Andrew D. Gronewold, Ph.D., P.E.

Curriculum Vitae

March 2024

Contact Information

University of Michigan
School for Environment and Sustainability
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Education

Ph.D., Duke University (Environmental Science and Policy)	2008
B.S., Cornell University (Civil and Environmental Engineering)	1995

Professional Appointments

Associate Professor, Univ. Michigan, School for Environment and Sustainability	2019 - present
Associate Professor (courtesy appt.), Univ. Michigan, Earth and Env. Sciences	2019 - present
Associate Professor (courtesy appt.), Univ. Michigan, Civil and Env. Engineering	2019 - present
Graduate faculty, courtesy appointment, University of Toledo	2018 - present
Adjunct Asst. Professor, Univ. Michigan, Civil and Env. Engineering	2013 - 2018
Physical Scientist, NOAA, Great Lakes Environmental Research Laboratory	2010 - 2018
Adjunct Assistant Professor, University of North Carolina - Chapel Hill	2008 - 2013
Post-Doctorate Fellow, Office of Research and Development, USEPA	2008 - 2010
Instructor, Nicholas School of the Environment, Duke University	2004 - 2009
Research Assistant, Nicholas School of the Environment, Duke University	2005 - 2008
Director of Engineering, Ecological Engineering Group, Inc.	2003 - 2004
Assistant Scientist, Sea Education Association	1998 - 2000
Environmental Engineer, Stearns & Wheler, LLC	1995 - 2003

Courses taught

EAS 635 Multivariate analysis for environmental science (University of Michigan)
EAS 579 Hydrologic cycle and water resources management (University of Michigan)
EAS 538 Natural resource statistics (University of Michigan)
EARTH 450 Ecosystem science (University of Michigan - Camp Davis)
CEE 421 Hydrology and floodplain hydraulics (University of Michigan)
CEE 325 Fluid mechanics (University of Michigan)
ENV 335 Water quality modeling (Duke University)
ENV 236 Water quality management (Duke University)
MTH 160 Basic statistics (Washtenaw Community College)

Peer-reviewed publications (students underlined, post-doctorate fellows double-underlined)

Submitted manuscripts

78. Calappi, T., J.M. Waddell, M.A. McClerren, **A.D. Gronewold**, J.E. McNinch, J.P. Selegean. Evaluation of repeat bathymetric surveys on water surface elevations on the Saint Clair River (Submitted).

77. Gossard, A., M. Venumuddula, A. VanDeWeghe, C. Wegener, **A.D. Gronewold**. Why does Mono Lake still need saving? Differentiating impacts of climate change from anthropogenic demand (Submitted).

76. Shin, S, **A.D. Gronewold**, L.M. Fry, A. Dugger, J. Kessler. Evaluating surface and subsurface fluxes in hydrological models to advance basin-scale operational long-term water supply forecasting in the Great Lakes basin (Submitted).

75. Zuo, C, R. Wang, Y. Hong, Y. Zhou, Y. He, **A.D. Gronewold**. The influence of road network topology on street flooding in New York City - a social media data approach (Submitted).

74. Venumuddula, M, K. Kirchner, A. Chen, R. Rood, **A.D. Gronewold**. Improving coastal ice cover forecasting: a case study from the Laurentian Great Lakes (Submitted).

73. Fuller, J., E. Rowan, A. Landgraf, K. Alofs, J. Foufopoulos, **A.D. Gronewold**. Waterbird colony collapses under climate driven lake-level rise and anthropogenic stressors. (Under revision).

72. Hille, M., M. Clark, **A.D. Gronewold**, A. West, D. Zekkos, D. Chamlagain (Submitted). The orographic influence of storm variability, extreme rainfall characteristics and rainfall-triggered landsliding (Submited).

71. Do, Hong X., P. Vo, H. Pham, Y. Mei, **A.D. Gronewold** (Submitted). Observed response of tropical river streamflow to climate change - evidence from a national database.

70. Comer, B., Fry, L., **A.D. Gronewold** (Submitted). Publication trends for the earth's largest fresh surface waters.

69. **Gronewold, A.D.** and J.M. Lewis. (Submitted). Anomalies in the water budget of Earth's largest lake system following the 1997-1998 El Niño.

68. Mei, Yiwen, C. Stephens, H. Do., Y. Hong, H. Pham, P. Vo, **A.D. Gronewold**, E. Nikolopoulos (Submitted). Large catchment storage capacity slows down the propagation from meteorological to hydrological drought.

Published journal articles

67. Sorensen, T, E. Espey, J.G.W. Kelley, J. Kessler, **A.D. Gronewold**, 2024. A database of *in situ* water temperatures for large inland lakes across the coterminous United States. *Nature Scientific Data*. 11, 282.

66. Polidori, J, H. Paulson, **A.D. Gronewold**. Assessing trends in urban municipal water use across the Great Lakes basin, 2024. *Journal of Great Lakes Research*. 50(1), 102243.

65. Mei, Y., J. Mai, H. Do, **A.D. Gronewold**, H. Reeves, S. Eberts, R. Niswonger, S. Regan, R. Hunt, 2023. Can hydrologic model calibration benefit from global gridded soil moisture, evapotranspiration, and runoff products? *Water Resources Research*. 59(2), e2022WR032064.

64. Shriberg, M., R. Norton, A. Steiner, S. Hughes, J. Overpeck, G. Dick, K. Whyte, **A.D. Gronewold**, J. Allan, D. Porter, J. Read, O. Salim. 2023. Leadership for the next generation of Great Lakes stewardship. *Journal of Great Lakes Research*. 49(5), 1211-1213.

63. Yao, D., Y. Huang, L. Xue, Y. Fu, **A.D. Gronewold**, J. Fox, 2022. Seismicity around Southern Lake Erie during 2013-2020 in relation to lake water level *Seismological Research Letters*. 93(4), 2268-2280.

62. Phillips, D., P. Jamwal, M. Lindquist, **A.D. Gronewold**, 2022. Assessing catchment-scale performance of in-stream Green Infrastructure interventions using SWMM-based TOPSIS. *Landscape and Urban Planning*. 10.1016/j.landurbplan.2022.104448

61. Benjamin, S. G., T. Smirnova, E. James, E. Anderson, A. Fujisaki-Manome, J. Kelley, G. Mann, **A.D. Gronewold**, P. Chu, S. Kelley, 2022. Inland lake temperature initialization via coupled cycling with atmospheric data assimilation. *Geoscientific Model Development*. 15(7), 6659-6676.

60. VanDeWeghe, A., Lin, V., Jayaram, J., **A.D. Gronewold**, 2022. Changes in large lake water level dynamics in response to climate change. *Frontiers in Water*. 4, 805143.

59. Hong, Yi, H. Do, J. Kessler, L. Fry, L. Read, A. Rafieei-Nasab, **A.D. Gronewold**, L. Mason, E. Anderson, 2022. Evaluation of gridded precipitation datasets over international basins and large lakes. *Journal of Hydrology*. 607, 127507.

58. Fry, L., **A.D. Gronewold**, F. Seglenieks, S. Minallah, D. Apps, J. Ferguson, 2022. Navigating Great Lakes hydroclimate data. *Frontiers in Water*. 4, 803869.

57. Anderson, E.J., C.A. Stow, **A.D. Gronewold**, L.A. Mason, M. McCormick, S. Qian, S.A. Ruberg, K. Beadle, S.A. Constant, N. Hawley, 2021. Seasonal overturn and stratification changes drive deep-water warming in one of Earth's largest lakes. *Nature Communications*. 12(1), 1-9.

56. **A.D. Gronewold**, H.X. Do, Y. Mei, C.A. Stow, 2021. A tug-of-war within the hydrologic cycle of a continental freshwater basin. *Geophysical Research Letters*. 48(4), e2020GL090374.

55. Do, Hong X., Y. Mei, **A.D. Gronewold**, 2020. To what extent are changes in flood magnitude related to changes in precipitation extremes? *Geophysical Research Letters*. 47(18), e2020Gl088684.

54. Do, Hong X., J. Smith, L.M. Fry, **A.D. Gronewold**, 2020. Seventy-year long record of monthly water balance estimates for Earth's largest lake system. *Nature Scientific Data*. 7(276).

53. Labuhn, K., **A.D. Gronewold**, T. Calappi, Alison MacNeil, C. Brown, E.J. Anderson, 2020. Towards an operational flow forecasting system for the Upper Niagara River. *Journal of Hydraulic Engineering*. 146(9), 05020006.

52. **Gronewold, A.D.**, J. Smith, L. Read, J. Crooks, 2020. Reconciling the water balance of large lake systems. *Advances in Water Resources*. 137, 103505.

51. Apps, D., L.M. Fry, **A.D. Gronewold**, 2020. Operational seasonal water supply and water level forecasting for the Laurentian Great Lakes. *Journal of Water Resources Planning and Management*. 146(9), 04020072.

50. Fujisaki-Manome, A., E. Anderson, J. Kessler, P. Chu, J. Wang, **A.D. Gronewold**, 2020. Simulating impacts of precipitation on ice cover and surface water temperature across large lakes. *Journal of Geophysical Research - Oceans*. 125(5).

49. Quinn, F.H., A.H. Clites, **A.D. Gronewold**, 2020. Evaluating estimates of channel flow in a continental-scale lake-dominated basin. *Journal of Hydraulic Engineering*. 146(3).

48. Ji, Xiaolong, **A.D. Gronewold**, H. Daher, R.B. Rood, 2019. Modeling seasonal onset of coastal ice cover. *Climatic Change*. 154(1-2), 125-141.

47. **Gronewold, A.D.**, E.J. Anderson, J. Smith, 2019. Evaluating operational hydrodynamic models for real-time simulation of evaporation from large lakes. *Geophysical Research Letters*. 46(6), 3263-3269.

46. Mason, L., **A.D. Gronewold**, M. Laitta, D. Gochis, K. Sampson, E. Klyszejko, J. Kwan, L. Fry, K. Jones, P. Steeves, A. Pietroniro, M. Major, 2019. A new transboundary hydrographic dataset for advancing regional hydrological modeling and water resources management. *Journal of Water Resources Planning and Management*. 145(6), 06019004.

45. **Gronewold, A.D.** and R. Rood, 2019. Recent water level changes across Earth's largest lake system and implications for future variability. *Journal of Great Lakes Research*. 45(1), 1-3.

44. Charusombat, U., A. Fujisaki-Manome, **A.D. Gronewold**, Brent Lofgren, Eric J. Anderson, Peter Blanken, Christopher Spence, John Lenters, Chuliang Xiao, Lindsay Fitzpatrick, Gregory Cutrell, 2018. Evaluating and improving modeled turbulent heat fluxes across the North American Great Lakes. *Hydrology and Earth System Sciences*. 22(10), 5559-5578.

43. **Gronewold, A.D.**, V. Fortin, R. Caldwell, J. Noel, 2018. Resolving hydrometeorological data discontinuities along an international border. *Bulletin of the American Meteorological Society.* 99(5), 899-910.

42. Fujisaki-Manome, A., L. Fitzpatrick, **A.D. Gronewold**, E.J. Anderson, B.M. Lofgren, C. Spence, J. Chen, C. Shao, D. Wright, C. Xiao, 2017. Turbulent heat fluxes during an extreme lake effect snow event. *Journal of Hydrometeorology.* 18(2), 3145-3163.

