2007: Reply to Commentary by Schwartz, Charlson and Rodhe, *Nature Reports Climate Change*, **4**, 63-64.
101. Zhang, X., F.W. Zwiers, G.C. Hegerl, F.H. Lambert, N.P. Gillett, S. Solomon, P.A. Stott, T. Nozawa, 2007: Detection of human influence on twentieth-century precipitation trends. *Nature*, **448**, 461-465, doi:10.1038/nature06025.
102. Yu, B., A. Shabbar, F.W. Zwiers, 2007: The enhanced PNA-like climate response to Pacific interannual and decadal variability. *Journal of Climate*, **20**, 5285-5300, doi:10.1175/2007JCLI1480.1.
103. Wu, A., W.W. Hsieh, G.J. Boer, F.W. Zwiers, 2007: Changes in the Arctic Oscillation under increased atmospheric greenhouse gases. *Geophys. Res. Lett.*, **34**, L12701, doi:10.1029/2007GL029344.
104. Yu, B. and F.W. Zwiers, 2007: The impact of combined ENSO and PDO on the PNA climate: a 1000-yr climate modeling study. *Climate Dynamics*, **29**, 837-851, doi:10.1007/s00382-007-0267-4.
105. Kharin, V.V., F.W. Zwiers, X. Zhang, and G.C. Hegerl, 2007: Changes in temperature and precipitation extremes in the IPCC ensemble of global coupled model simulations. *Journal of Climate*, **20**, 1419-1444.
106. Dang, H., N.P. Gillett, A.J. Weaver and F.W. Zwiers, 2007: Climate change detection over different land surface vegetation classes. *International Journal of Climatology*, **27**, 211-220.
107. Lee, T.C.K., F.W. Zwiers, X. Zhang and M. Tsao, 2006: Evidence of decadal climate prediction skill resulting from changes in anthropogenic forcing. *Journal of Climate*, **19**, 5305-5318.
108. Zhang, X., F.W. Zwiers and P.A. Stott, 2006: Multi-model multi-signal climate change detection at regional scale. *Journal of Climate*, **19**, 4294-4307
109. Hegerl, G.C., T.R. Karl, M. Allen, N.L. Bindoff, N. Gillett, D. Karoly, X. Zhang, F.W. Zwiers, 2006: Climate change detection and attribution: beyond mean temperature signals. *Journal of Climate*, **19**, 5058-5077.
110. Wang, X.L., V.R. Swail and F.W. Zwiers, 2006: Climatology and changes of extra-tropical storm tracks and cyclone activity: comparison of ERA-40 with NCEP/NCAR reanalysis for 1958-2001, *Journal of Climate*, **19**, 3145-3166.
111. Wu, A., W.W. Hsieh, A. Shabbar, G.J. Boer and F.W. Zwiers, 2006: The nonlinear association between the Arctic Oscillation and North American winter climate. *Climate Dynamics*, DOI: 10.1007/s00382-006-0118-8.
112. Kharin, V.V., F.W. Zwiers, and X. Zhang, 2005 Intercomparison of near surface temperature and precipitation extremes in AMIP-2 simulations, reanalyses and observations. *Journal of Climate*, **18**, 5201-5223.
113. Lee, T.C.K., F.W. Zwiers, G.C. Hegerl, X. Zhang, and M. Tsao, 2005: A Bayesian climate change detection and attribution assessment. *Journal of Climate*, **18**, 2429-2440.
114. Zhang, X., G.C. Hegerl, F.W. Zwiers, J. Kenyon, 2005: Avoiding inhomogeneity in percentile-based indices of temperature extremes. *Journal of Climate*, **18**, 1641-1651.
115. IDAG (International ad hoc Detection and Attribution Group), 2005: Detecting and attributing external influences on the climate system: A review of recent advances. *Journal of Climate*, **18**, 1291-1314.
116. Kharin, V.V., and F.W. Zwiers, 2005: Estimating extremes in transient climate change simulations. *Journal of Climate*, **18**, 1156-1173.
117. Gillett, N.P., A.J. Weaver, F.W. Zwiers, M.D. Flannigan, 2004: Detecting the effect of human induced climate change on Canadian forest fires. *Geophysical Research Letters*, **31**, L18211, doi:10.1029/2004GL020876.
118. Gillett, N.P., A.J. Weaver, F.W. Zwiers, M.F. Wehner, 2004: Detection of volcanic influence on global precipitation. *Geophysical Research Letters*, **31**, L12217, doi:10.1029/2004GL020044.
119. Zwiers, F.W., and H. von Storch, 2004: On the role of statistics in climate research. *International Journal of Climatology*, **24**, 665-680.

120. Zhang, X., and F.W. Zwiers, 2004: Comments on "Applicability of prewhitening to eliminate the influence of serial correlation on the Mann-Kendall test". *Water Resources Research*, **40**, W03805, doi:10.1029/2003WR002073.
121. Hegerl, G.C., F.W. Zwiers, P.A. Stott and V.V. Kharin, 2004: Detectability of anthropogenic changes in temperature and precipitation extremes. *Journal of Climate*, **17**, 3683-3700.
122. Wang, X.L., F.W. Zwiers, and V. Swail, 2004: North Atlantic ocean wave climate scenarios for the 21st century. *Journal of Climate*, **17**, 2368-2383.
123. Zhang, X., F.W. Zwiers, and G. Li, 2004: Monte Carlo experiments on the detection of trends in extreme values. *Journal of Climate*, **17**, 1945-1952.
124. Karoly, D.J., J.F.B. Mitchell, M. Allen, G. Hegerl, J. Marengo and F. Zwiers, 2003: Comment on Soon et al. (2001) 'Modeling climatic effects of anthropogenic carbon dioxide emissions: unknowns and uncertainties'. *Climate Research*, **24**, 91-92.
125. Kharin, V.V., and F.W. Zwiers, 2003: On the ROC score of probability forecasts. *Journal of Climate*, **16**, 4145-4150.
126. Kharin, V.V., and F.W. Zwiers, 2003: Improved seasonal probability forecasts. *Journal of Climate*, **16**, 1684-1701.
127. Wu, A., W.W. Hsieh and F.W. Zwiers, 2003: Nonlinear modes of North American winter climate variability derived from a general circulation model simulation. *Journal of Climate*, **16**, 2325-2339.
128. Gillett, N.P., F.W. Zwiers, A.J. Weaver and P.A. Stott, 2003: Detection of human influence on sea-level pressure. *Nature*, **422**, 292-294.
129. Zwiers, F.W., and X. Zhang, 2003: Towards regional climate change detection. *Journal of Climate*, **16**, 793-797.
130. Gillett, N.P., F.W. Zwiers, A.J. Weaver, G.C. Hegerl, M.R. Allen, and P.A. Stott, 2002: Detecting anthropogenic influence with a multi-model ensemble. *Geophysical Research Letters*, 10.1029/2002GL015836.
131. Zwiers, F.W., 2002: Climate change. The 20-year forecast. *Nature*, **416**, 690-691.
132. Kharin, V.V. and F.W. Zwiers, 2002: Climate predictions with multi-model ensembles. *Journal of Climate*, **15**, 793-799..
133. Kharin, V.V., F.W. Zwiers and N. Gagnon, 2001: Skill of seasonal hindcasts as a function of the ensemble size. *Climate Dynamics*, **17**, 835-843.
134. Hsu, C. J., and F. W. Zwiers, 2001: Climate change in recurrent regimes and modes of atmospheric variability. *Journal of Geophysical Research*, **106(D17)**, 20145-20159.
135. Derome, J., G. Brunet, A. Plante, N. Gagnon, G.J. Boer, F.W. Zwiers, S.J. Lambert, J. Sheng and H. Ritchie, 2001: Seasonal predictions based on two dynamical models. *Atmosphere-Ocean*, **39**, 485-501..
136. Wang, X.L., and F.W. Zwiers, 2001: Using redundancy analysis to improve dynamical seasonal mean 500 hPa geopotential forecasts. *International Journal of Climatology*, **21**, 637-654.
137. Kharin, V.V., and F.W. Zwiers, 2001: Skill as a function of time scale in two ensembles of seasonal forecasts. *Climate Dynamics*, **17**, 127-141.
138. Zwiers, F.W. and A.W. Weaver, 2000: The causes of 20th century warming. *Science*, **290**, 2081-2082.
139. Weaver, A.W. and F.W. Zwiers, 2000: Certainty in climate change? *Nature*, **407**, 571-572.
140. Stone, D.A., A.J. Weaver and F.W. Zwiers, 2000: Trends in Canadian precipitation intensity. *Atmosphere-Ocean*, **38(2)**, 321-347.
141. Kharin, V.V., and F.W. Zwiers, 2000: Changes in the extreme in an ensemble of transient climate simulation with a coupled atmosphere-ocean GCM, *Journal of Climate*, **13**, 3760-3788..
142. Zwiers, F.W., X.L. Wang and J. Sheng, 2000: Effects of specifying bottom boundary conditions in an ensemble of atmospheric GCM simulations. *Journal of Geophysical Research*, **105(D6)**, 7295-7315.
143. Meehl, G.A., T. Karl., D.R. Easterling, S. Changnon, R. Pielke Jr., D. Changnon, J. Evans, P.Ya. Groisman, T.R. Knutson, K. Kunhel, L.O. Mearns, T. Root, R.B. Street, R.T. Sylves, P. Whetton and F.W. Zwiers, 2000: An introduction to trends in extreme weather and climate events: Observations, socio-economic impacts, and model projections, *Bulletin of the American Meteorological Society*, **81**, 413-416.
144. Meehl, G.A., F.W. Zwiers, T. Knutson, L.O. Mearns and P. Whetton, 2000: Trends in extreme weather in climate events: Issues related to modelling extremes in projection of future climate change, *Bulletin of the American Meteorological Society*, **81**, 427-436.
145. Dong, M., F.W. Zwiers and Z. Ye, 2000: A preliminary validation study of the seasonal forecast of CCCma model over China. *Acta Meteorologica Sinica*, **14**, 268-279.
146. Rowell, D.P., and F.W. Zwiers, 1999: The global distribution of sources of atmospheric decadal variability and mechanisms over the tropical Pacific and southern North America. *Climate Dynamics*, **15**, 751-772.
147. Wang, X.L., and F.W. Zwiers, 1999: Interannual variability of precipitation in an ensemble of AMIP climate simulations conducted with the CCC GCM2. *Journal of Climate*, **12**, 1322-1335.