41. Gaborit, E., V. Fortin, X. Xu, F. Seglenieks, B. Tolson, L.M. Fry, T. Hunter, F. Anctil, **A.D. Gronewold**, 2017. A hydrological prediction system based on the SVS land-surface scheme: effective calibration of GEM-Hydro for streamflow simulation over the Lake Ontario basin. *Hydrology and Earth System Sciences.* 21(9), 4825-4839.

40. **Gronewold, A.D.**, K. McMahan, M. Sobsey, 2017. The compartment bag test (CBT) for enumerating fecal indicator bacteria: basis for design and interpretation of results. *Science of the Total Environment.* 587, 102-107.

39. Bolinger, R., **A.D. Gronewold**, K. Kompoltowicz, L. Fry. 2017. Application of the NMME in the Development of a New Regional Seasonal Climate Forecast Tool. *Bulletin of the American Meteorological Society.* 98(3), 555-564.

38. Gaborit, E., V. Fortin, B. Tolson, L. Fry, T. Hunter, **A.D. Gronewold**, 2017. Great Lakes Runoff Inter-Comparison Project, phase 2: Lake Ontario (GRIP-O). *Journal of Great Lakes Research*, 43(2), 217-227.

37. Bertani, I., D. Obenour, C. Steger, C. Stow, **A.D. Gronewold**, D. Scavia, 2016. Probabilistically assessing the role of nutrient loading in harmful algal bloom formation in western Lake Erie. *Journal of Great Lakes Research*, 42(6), 1184-1192.

36. Mason, L. A., C.M. Riseng, **A.D. Gronewold**, E.S. Rutherford, J. Wang, A. Clites, S. Smith, P. McIntyre, 2016. Fine-scale spatial variation in ice cover and surface temperature trends across the surface of the Laurentian Great Lakes. *Climatic Change*, 138(1-2), 71-83.

35. **Gronewold, A.D.**, J. Bruxer, D. Durnford, J. Smith, A. Clites, F. Seglenieks, T. Hunter, S. Qian, V. Fortin, 2016. Hydrological drivers of record-setting water level rise on Earth's largest lake system. *Water Resources Research*, 52(5), 4026-4042.

34. Smith, J.P, T.S. Hunter, A.H. Clites, C.A. Stow, T. Slawecki, G.C. Muhr, **A.D. Gronewold**, 2016. An expandable web-based platform for visually analyzing basin-scale hydro-climate time series data. *Environmental Modelling & Software*, 78, 97-105.

33. **Gronewold, A.D.**, E.J. Anderson, B. Lofgren, P.D. Blanken, J. Wang, J. Smith, T. Hunter, G. Lang, C.A. Stow, D. Beletsky, J. Bratton, 2015. Impacts of extreme 2013-2014 winter conditions on Lake Michigan's fall heat content, surface temperature, and evaporation. *Geophysical Research Letters*, 42(9), 3364-3370.

32. **Gronewold, A.D.**, A.H. Clites, J. Bruxer, K. Kompoltowicz, J.P. Smith, T. Hunter, C. Wong, 2015. Great Lakes water levels surge. *Eos, Transactions of the American Geophysical Union*, 96(1), 14-17.

31. Hunter, T., Clites, A., Campbell, K., **Gronewold, A.D.**, 2015. Development and application of a monthly hydrometeorological database for the North American Great Lakes - Part I: precipitation, evaporation, runoff, and air temperature. *Journal of Great Lakes Research*, 41(1), 65-77.

30. Fry, L., **Gronewold, A.D.**, V. Fortin, S. Buan, A. Clites, C. Luukkonen, D. Holtschlag, L. Diamond, T. Hunter, F. Seglenieks, D. Durnford, M. Dimitrijevic, C. Subich, E. Klyszejko, K. Kea, P. Restrepo, 2014. The Great Lakes runoff intercomparison project - Phase I: Lake Michigan (GRIP-M). *Journal of Hydrology*, 519 (Part D), 3448-3465.

29. Kult, J., Fry, L., **Gronewold, A.D.**, Choi, W., 2014. Regionalization of hydrologic response in the Great Lakes basin: considerations of temporal scales of analysis. *Journal of Hydrology*, 519 (Part B), 2224-2237.

28. Obenour, D., **Gronewold, A.D.**, Stow, C., Scavia, D., 2014. Using a Bayesian hierarchical model with a gamma error distribution to improve Lake Erie cyanobacteria bloom forecasts. *Water Resources Research*, 50(10), 7847-7860.

27. Clites, A.H., J. Smith, T. Hunter, **Gronewold, A.D.**, 2014. Visualizing relationships between hydrology, climate, and water level fluctuations on Earth's largest system of lakes. *Journal of Great Lakes Research*, 40(3), 807-811.

26. Clites, A.H., Wang, J., Campbell, K. B., **Gronewold, A.D.**, Assel, R.A., Bai, X., Leshkevich, G.A., 2014. Cold water and high ice cover on Great Lakes in spring 2014. *Eos, transactions of the American Geophysical Union*, 95(34), 305–306.

25. **Gronewold, A.D.** and C.A. Stow, 2014. Water loss from the Great Lakes. *Science*, 343(6175), 1084–1085.

24. **Gronewold, A.D.** and C.A. Stow, 2014. Unprecedented seasonal water level dynamics on one of the earth's largest lakes. *Bulletin of the American Meteorological Society*, 95(1), 15–17.

23. Wu, J., **A.D. Gronewold**, R.A. Rodriguez, J.R. Stewart, M.D. Sobsey, 2014. Integrating quantitative PCR and Bayesian statistics in quantifying human adenoviruses in small volumes of source water. *Science of the Total Environment*, 470, 255–262.

22. Lofgren, B.M. and **A.D. Gronewold**, 2013. Reconciling alternative approaches to projecting hydrologic impacts of climate change. *Bulletin of the American Meteorological Society*, 94(10), ES133–ES135.

21. Lofgren, B.M., **A.D. Gronewold**, A. Acciaioli, J. Cherry, A. Steiner, D. Watkins, 2013. Methodological approaches to projecting the hydrologic impacts of climate change. *Earth Interactions*, 17(22), 1–19.

20. **Gronewold, A.D.**, V. Fortin, B. Lofgren, A. Clites, C.A. Stow, F. Quinn, 2013. Coasts, water levels, and climate change: A Great Lakes perspective. *Climatic Change*, 120(4), 697–711.

19. **Gronewold, A.D.**, A.H. Clites, J.P. Smith, T.S. Hunter, 2013. A dynamic graphical interface for visualizing past, present, and future surface water elevations of the earth's largest lakes. *Environmental Modelling & Software*, 49, 34–39.

18. Fry, L., Hunter, T., Mantha, P., Fortin, V., **Gronewold, A.D.**, 2013. Identifying streamgage networks for maximizing the effectiveness of large scale water balance modeling. *Water Resources Research*, 49(5), 2689–2700.

17. **Gronewold, A.D.**, C.A. Stow, K. Vijayavel, M.A. Moynihan, D.R. Kashian, 2013. Differentiating *Enterococcus* concentration spatial, temporal, and analytical variability in recreational waters. *Water Research*, 47(1), 2141–2152.

16. **Gronewold, A.D.** and V. Fortin, 2012. Advancing Great Lakes hydrological science through targeted binational collaborative research. *Bulletin of the American Meteorological Society*, 93(12), 1921–1925.

15. **Gronewold, A.D.**, C. Stow, J. Crooks, T. Hunter, 2012. Quantifying parameter uncertainty and assessing the skill of exponential dispersion rainfall simulation models. *International Journal of Climatology*, 33(3), 746–757.

14. Holman, K., **A.D. Gronewold**, M. Notaro, A. Zarrin, 2012. Improving historical precipitation estimates over the Lake Superior basin. *Geophysical Research Letters*, 39, L03405.

13. **Gronewold, A.D.**, A. Clites, T. Hunter, C. Stow, 2011. An appraisal of the Great Lakes advanced hydrologic prediction system. *Journal of Great Lakes Research*, 37, 577-583.

12. **Gronewold, A.D.**, L. Myers, J.L. Swall, R.T. Noble, 2011. Addressing uncertainty in fecal indicator bacteria dark inactivation rates. *Water Research*, 45(2), 652–664.

11. **Gronewold, A.D.**, M.E. Borsuk, 2010. Improving water quality assessments through a hierarchical Bayesian analysis of variability. *Environmental Science & Technology*, 44(20), 7858–7864.

10. **Gronewold, A.D.**, M.E. Borsuk, 2009. A software tool for translating deterministic model results into probabilistic assessments of water quality standard compliance. *Environmental Modelling & Software*, 24(10), 1257–1262.

9. **Gronewold, A.D.**, S.S. Qian, R.L. Wolpert, and K.H. Reckhow, 2009. Calibrating and validating bacterial water quality models: A Bayesian approach. *Water Research*, 43(10), 2688–2698.

8. **Gronewold, A.D.**, M.E. Borsuk, R.L. Wolpert, and K.H. Reckhow, 2008. An assessment of fecal indicator bacteria-based water quality standards. *Environmental Science & Technology*, 42(13), 4676–4682.

7. **Gronewold, A.D.**, R.L. Wolpert, 2008. Modeling the relationship between most probable number (MPN) and colony-forming unit (CFU) estimates of fecal coliform concentration. *Water Research*, 42(13), 3327–3334.

Book chapters

6. **Gronewold, A.D.** and R.B. Rood, 2023. Climate change is driving rapid shifts between high and low water levels on the Great Lakes. In: *The Conversation on Water*, Andrea K. Gerlak ed., Johns Hopkins University Press.

5. **Gronewold, A.D.**, 2016. The North American Great Lakes System. In: *Handbook of Applied Hydrology*, V.P. Singh ed., McGraw-Hill.

4. Lofgren, B. and **A.D. Gronewold**, 2014. Water Resources. In: *Climate Change in the Midwest: A Synthesis Report for the National Climate Assessment*, J.A. Winkler, J.A. Andresen, J.L. Hatfield, D. Bidwell, and D. Brown, eds., Island Press, 224–237.

3. Fortin, V. and **Gronewold, A.D.**, 2012. Water balance of the Laurentian Great Lakes. *Encyclopedia of Lakes and Reservoirs, Springer*, 864–869.

2. **Gronewold, A.D.**, D.A. Vallero, 2010. New applications of Bayes' theorem for predicting environmental damage. *Yearbook of Science and Technology, McGraw-Hill Professional*, 18-22.

1. Loarie, S.R., S. Chakraborty, K. Dexter, A. Fleming-Davies, **A. Gronewold**, J. Liu, A. McBride, E. Pollina, 2007. Density dependence and population growth: evaluating classical and Bayesian approaches to parameter estimation and model selection. In J.S. Clark, "Statistical computation for environmental sciences in R". Princeton University Press.

Funded Research

Active projects

National Science Foundation - ($4,970,000); Global Center for Understanding Climate Change Impacts on Transboundary Waters.

National Oceanic and Atmospheric Administration - ($314,326); Advancing modeling to support probabilistic projections of total water levels in Great Lakes coastal areas under climate scenarios.

United States Army Corps of Engineers - ($96,000); Phase II - Investigating uncertainty associated with the Great Lakes water balance.

Great Lakes Higher Education Consortium (Travel support) - Great Lakes Regional Workshop

National Oceanic and Atmospheric Administration Joint Technology Transfer Initiative (JTTI) - ($499,936; UM portion = $210,476); An optimized lake-treatment strategy for improved land-surface modeling and weather prediction in the Unified Forecast System (UFS)

Great Lakes Protection Fund - Phase II ($314,000); with the Conference of Great Lakes and St. Lawrence Governors and Premiers. Building the Great Lakes Impact Investment Platform.

United States Geological Survey - Powell Center ($100,000); Improving representation of groundwater in foundational Great Lakes hydrologic and hydrodynamic models and data sets.

United States Army Corps of Engineers - ($86,000); Phase I - Investigating uncertainty associated with the Great Lakes water balance.

New York Sea Grant (with Cornell University) - ($16,200); Using social science and hydroclimate modeling to enhance flood resilience on Lake Ontario through the Climate Smart Communities Program.

Michigan Department of Transportation (MDOT) ($49,900); Investigation of impacts of lake water level and inland hydrology on coastal infrastructure.

Great Lakes Protection Fund (GLPF) - ($46,500); Understanding potential impacts of plausible climate change scenarios on Great Lakes water levels and ecosystem health.

Macomb County Planning and Developemnt - ($6,000); North Branch Greenway Plan implementation land use assessment.

Michigan State University and USGS - ($10,000); Reflecting water quality measurement variability and uncertainty in decision support systems.

National Oceanic and Atmospheric Administration Climate Program Office - ($25,000, in partnership with CIGLR); addressing inequitable impacts of flooding on communities in the Great Lakes.

Completed projects

School for Environment and Sustainability (SEAS), University of Michigan - Water Theme grant ($80,000). Pressing water issues.

2020: University of Michigan Office for Research (UMOR) Mcubed program ($60,000); with CO-Is Allison Steiner and Richard Rood; Simulating and visualizing foundational basin-scale hydrologic data

2020: Great Lakes Protection Fund - Phase I ($84,335); with the Conference of Great Lakes and St.

Lawrence Governors and Premiers. Building the Great Lakes Impact Investment Platform.

2020: Conference of Great Lakes St. Lawrence Governors and Premiers ($11,700). Assessment of water use rates and drivers across the Great Lakes basin.

2020: Macomb County Planning Department ($8,000). Development of a conceptual hydrologic model for the north branch of the Clinton River.

2017: United States Army Corps of Engineers ($82,000); improving seasonal operational forecasting protocols and implementation (with CIGLR)

2016–2017: NCAR Postdocs Applying Climate Expertise (PACE) program, New York Power Authority, and Ontario Power Generation ($200,000); forecasting improvements project for regional hydropower management

2016–2017: International Joint Commission (IJC) International Watersheds Initiative ($53,000); closing the water balance of the Great Lakes: developing a new historical record reconciling bias and uncertainty

2014–2016: University Corporation for Atmospheric Research (UCAR) PACE program and United States Army Corps of Engineers ($240,000); improving regional water budget projections, with Rebecca Bolinger

2015–2016: NOAA Coastal Storms Program ($260,000); improving estimates of evaporation over the North American Great Lakes, with Peter Blanken and John Lenters

2015: United States Army Corps of Engineers ($25,000); providing updated climate and water budget projections for long-term coastal water level infrastructure planning, with Brent Lofgren and John Allis

2014: United States Army Corps of Engineers ($40,000); improving modeling-based estimates of evaporation over the North American Great Lakes

2014: University of Michigan Water Center ($50,000); experimental buoy and drifter sensor project for improving estimates of over-lake evaporation, with Branko Kerkez

2013–2014: United States Great Lakes Restoration Initiative (GLRI); administered by USEPA ($850,000); near-shore focus area monitoring and modeling improvements, with Eric Anderson

2013–2014: International Joint Commission ($46,000); Great Lakes Runoff Intercomparison Project (GRIP) for Lake Ontario, with Lauren Fry

2013: University of Michigan CILER post-doctoral fellowship support ($120,000); improving estimates of runoff in the Great Lakes basin, with Lauren Fry

2012: International Joint Commission ($10,000); Improving historical estimates of runoff in the Great Lakes basin

2008: National Center for Atmospheric Research (NCAR) and Pacific Institute for the Mathematical Sciences ($4,000): International Graduate Summer School on Statistics and Climate Modeling

2005-2008: North Carolina Department of Environmental Health and Natural Resources (NCDEHNR) Contract No. EW05049 ($555,000), with Kenneth Reckhow (PI), Rachel Noble, and Nancy White: Developing Fecal Coliform TMDLs Using Bayesian Modeling and Novel Molecular Monitoring Techniques

Invited Talks, Presentations, and Conference Abstracts

247. **Gronewold, A.D.** [Invited] Current state of Great Lakes water levels. Presented to the

Environmental Law and Policy Center seminar series. May 2021.

246. **Gronewold, A.D.** [Invited], Understanding Great Lakes water level variability. Presented at 'Water at Wayne'; Wayne State University. April 2021.

245. **Gronewold, A.D.** [Invited], The hydrologic cycle of the Laurentian Great Lakes: connections to policy, management, and research priorities. Presented to the University of Wisconsin-Milwaukee seminar water series. April 2021.

244. **Gronewold, A.D.** [Invited], Fluctuations in hydrologic extremes across large lake systems. Presented to the CU Boulder water research seminar series. March 2021.

243. **Gronewold, A.D.** [Invited], The rise and fall of Great Lakes water levels. Presented at the annual meeting of the Wisconsin DNR drinking water and groundwater program. February 2021.

242. Mei, Y., **A.D. Gronewold**, Drought and storage capacity. MUSE Annual Meeting. February 2021.

241. Garcia, H., S. Brines, B. Wong, C. Brown, **A.D. Gronewold**, Coastal Water Level Variability, Inundation, and Impacts on Nearshore Infrastructure. MUSE Annual Meeting. February 2021.

240. Do, H., J. Smith, L. Fry, **A.D. Gronewold**, Developing a new estimate for the water balance of the Laurentian Great Lakes. MUSE Annual Meeting. February 2021.

239. **Gronewold, A.D.**, The Great Lakes hydrologic cycle. Presented to Ann Arbor Trout Unlimited. January 2021.

238. Anderson, E., **A.D. Gronewold**. Three decades of subsurface water temperature measurements reveal warming trends and deep water dynamics in Lake Michigan. American Geophysical Union (AGU) Annual Meeting. December 2020.

237. Huang, Y., **A.D. Gronewold**, others. Identification of earthquakes and anthropogenic events around the southern Great Lakes. American Geophysical Union (AGU) Annual Meeting. December 2020.

236. Mei, Y., **A.D. Gronewold**, Evaluation of Terrestial Water and Energy Budget Components over the Laurentien Great Lakes Basin. American Geophysical Union (AGU) Annual Meeting. December 2020.

235. Sherwin, J., A. VandeWeghe, **A.D. Gronewold**, Modes of variability in the Great Lakes water balance. American Geophysical Union (AGU) Annual Meeting. December 2020.

234. J. Jayaram, **A.D. Gronewold**, Copula-Based Water Supply Forecasting. American Geophysical Union (AGU) Annual Meeting. December 2020.

233. Garcia, H., S. Brines, B. Wong, C. Brown, **A.D. Gronewold**, Coastal Water Level Variability, Inundation, and Impacts on Nearshore Infrastructure. American Geophysical Union (AGU) Annual Meeting. December 2020.

232. Do, H., J. Smith, L. Fry, **A.D. Gronewold**, Developing a new estimate for the water balance of the Laurentian Great Lakes. American Geophysical Union (AGU) Annual Meeting. December 2020.

231. **Gronewold, A.D.**, Great Lakes water level: science overview. Georgian Bay Forever and Georgian Bay Association water levels symposium. October 2020.

230. **Gronewold, A.D.**, Hydrologic science issues surrounding the Line 5 pipeline. Presented on behalf of the Bay Mills tribe. October 2020.

229. **Gronewold, A.D.**, Drivers of recent and historical water level variability across the Great Lakes. Annual Lake Huron Conference. September 2020.

228. **Gronewold, A.D.**, Great Lakes water level variability: past, present, and future. Beaver Island High Water Summit. August 2020.

227. **Gronewold, A.D.**, The science behind water level fluctuations. Presented to the Tip of the Mitt Watershed Council. July 2020.

226. **Gronewold, A.D.**, The science behind water level variability across the Great Lakes. Presented at the Institute for Journalism and Natural Resources. June 2020.

225. **Gronewold, A.D.**, H. Do., L. Briley, R. Rood. Research needs to address hydrologic impacts of climate change. Presented at the International Association of Great Lakes Research (IAGLR) Annual Meeting. June 2020.

224. Do, H., **A.D. Gronewold**, L. Fry, J. Smith. Impacts of hydro-climate variability to the recent surge of water levels across the Laurentian Great Lakes. Presented at the International Association of Great Lakes Research (IAGLR) Annual Meeting. June 2020.

223. Garcia, H., S. Brines, B. Wong, C. Brown, **A.D. Gronewold** Incorporating remote-sensing data to improve conceptual floodplain modeling in Southeast Michigan. Presented at the International Association of Great Lakes Research (IAGLR) Annual Meeting. June 2020.

222. **Gronewold, A.D.** [Invited] Forecasting Great Lakes water levels across multiple time scales. Presented to the Council of Great Lakes Governors and Premiers.

221. **Gronewold, A.D.** [Invited] Rising water levels across the Great Lakes. Presented remotely to the Great Lakes Coalition. May 2020.

220. **Gronewold, A.D.** [Invited] Rising water levels across the Great Lakes. Presented remotely to the Environmental Law and Policy Center (ELPC). April 2020.

219. **Gronewold, A.D.** Water levels and the water balance of the Great Lakes. Presented to the Bayview Yacht Club. March 2020, Detroit, MI.

218. **Gronewold, A.D.** [Invited] Hydrologic science and water level changes across the Great Lakes region. Presented remotely to the Lake Superior Partnership. February 2020.

217. **Gronewold, A.D.** [Keynote] Understanding Great Lakes water level variability. Save the River Conference. Clayton, NY. February 2020.

216. Chen, Z., Do, H., M. Mulumpwa, G. Chavula, C. Ngongondo, **A.D. Gronewold**. Resconstructing and forecasting the water balance of Lake Chilwa. Presented at the University of Michigan MUSE Conference. Ann Arbor, MI. February 2020.

215. Askar, M., J. Jayaram, Chen, Z., Do, H., M. Mulumpwa, G. Chavula, C. Ngongondo, **A.D. Gronewold**. Customizing an interactive hydroclimate dashboard for large lakes in Africa. Presented at the University of Michigan MUSE Conference. Ann Arbor, MI. February 2020.

214. Do, H., **A.D. Gronewold**. Evaluating the capacity of the National Water Model streamflow reanalysis in simulating flood hazards. Presented at the University of Michigan MUSE Conference. Ann Arbor, MI. February 2020.

213. Garcia, H., S. Brines, C. Brown, **A.D. Gronewold**. Improving Models to Understand the Impacts of Coastal and Inland Flooding in Southeast Michigan. Presented at the University of Michigan MUSE Conference. Ann Arbor, MI. February 2020.

212. Vandeweghe, A., **A.D. Gronewold**. Understanding water balance component variability across the Great Lakes. Presented at the University of Michigan MUSE Conference. Ann Arbor, MI. February 2020.

211. Do, H., **A.D. Gronewold**. Understanding drivers of recent record-high water levels across the Laurentian Great Lakes. Presented at the University of Michigan MUSE Conference. Ann Arbor, MI. February 2020.

210. **Gronewold, A.D.**. [Keynote] Understanding drivers of Great Lakes water level variability. Presented at the Save the River Conference, Clayton, NY. February 2020.