148. Zwiers, F.W. and V.V. Kharin, 1998: Changes in the extremes of the climate simulated by CCC GCM2 under CO_2 doubling. *Journal of Climate*, **11**, 2200-2222.
149. Zwiers, F.W. and V.V.Kharin, 1998: Intercomparison of interannual variability and potential predictability: An AMIP diagnostic subproject. *Climate Dynamics*, **14**, 517-528.
150. Sheng, J., and F.W. Zwiers, 1998: An improved scheme for time-dependent boundary conditions in atmospheric general circulation models. *Climate Dynamics*, **14**, 609-613
151. Zwiers, F.W., and S.S. Shen, 1997: Errors in Estimating Spherical Harmonic Coefficients from Partially Sampled GCM Output. *Climate Dynamics*, **13**, 703-716.
152. Zwiers, F.W., 1996: Interannual Variability and Predictability in an Ensemble of AMIP Climate Simulations Conducted with the CCC GCM2. *Climate Dynamics*, **12**, 825-847.
153. Zwiers, F.W., and H. von Storch, 1995. Taking serial correlation into account in tests of the mean. *Journal of Climate*, **8**, 336-351.
154. Zwiers, F.W., 1993. Simulation of the Asian Summer Monsoon with the CCC GCM-1. *Journal of Climate*, **6**, 470-486.
155. Zwiers, F.W., and W.R. Ross, 1991. An alternate approach to the extreme value analysis of rainfall data. *Atmosphere-Ocean*, **29**, 437-461.
156. Zwiers, F.W., 1990. The effect of serial correlation on Statistical Inferences made with re-sampling procedures, *Journal of Climate*, **3**, 1452-1461.
157. Zwiers, F.W. and Storch, H.v., 1990. Regime Dependent auto-regressive time series modelling of the Southern Oscillation, *Journal of Climate*, **3**, 1330-1346.
158. Zwiers, F.W. and Storch, H.v., 1989. Multiple Recurrence Analysis, *Journal of Climate*, **2**, 1538-1553.
159. Storch, H.v. and Zwiers, F.W., 1988. Recurrence Analysis of Climate Sensitivity Experiments, *Journal of Climate*, **1**, 157-171.
160. Zwiers, F.W., 1987. An extreme value analysis of wind speed at 5 Canadian Stations, *Can. Jour. Stat.*, **15**, 317-327. Also published in *Case Studies in Data Analysis*, J.F. Gentleman and G.A. Whitmore, eds., Springer-Verlag, 1994, pp. 124-134.
161. Zwiers, F.W., 1987. A Potential Predictability Study of the Climate of an Atmospheric General Circulation Model. *Mon. Wea. Rev.*, **115**, 2957-2974.
162. Zwiers, F.W., 1987. Statistical Considerations for Climate Experiments: Part II (Multivariate Tests). *Journal of Climate and Applied Meteorology*, **26**, 477-487.
163. Zwiers, F.W. and Boer, G.J., 1987. A comparison of Climates Simulated by a General Circulation Model when Run in the Annual Cycle and Perpetual Modes. *Mon. Wea. Rev.*, **115**, 2624-2644.
164. Zwiers, F.W. and Thiebaut, H.J., 1987. Statistical Considerations for Climate Experiments: Part I (Scalar Tests). *Journal of Climate and Applied Meteorology*, **26**, 464-476.
165. Zwiers, F.W. and Hamilton, K., 1986. Simulation of Solar Tides in the Canadian Climate Centre General Circulation Model. *Journal of Geophysical Research*, **91(D11)** 11877-11896.
166. Zwiers, F.W. and Kelly, I.W., 1986. Probability and the short Run Illusion: Perceptions and Misperceptions, *School Science and Mathematics*, **86**, 149-155.
167. Zwiers, F.W., 1985. Estimating the probability of collision between an iceberg and a fixed marine structure, *Canadian Journal of Statistics*, **13**, 94-105. Also published in *Case Studies in Data Analysis*, J.F. Gentleman and G.A. Whitmore, eds., Springer-Verlag, 1994, pp. 55-66.
168. Thiebaut, H.J. and Zwiers, F.W., 1984. On the interpretation and estimation of effective sample size. *Journal of Climate and Applied Meteorology*, **23**, 800-811.
169. Zwiers, F.W., 1981. Auto-Regression Moving-Average Processes on the Unit Circle, *Canadian Journal of Statistics*, **9**, 11-26.

6.2 Articles in Preparation

170. Ben Alaya, M.A., F.W. Zwiers and X. Zhang, 2017: Probability of compound extreme precipitation events to inform engineering design. To be submitted to *Hydrol. Earth Sys. Sci.*
171. , Li, C., X. Zhang and F.W. Zwiers, 2017: Reducing uncertainty in extreme short-duration precipitation estimates. To be submitted to *Journal of Hydrometeorology*.
172. Flato, G.M., et al., 2017: Arctic change at 1, 1.5 and 2 degrees global warming. To be submitted to *Earth's Future*.
173. Pingree-Shippee, K., F.W. Zwiers, D. Atkinson, 2017: Seasonal Extratropical Storm Activity Potential Predictability and its Sources in the Northern Hemisphere during the Cold Seasons. To be submitted to *Climate Dynamics*.
174. Whan, K., F.W. Zwiers, W.J. Merryfield, 2016: Influence of ENSO on atmospheric river precipitation and snow. To be submitted to *Climatic Change*.
175. Teufel, B., L. Sushama, O. Huzly, G.T. Diro, D.I. Jeong, K. Winger, C. Garnaud, R. de Elia, F.W. Zwiers, J.R. Gyakum, D. Matthews, 2017: Investigation of the mechanisms leading to the 2017 Montreal flood. To be submitted to *Climate Dynamics*.

6.3 Books, Chapters, Short Communications and Similar Publications

176. National Academies of Sciences, Engineering, and Medicine. 2016. *Attribution of Extreme Weather Events in the Context of Climate Change*. Washington, DC: National Academies Press. DOI: 10.17226/21852. (Zwiers was a committee member).
177. Zhang, X., F.W. Zwiers, 2015: Observed and Projected Changes in Temperature and Precipitation Extremes. in *Dynamics and predictability of large-scale high-impact weather and climate events*, Jianping Li, Richard Swinbank, Hans Volkert and Richard Grotjahn, eds., Cambridge University Press, in press, ISBN 9781107071421.
178. Zwiers, F.W., G.C. Hegerl, X. Zhang, Q.H. Wen, 2014: Quantifying the Human and Natural Contributions to Observed Climate Change. In *Statistics in Action: A Canadian Outlook*, J.F. Lawless, ed., Chapman & Hall/CRC, ISBN: 9781482236231, pp349-370.
179. Zwiers, F.W., L.V. Alexander, G.C. Hegerl, T.R. Knutson, J. Kossin, P. Naveau, N. Nicholls, C. Schär, S.I. Seneviratne and X. Zhang, 2013: Challenges in Estimating and Understanding Recent Changes in the Frequency and Intensity of Extreme Climate and Weather Events. In (*Climate Science for Serving Society: Research, Modelling and Prediction Priorities*, G. Asrar and J. Hurrell, eds.), 339-389, doi:10.1007/978-94-007-6692-1.13.
180. Kirtman, B., S. Power, et al (Zwiers is listed as a Review Editor), 2013: Near-term Climate Change: Projections and Predictability. In *Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis. Chapter 11*, T. Stocker, et al., eds., Cambridge University Press.
181. Collins, M., et al (Zwiers is listed as a member of the Advisory Board), 2013: Atlas of Global and Regional Climate Projections. In *Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis. Annex I*, T. Stocker, et al., eds., Cambridge University Press.
182. Zhang, X, F.W. Zwiers, 2013: Statistical indices for the diagnosing and detecting changes in extremes. In *In Hydrologic extremes in a changing climate: detection, analysis and uncertainty* (AghaKouchak, A., D. Easterling, K. Hsu, S. Schubert, and S. Sorooshian, eds.), Springer-Verlag, pp 1-14, doi:10.1007/978-94-007-4479-0 1.
183. Zwiers, F.W. and H. von Storch, 2012: Regional Climate Services Workshop 2011. *EOS*, 93, doi:10.1029/2012EO230009.
184. Seneviratne, S.I., N. Nicholls, et el (Zwiers is listed as a Contributing Author), 2012: Changes in climate extremes and their impacts on the natural Physical environment. In: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 109-230.
185. Zwiers, F.W. and G. Bürger, 2012: Climate change scenarios for impacts assessment. In *Encyclopedia of Environmetrics, 2nd Edition* [El-Shaarawi, A.H. and W.W. Piegorsch (eds.)], ISBN: 978-0-470-97388-2.
186. Zwiers, F.W., M.A. Schnorbus and G.D. Maruszczyk, 2011: *Hydrologic Impacts of Climate Change on BC Water Resources: Summary Report for the Campbell, Columbia and Peace River Watersheds*. Pacific Climate Impacts Consortium. Available at <http://www.pacificclimate.org/sites/default/files/publications/Zwiers.HydroImpactsSummary-CampbellPeaceColumbia.Jul2011-SCREEN.pdf>
187. Hegerl, G.C., F.W. Zwiers, and P.A. Stott, 2011: Detection and Attribution of Climate Change. In *Encyclopaedia of Climate and Weather, 2nd Edition*, S.J. Schneider and M. Mastrandrea, Eds. Oxford University Press. e-reference edition available at <http://www.oxford-climateweather2.com/entry?entry=t323.e133>
188. Mastrandrea, M.D., C.B. Field, T.F. Stocker, O. Edenhofer, K.L. Ebi, D.J. Frame, H. Held, E. Kriegler, K.J. Mach, P.R. Matschoss, G.-K. Plattner, G.W. Yohe, and F.W. Zwiers, 2010: *Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties*. Intergovernmental Panel on Climate Change (IPCC). Available at <http://www.ipcc.ch>.
189. Klein Tank, A.M.G., F.W. Zwiers, X. Zhang, 2009: *Guidelines on Analysis of extremes in a changing climate in support of informed decisions for adaptation*. WMO Climate and Data Monitoring, WCDMP-No.-72, 55pp.
190. Gutowski, W.J., G.C. Hegerl, G.J. Holland, T.R. Knutson, L.O. Mearns, R.J. Stouffer, P.J. Webster, M.F. Wehner, F.W. Zwiers, 2008: Causes of Observed Changes in Extremes and Projections of Future Changes, in *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands*. T.R. Karl, G.A. Meehl, C.D. Miller, S.J. Hassol, A.M. Waple, and W.L. Murray (eds.). A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research, Washington, DC.

191. Hegerl, G.C., F.W. Zwiers, P. Braconnot, N. Gillett, J. Marengo, N. Nicholls, J. Penner, P. Stott, Y. Lou, 2007: Understanding and attribution climate change. In: *Climate Change 2007: The physical science basis, the Intergovernmental Panel on Climate Change Working Group 1 contribution to the 4th Assessment Report*, Cambridge University Press, Cambridge.
192. Zwiers, F.W., 2001: Global climate change detection and attribution. In: El-Shaarawi, A., and W. Piergorsch (Eds.), *Encyclopedia of Environmetrics*, Wiley, 2672pp.
193. Mitchell, J.F.B., D.J. Karoly, G.C. Hegerl, F.W. Zwiers, M.R. Allen and J. Marengo, 2001: Detection of climate change and attribution of causes. *Chapter 12, IPCC Working Group 1 Third Assessment Report*, Cambridge University Press.
194. von Storch, H. and F.W. Zwiers, 1999. *Statistical Analysis in Climate Research*. Cambridge University Press (ISBN 0 521 45071 3), 484pp.
195. Zwiers, F.W., 1999: Climate Change Detection: A Review of Techniques and Applications. In von Storch H, Raschke E and Flöser G (eds), 1999: *Anthropogenic Climate Change*. Springer Verlag, pp. 161-206.
196. Barnett, T., H. Ellsaesser, P. Ya. Groisman, S. Grotch, G. Jenkins, D. Karoly, M. Riches, B. Santor, C. Schonwiese, K. Vinnikov and F. Zwiers, 1991. Greenhouse Signal Detection. Working Group 3 Report. In *Greenhouse-Gas-Induced Climatic Change: A Critical Appraisal of Simulations and Observations*. M.E. Schlesinger, (ed). Elsevier.
197. Priesendorfer, R.W., F.W. Zwiers and T.P. Barnett, 1982. Foundations of Principal Component Selection Rules. *Scripps Institution of Oceanography Reference Series 81-4*. Scripps Institution of Oceanography, La Jolla, California, 192 pp.
198. Zwiers, F.W., 1980. *Auto-Regression Moving-Average Processes on the Unit Circle*. Ph.D. Thesis, Dalhousie University.
199. Zwiers, F.W., 1976. *Developments in the Theory of Sampling from Actual Populations*. M.Sc. Thesis, Acadia University.

6.4 Unrefereed Publications

200. Chow, B., D. Spittlehouse, F.W. Zwiers, H. Radhakrishnan, L. DesLauriers, M. Jakob, P. Whitfield, 2017: Natural resource professionals explore and discuss design flood hydrology under a changing climate. *APEG-BC Innovation Magazine*. Available at <https://www.apeg.bc.ca/News/Articles/Natural-Resource-Professionals-Explore-and-Discuss>.
201. Kushner, P.J., J.T. Ambadan, C.C. Bajish, A. Berg, A. Bichet, C.P. Dersken, S.J. Dery, A. Dirkson, G. Flato, C. Fletcher, J. Fyfe, N. Gillett, C. Haas, S. Howell, F. Laliberte, K. McCusker, W. Merryfield, L. Mudryk, M. Sigmond, R. Sospedra, C. Thackeray, B. Tremblay, F.W. Zwiers, 2016: *Assessment of Snow, Sea Ice, and Related Climate Processes in Canadas Earth System Models and Climate Prediction Systems*. Deliverable 1 Report of the Canadian Sea Ice and Snow Evolution (CanSISE) Network. Available at <http://www.cansise.ca/reports-publications-1/>
202. Zwiers, F.W., 2011: Testimony for House Committee on Energy and Commerce Subcommittee on Energy and Power hearing entitled "Climate Science and EPA's Greenhouse Gas Regulations". Available at <http://republicans.energycommerce.house.gov/Media/file/Hearings/Energy/030811/Zwiers.pdf>

2010 and earlier

70 additional items dated 2010 or earlier.

6.5 Conferences, Meetings, etc.

2017

1. Invited Public Lecturer, Faculty of Science, University of Manitoba, October 20
2. Invited Seminar Speaker, Department of Statistics, University of Manitoba, October 19
3. Briefing on Event Attribution, Ecojustice, remote presentation, October 17
4. Briefing on Extremes, BC Hydro, September 27
5. Co-organizer, Workshop on Environmental Risk Modelling, Centre de Recherches Mathematique, Universite de Montreal, August 28-31.
6. Invited Lecturer, Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere and Climate, Nottawasaga, Ontario, July 19 and 20.
7. Invited Public Speaker, Canadian Meteorological and Oceanographic Society Annual Congress, Toronto, Ontario, June 7

8. Co-organizer, Session entitled *Hydro-meteorological extremes in a changing climate: improved tools for downscaling*, Canadian Meteorological and Oceanographic Society Annual Congress, Toronto, Ontario, June 5
9. Invited Speaker, Association of Professional Engineers and Geoscientists of British Columbia, Design Flood Hydrology Workshop for BC Natural Resource Professionals, Richmond, BC, March 28
10. Invited Speaker, ECCC/Science Media Centre of Canada Climate Science Webinar Series, March 20
11. Invited Speaker, PICS Strategic Planning Workshop, Vancouver, March 9
12. Invited Panelist, North2Warm Workshop: The Impact of 1.5C or Greater Global Warming on Canadas North, University of Toronto, March 3-4
13. Invited Panelist, Columbia River Treaty Symposium, Northwest Indian College and Western Washington University, Bellingham, WA, February 22-23
14. Invited Speaker, Climate Data and Scenarios Workshop, Environment and Climate Change Canada, Gatineau, February 21
15. Invited Lecture, Centre d'etude de la foret, Universitee Laval, Quebec, January 20
16. Invited Speaker, National Research Council workshop on climate change and codes, Ottawa, January 18-19

2016

17. Invited Speaker, American Geophysical Union, Union Session "Determining matured science: utility, cases and formats", December 12
18. Invited Keynote Lecture, EUCLEIA Annual General Assembly, Exeter, UK, November 29
19. Invited Public Lecture, Okanagan Regional Library, Kelowna, British Columbia, October 27
20. Keynote Speaker, Wildland Fire Canada 2016, Kelowna, British Columbia, October 25
21. Invited Speaker, Association of Professional Engineers and Geophysicists of British Columbia, Annual General Meeting, Victoria, October 20
22. Invited Speaker, Institute for Catastrophic Loss Reduction Friday Forum, webinar, October 14
23. Invited Speaker, Natural Resources and Environmental Studies Institute, University of Northern British Columbia, September 30
24. Co-organizer, Banff International Research Station workshop on Uncertainty Modelling in the Analysis of Weather, Climate and Hydrological Extremes, Banff, Alberta, June 12-16
25. Local organizer and Invited Speaker, 13th International Meeting on Statistical Climatology, Canmore, Alberta, June 6-10
26. Invited Speaker, Canadian Meteorological and Oceanographic Society Annual Congress, Fredericton, May 30
27. Co-organizer, CanSISE West Network Meeting, Victoria, May 9
28. Invited Speaker and Panel Member, Adaptation Canada 2016, Ottawa, April 12-14
29. Invited Lecturer, School of Atmospheric Sciences, Sun Yat-sen University, Guangzhou, China, April 6-8
30. Invited Speaker, Action Canada Alumni Conference, Vancouver, April 2
31. Invited Speaker, Canadian Electrical Association Climate Change Adaptation Working Group, Vancouver, February 29
32. Tour Speaker, Canadian Meteorological and Oceanographic Society, 9 venues in Canada, February 24 - April 15
33. Invited Speaker, 23rd American Meteorological Society Conference on Probability and Statistics, New Orleans, January 13

2015

34. Invited Speaker, American Geophysical Union Fall Meeting, San Francisco, December 18
35. Keynote Speaker, Spatial Data Infrastructure Summit, Victoria, November 24
36. Invited Participant, Workshop on Projection of Extreme Precipitation to Support Infrastructure Design, Environment Canada, Toronto, November 10
37. Invited Seminar, Institute for Integrated Energy Systems, University of Victoria, Victoria, October 29
38. Invited Speaker, Workshop on understanding, modelling and predicting weather and climate extremes, Oslo, October 6
39. Invited Seminar, Department of Statistics and Actuarial Science, University of Waterloo, Waterloo, September 17
40. Invited Seminar, Department of Statistics, Western University, London, September 16
41. Invited Lecturer, 14th International Swiss Climate Summer School, Ascona, Switzerland, August 24
42. Keynote Speaker, Our Common Future Under Climate Change, Paris, France, July 7