209. Askar, M., J. Jayoram, Z. Chen, H. Do, **A.D. Gronewold**, M. Mulumpwa, C. Ngongondo, G. Chavula. Customizing an interactive hydroclimate dashboard for large lakes in Africa. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

208. Brown, C., **A.D. Gronewold**, T. Calappi, S. Brines, K. LaBuhn. Enhancing river discharge forecasting in the Niagara River: an integrated approach to utilizing multi-source remote sensing data for bathymetry maps. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

207. Kirchner, K., J. Jorns, R. Rood, **A.D. Gronewold**. Novel statistical modeling tools for identifying thresholds and phase shifts in coastal ice cover. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

206. Fry, L., D. Apps, **A.D. Gronewold**. Employing ensemble prediction to enhance the value of Great Lakes seasonal water supply and water level forecasts. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

205. Mai, J., **A.D. Gronewold**, among many others. The runoff model inter-comparison project over Lake Erie and the Great Lakes. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

204. Read, L., D. Yates, **A.D. Gronewold**, K. Sampson, D. Gochis. Parameterizing waterbodies in a level pool scheme: a National Water Model application. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

203. Beletsky, D., J. Feyen, L. Mason, C. Xiao, **A.D. Gronewold**, D. Titze, H. Hu, E. Anderson, P. Chu, L. Read, W. Saunders. Developing a hydrologic-hydrodynamic flood forecasting system for Lake Champlain. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

202. Do, H., **A.D. Gronewold**, L. Fry, J. Smith. Understanding drivers of recent record-high water levels across the Laurentian Great Lakes. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

201. Chen, Z., H. Do., **A.D. Gronewold**, M. Mulumpwa, G. Chavula, C. Ngongondo. Reconstructing and forecasting the water balance of Lake Chilwa (Malawi). Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

200. Chu, P., T. Hunter, L. Fry, L. Mason, K. Sampson, L. Read, **A.D. Gronewold**, D. Gochis, A. Rafieeinasab, L. Karsten. Enhancing total water prediction for the Great Lakes through calibration of the National Water Model in Canadian watersheds. Presented at the American Geophysical Union (AGU) Annual Fall Meeting. December 2019.

199. **Gronewold, A.D.** [Invited] Understanding the Great Lakes hydrologic cycle. Presented remotely (via webinar) at the NOAA Climate Program Office (CPO) Seminar Series. December 2019.

198. Chen, Z., H. Do., **A.D. Gronewold**, M. Mulumpwa, G. Chavula, C. Ngongondo. Reconstructing and forecasting the water balance of Lake Chilwa (Malawi). Presented at the University of Michigan STEM V Africa Conference. October 2019.

197. **Gronewold, A.D.** Understanding Great Lakes water level variability. Presented at the St. Clair County Workshop on Planning for Coastal Resilience. Goodells, MI. October, 2019.

196. **Gronewold, A.D.** [Invited] Understanding Great Lakes water level variability. Presented at the Pennsylvania Lake Erie Environmental Forum. Erie, PA. October, 2019.

195. **Gronewold, A.D.** Climate change impacts on Michigan and the Michigan economy. Presented at the Edward Jones Continuing Professional Education Seminar. Hudsonville, MI. September 2019.

194. **Gronewold, A.D.** [Invited] Climate change impacts on northern regions: a perspective from the Great Lakes. Presented at the Annual FinnFest Symposium. Detroit, MI. September 2019.

193. **Gronewold, A.D.** [Invited plenary] Hydrology of the Great Lakes. Presented at the Coastal Wetlands Symposium. Maumee Bay, OH. September 2019.

192. **Gronewold, A.D.** [Invited] Climate change science in the Great Lakes - St. Lawrence Region and an overview of future research needs. Presented to the Great Lakes Compact Regional body and Compact Science Team. Detroit, MI, September 2019.

191. **Gronewold, A.D.** [Invited] Differentiating variability and uncertainty in environmental systems. Presented at the Bowling Green State University Biological Sciences Department Seminar Series. Bowling Green, OH, September 2019.

190. **Gronewold, A.D.**. [Invited address] Perspectives on water supplies in the Great Lakes basin. Presented at the National Wildlife Federation pre-debate briefing. Detroit, MI, July 2019.

189. **Gronewold, A.D.**. [Invited key note] Connections between water level variability and urban water systems planning. Presented at the "Reimagining Urban Water: Linking Sustainable Urban Water Systems in the Great Lakes Basin" Interdisciplinary Workshop. July 2019, Milwaukee, WI (USA).

188. **Gronewold, A.D.**. [Invited] Great Lakes water level fluctuations. Presented to the Ann Arbor Kiwanis Club. June 2019. Ann Arbor, MI (USA).

187. Fujisaki-Manome, A., **A.D. Gronewold**. Impacts of precipitation on ice cover and water temperature in the Great Lakes. To be presented at the annual meeting of the International Association of Great Lakes Research. June 2019, Brockport, NY (USA).

186. Nummer, S., Qian, S., **A.D. Gronewold**. Understanding the response of Great Lakes ice coverage to climate change using a hockey stick model. To be presented at the annual meeting of the International Association of Great Lakes Research. June 2019, Brockport, NY (USA).

185. **Gronewold, A.D.**. Reconciling the water balance of large lake systems. University of Michigan, Department of Civil and Environmental Engineering. Water Resources Engineering Seminar Series. April 2019.

184. **Gronewold, A.D.**. [Invited] A new look at models, data, and analytical tools for supporting water resources management. Duke University, Department of Civil and Environmental Engineering. March 2019.

183. **Gronewold, A.D.**. [Invited] Great Lakes water levels and the hydrologic cycle. Bayview Yacht Club seminar series. Detroit, Michigan. February 2019.

182. **Gronewold, A.D.**. [Invited] Hydrologic science and uncertainty assessment: supporting water resources management planning and forecasting. University of Wisconsin-Milwaukee. February 2019.

181. **Gronewold, A.D.**. [Invited] Hydrologic science and uncertainty assessment. Smith Lecture at the University of Michigan, Department of Earth and Environmental Science. February 2019.

180. **Gronewold, A.D.**. [Invited] Models, data, and analytical tools for water resources management. Presented at Michigan State University. February 2019.

179. **Gronewold, A.D.**. [Invited] Regional water resources management: A Great Lakes perspective. Presented at Science Saturday at University of Toledo. February 2019.

178. **Gronewold, A.D.**, L. Fry, V. Fortin, J. Noel. Strengthening cross-agency bi-national partnerships to improve water prediction and management capabilities. Presented at the American Geophysical Union Annual Meeting, December 2018, Washington, D.C.

177. Smith, J.P., **A.D. Gronewold**, S. Steinschneider. Quantifying data uncertainty and bias in a Bayesian model for large lake systems. Presented at the American Geophysical Union Annual Meeting, December 2018, Washington, D.C.

176. Anderson, E.J., Fujisaki-Manome, A., **A.D. Gronewold**, L. Fitzpatrick, B. Lofgren, R. Muzzi, K. Beadle, P. Blanken, C. Fairall, L. Bariteau, C. Spence, J. Lenters, G. Mann, P. Chu. Propagating novel turbulent heat flux measurements into extreme lake weather event and water supply forecasting systems. Presented at the American Geophysical Union Annual Meeting, December 2018, Washington, D.C.

175. **Gronewold, A.D.**, L. Read, D. Gochis, L. Mason, K. Sampson, B. Cosgrove, K. FitzGerald, A. Dugger, J. McCreight, C. Xiao, E. Anderson. Customizing the National Water Model to meet regional needs for water prediction. Presented at the American Geophysical Union Annual Meeting, December 2018, Washington, D.C.

174. Fry, L.M., **Gronewold, A.D.**, From research to operation decisions: hydroclimatic forecasting advancements for application to regulation of Lake Superior outflow and water resources management in the Great Lakes. Presented at the American Geophysical Union Annual Meeting, December 2018, Washington, D.C.

173. **Gronewold, A.D.** [Invited] Changes in the Great Lakes Hydrologic Cycle and Impacts on Lake St. Clair Water Levels and Channel Flows. 8th binational Lake St. Clair Conference. Harrison Township, Michigan. November 2018.

172. **Gronewold, A.D.** [Invited] Great Lakes water levels and impacts of recent rebound. Michigan Sea Grant Freshwater Summit. Traverse City, Michigan. October 2018.

171. **Gronewold, A.D.** [Invited] Developing models, data, and analytical tools for improving water resources management. Cornell University Department of Civil and Environmental Engineering. October 2018.

170. **Gronewold, A.D.** [Invited] Models and data for studying water quality and climate change. Grand Valley State University Year of Water and Big Data Month initiatives. September 2018.

169. **Gronewold, A.D.** [Invited] Quantifying variability in environmental systems to improve management, planning, and policy development. Grand Valley State University, Department of Biology Seminar Series. September 2018.

168. **Gronewold, A.D.** Great Lakes water levels: past, present, and future. Presented via webinar for the Great Lakes Islands Coalition. August 2018.

167. Fry, L., Z. Miller, **A.D. Gronewold**, K. Kompoltowicz. Advances in operational seasonal to inter-annual Great Lakes water level forecasting. Presented at the International Association of Great Lakes Research Conference, Toronto, Ontario. June 2018.

166. Smith, J., S. Steinschneider, J. Bruxer, **A.D. Gronewold**. Capturing the Great Lakes water balance in a Bayesian network. Presented at the International Association of Great Lakes Research Conference, Toronto, Ontario. June 2018.

165. Blanken, P., J. Lenters, C. Spence, **A.D. Gronewold**, C. Fairral, R. Muzzi. Vessel-based observations of meteorological and evaporation gradients on the Laurentian Great Lakes. Presented at the International Association of Great Lakes Research Conference, Toronto, Ontario. June 2018.

164. Fitzpatrick, L., Fujisaki-Manome, A., **A.D. Gronewold**, B. Lofgren, E. Anderson, P. Blanken, C. Spence, J. Lenters, U. Charusombat, C. Xiao, G. Cutrell. Validating modeled turbulent heat fluxes across the Great Lakes. Presented at the International Association of Great Lakes Research Conference, Toronto, Ontario. June 2018.

163. Mai, J., B. Tolson, H. Shen, E. Gaborit, N. Gasset, V. Fortin, M. Abrahamowicz, D. Durnford, Y.L. Shin, L.M. Fry, T. Hunter, **A.D. Gronewold**, others. Status report on the Great Lakes Runoff Intercomparison Project for Lake Erie (GRIP-E). Presented at the 2018 Global Water Futures Conference. Hamilton, Ontario. June 2018.

162. **Gronewold, A.D.** Great Lakes water levels: past, present, and future. Presented at the Lake Huron Conference, "Is the Coast Clear?", Grand Bend, Ontario, May 2018.

161. **Gronewold, A.D.** Regional customization of the National Water Model. National Water Center showcase. Tuscaloosa, AL. March 2018.

160. Xiao, C., B. Lofgren, **A.D. Gronewold**, D. Gochis, L. Mason, L. Pei, K. Sampson. Implementing the WRF-Hydro Modeling System in the Great Lakes Region. Presented at 2018 American Meteorological Society Annual Meeting. Austin, TX, January 2018.