43. Invited Seminar, Centre national de la recherche meteorologique, Toulouse, France, July 2
44. Keynote Speaker, International Union of Geodesy and Geophysics 26th General Assembly, Prague, June 29
45. Invited Speaker, Statistical Society of Canada Annual Meeting, Halifax, June 16
46. Invited Speaker, BC Climate Leadership Team, Vancouver, June 1
47. Invited Speaker, Canadian Wildlife Health Association Workshop "The Place for Wildlife Health in Climate Change Preparedness and Adaptation", Victoria, May 13
48. Invited Speaker, Transport Canada Webinar, April 23
49. Invited Speaker, Capital Region District Round Table on the Environment, Victoria, January 9

2014

50. Invited Lecturer, Sun-Yat Sen University, Guangzhou, China, November 28
51. Co-organizer, Session on Extremes, Climate Symposium 2014, Darmstadt, Germany, October 13-18
52. Invited Lecturer, University of Washington, Seattle WA, October 7
53. Invited Speaker, IPIECA Workshop on IPCC AR5, Washington DC, September 25
54. Invited Keynote Speaker, 13th Chinese Academy of Science/World Academy of Science/World Meteorological Organization Forum International Symposium on Extreme Weather and Climate: Past, Present, Future, September 9
55. Invited Plenary Speaker, Third Nordic International Conference on Climate Change Adaptation, Copenhagen, August 27
56. Invited Plenary Speaker, Coastal Zones Canada 2014, Halifax, NS, June 18
57. Invited Speaker, Brace Centre Annual Symposium, McGill University, May 8
58. Invited Speaker, Canadian Climate Forum, Ottawa, April 23
59. Invited Speaker, Workshop on Attribution of Climate and Weather Extremes, Environmental Defence Fund, New York, April 14
60. Invited Lecturer, Dean's Colloquium, Faculty of Mathematics, University of Waterloo, February 13
61. Invited Lecturer, Centre for Global Change Science Distinguished Lecturer Series, University of Toronto, February 11
62. Invited Keynote Speaker, 1st EUCLEIA General Assembly, ETH, Zurich, Switzerland, January 20
63. Invited Speaker, Great Northern Landscape Conservation Cooperative, webinar, January 7

2013

64. Invited Speaker, AGU Fall Meeting, San Francisco, CA, December 13
65. Invited Lecturer, PIMS Distinguished Speakers Series, University of Victoria, Victoria, BC, November 28
66. Invited Speaker, Probus Club of Victoria, Victoria, BC, November 27
67. Invited Speaker, Stat + Climate 2013 Workshop, University of Oslo, Oslo, Norway, November 11
68. Invited Participant, Workshop on Managing Fire on Populated Forest Landscapes, Banff International Research Station, Banff, AB, October 24
69. Keynote Speaker, International Boreal Forest Research Association Conference, Edmonton, AB, October 8
70. Invited Speaker, Ft. St. John Petroleum Association, Ft. St. John, BC, October 3
71. Invited Speaker, Ouranos IPCC WG1 AR5 Briefing (Webinar), September 27
72. Invited Speaker, Science Media Centre of Canada, IPCC WG1 AR5 Briefing (Webinar), September 27
73. Invited Speaker, IPCC WG1 XII Approvals Plenary, Stockholm, Sweden, September 23
74. Invited Seminar Speaker, Centre for International Climate and Environmental Research (CICERO), Oslo, Norway, September 18
75. Invited Speaker, North Pacific Land Conservancy Consortium, Victoria, BC, September 10
76. Invited Speaker, US-CLIVAR Workshop on Extremes, Berkley, CA, August 20-22
77. Invited Speaker, Next Generation Data Products Workshop, Boulder, CO, July 15-19
78. Member of the Organizing Committee, 12th International Meeting on Statistical Climatology, Jeju, Korea, June 24-28
79. Invited Speaker, Canadian Meteorological and Oceanographic Society, Saskatoon, SK, May 26-30
80. Invited Speaker, Science in Society, Herstmonceux Castle, UK, April 17-20
81. Member of the Organizing Committee, BC Atmospheric River Events: State of the Knowledge Workshop, Victoria, BC, March 7

2012

82. Invited Speaker, Symposium: Adaptation to Climate Change, Region Reunion, Reunion Island, December 12-14
83. Invited Speaker, American Geophysical Union Fall Meeting, San Francisco, CA, United States, December 5
84. Invited Speaker, EESS Fall Seminar Series, Department of Environmental Earth System Science, Stanford University, November 28
85. Invited Speaker, Ouranos, Montreal, QC, November 6
86. Invited Speaker, Association of Professional Engineers and Geoscientists of BC 2012 Annual Conference, Victoria, BC, October 24
87. Invited Briefing, Climate Action Secretariat, BC Ministry of Environment, Victoria, BC, October 23
88. Invited Expert, Exploratory Workshop DADA (Exploring the Use of Data Assimilation Methods for the Detection and Attribution of Climate Change), Buenos Aires, Argentina, October 15-18
89. Member of Organizing Committee, Pacific Northwest Climate Science Conference, Boise, ID, October 1-2
90. Invited Participant, Attribution of Climate and Weather Extremes Workshop: Assessing, Anticipating and Communicating Climate Risks, Oxford, UK, September 12-14
91. Invited Speaker, Annual PIs Retreat, Climate Impacts Research Consortium, Portland, OR, July 12
92. Invited Speaker, Australian Meteorological and Oceanographic Society, University of New South Wales, Sydney, Australia, July 2
93. Invited Speaker, University of Melbourne, June 29
94. Invited Speaker, Bureau of Meteorology, Melbourne, Australia, June 27
95. Invited Speaker, 2012 NCCARF National Adaptation Conference, Melbourne, Australia, June 26-28
96. Invited Lecturer, Pearman Lecture, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Victoria, Australia, June 25
97. Invited Speaker, Statistical Society of Canada Impact Award Address, University of Guelph, Guelph, Ont., June 3-6
98. Invited Speaker, Workshop on "Frontiers in the Detection and Attribution of Climate Change", Banff International Research Station, Banff, AB, May 27 to June 1
99. Invited Speaker, Regional Outreach Meeting for the IPCC Special Report on Extremes, Beijing, China, April 26-27
100. Invited Speaker, Eighth Session of the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAP), Beijing, China, April 5-7
101. Invited Participant, Public Infrastructure Engineering Vulnerability Committee Meeting and National Assessment Workshop, Engineers Canada, Ottawa, March 21
102. Invited Speaker, Ideafest, University of Victoria, March 6 and 8
103. Invited Speaker, Air and Waste Management Association, Victoria Chapter, Victoria, BC, February 28
104. Invited Speaker, Carbon Management Technology Conference, Orlando, Florida, February 7-9
105. Invited Speaker, University of Edinburgh Grant Institute, January 16

2011

106. Invited Speaker, 2011 International Conference on Climate Change, Taipei, December 6-8
107. Co-organizer and Speaker, Workshop entitled "Exploring Regional Climate Services: Meeting Stakeholder Needs for Practical Climate Information", PCIC, University of Victoria, November 21-23
108. Session Organizer, Detecting, understanding and predicting extreme climate events, World Climate Research Program Open Science Conference, Denver, CO, October 24-28
109. Invited Speaker, and Member of the Organizing Committee, Pacific Northwest Climate Science Conference, University of Washington, Seattle, WA, September 13-14
110. Invited Speaker, Workshop on Environmental Risk and Extreme Events, Centro Stefano Franscini, Ascona, Switzerland, July 12
111. Invited Speaker, Statistics 2011 Canada, Concordia University, Montreal, July 3
112. Invited Speaker, Extreme Value Analysis 2011, Lyon, France, June 27
113. Invited Speaker, Canadian Meteorological and Oceanographic Society, Victoria, BC, June 5-9
114. Invited Speaker, Distinguished Speaker Series, Dalhousie University, March 10
115. Invited Speaker, Science of Climate Change Seminar Series, Simon Fraser University, Vancouver, February 23
116. Invited Speaker, International Joint Commission, Vancouver, February 9

117. Invited Speaker, Weather and Climate Extremes over Canada: Science and Adaptation, Drought Research Initiative (DRI) Network, University of Manitoba, Winnipeg, February 7
118. Invited Discussant, American Meteorological Society Annual Meeting, Seattle, WA, January 24
119. Invited Speaker, Workshop on Statistical Methods in Meteorology and Climate, Centre de Recherches Mathematiques, Universite de Montreal, January 13

2010 and earlier

159 additional items dated 2010 or earlier.

6.6 Seminars, Short Courses, Workshop, Conference and other Presentations

2017

1. *Changing weather extremes - Who or what is to blame?*, Faculty of Science, University of Manitoba, October 20 (invited public lecture)
2. *Probable maximum precipitation estimation and uncertainty quantification using bivariate extreme value analysis*, Department of Statistics, University of Manitoba, October 19 (invited seminar)
3. *Event attribution: the emerging science of attributing causes to extreme events*, Ecojustice, via webinar, October 17
4. *Update on extremes, with a focus on engineering applications*, BC Hydro Adaptation Working Group, Burnaby, BC, September 27
5. *Changing weather extremes: Why it isn't an alternative fact*, TISED, Faculty of Engineering, McGill University, August 30 (invited seminar)
6. *Probable maximum precipitation estimation and uncertainty quantification using bivariate extreme value analysis*, Workshop on Environmental Risk Modelling, Centre de Recherches Mathematique, Universite de Montreal, August 30
7. *Detection and attribution of changes in extremes*, Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere and Climate, Nottawasaga, Ontario, July 20 (invited lecture)
8. *Detection and attribution of long-term change (trend detection)*, Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere and Climate, Nottawasaga, Ontario, July 19 (invited lecture)
9. *Changing weather extremes why it isn't an "alternative fact"*, Canadian Meteorological and Oceanographic Society Annual Congress, Toronto, June 6 (invited public lecture).
10. *Attributing Extreme Fire Risk in Western Canada to Human Emissions*, Canadian Meteorological and Oceanographic Society Annual Congress, Toronto, June 7
11. *PCIC Status and Plans*, Canadian Network for Regional Climate and Weather Processes network workshop, Montreal, May 5 (presented by Arelia Schoeneberg).
12. *Columbia River Basin Modelling Update*, Canadian Centre for Climate Modelling and Analysis, University of Victoria, April 24
13. *Flood Risk on the Fraser and Event Attribution*, Canadian Snow and Ice Evolution Network (CanSISE) West workshop, University of Victoria, April 10
14. *Canadian Snow and Ice Evolution Network (CanSISE) Deliverable 3*, Canadian Snow and Ice Evolution Network (CanSISE) West workshop, University of Victoria, April 10
15. *Climate change and BC hydrology*, APEG-BC Design Flood Hydrology for BC Natural Resource Professionals Workshop, March 28 (invited speaker).
16. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science 2016-2017*, University of Victoria Board of Governors, March 27 (annual report presentation).
17. *Climate change and our infrastructure*, ECCC/Science Media Centre for Canada Webinar, March 20 (invited speaker and panellist).
18. *Communicating and acting on the findings of climate science*, Wosk Centre, Vancouver, BC, PICS Strategic Planning Workshop, March 9 (invited speaker).
19. *An approach to assessing incremental "risk" from extremes*, University of Toronto, North2Warm workshop, March 3.
20. *Estimating future hydrologic impacts in BC*. Environment Canada and Climate Change, Gatineau, Quebec, February 21 (invited workshop speaker)
21. *Challenges in understanding and projecting changes in extreme precipitation*. PCIC Advisory Committee meeting, February 16.
22. *Event attribution: the emerging science of attributing causes to extreme events*. Centre d'etude de la foret, Universitee Laval, Quebec, January 20 (invited seminar speaker)
23. *Challenges in understanding and projecting changes in extreme precipitation*. National Research Council workshop on Climate Change and Codes, Ottawa, January 18 (invited speaker)

2016

24. *The IPCC: a Mechanism for Identifying Mature Science at the Policy/Science Interface*. American Geophysical Union, San Francisco, December 12 (invited speaker)
25. *EUCLEIA External Advisory Board Perspectives*. EUCLEIA Annual General Assembly, Exeter, UK, December 1
26. *Some perspectives on event attribution science*. EUCLEIA Annual General Assembly, Exeter, UK, November 29 (invited keynote)
27. *The IPCC Science Assessment Process*. Quest University, November 3 (web presentation)
28. *Changing Extremes Is it real, or just imagined? (Is the latest extreme event due to human induced climate change?)* Okanagan Regional Library, Kelowna, BC, October 27 (invited public lecture)
29. *Event attribution: the emerging science of attributing causes to extreme events*, Wildland Fire Canada 2016, Kelowna, BC, October 25 (invited keynote)
30. *Hydrologic Impacts of a Changing Climate in Western Canada*, Association of Professional Engineers and Geophysicists of British Columbia, Annual General Meeting, Victoria, BC, October 20 (invited; jointly presented with R. Shrestha)
31. *Challenges in understanding and projecting changes in extreme precipitation*, Institute for Catastrophic Loss Reduction Friday Forum, webinar, October 14
32. *Challenges in understanding and projecting changes in extreme precipitation*, Natural Resources and Environmental Studies Institute, University of Northern British Columbia, September 30
33. *Detection, attribution of long-term change, and event attribution*, Banff International Research Station workshop on Uncertainty Modelling in the Analysis of Weather, Climate and Hydrological Extremes, Banff, Alberta, June 14
34. *Projecting future extreme streamflow for the Fraser River: a nonstationary extreme value analysis approach*, 13th International Meeting on Statistical Climatology, Canmore, Alberta, June 10
35. *Our shared responsibility as users of statistics and consumers of results*, 13th International Meeting on Statistical Climatology, Canmore, Alberta, June 9 (invited)
36. *Event attribution: the emerging science of attributing causes to extreme events*, 13th International Meeting on Statistical Climatology, Canmore, Alberta, June 8
37. *Comparing the effects of 1.5° C and 2° C global warming on climate extremes over Canada and the globe*, Canadian Meteorological and Oceanographic Society Annual Congress, Fredericton, June 1 (presented on behalf of N.P. Gillett).
38. *Attribution of Extreme Events in Arctic Sea Ice Extent*, Canadian Meteorological and Oceanographic Society Annual Congress, Fredericton, May 31 (presented on behalf of M. Kirchmeier-Young).
39. *Event attribution: the emerging science of attributing causes to extreme events*, Canadian Meteorological and Oceanographic Society Annual Congress, Fredericton, May 31 (invited)
40. *Influence of ENSO and the NAO on extreme winter precipitation in North America*, CNRCWP Network Meeting, Université du Québec à Montréal, May 17
41. *Probable Maximum Precipitation Response to Projected Climate Change over North America*, CNRCWP Network Meeting, Université du Québec à Montréal, May 17 (presented on behalf of Xuebin Zhang)
42. *Projecting future extreme streamflow for the Fraser River: a non-stationary extreme value analysis approach*, CanSISE West Network Meeting, University of Victoria, May 9.
43. *Pacific Climate Impacts Consortium: Providing user-motivated climate science*, UVic-ECCC Bilateral Meeting, University of Victoria, April 28 (invited)
44. *Can we provide robust advice to support infrastructure design?*, Adaptation Canada 2016, Ottawa, April 13 (invited).
45. *Spatial Climate Change Data to Aide Adaptation in Resource Management*, Adaptation Canada 2016, Ottawa, April 12 (presented for Dave Spittlehouse, BC Ministry of Forests, Lands and Natural Resource Operations).
46. *Climate Change and the Challenge of Delivering Information*, Adaptation Canada 2016, Ottawa, April 12 (invited)
47. *Why is "event attribution" hard?*, Sun Yat-sen University, Guangzhou, April 8 (invited seminar).
48. *How much has China warmed?*, Sun Yat-sen University, Guangzhou, April 6 (invited seminar).
49. *The Challenge Imposed by Climate Change*, Action Canada Alumni Conference, Vancouver, April 2 (invited).
50. *Changing Extremes - is it real, or just imagined?*, Community Climate Science Seminar, University of Victoria, March 30 (invited).
51. *Pacific Climate Impacts Consortium: Providing user-motivated climate science, 2015-2016*, University of Victoria Board of Governors, March 30.

52. *Pacific Climate Impacts Consortium: Providing User Motivated Climate Science*, Canadian Electrical Association Climate Change Adaptation Working Group Workshop, Vancouver, February 29 (invited)
53. *Changing extremes - is it real, or just imagined?*, Canadian Meteorological and Oceanographic Society Tour Speaker, Ottawa, St. John's, Halifax, Toronto, Montreal (2 venues), Quebec City, Rimouski, Fredricton, February 24 - April 15 (Invited)
62. *Victoria Updates*, International adhoc Detection and Attribution Group Workshop, Boulder, CO, February 1.
63. *Caveat Venditor, Lector et Emptor (Seller, Reader and Buyer Beware)*, 23rd AMS Conference on Probability and Statistics, New Orleans, January 13 (Invited)
64. *Revisiting Trends in Wetness and Dryness in the Presence of Internal Climate Variability*, 28th AMS Conference on Climate Variability and Change, New Orleans, January 14 (presented by Sanjiv Kumar)

2015

65. *Optimal Fingerprinting Approach to Detect Anthropogenic Signal in the Regional Hydrologic Cycle*, AGU Fall Meeting, San Francisco, December 18 (co-author of poster, presented by Reza Najafi)
66. *Robust and Heterogeneous Hydrological Changes under Global Warming*, AGU Fall Meeting, San Francisco, December 18 (co-author of poster, presented by Sanjiv Kumar)
67. *The influence of atmospheric blocking on extreme winter minimum temperatures in North America*, AGU Fall Meeting, San Francisco, December 18 (presented for lead author, Kirien Whan)
68. *How Will Climate Change Affect Explosive Cyclones in the Extratropics of the Northern Hemisphere?*, AGU Fall Meeting, San Francisco, December 17 (presented by Christian Seiler).
69. *Detecting and Quantifying the Anthropogenic Influence on Extremes*, AGU Fall Meeting, San Francisco, December 15 (Invited)
70. *Climate Change and the Challenge of Delivering Information*, Spatial Data Infrastructure Summit, Victoria, November 24 (Invited Keynote)
71. *Changes in Extreme Precipitation: What We Know and What We Understand*, Environment Canada, Toronto, Ontario, November 10 (Xuebin Zhang, presenter)
72. *Detection, Attribution and Extreme Climate and Weather Events*, IESVIC, University of Victoria, October 29 (Invited)
73. *Evaluation of dynamical or dynamically influenced phenomena in Regional Climate Models*, CICERO, University of Oslo, October 6 (Invited)
74. *The IPCC Assessment Process*, Quest University (Skype presentation), October 1
75. *Detection, Attribution and Extreme Climate and Weather Events*, Department of Statistics and Actuarial Science, University of Waterloo, Waterloo, Ontario, September 17 (Invited)
76. *Detection, Attribution and Extreme Climate and Weather Events*, Department of Statistics, Western University, London, Ontario, September 16 (Invited)
77. *Detection and attribution of long term changes in extremes*, 14th Swiss Summer Climate School "Extremes and Climate", Ascona, Switzerland, August 24 (Invited)
78. *Are humans exacerbating climate and weather extremes?*, Our Common Future Under Climate Change, UNESCO, Paris, France, July 7 (Invited Keynote)
79. *The Challenge of Event Attribution: How and When to pose the question*, Centre de la Recherche Meteorologique, Toulouse, France, July 2 (Invited)
80. *Detection, Attribution and Extreme Climate and Weather Events*, International Union of Geodesy and Geophysics 26th General Assembly (IAMAS Symposium), Prague, Czechoslovakia, June 29 (Invited Keynote)
81. *Detection, Attribution and Extreme Climate and Weather Events*, Statistical Society of Canada Annual Meeting, Halifax, NS, June 16 (Invited)
82. *The impact of atmospheric blocking on extreme winter minimum temperatures in North America*, presented by K. Whan (lead author), Canadian Meteorological and Oceanographic Society Annual Congress, Whistler, BC, June 2
83. *Detection, Attribution and Extreme Climate and Weather Events*, Canadian Meteorological and Oceanographic Society Annual Congress, Whistler, BC, June 2
84. *Attribution of Hydroclimatic Changes in Western Canada to Human Influence*, Canadian Meteorological and Oceanographic Society Annual Congress, poster presentation (M.R. Najafi lead author), Whistler, BC, June 1
85. *The Challenge Imposed by the Climate Change Context*, BC Climate Leadership Team, Vancouver, June 1 (Invited)
86. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science 2014-2015*, University of Victoria Board of Governors, May 25