159. Fujisaki-Manome, A. **A.D. Gronewold**, B. Lofgren, E. Anderson, L. Fitzpatrick, P. Blanken, C. Spence, J. Lenters, U. Charusombat, C. Xiao, G. Cutrell. Validating modeled turbulent heat fluxes across large freshwater surfaces. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

158. Smith, J., **Gronewold, A.D.** A Bayesian network for the Laurentian Great Lakes water balance. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

157. Pei, L., **A.D. Gronewold**, D. Gochis, L. Mason, K. Sampson, A. Dugger, L. Read, J. McCreight, C. Xiao, B. Lofgren, E. Anderson, P. Chu. Customizing WRF-Hydro for the Laurentian Great Lakes basin. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

156. Channell, K., **A.D. Gronewold**, R. Rood, C. Xiao, B. Lofgren, T. Hunter. Sensitivity of hydrologic response to climate model debiasing procedures. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

155. LaBuhn, K., T. Calappi, A. MacNeil, **A.D. Gronewold**. An operational short-term forecasting system for regional hydropower management. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

154. Apps, D., L. Fry, R. Bolinger, **A.D. Gronewold**. Application of the North American Multi-Model Ensemble (NMME) to seasonal water supply forecasting in the Great Lakes basin through the use of the Great Lakes seasonal climate forecast tool. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

153. **Gronewold, A.D.**, F. Seglenieks, J. Bruxer, V. Fortin, J. Noel. Improving regional climate and hydrological forecasting following the record-setting flooding across the Lake Ontario - St. Lawrence River system. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

152. Fry, L., **A.D. Gronewold**, T. Hunter, L. Pei, J. Smith, H. Lucier, R. Mueller. Assessment of a new seasonal to inter-annual operational Great Lakes water supply, water levels, and connecting channel flow forecasting system. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

151. Fitzpatrick, L., A. Fujisaki-Manome, **A.D. Gronewold**, E. Anderson, C. Spence, J. Chen, C. Shao, D. Posselt, D. Wright, B. Lofgren, D. Schwab. Reconstructing heat fluxes over Lake Erie during the lake effect snow event of November 2014. Presented at 2017 American Geophysical Union (AGU) Fall Meeting, New Orleans, LA, USA. December 2017.

150. **Gronewold, A.D.** Great Lakes water levels and the hydrologic cycle. Presented to the Electric Power Research Institute (EPRI) and the Great Lakes Interest Group (GRIG) via webinar. December 2017.

149. **Gronewold, A.D.** [Invited] Resources for Supporting the Indiana Dunes Climate Change Adaptation Plan. Presented via Webinar. August 2017.

148. Xiao, C., B. Lofgren, **A.D. Gronewold**, D. Gochis, L. Mason, L. Pei. Implementing the WRF-Hydro modeling system in the Great Lakes region. IAGLR Annual Conference. Detroit, MI. May 2017.

147. Smith, J., L. Mason, S. Qian, **A.D. Gronewold**. MCMC modeling with JAGS and applications in the Great Lakes. IAGLR Annual Conference. Detroit, MI. May 2017.

146. Quinn, F., A. Clites, **A.D. Gronewold**. Reconciling discontinuity of temporal flow measurements for the Detroit River. IAGLR Annual Conference. Detroit, MI. May 2017.

145. Pei, L., T. Hunter, R. Bolinger, **A.D. Gronewold**. Applying climate change projections in Great Lakes regional water management decisions. IAGLR Annual Conference. Detroit, MI. May 2017.

144. Noel, J., B. Hall, L. Stoecker, **A.D. Gronewold**, L. Fry, F. Seglenieks, V. Fortin. New website supporting bi-national coordination of precipitation over the Great Lakes. IAGLR Annual Conference. Detroit, MI. May 2017.

143. Mason, L., K. Sampson, A. Dugger, D. Gochis, C. Riseng, **A.D. Gronewold**. Development of a new geospatial hydrofabric to support advanced hydrological modeling. IAGLR Annual Conference. Detroit, MI. May 2017.

142. Labuhn, K., T. Calappi, **A.D. Gronewold**, E. Anderson, P. Kowalski. Optimizing water levels in the Grass Island Pool for hydropower production on the Niagara River. IAGLR Annual Conference. Detroit, MI. May 2017.

141. Ji, X., R. Rood, H. Daher, **A.D. Gronewold**. Simulating and forecasting seasonal ice cover. IAGLR Annual Conference. Detroit, MI. May 2017.

140. **Gronewold, A.D.**, J. Smith. Great Lakes water budget modeling and uncertainty estimation under a Bayesian MCMC framework. IAGLR Annual Conference. Detroit, MI. May 2017.

139. Fry, L., **A.D. Gronewold**, R. Bolinger, R. Mueller. Assessment of probabilistic 5-year forecasts of Great Lakes water levels and outflows for hydropower. IAGLR Annual Conference. Detroit, MI. May 2017.

138. Fitzpatrick, L., A. Fujisaki-Manome, **A.D. Gronewold**, E. Anderson, C. Spence, J. Chen, C. Shao, D. Posselt, D. Wright, B. Lofgren, D. Schwab. Reconstructing evaporation over Lake Erie during the historic November 2014 lake effect snow event. IAGLR Annual Conference. Detroit, MI. May 2017.

137. Chu, P., E. Anderson, B. Lofgren, **A.D. Gronewold**, J. Wang, C. Stow, G. Lang, T. Hunter, A. Clites. Towards an integrated environmental modeling system for the Great lakes. IAGLR Annual Conference. Detroit, MI. May 2017.

136. Channell, K., **A.D. Gronewold**, C. Xiao, R. Rood, B. Lofgren. Implications of model debiasing methods on lake level projections. IAGLR Annual Conference. Detroit, MI. May 2017.

135. Fujisaki-Manome, A., L.E. Fitzpatrick, **A.D. Gronewold**, E.J. Anderson, C. Spenct, J. Chen, C. Shao, D. Wright, C. Xiao. Turbulent heat fluxes during an extreme lake effect snow event: direct measurements and model ensemble. JpGU-AGU joint meeting. Japan. May 2017.

134. Hall, B., L.A. Stoecker, J. Noel, **A.D. Gronewold**. A new precipitation product for reconciling discrepancies across the US-Canadian border. 2017 Climate Prediction Applications Science Workshop. Anchorage, Ak. May 2017.

133. Channell, K., **A.D. Gronewold**, C. Xiao, B. Lofgren, T. Hunter, R. Rood. Variability of Great Lakes water levels due to bias correction of climate model projections. 2017 Michigan Geophysical Union. Ann Arbor, MI. April 2017.

132. Fitzpatrick, L.E., A. Manome, **A.D. Gronewold**, E.J. Anderson, C. Spence, J. Chen, C. Shao, D.M. Wright, B.M. Lofgren, C. Xiao, D.J. Posselt, D.J. Schwab. Reconstructing evaporation over Lake Erie during the historic November 2014 lake effect snow event. Annual AMS conference. Seattle, WA. January 2017.

131. Anderson, E.J., **A.D. Gronewold**, L. Pei, C. Xiao, L.E. Fitzpatrick, B.M. Lofgren, P.Y. Chu, T. Hunter, D.J. Gochis, K. Sampson, A Dugger. Linking hydrologic and coastal hydrodynamic models in the Great Lakes. Annual AMS conference. Seattle, WA. January 2017.

130. Gates, O.C., K. Channell, D. Brown, W. Baule, D.J. Schwab, C. Riseng, and **A.D. Gronewold**. The Great Lakes adaptation data suite: providing a coherent collection of climate data for the Great Lakes region. Annual AMS conference. Seattle, WA. January 2017.

129. Pei, L., **A.D. Gronewold**, D.J. Gochis, K. Sampson, A. Dugger, C. Xiao, L. Mason, B.M. Lofgren, P.Y. Chu. Applying WRF-Hydro in the Great Lakes basin: offline simulations in the seasonal hydrological responses. Annual AMS conference. Seattle, WA. January 2017.

128. Xiao, C., B.M. Lofgren, J. Wang, P.Y. Chu, **A.D. Gronewold**. Projecting water levels of the Laurentian Great Lakes in the 21st century from a dynamical downscaling perspective. Annual AMS conference. Seattle, WA. January 2017.

127. Charusombat, U., C. Chiu, K. Byun, A.F. Hamlet, B.M. Lofgren, **A.D. Gronewold**. An overview of the Great Lakes hydroclimate scenarios project (GLHSP). Annual AMS conference. Seattle, WA. January 2017.

126. Ji, X., H. Daher, R. Bolinger, **A.D. Gronewold**, R.B. Rood. Simulating and forecasting seasonal ice cover. Annual AMS conference. Seattle, WA. January 2017.

125. Pei, L., **A.D. Gronewold**, T. Hunter, R. Bolinger. Regional hydrological response from statistically downscaled future climate projections in the 21st century. Annual AMS conference. Seattle, WA. January 2017.

124. **Gronewold, A.D.**. [Invited] Improving NOAA's Great Lakes forecasting models with offshore monitoring platforms. Presented at the University of Michigan Great Lakes Adaptation Forum. Ann Arbor, MI (USA). October 2016.

123. **Gronewold, A.D.**. [Invited] Great Lakes water levels: past, present, and future. Presented to the Tip of the Mitt Division of the US Power Squadron. Petoskey, MI (USA). October 2016.

122. **Gronewold, A.D.**. [Invited] Climate change and water resources across the Great Lakes. Presented at the Northwestern University Climate Forum. Evanston, IL (USA). October 2016.

121. **Gronewold, A.D.**. [Invited] Great Lakes water levels: past, present, and future. Presented to Flint Division of the US Power Squadron. Flint, MI (USA). September 2016.

120. **Gronewold, A.D.**. [Invited keynote] Hydrological forecasting from a Great Lakes perspective. Presented at the HEPEX bi-annual meeting. Quebec City, CA. June 2016.

119. **Gronewold, A.D.**. [Invited] Understanding drivers of rapid water level changes on the Great Lakes. Presented at the annual American Water Works Association (AWWA) conference. Chicago, IL (USA). June 2016.

118. Charusombat, U., B.M. Lofgren, **A.D. Gronewold**, T. Hunter, E.J. Anderson, J.D. Lenters, C. Spence, P.D. Blanken, A.F. Manome. Validation of Lake Evaporation in NOAA-GLERL's physical models. 59th annual conference on Great Lakes research. Guelph, Ontario. June 2016.

117. Lofgren, B.M., **Gronewold, A.D.**, C. Xiao, L. Pei, U. Charusombat. WRF-Hydro and atmosphere-land coupled modeling at the NOAA Great Lakes Environmental Research Laboratory. 59th annual conference on Great Lakes research. Guelph, Ontario. June 2016.

116. **Gronewold, A.D.**. [Invited] Changing Great Lakes water levels: current conditions and future projections. Presented to the University of Michigan Water Level Integrated Assessment Program. Ann Arbor, MI (USA). May 2016.

115. **Gronewold, A.D.**. [Invited] Great Lakes water levels: past, present, and future. Presented to Lansing Division of the US Power Squadron. Lansing, MI (USA). May 2016.

114. **Gronewold, A.D.**. [Invited] Great Lakes water levels: past, present, and future. Presented to District 9 of the US Power Squadron. Dearborn, MI (USA). April 2016.

113. Gaborit, E., B. Tolson, V. Fortin, **A.D. Gronewold**, L.M. Fry, T. Hunter. The Great Lakes Runoff Intercomparison Project (GRIP): Phase II, Lake Ontario. April 2016. European Geosciences Union (EGU) General Assembly. Austria, Vienna.

112. **Gronewold, A.D.**. Great Lakes water levels, ice, and climate change: practical application of models. Presented at the School of Natural Resources, University of Michigan. Ann Arbor, MI (USA). January 2016.