87. *Evidence of a changing climate*. Canadian Wildlife Health Association Workshop "The Place for Wildlife Health in Climate Change Preparedness and Adaptation", Victoria, May 13 (Invited)
88. *ARRCU Community: Scope, Definition, Purpose*, Atmosphere Related Research in Canadian Universities (ARRCU) working group meeting, Montreal, May 8
89. *Pacific Climate Impacts Network: Providing User Motivated Climate Science*, CRNCWP Network Meeting, UQAM, Montreal, April 30
90. *Canadian Network for Regional Climate and Weather Processes (Theme B Introduction)*, CRNCWP Network Meeting, UQAM, Montreal, April 30
91. *Climate change and precipitation extremes*, Transport Canada Webinar, April 23 (Invited)
92. *Attributing causes to observed changes in Northern Climate*, CanSISE Network Meeting, University of Toronto, March 11
93. *CanSISE northern climate detection and attribution research contributions*, International ad hoc Detection and Attribution Group, NCAR, Boulder, CO, January 22
94. *Past and future climate change in British Columbia*, Capital Region District Round Table on the Environment, Victoria, January 9 (Invited)

2014

95. *The IPCC 5th Assessment Report*, Quest University (via Skype), December 9
96. *Are humans affecting the intensity of temperature and precipitation extremes?* Sun Yat-Sen University, Guangzhou, China, December 1 (Invited)
97. *The prediction and attribution of extremes: from climate to weather*, Session Introduction, Climate Symposium 2014, Darmstadt, Germany, October 16
98. *The human contribution to observed changes in precipitation extremes*, ATM S 475, University of Washington, Seattle WA, October 7 (Invited)
99. *Highlights of the WG1 AR5 Report*, IPIECA Workshop on IPCC AR5, Washington DC, September 25 (Invited)
100. *Evidence of a changing climate*, HDCC200, University of Victoria, September 15
101. *The human contribution to observed changes in precipitation extremes*, 13th CAS-TWAS-WMO Forum, Beijing, China, September 9 (Invited Keynote)
102. *The human contribution to observed changes in precipitation extremes*, Third Nordic International Conference on Climate Change Adaptation, Copenhagen, August 27 (Invited)
103. *Detection and attribution: Approaches for climate and weather extremes*, WCRP Summer School on Extremes, Trieste, Italy, July 28
104. *Detection and attribution: A general introduction*, WCRP Summer School on Extremes, Trieste, Italy, July 23
105. *Changes in climate extremes*, 7th International GEWEX Conference, The Hague, July 15 (presented by Xuebin Zhang)
106. *Evaluation of influence of spatial resolution on extreme precipitation projections*, RCM2014 Poster T3-54, Lund, Sweden, June 18 (presented by Trevor Murdock)
107. *Evidence of a changing climate*, Coastal Zones Canada 2014, Halifax, NS, June 18 (Invited)
108. *Convocation Address*, 303rd Convocation, Western University, London, Ontario, June 11 (Invited)
109. *Have extreme precipitation events become more extreme?*, Canadian Meteorological and Oceanographic Society Annual Congress, Rimouski, Quebec, June 2
110. *Have extreme precipitation events become more extreme?*, Canadian Network for Regional Climate and Weather Processes, UQAM, Montreal, May 29
111. *Attributing northern high-latitudes precipitation change in late 20th century to Human Influence*, Canadian Snow and Sea-Ice Evolution Network Workshop, University of Victoria, May 9
112. *Have extreme precipitation events become more extreme?*, 10th Annual Symposium of the Brace Centre for Water Resources Management, McGill University, May 8 (Invited)
113. *Have extreme precipitation events become more extreme?*, Canadian Climate Forum Symposium, Ottawa, April 23 (Invited)
114. *Attribution of Extremes: Scientific challenges*, Environmental Defence Fund workshop on the Attribution of Climate and Weather Extremes, New York City, April 4 (Invited)
115. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science 2013-2014*, Board of Governors, University of Victoria, April 1
116. *Changing Climates (IPCC AR5) and Implications for the Canadian Prairies*, School of Environment and Sustainability, University of Saskatchewan, February 14 (presented by Elaine Wheaton)
117. *Observed, simulated and projected changes in indicators of climate extremes*, Dean's Colloquium. Faculty of Mathematics, University of Waterloo, February 13 (Invited)

118. *Quantifying the contributions to observed changes in extremes*, Centre for Global Change Science, University of Toronto, February 11 (Invited)
119. *Climate change scenarios relevant to CCaR*, Coastal Cities at Risk Workshop, Simon Fraser University, Vancouver, BC, February 6
120. *Attribution of Extremes: Scientific Challenges*, EUCLEIA General Assembly, ETH, Zurich, Switzerland, January 20 (Invited Keynote)
121. *Pacific Climate Impacts Consortium - Hydrologic Impacts Theme Update*, International Columbia Basin Climate and Hydrology Assessment Workshop, Portland, OR, January 15
122. *An update on the IPCC 5th Assessment Report*, International Columbia Basin Climate and Hydrology Assessment Workshop, Portland, OR, January 15
123. *The IPCC 5th Assessment Report: Implications for British Columbia*, Great Northern Landscape Conservation Cooperative, delivered via webinar, January 7 (Invited)

2013

124. *Towards Understanding the Causes of Observed Changes in Precipitation Extremes*, AGU Fall Meeting, San Francisco, CA, December 13 (Invited)
125. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, Presentation to the Honourable Mary Polak, Minister of Environment, British Columbia, University of Victoria, Victoria, BC, December 2
126. *Are Climate Extremes Changing?*, PIMS Distinguished Speakers Series, University of Victoria, Victoria, BC, November 28 (Invited)
127. *A Turbulent (and uncertain) Climate?*, Probus Club of Victoria, Victoria, BC, November 27 (Invited)
128. *Use of Regional Modelling in Analysis of Extreme Precipitation Events*, APEX Project Kickoff Meeting, Oslo, Norway, November 15
129. *An Update on Precipitation Extremes*, NAPEX Project Kickoff Meeting, Oslo, Norway, November 13
130. *Climate Change Detection and Attribution Methods*, Stat+Clim 2013 Workshop, Oslo, Norway, November 11
131. *Observed and projected "high" latitude regional climate change*, CanSISE Network Workshop, Victoria, BC, October 30
132. *Observed and projected changes in extremes*, BIRS International Research Station, Banff, AB, October 24 (Invited)
133. *An Update on Precipitation Extremes*, BC Hydro, Vancouver, BC, October 9
134. *A Turbulent Climate*, International Boreal Forest Research Association Conference, Edmonton, AB, October 8 (Invited Keynote)
135. *The IPCC 5th Assessment Report: Implications for British Columbia*, Ft. St. John Petroleum Association, Ft. St. John, BC, October 3 (Invited)
136. *The IPCC 5th Assessment Report: Background and The IPCC 5th Assessment Report: Implications for British Columbia*, PCIC/PICS Public Sector Briefing, St. Anne's Academy, Victoria, BC, October 2 (Invited)
137. *The IPCC 5th Assessment Report: Background and The IPCC 5th Assessment Report: Implications for British Columbia*, PCIC/PICS Public Briefing, Wosk Centre (live and webcast), Vancouver, BC, September 30 (Invited)
138. *The IPCC 5th Assessment Report: Background*, Science Media Centre of Canada Public IPCC Briefing, Webcast (Ottawa, ON), September 27 (Invited)
139. *The IPCC 5th Assessment Report: Background*, Ouranos Public IPCC Briefing, Webcast (Montreal, QC), September 27 (Invited)
140. *IPCC Uncertainty Language*, IPCC WG1 XII Approval Plenary, Stockholm, Sweden, September 23 (Invited)
141. *Precipitation extremes and the warming hiatus*, CICERO, Oslo, Norway, September 18 (Invited)
142. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, North Pacific Land Conservancy Consortium, Victoria, BC, September 10 (Invited)
143. *Some applications of extreme value analysis in climate science*, US CLIVAR Workshop on Extremes, Lawrence Berkeley National Labs, Berkeley, CA, August 20 (Invited)
144. *Some applications of extreme value analysis in climate science*, Next Generation Data Products Workshop, NCAR, Boulder, CO, July 15 (Invited)
145. *Precipitation extremes and the warming hiatus*, International adhoc Detection and Attribution Group, NCAR, Boulder, CO, July 2
146. *Is our ability to understand the causes of changes in precipitation extremes improving?*, 12th International Meeting on Statistical Climatology, Jeju, Korea, June 26

147. *Extreme value theory and precipitation extremes*, Canadian Meteorological and Oceanographic Society Annual Congress, Saskatoon, Sask, May 27 (Invited)
148. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, Annual Climate Change Research Symposium, Ontario Climate Consortium, Toronto, ON, May 13
149. *Foreseeing long term and short term hydrologic changes in BC drainage basins*, Hydropower Operations and Planning Interest Group Workshop, Manitoba Hydro, Winnipeg, Man, May 9
150. *A turbulent climate*, Herstmonceux Conference on Statistics, Science and Policy, Herstmonceux Castle, UK, April 18 (Invited)
151. *The precipitation chronicles*, School of Geosciences, University of Edinburgh, UK, April 15
152. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, University of Victoria Board of Governors, Victoria, BC, March 25
153. *The precipitation chronicles*, Atmospheric Science and Technology Directorate Seminar Series, Toronto, ON, March 22
154. *Future trends in extreme precipitation events in the Pacific and Yukon Region*, BC Atmospheric River Events: State of the Knowledge Workshop, Victoria, BC, March 7 (Invited)