111. Lofgren, B.M., A.D. Gronewold, C. Xiao, and R.A. Bolinger. Integration of Great Lakes Water Resources into National and Continental Systems for Weather and Climate Prediction. American Meteorological Society Annual Meeting, New Orleans, LA. January 2016.

110. Blanken, P., C. Spence, J.D. Lenters, **A.D. Gronewold**, B. Kerkez, P. Xue, N. Froelich. The Dynamics of Laurentian Great Lakes Surface Energy Budgets. December 2015. American Geophysical Union Fall Meeting, San Francisco, CA (USA).

109. **Gronewold, A.D.**, J. Bruxer, J. Smith, T. Hunter, V. Fortin, A.H. Clites, D. Durnford, F. Seglenieks. Aggregating hydrometeorological data from international monitoring networks across Earth's largest lake system. December 2015. American Geophysical Union Fall Meeting, San Francisco, CA (USA).

108. Gaborit, E., B. Tolson, V. Fortin, **A.D. Gronewold**, L.M. Fry, T. Hunter. The Great Lakes Runoff Intercomparison Project (GRIP): Phase II, Lake Ontario. December 2015. American Geophysical Union Fall Meeting, San Francisco, CA (USA).

107. R.A. Bolinger, L.M. Fry, K. Kompoltowicz, **A.D. Gronewold**. Using NMME in Region-Specific Operational Seasonal Climate Forecasts. December 2015. American Geophysical Union Fall Meeting, San Francisco, CA (USA).

106. **Gronewold, A.D.**. Data analysis, inference, and model development for improving water resources management. November 2015. North Carolina State University, Department of Civil and Environmental Engineering Seminar Series. Raleigh, NC (USA).

105. **Gronewold, A.D.**, E. Anderson, B. Lofgren, P. Blanken, J. Wang, J. Smith, T. Hunter, D. Beletsky, G. Lang, C. Stow, May 2015. Impact of regional climate perturbations on Lake Michigan's heat content. 2015 Annual Conference on Great Lakes Research, Burlington, Vermont (USA).

104. Hunter, T. J. Smith, S. Qian, **Gronewold, A.D.**, May 2015. Improving the historical record of the Great Lakes water budget. 2015 Annual Conference on Great Lakes Research, Burlington, Vermont (USA).

103. **Gronewold, A.D.**, Communicating long-term Great Lakes water budget and water level information. May 2015. Presented at Traverse City water level information workshop "Great Lakes water level fluctuations - what does the future hold?", Northwestern Michigan College, Traverse City, MI (USA).

102. **Gronewold, A.D.**, Communicating long-term Great Lakes water budget and water level information. May 2015. Presented to Rochester Hills Rotary Club. Rochester, Hills, Michigan (USA). 2015 American Meteorological Society Annual Meeting, Phoenix, AZ, USA.

101. **Gronewold, A.D.**, Understanding Great Lakes water level fluctuations. May 2015. Restore Our Waters International (ROWI) Seminar Series. Ann Arbor, Michigan (USA).

100. **Gronewold, A.D.**, Monitoring and modeling the water budget and water levels of Earth's largest lake system. May 2015. University of Michigan CILER seminar series. Ann Arbor, Michigan (USA).

99. **Gronewold, A.D.**, P.D. Blanken, C. Spence, J. Lenters, B. Kerkez, W. Leger, K. Paige, T. Slawecki, F. Seglenieks, V. Fortin, N.J. Froelich, S.A. Ruberg, D. Wolfe, C.W. Fairall, J. Chen, January 2015. Improving estimates of evaporation from Earth's largest lake system. 2015 American Meteorological Society Annual Meeting, Phoenix, AZ, USA.

98. Bolinger, R., K. Kompoltowicz, T. Hunter, **A.D. Gronewold**, January 2015. Improving Great Lakes regional operational water budget and water level forecasting. 2015 American Meteorological Society Annual Meeting, Phoenix, AZ, USA.

97. Bolinger, R., K. Kompoltowicz, **A.D. Gronewold**, January 2015. Quantification of temperature and precipitation variability over the Great Lakes. 2015 American Meteorological Society Annual Meeting, Phoenix, AZ, USA.

96. Bolinger, R., C. Olheiser, B. Krumweide, **A.D. Gronewold**, December 2014. Comparing measurements, simulations, and forecasts of snow water equivalent across the Great Lakes basin. 2014 American Geophysical Union Fall Meeting, San Francisco, CA, USA.

95. Obenour, D.R., **A.D. Gronewold**, C.A. Stow, I. Bertani, C.E. Steger, S.A. Ruberg, D. Scavia. December 2014. Probabilistic forecasting of harmful algal blooms in western Lake Erie (poster). 2014 American Geophysical Union Fall Meeting, San Francisco, CA, USA.

94. **A.D. Gronewold**, Understanding changes in the water cycle. December 2014. Young Scientist Workshop at the 2014 American Geophysical Union Fall Meeting, San Francisco, CA, USA.

93. **A.D. Gronewold**, E.J. Anderson, B.M. Lofgren, P.D. Blanken, J. Wang, J.P. Smith, T.S. Hunter, G.A. Lang, C.A. Stow. December 2014. Modeling transitions in the hydrologic and thermal regimes of Earth's largest lake system. 2014 American Geophysical Union Fall Meeting, San Francisco, CA, USA.

92. **A.D. Gronewold**, October 2014. Great Lakes water levels: trends, anomalies, and projections. University of Toledo, Toldeo, Ohio (USA).

91. **A.D. Gronewold**, September 2014. Climate change and the news: impacts in the Great Lakes, Metcalf Institute for Marine and Environmental Reporting, Chicago, Illinois, United States.

90. **A.D. Gronewold**, August 2014. Drivers of water level change on Earth's largest lake system. Computations in Science Seminar Series, James Franck Institute, University of Chicago.

89. **A.D. Gronewold**, July 2014. Great Lakes water levels: Past, present, and future. Great Lakes and Inland Waters Committee of the State Bar of Michigan Environmental Law Section, Wayne State University.

88. Obenour, D.R, **Gronewold, A.D.**, C.A. Stow, D. Scavia, May 2014. Exploring Lake Erie's increasing susceptibility to Cyanobacteria blooms through probabilistic modeling. Joint Aquatic Sciences Meeting. Portland, Oregon, United States.

87. Obenour, D.R, **Gronewold, A.D.**, C.A. Stow, D. Scavia, May 2014. A decision support model for Cyanobacteria blooms in the western basin of lake Erie. 2014 Annual Conference on Great Lakes Research, Hamilton, Ontario, Canada.

86. **A.D. Gronewold** and Alan Steinman, May 2014. Common drivers behind long-term water level variability and ecosystem function along Earth's longest freshwater coast. 2014 Annual Conference on Great Lakes Research, Hamilton, Ontario, Canada.

85. **A.D. Gronewold**, May 2014. Great Lakes water levels; past, present, and future. Presented to the Advisory Council of the Alpena Marine Sanctuary. Alpena, Michigan, United States.

84. **A.D. Gronewold**, April 2014. Great Lakes water levels; past, present, and future. Presented to the Ann Arbor Rotary Club. Ann Arbor, Michigan, United States.

83. **A.D. Gronewold**, March 2014. State of the Science: Great Lakes water levels. Presented at 2014 Science-Policy Confluence Conference on Great Lakes water levels. Ann Arbor, Michigan, United States.

82. **A.D. Gronewold**, February 2014. Differentiating drivers of water loss to prioritize water resource management planning. Presented at 2014 Borchardt conference. Ann Arbor, Michigan, United States.

81. **A.D. Gronewold**, February 2014. Great Lakes water levels. Presented to Council of Great Lakes Industries Water Use and Quality Work Group. Ann Arbor, Michigan, United States.

80. **A.D. Gronewold**, December 2013. Invited briefing on Great Lakes water levels to representatives from Union of Concerned Scientists, Meridian Institute, World Resources Institute, Energy Foundation, and Michigan League of Conservation Voters. (Via remote broadcast) Washington, D.C., United States.

79. **A.D. Gronewold**, November 2013. Great Lakes levels panel discussion at sixth annual freshwater summit. Traverse City, Michigan, United States.

78. Fry, L., E.J. Andereson, A.A. Ritzenthaler, K.B. Campbell, E.L. Kramer, and **A.D. Gronewold**. Representation of spatial and temporal variability in beach water quality using a bacteria-hydrology-hydrodynamics modeling framework. State of Lake Michigan-Great Lakes Beach Association Conference, Sheboygan, WI, October 2013.

77. Ritzenthaler, A.A., E.L. Kramer, L.M. FRY, **A.D. Gronewold**, and E.J. Anderson. Spatial, temporal, and analytical variability in nearshore water quality and its implications on management decisions. State of Lake Michigan-Great Lakes Beach Association Conference, Sheboygan, WI, October 2013.

76. **A.D. Gronewold**, July 2013. Great Lakes water level dynamics. Upper Midwest and Great Lakes climate forum: seasonal outlooks. Ann Arbor, Michigan, United States.

75. **A.D. Gronewold**, July 2013. Great Lakes water level dashboard. Shoreline Change Virtual Workshop 2013: perspectives on the Great Lakes.

74. A. Ritzenthaler, L. Fry, E. Anderson, K. Campbell, and **A.D. Gronewold**, June 2013. Development of a multi-model framework linking a pathogen loading model to a hydrodynamics model for beach water quality forecasting. 2013 Annual Conference on Great Lakes Research, West Lafayette, Indiana, United States.

73. A. Paine, A. Ritzenthaler, E. Kramer, and **A.D. Gronewold**, June 2013. Monitoring and analysis of Escherichia coli in the nearshore waters of Lake St. Clair. 2013 Annual Conference on Great Lakes Research, West Lafayette, Indiana, United States.

72. E. Kramer, A. Ritzenthaler, A. Paine, and **A.D. Gronewold**, June 2013. Spatial, temporal, and analytical variability in near-shore water quality and its implications on management decisions. 2013 Annual Conference on Great Lakes Research, West Lafayette, Indiana, United States.

71. **A.D. Gronewold**, C.A. Stow, K. Campbell, T. Hunter, June 2013. Climate change impacts on the water budget and water level dynamics of the Great Lakes basin. 2013 Annual Conference on Great Lakes Research, West Lafayette, Indiana, United States.

70. L. Fry, **A.D. Gronewold**, V. Fortin, S. Buan, A. Clites, C. Luukkonen, D. Holtschlag, L. Diamond, T. Hunter, F. Seglenieks, D. Durnford, E. Klyszejko, K. Kea, P. Restrepo. June 2013. The Great Lakes runoff intercomparison project Phase I (Lake Michigan): Summary of results and plans for Phase II (Lake Ontario). 2013 Annual Conference on Great Lakes Research, West Lafayette, Indiana, United States.

69. Clites, A., E. Kramer, L. Fry, E. Anderson, and **A.D. Gronewold**. June 2013. Implications of an improved hydrologic model for understanding near-shore hydrodynamics: impacts of the Clinton River spillway on predicting beach water quality. 2013 Annual Conference on Great Lakes Research, West Lafayette, Indiana, United States.

68. **A.D. Gronewold**, May 2013. Understanding drivers of Great Lakes water levels. University of Michigan Water Center, CILER, and NOAA-GLERL joint seminar. Ann Arbor, Michigan, United States.

67. Gill, S., **A.D. Gronewold**, and T. Landon, May 2013. Great Lakes Economies and Ecosystems: will extreme low water levels leave them high and dry? NOAA Central Library Brown Bag Seminar Series. Silver Spring, Maryland, United States.