2012

155. *Changes in Climate Extremes: Local to Global*, ACCLIMAT Project Final Meeting, St. Denis, Reunion Island, December 13 (Invited)
156. *The precipitation chronicles: How and why are precipitation extremes changing?*, American Geophysical Union Fall Meeting, San Francisco, CA, United States, December 5 (Invited)
157. *How and why are precipitation extremes changing*, EESS Fall Seminar Series, Department of Environmental Earth System Science, Stanford University, November 28 (Invited)
158. *PCIC Program: Theme Research Plan Update*, PCIC Program Advisory Committee Meeting, Victoria, BC, November 23
159. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, EC Climate Services Workshop, Ouranos, Montreal, QC, November 22 (Invited)
160. *The precipitation chronicles*, Ouranos, Montreal, QC, November 6 (Invited)
161. *Our Evolving Climate*, Association of Professional Engineers and Geoscientists of BC 2012 Annual Conference, Victoria, BC, October 24 (Invited)
162. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, Briefing to the Climate Action Secretariat, BC Ministry of Environment, Victoria, BC, October 23 (Invited)
163. *How do millennial proxy reconstructions methods stack up?*, Exploratory Workshop DADA, Buenos Aires, Argentina, October 17 (Invited)
164. *Climate change detection and attribution methods*, Exploratory Workshop DADA, Buenos Aires, Argentina, October 15 (Invited)
165. *Why has the climate warmed, and how much more will it warm?*, Guest Lecture, HDCC 200, University of Victoria, September 24
166. *How do we know the climate has warmed?*, Guest Lecture, HDCC 200, University of Victoria, September 20
167. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, Climate Impacts Research Center (CIRC) Retreat, Portland, Oregon, July 12 (Invited)
168. *Progress in Detecting Anthropogenic Influence on Temperature and Precipitation Extremes*, Australian Meteorological and Oceanographic Society, University of New South Wales, Sydney, Australia, July 2 (Invited)
169. *Progress in Detecting Anthropogenic Influence on Temperature and Precipitation Extremes*, University of Melbourne, June 29 (Invited)
170. *On the Attributes and Challenges of Regional Climate Services*, Climate Adaptation in Action 2012 Conference, National Climate Change Adaptation Research Facility, Melbourne, Australia, June 28 (Invited)
171. *An update on extremes: Progress on model performance, detection and attribution, and climate service delivery*, Bureau of Meteorology, Melbourne, Australia, June 27 (Invited)
172. *Progress in Detecting Anthropogenic Influence on Temperature and Precipitation Extremes*, Pearman Lecture, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Victoria, Australia, June 25 (Invited)
173. *On bridging two solitudes: Examples of a slow diffusive process*, Impact Award Address, Statistical Society of Canada Annual Meeting, Guelph, ON, June 4 (Invited)
174. *International activities related to detection and extremes*, Banff International Research Station for Mathematical Innovation and Discovery, Banff, AB, June 1 (Invited)

175. *Detection and attribution of changes in extremes*, Banff International Research Station for Mathematical Innovation and Discovery, Banff, AB, May 29 (Invited)
176. *Changes in Climate Extremes and their Impacts on the Natural Physical Environment*, Regional Outreach Meeting for the IPCC Special Report on Extremes, Chinese Meteorological Administration, Beijing, April 26 (Invited)
177. *On the attributes and challenges of regional climate services*, Eighth Session of the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAII), Chinese Meteorological Administration, Beijing, April 5 (Invited)
178. *PCIC Strategic Plan 2012-2016*, PCIC Program Advisory Committee Meeting, Victoria, April 2
179. *Pacific Climate Impacts Consortium: Providing User-Motivated Climate Science*, University of Victoria Board of Governors, March 27
180. *What do climate models tell us about projected changes in climate extremes?*, 7. Public Infrastructure Engineering Vulnerability Committee Meeting and National Assessment Workshop, Ottawa, March 21 (Invited)
181. *On Climate Change and Future Hydrology*, IdeaFest 2012 Round Table on Water Issues, University of Victoria, March 8 (Invited)
182. *Climate Change in the BC Context*, IdeaFest 2012 Lectures on Climate and Food Security, University of Victoria, March 6 (Invited)
183. *Have Humans affected weather and climate extremes?*, Air and Waste Management Association, Victoria Chapter, Victoria, BC, February 28 (Invited)
184. *Detection and attribution of changes in extremes*, University of Edinburgh Grant Institute, Edinburgh, UK, January 16 (Invited)

2011

185. *Detection and attribution of changes in extremes*, 2011 International Conference on Climate Change, Taipei, Taiwan, December 7 (Invited)
186. *Our Evolving Climate*, Teck Resources, Vancouver, November 30
187. *Why is GHG mitigation not enough to deal with climate change?*, briefing to the British Columbia Minister of the Environment, Vancouver, November 29 (Invited)
188. *On the attributes and challenges of regional climate services*, Regional Climate Services Workshop 2011, PCIC, University of Victoria, November 23
189. *Progress in Detecting Anthropogenic Influence on Temperature and Precipitation Extremes*, poster TH160B, World Climate Research Program Open Science Conference, Denver, CO, October 24
190. *From CRMP to PRISM: Progress toward providing users improved climate data*, PCIC Program Advisory Committee, University of Victoria, September 27.
191. *Detection and Attribution of Changes in Extremes*, Pacific Northwest Climate Science Conference, University of Washington, Seattle, WA, September 14 (Invited)
192. *Our Evolving Climate*, guest lecture, UVic Course HDCC200 (Prof. R. Gifford), September 12
193. *AR5 Guidance on Consistent Treatment of Uncertainties*, IPCC 5th Assessment Report Working Group I 2nd Lead Author Meeting, Brest, France, July 21
194. *Detection and attribution of changes in extremes - current approaches*, Ascona 2011, Centro Stephano Franscini, Ascona, Switzerland, July 14. (Invited)
195. *Detection and attribution of changes in extremes - some current approaches*, Statistics 2011 Canada, Montreal, July 3. (Invited)
196. *Detection and attribution of changes in extremes - current approaches*, Extreme Value Analysis 2011, Lyon, France, July 1 (Invited)
197. *Pacific Climate Impacts Consortium*, Pacific Institute for Climate Solutions Forum, Vancouver, June 15
198. *Why is GHG mitigation not enough to deal with climate change?*, Pacific Institute for Climate Solutions Forum, Vancouver, June 14 (Invited)
199. *Our Evolving Climate*, I.I. Glass Lecture, University of Toronto Institute for Aerospace Studies, Toronto, June 13 (Invited)
200. *Quantification of uncertainty in high resolution temperature scenarios for North America*, Canadian Meteorological and Oceanographic Society Congress, Victoria, BC, June 9
201. *On the role of statisticians and the study of predictability: A tribute to George Boer*, Canadian Meteorological and Oceanographic Society Congress, Victoria, BC, June 9 (Invited)
202. *The IPCC 5th Assessment Report*, Canadian Meteorological and Oceanographic Society Congress, Victoria, BC, June 6
203. *Detection and attribution of changes in extremes - current approaches*, University of Bern, Bern, Switzerland, April 20

204. *Detection of external influence on Northern Hemispheric snow cover*, School of Earth and Ocean Sciences, University of Victoria, April 12
205. *Anthropogenic influence on long return period daily temperature extremes*, Forum on Regional Climate Monitoring and Assessment for Asai (FOCARII), Beijing Climate Centre, April 6 (Invited)
206. *Pacific Climate Impacts Consortium Overview*, Council of Centre Directors, University of Victoria, March 17
207. *Our Evolving Climate*, Distinguished Speaker Series, Dalhousie University, Halifax, NS, March 10 (Invited)
208. *Testimony for House Committee on Energy and Commerce Subcommittee on Energy and Power - Tilting the Odds*, Washington, DC, March 8 (Invited)
209. *Some approaches to detecting human influence on extremes*, Meeting of the CCICLIVARJCOMM Expert Team on Climate Change Detection and Indices (ETCCDI), University of Victoria, February 24
210. *The Instrumental Temperature Record and what it tells us about Climate Change*, Seminar Series on the Science of Global Warming, Simon Fraser University, February 23 (Invited)
211. *Detection and attribution of changes in extremes - current approaches*, Canadian Centre for Climate Modelling and Analysis, University of Victoria, February 17
212. *Climate change projections and their potential hydrologic impacts for some key British Columbia drainage basins*, Executive Committee meeting, International Joint Commission, Vancouver, BC, February 9 (Invited)
213. *International research activities related to extremes*, Drought Research Initiative (DRI) Workshop, Winnipeg, MA, February 8
214. *Climate and weather extremes and their causes*, Drought Research Initiative (DRI) Workshop, Winnipeg, MA, February 7
215. *Detection and attribution of changes in extremes - current approaches*, Drought Research Initiative (DRI) Workshop, Winnipeg, MA, February 7 (Invited)
216. *Detection of external influence on Northern Hemispheric snow cover*, International ad-hoc Detection and Attribution Group, Boulder, CO, January 31
217. *Anthropogenic influence on long return period daily temperature extremes*, Annual meeting of the American Meteorological Society, Seattle, WA, January 24 (Invited)
218. *Some approaches to detecting human influence on extremes*, Statistics Seminar, Department of Mathematics and Statistics, University of Victoria, January 21
219. *Our evolving climate*, Cadboro Bay Residents Association, Victoria, BC, January 20 (Invited)
220. *Some approaches to detecting human influence on extremes*, Workshop on Statistical Methods for Meteorology and Climate Change, Centre de Recherches Mathematiques, Universite de Montreal, Montreal, January 13 (Invited)

2010 and earlier

300 additional items prior to 2010.