66. Bratton, J.F., J. Wang, **A.D. Gronewold**, B.M. Lofgren, and M. Colton. Tools for prediction and management of climate change impacts on natural resources in the Great Lakes and the Arctic. 11th Annual Climate Prediction Applications Science Workshop, Climate Information for Natural Resource Management, Logan, UT, April 23-25, 2013.

65. Kult, J., Fry, L., **Gronewold, A.D.**, Choi, W., 2013. Effects of inter-annual and seasonal variability in regionalization of hydrologic response in the Great Lakes basin. Presented at the 6th International Conference on Water Resources and Environmental Research. Koblenz, Germany.

64. **Gronewold, A.D.**. March 2013. Great Lakes water level dynamics. Presented at the Michigan State University, Institute of Water Research, Great Lakes Conference - The Great Lakes: Science and Stewardship, East Lansing, Michigan, United States.

63. **Gronewold, A.D.**, A. Ritzenthaler, L.M. Fry, E.J. Anderson. Forecasting recreational water quality standard violations with a linked hydrologic-hydrodynamic modeling system. Presented at 2012 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA. December 2012.

62. **Gronewold, A.D.**, V. Fortin, L.M. Fry. The Great Lakes Runoff intercomparison project (GRIP). Presented at 2012 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA. December 2012.

61. Hunter, T.S., L.M. Fry, **Gronewold, A.D.**, J. Kult. Assessment of differences in physical watershed characteristics between gaged and ungaged portions of the Great Lakes basin. Presented at 2012 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA. December 2012.

60. Kult, J.M., L.M. Fry, **Gronewold, A.D.**. Accounting for inter-annual and seasonal variability in regionalization of hydrologic response in the Great Lakes basin. Presented at 2012 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA. December 2012.

59. Fry, L.M., T.S. Hunter, M.S. Phanikumar, V. Fortin, **Gronewold, A.D.**. Assessment of the Area Ratio Method and the value of gages for predicting runoff in intermittently gaged portions of the Great Lakes basin. Presented at 2012 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA. December 2012.

58. Ritzenthaler, A.A., E.J. Anderson, L.M. Fry, and **A.D. Gronewold**. Development of a process model-based bacterial water quality forecasting system. 12th Annual Great Lakes Beach Association Conference, Mackinac Island, MI, October 2012.

57. Ritzenthaler, A., Kramer, E., Anderson, E., Fry, L., **A.D. Gronewold**, November 2012. Progress in Forecasting Threats to Beach Health. 6th binational Lake St. Clair conference. Harrison Township, Michigan, United States.

56. **A.D. Gronewold** and Lofgren, B. October 2012. Technical input to the 2014 National Climate Assessment on climate change impacts on regional water resources. GLISA Symposium, University of Michigan, Ann Arbor, Michigan, United States.

55. **A.D. Gronewold**. September 2012. Introducing the Great Lakes water level dashboard. NOAA Climate Connection Seminar Series.

54. **A.D. Gronewold**. August 2012. Great Lakes hydrologic forecasting and data needs. Public forum on Great Lakes research. Northern Michigan University, Marquette, Michigan, United States.

53. Rockwell, D.C., Campbell, K., Schwab, D.J., Mann, G.E., Wagenmaker, R., Joshi, S.J., Lang, G.A. and **A.D. Gronewold**. Beach Water Quality Management Decision Support Systems for Forecasting Probability of Exceeding E. coli Levels. 2012 Annual Conference on Great Lakes Research, Cornwall, Ontario, Canada.

52. Fry, L.M. and **A.D. Gronewold**. Development of a Regional Parameter Estimation Model for a Basin-Wide Recalibration of the Large Basin Runoff Model. 2012 Annual Conference on Great Lakes Research, Cornwall, Ontario, Canada.

51. Clites, A., Smith, J., Hunter, T., **A.D. Gronewold**. May 2012. A Web-Based Portal for Understanding Great Lakes Water Level Dynamics and Climate Variability. 2012 Annual Conference on Great Lakes Research, Cornwall, Ontario, Canada.

50. Crooks, J., Hunter, T., Stow, C., **A.D. Gronewold**. May 2012. Accommodating Precipitation Estimate Bias and Uncertainty in Large-Lake Dominated Basins. 2012 Annual Conference on Great Lakes Research, Cornwall, Ontario, Canada.

49. Ritzenthaler, A., Alameddine, I., Campbell, K., **A.D. Gronewold**. May 2012. Developing bacterial watershed fate and transport models in data-limited tributaries. 2012 Annual Conference on Great Lakes Research, Cornwall, Ontario, Canada.

48. **A.D. Gronewold** and R.L. Wolpert. May 2012. Moving Beyond the MPN and CFU: Novel Applications of Statistical Models. 2012 Annual Conference on Great Lakes Research, Cornwall, Ontario, Canada.

47. Fry, Lauren, **A.D. Gronewold** April 2012. Employing state-of-the-art hydrological modeling tools to improve historical estimates and forecasts of Great Lakes basin runoff. Presented as part of CILER-GLERL seminar series, Ann Arbor, Michigan, United States.

46. **Gronewold, A.D.**. April 2012. Great Lakes water level dynamics. Presented at the Frankfort Rotary Club, Frankfort, Michigan, United States.

45. **Gronewold, A.D.**, V. Fortin. March 2012. Leveraging binational collaborative research to advance Great Lakes hydrological science and improve operational forecasting. Presented at the 20th U.S. - Canadian Great Lakes Operational Meteorology Workshop, Chicago, Illinois, United States.

44. **Gronewold, A.D.**. January 2012. Great Lakes water level dynamics. Presented at the Inland Seas Education Association, Suttons Bay, Michigan, United States.

43. **Gronewold, A.D.**. November 2011. Great Lakes hydrological modeling. Presented to visiting scientists and students from Wayne State University at NOAA GLERL, Ann Arbor, Michigan, United States.

42. **Gronewold, A.D.**. September 2011. Great Lakes Water Levels. Coastal Habitat Conservation in a Changing Climate: Strategies and Tools for the Great Lakes Region, Ypsilanti, Michigan, United States.

41. **Gronewold, A.D.**. August 2011. A Perspective on the Climate and Water Connection from the Great Lakes. NOAA National Weather Service, Silver Spring, Maryland, United States.

40. **Gronewold, A.D.**. August 2011. A Great Lakes Perspective on the Climate and Water Connection. NOAA Climate Prediction Center, Camp Springs, Maryland, United States.

39. **Gronewold, A.D.**. August 2011. Climate change impacts on Great Lakes water levels. The Ohio State University Stone Laboratory, Put–in–Bay, Ohio, United States.

38. **Gronewold, A.D.** and T.S. Hunter. June 2011. Novel models for quantifying spatial variability in daily precipitation estimates. 2011 Annual Conference on Great Lakes Research, Duluth, Minnesota, United States.

37. Moynihan, M.A., K. Kannapan, D. Kashian, C.A. Stow, **A.D. Gronewold**. June 2011. *E. coli* and *Enterococci* concentrations in Great Lakes Beaches: Implications of small scale sampling variability on perceived threats to human health. 2011 Annual Conference on Great Lakes Research, Duluth, Minnesota, United States.

36. Clites, A.H., T.S. Hunter, **A.D. Gronewold** and C.A. Stow. June 2011. An appraisal of the Great Lakes Advanced Hydrologic Prediction System (AHPS). 2011 Annual Conference on Great Lakes Research, Duluth, Minnesota, United States.

35. T.S. Hunter and **Gronewold, A.D.**. June 2011. Variability and uncertainty in Great Lakes runoff estimates. 2011 Annual Conference on Great Lakes Research, Duluth, Minnesota, United States.

34. **Gronewold, A.D.**. May 2011. Climate change impacts on Great Lakes water levels. The Ohio State University Climate Change Outreach program webinar series. Columbus, Ohio, United States.

33. **Gronewold, A.D.** Propagating uncertainty into water resource management decisions. March 2011. Grand Valley State University (Annis Water Resources Institute), Muskegon, Michigan, USA.

32. **Gronewold, A.D.** Uncertainty and Variability in Hydrological and Water Quality Models. February 2011. Western Michigan University (Department of Geography Colloqium Series), Kalamazoo, Michigan, USA.

31. **Gronewold, A.D.** NOAA's Regional Strategic Plan for Monitoring and Research. December 2010. Uncertainty in Upper Great Lakes Water Budgets workshop. Burlington, Ontario, Canada.

30. **Gronewold, A.D.** Hydrological modeling. November 2010. GLERL Science Program Review, Ann Arbor, Michigan, USA.

29. **Gronewold, A.D.** Addressing Uncertainty and Variability in Hydrological and Water Quality Models. November 2010. Michigan Technological University Seminar (Department of Civil and Environmental Engineering), Houghton, Michigan, USA.

28. **Gronewold, A.D.** and C.A. Stow. Precipitation and evaporation (overview of GLERL's data resources). October 2010. Great Lakes Water Resources Manager's Initiative Technical Workshop, Chicago, IL. Council of Great Lakes Governors.

27. **Gronewold, A.D.** Predicting Flows in Ungauged Basins: A probabilistic comparison of alternative regionalization schemes. CILER-GLERL Seminar Series, August 2010, Ann Arbor, Michigan, USA.

26. **Gronewold, A.D.** and I.M. Alameddine. Propagating Data Uncertainty and Variability into Flow Predictions in Ungauged Basins. July 2010. Presented at 2010 International Congress on Environmental Modeling and Software, Ottawa, Canada.

25. **Gronewold, A.D.**, M. B. Nevers, R. L. Whitman. June 2010. Improving Recreational Water Quality Assessments through Novel Approaches to Quantifying Measurement Uncertainty. Presented at 2010 Annual Conference on Great Lakes Research, Toronto, Canada.

24. **Gronewold, A.D.**, T. Hunter, C. Stow. June 2010. Novel Modeling Tools for Propagating Climate Change Variability and Uncertainty into Hydrodynamic Forecasts. Presented at 2010 Annual Conference on Great Lakes Research, Toronto, Canada.

23. **Gronewold, A.D.**, I.M. Alameddine, 2010. Propagating Data Uncertainty and Variability into Flow Predictions in Ungauged Basins. In conference proceedings, International Congress on Environmental Modeling and Software, Ottawa, Canada, 1795–1802.

22. **Gronewold, A.D.**, I.M. Alameddine, R. Anderson. A Bayesian Hierarchical Modeling Approach to Predicting Flow in Ungauged Basins. Presented at 2009 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA. December 2009.

21. **Gronewold, A.D.**, I.M. Alameddine, R. Anderson, Novel Probabilistic and Bayesian Modeling Tools for Predicting Flow in Ungauged Basins. Networking and Leadership Training Organization (NLTO), United States Environmental Protection Agency, Research Triangle Park, North Carolina, USA. December 2009.

20. **Gronewold, A.D.**, Propagating Uncertainty and Variability into Ecosystem Forecasts. University Program in Ecology Seminar Series, Nicholas School of the Environment, Duke University, Durham, North Carolina, USA. October 2009.

19. **Gronewold, A.D.**, Building and Applying Network Models of Pollutant Fate and Transport Processes in Coastal Watersheds. United States Environmental Protection Agency, Research Triangle Park, North Carolina, USA. August 2009.

18. **Gronewold, A.D.**, Uncertainty and Variability in Environmental Resource Management Decisions. USEPA Landscape Ecology Branch Seminar Series, Research Triangle Park, North Carolina, USA. March 2009.