7 Educational and Peer Review Contributions

7.1 Educational Contributions

- J. Marchal, 2017, Ph.D Candidate, Laval University, External Examiner
- C. Li, 2016-, Research Associate, University of Victoria, Co-supervisor with X. Zhang
- C. Curry, 2016-, Research Associate, University of Victoria, Co-supervisor with N. Gillett
- M.A. Ben Alaya, 2016-, Postdoctoral Fellow, University of Victoria, Co-supervisor with X. Zhang
- A. Albert-Green, 2016, Ph.D. Candidate, Western University, External Examiner
- A. Erler, 2015, Ph.D. Candidate, University of Toronto, External Examiner
- M. Kirchmeier-Young, 2015-, Postdoctoral Fellow, University of Victoria, Co-supervisor with N. Gillett
- Y. Wang, 2015-, M.Sc. Student, Department of Geography, University of Victoria, Co-supervisor with David Atkinson
- T. Shi, 2015, Ph.D. Candidate, University of British Columbia, External Examiner.
- T. Shi, 2014, Ph.D. Candidate, University of British Columbia, External Examiner.
- S. Kumar, 2013-2014, Research Associate, PCIC, University of Victoria, Supervisor.
- R. Najafi, 2013-2015, Postdoctoral Fellow, PCIC, University of Victoria, Co-supervisor with N. Gillett
- K. Whan, 2013-2015, Postdoctoral Fellow, PCIC, University of Victoria. Supervisor.
- C. Seiler, 2013-2015, Postdoctoral Fellow, PCIC, University of Victoria. Supervisor.

B. Mueller, 2013-2016, M.Sc. Student, SEOS, University of Victoria, Member of Supervisory Committee.

K. Whan, 2013: Ph.D. candidate, Australian National University, External Examiner

K. Pingree, 2013-, Ph.D. Student, Dept. of Geography, University of Victoria. Co-supervisor with David Atkinson.

N. Shippee, 2012-2016, Ph.D. Student, Dept. of Geography, University of Victoria. Member of Supervisory Committee.

B. Tencer, 2012-2015, Postdoctoral Fellow, School of Earth and Ocean Sciences, University of Victoria, co-supervised with Andrew Weaver.

K. Noake, 2011, M.Sc. Candidate, University of Edinburgh, External Examiner

E. Salimun, 2011: Ph.D. Student, School of Environmental and Natural Resource Sciences, National University of Malaysia. Hosted Ester at PCIC for approximately 2 months as part of her PhD program. Ester's PhD is supervised by Dr. Fredolyn Tangang.

O. Krueger, 2011: Ph.D. Student, Department of Meteorology, University of Hamburg. Hosted Oliver at PCIC for approximately 2 months as part of his PhD program. Oliver's PhD is supervised by Hans von Storch, Helmholtz Zentrum Geesthacht.

S. Taylor, 2011- : Ph.D. Student, Dept. of Statistics, Simon Fraser University. Member of Supervisory Committee.

J. Sillman, 2010-2013 : Postdoctoral Fellow, School of Earth and Ocean Sciences and Canadian Centre for Climate Modelling and Analysis, co-supervisor with Andrew Weaver (while at SEOS) and Slava Kharin (while at CCCma).

M. Remple, 2010-2012 : M.Sc. Student, Department of Mathematics and Statistics and School of Earth and Ocean Sciences, University of Victoria. Co-supervisor.

S. Sobie, 2010: M.Sc. Candidate, University of Victoria, External Examiner.

D. Vyushin, 2007-2009: Ph.D. Student, Dept. of Physics, University of Toronto. Member of Supervisory Committee.

J. Beersma, 2007: Ph.D Candidate, Wageningen Universiteit, Wageningen, The Netherlands. External Examiner.

Prof. R. Leconte, 2005: Sabbatical Visitor (2 months), Ecole Technical Superieur, Montreal.

Dr. Q. Teng, 2004-2006: Postdoctoral fellow, CFCAS/NSERC CLIVAR Research Network. Co-supervised with V.V. Kharin and X. Zhang.

H. Dang, 2003-2005 : M.Sc. Student, School of Earth and Ocean Sciences, University of Victoria, Co-supervised with A.J. Weaver.

T. Lee, 2003-2008 : Ph.D. Student, Department of Mathematics and Statistics, University of Victoria. Co-supervised with Min Tsao.

T. Lee, 2002-2003: M.Sc. Student, Department of Mathematics and Statistics, University of Victoria. Co-supervised with Min Tsao.

EOS 561, 2002: Directed studies in Statistical Climatology (for Q. Teng, PhD candidate, SEOS).

Dr. N.P. Gillett, 2002-2005: Postdoctoral fellow, CFCAS/NSERC CLIVAR Research Network. Co-supervised with A.J. Weaver.

M. Hermary, 2000-2002: Ph.D Student, Department of Mathematics and Statistics, University of Victoria. Supervisor. Unfortunately, this student was not able to complete his degree.

Q. Teng, 2000-2004: Ph.D. Student, School of Earth and Ocean Sciences, University of Victoria, Member of Supervisory Committee.

EOS 561, 2000: Directed studies in Multivariate Analysis (for R. Veefkind, PhD candidate, SEOS).

G. Arfeuille, 1999-2001: Ph.D Student, School of Earth and Ocean Sciences, University of Victoria, Member of Supervisory Committee.

D. Stone, 1999-2003: Ph.D. Student, School of Earth and Ocean Sciences, University of Victoria. Member of Supervisory Committee.

Dr. C. J. Hsu, 1999: Postdoctoral fellow, Climate Variability Node of the Canadian Climate Research Network.

M. Faucher, 1998: Ph.D. Student, Environmental Sciences, University of Quebec at Montreal, Member of Qualifying Examination Committee.

D. Stone, 1998-1999: M.Sc. Student, School of Earth and Ocean Sciences, University of Victoria. Member of Supervisory Committee.

Q. Zhang, 1998-2000: Ph.D. Student. School of Earth and Ocean Sciences, University of Victoria. Member of Supervisory Committee.

Y. Zudan, 1998-2000: Ph.D. Student. Department of Earth and Ocean Sciences, University of British Columbia, Member of Supervisory Committee.

Dr. M. Stevens, 1998-2000: NSERC Visiting Fellow, Climate change detection. CCCma.

W.G. Sneddon, 1997 (External examiner): Ph.D. candidate, Statistics, Dalhousie University.
 F.T. Tangang, 1997 (External examiner): Ph.D. candidate, Oceanography, University of British Columbia.
 Dr. V. Kharin, 1996-1999: Postdoctoral fellow, Climate Variability Node of the Canadian Climate Research Network.
 Dr. X. Wang, 1996-1998: Postdoctoral fellow, Climate Variability Node of the Canadian Climate Research Network.
 R. Taylor, 1996: Co-op Student, Dept. of Mathematics and Statistics, University of Victoria.
 T. Gui, 1996: Co-op Student, Dept. of Physics, University of Victoria.
 Dr. Richard Tol, 1994. Visitor (1 month) from the Institute of Environmental Studies, Free University of Amsterdam.
 J. Karr, 1994: Co-op Student, Dept. of Physics, University of Victoria.
 R.M. Gilchrist, 1984. The Asymptotic Distribution of the Sum and Maximum of Chain Dependent Processes, M.Sc., University of Saskatchewan.
 S.M. El-Saadany, 1984. Comparative Study of the Estimation Accuracy of Covariance Estimates Used in Objective Analysis Schemes, M.Sc., University of Saskatchewan.

7.2 Peer Review Contributions

During my career I have served as a referee for AERES, AES Science Subventions, African Geographical Review, Annales Geophysicae, Arctic, Atmosphere-Ocean, Atmospheric Chemistry and Physics, Atmospheric Science Letters, Austrian FWF (Austrian Science Fund), Bulletin of the American Meteorological Society, Cambridge University Press, Canada Research Chairs, Canadian Journal of Plant Science, Canadian Journal of Statistics, Canadian Water Research Journal, CCAF, CFCAS, Climate Dynamics, Climate Research, Climatic Change, Climate of the Past, CORDEX, Deep Sea Research, Deep South Challenge (New Zealand), Dendroclimatologia, Environmental Modelling and Simulation, Environmetrics, ESRC, ETH Zurich, Fields Institute, Geophysical Research Letters, Intergovernmental Panel on Climate Change, International Journal of Climatology, Journal of Applied Meteorology, Journal of Applied Meteorology and Climatology, Journal of Atmospheric Science, Journal of Atmospheric and Oceanic Technology, Journal of Atmospheric and Terrestrial Physics, Journal of Climate, Journal of Climate and Applied Meteorology, Journal of Geophysical Research, Journal of Great Lakes Research, Journal of Hydrology, Journal of Marine Systems, Journal of Meteorological Society of Japan, Journal of Quaternary Science, Kluwer, MEOPAR (an NCE), Meteorologische Zeitschrift, MITACS, Monthly Weather Review, National Academy of Sciences (USA), NASA, Nature, Nature Climate Change, Nature Communications Nature Geoscience, Nature Scientific Reports, NCAR, NERC, NOAA, NSERC, NSF, Ocean Dynamics, Ocean Modelling, Pageoph, Pakistan Journal of Statistics, Paleoceanography, Quarterly Journal of the Royal Meteorological Society, Risk Analysis, Royal Society Proceedings A, Science, Swiss National Science Foundation, Surveys in Geophysics, Technometrics, Tellus, UCAR, University of Bern, University of Chicago Press, University of Oxford Press, US Department of Energy, VRQ, Wiley.

I have also served as an Editor of the Journal of Climate, as an Associate Editor of the International Journal of Climatology, and currently serve as an Associate Editor of the Journal of Climate and the Journal of Geophysical Research - Atmospheres.