17. **Gronewold, A.D.**, I.M. Alameddine, R. Anderson, R.L. Wolpert, K.H. Reckhow. Simulating the Effect of Alternative Climate Change Scenarios on Pollutant Loading Reduction Requirements for Meeting Water Quality Standards Under USEPA's Total Maximum Daily Load Program. Presented at 2008 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA.

16. Anderson, R., **Gronewold, A.D.**, I.M. Alameddine, K.H. Reckhow. A Probabilistic Model for Propagating Ungauged Basin Runoff Prediction Variability and Uncertainty into Estuarine Water Quality Dynamics and Water Quality-based Management Decisions. Presented at 2008 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA.

15. O'Banion, R., I.M. Alameddine, **A.D. Gronewold**, K.H. Reckhow. PyLIDEM: A Python-Based tool to Delineate Coastal Watersheds Using LIDAR Data. Presented at 2008 American Geophysical Union (AGU) Fall Meeting, San Francisco, California, USA.

14. **Gronewold, A.D.**, M.E. Borsuk, R.L. Wolpert, K.H. Reckhow. Uncertainty and Variability in Fecal Indicator Bacteria-Based Water Quality Standard Compliance and Impacts on Pollutant Loading Reduction Estimates. Presented at 2008 American Water Resources Association (AWRA) Annual Conference in New Orleans, Louisiana, USA, November 2008.

13. **Gronewold, A.D.**, K.H. Reckhow, D.A. Vallero. Improving Human and Ecological Exposure Assessments: A Bayesian Network Modeling Approach. Presented at 2008 International Society for Exposure Analysis (ISEA) Joint Annual Conference in Pasadena, California, USA, October 2008.

12. **Gronewold, A.D.**, K.H. Reckhow, R.L. Wolpert, M.E. Borsuk. Acknowledging Fecal-Indicator Bacteria Concentration Measurement Uncertainty and Variability in Water Resource Management Decisions. Presented at 2008 Water Resource Research Institute (WRRI) Annual Conference in Raleigh, North Carolina, USA, October 2008.

11. **Gronewold, A.D.**, R.L. Wolpert, K.H. Reckhow. Propagating Water Quality Analysis Uncertainty into Resource Management Decisions Through Probabilistic Modeling. Presented at 2007 AGU Fall Meeting in San Francisco, California, USA, December 2007.

10. **Gronewold, A.D.** Stormwater Management Uncertainty and Variability. Presented at Institute of the Environment, University of North Carolina - Chapel Hill, Morehead City Field Site Seminar Series, USA, October 2007.

9. **Gronewold, A.D.** with K.H. Reckhow and D.A. Vallero. Application of Multimedia Models for Human and Ecological Exposure Analysis. Presented at the 17^{th} Annual Conference of the International Society of Exposure Analysis in Durham, North Carolina, USA, October 2007.

8. **Gronewold, A.D.**, A.D. Coulliette, R.T. Noble, R.L. Wolpert, K.H. Reckhow. Simple Bayesian network models for water resources management. Presented at Water Resources Research Institute (WRRI) annual meeting in Raleigh, North Carolina, USA, March 2007.

7. A.D. Coulliette, **Gronewold, A.D.**, E. Money, M. Serre, R.T. Noble, 2007. Examining the relationship between wet weather and fecal contamination in a North Carolina estuary. In conference proceedings, Water Environment Federation Specialty Conference - TMDL 2007, Bellevue, Washington, USA, 1019–1031.

6. **Gronewold, A.D.**, K.H. Reckhow, 2007. Developing a Bayesian network model for bacteriologically impaired surface waters. In conference proceedings, WaterMatex, Washington, D.C., USA.

5. **Gronewold, A.D.**, A.D. Coulliette, R.T. Noble, R.L. Wolpert, K.H. Reckhow, 2007. Pollutant-specific TMDLs: Developing a Bayesian network model for supporting fecal coliform TMDL assessments. In conference proceedings, Water Environment Federation Specialty Conference - TMDL 2007, Bellevue, Washington, USA, 1032–1041.

4. **Gronewold, A.D.**, R.L. Wolpert, K.H. Reckhow, W. Kirby-Smith. Simple Bayesian network models for supporting bacteria TMDLs. Poster presented at WEFTEC, Dallas, Texas, USA, October 2006.

3. **Gronewold, A.D.**, R.L. Wolpert, K.H. Reckhow. Improving parameter estimation in bacteria water quality models. Poster presented at Statistical and Applied Mathematical Sciences Institute (SAMSI) Program on Development, Assessment and Utilization of Complex Computer Models, Research Triangle Park, North Carolina, USA, September 2006.

2. **Gronewold, A.D.**, K.H. Reckhow, R.L. Wolpert. Monitoring environmental outcomes in adaptive management. Presented at 3rd Biennial Meeting of the International Environmental Modelling and Software Society, Burlington, Vermont, USA, July 2006.

1. **Gronewold, A.D.**, K.H. Reckhow, R.L. Wolpert. Bayesian network models supporting TMDL implementation in shellfishing resource areas. 3rd Biennial Meeting of the International Environmental Modelling and Software Society, Burlington, Vermont, USA, July 2006.

SERVICE (TO ACADEMIC, GOVERNMENT, OR PROFESSIONAL ORGANIZATIONS)

Session co-chair, "Uncertainty modeling for water quality studies" (with Ebrahim Ahmadisharaf), AGU 2020

Session co-chair, "Uncertainty modeling for water quality studies" (with Ebrahim Ahmadisharaf), AGU 2020

Session co-chair, "Lakes and inland water bodies" (with Samar Minallah, Peter Blanken, and Sally McIntyre), AGU 2020

International Joint Commission, Science Advisory Board (Science Priority Committee). 2020 to present.

Technical advisor, NASA DEVELOP program student project, "Niagara Falls and Lake Ontario flooding assessment". 2018-2019.

Session co-chair, "Using new data and technology to better understand freshwater and lake systems: end-to-end remote sensing and regional modeling approaches", AGU Annual Meeting, New Orleans, December 2017

Session co-chair, "Regional water management: development and application of modeling and data for decisions", 2017 International Association of Great Lakes Research annual meeting, Detroit, Michigan. June 2017.

Lead convener, workshop on Great Lakes Hydrological Modeling, Ann Arbor, MI, 2016

Session co-chair, "Interactions between large lakes and regional climate", 2016 International Association of Great Lakes Research annual meeting, University of Guelph, June 2016.

Great Lakes Ensemble Advisory Committee (GLISA), 2015

Great Lakes Adaptive Management Committee (U.S. Liaison), 2015-2017

Contributing author, SOLEC Great Lakes Indicator Report (water levels section), 2015

University of Michigan CILER Management Council, 2015-2017

Coordinating Committee on Great Lakes Basic Hydrologic and Hydraulic data, 2011-2019

University of Michigan CILER Council of Fellows, 2012-2015

Session co-chair, "Hydroclimatic variability in the Great Lakes region and its impact on aquatic ecosystems", 2014 International Association of Great Lakes Research annual meeting

Invited panelist, University of Michigan Water Center project review workshop, (September) 2013

Great Lakes Adaptive Management Task Team (U.S. Secretary), 2013

Member, Adaptive Management and Hydroclimate Working Group, IUGLS, 2013

NOAA Great Lakes Restoration Initiative (GLRI) nearshore focus area lead, 2013

Session co-chair, "Advances in monitoring, analytical methods, data management, and forecasting beach nearshore water quality", 2013 International Association of Great Lakes Research annual meeting

Session co-chair, "Recent advances in understanding the hydrology of the Great Lakes region", Hydrology Section, 2012 American Geophysical Union Fall meeting

Co-convener, workshop on "Methods of projecting hydrologic impacts of climate change", Muskegon, Michigan, 2012

Contributing author, U.S. National Climate Assessment (Midwest chapter), 2012

Session co-chair, "Interactions between climate and the energy and water balance of lakes and their watersheds", 2012 International Association of Great Lakes Research annual meeting

Session co-chair, "Assessing dynamics of the Great Lakes water budget", 2011 International Association of Great Lakes Research annual meeting

Invited speaker, Undergraduate Research Opportunity Program (UROP) 2011 Career Exploration

Honors and Awards

NOAA Bronze Medal, 2019
Department of Commerce Sustainability, Energy, and Environmental (SEE) Ambassador, 2018
NOAA Bronze Medal, 2016
USEPA National Leadership Training Award, 2009
Outstanding Paper Award (Hydrology), AGU Fall Meeting, 2007
North Carolina Association of Environmental Professionals: Graduate Scholarship, 2007
Water Environment Federation: Canham Graduate Scholarship, 2006
Quantitative Environmental Analysis, LLC: Graduate Scholarship, 2006
Duke University: Teaching Award, Nicholas School of the Environment, 2005
Cornell University: Student Life Distinguished Service Award, 1995
Cornell University: Cornell Club of Boston Scholar, 1993
Cornell University: Albert J. Kaneb Scholar, 1992

Media Contributions

National and local news

Article for The Conversation, "Climate change is driving rapid shifts between high and low water levels on the Great Lakes", with Richard B. Rood. June 4, 2019. [Widely redistributed]

Interview for WWJ News AM950 on Great Lakes water levels. June 2019.

Interview for Glen Arbor Sun on Great Lakes water levels. June 2019.

Interview for AM800 CKLW in Windsor, Ontario, on Great Lakes water levels. June 2019.

Interview for "Issues of the Environment" at WEMU, Ypsilanti, Michigan. Aired June 11, 2019.

Op-ed for Detroit News, "Wave of flooding a wake-up call", with Richard B. Rood. May 8, 2019.

National Public Radio (The Environment Report), December 2014. "Upper Great Lakes water levels are up. Here's why".

National Public Radio (All Things Considered), October 2014. "Why are the Great Lakes on the rise?".

New York Times, June 2014. "Creeping up on unsuspecting shores: The Great Lakes, in a welcome turnaround".

National Public Radio (The Environment Report), February 2014. "What all the snow and ice will mean for Great lakes water levels".

NBC Nightly News, June 2013. Evening news feature story.

Other media outlets

Interview for "The Steve Gruber Show" (Dr. Andrew D. Gronewold, wave of flooding a wake up call), May 10, 2019.

Interview for Great Lakes Now article "Early Flooding Hits Great Lakes cities: Water levels could hit record highs this summer", May 2019

Interview and podcast for "Garage Logic" (Professor Drew Gronewold on the record high water levels of Lake Superior), May 8, 2019.

Xploration Awesome Planet (with host Philippe Cousteau), December 2015. "Exciting Waterways".

Professional Society Memberships

American Water Resources Association (AWRA), 2008-present
American Geophysical Union (AGU), 2007-present
Sigma Xi, 2006-2009
International Association of Great Lakes Research (IAGLR), 2010-present
International Environmental Modelling and Software Society (iEMSs), 2006-present
North Carolina Water Resources Association (NCWRA), 2005-2010
Water Environment Federation (WEF), 1996-2010
American Academy of Environmental Engineers (AAEE - Associate), 2000-2002
American Water Works Association (AWWA), 1996-2000

Mentorship

Post-doctorate
Lauren Fry (CILER Fellow, 2012-2014)
Daniel Obenour (2013-2014) Co-supervised with Don Scavia
Margaret Kalcic (2013-2014) Co-supervised with Don Scavia
Becky Bolinger (UCAR PACE Fellow, 2014-2016) Co-supervised with Keith Kompoltowicz
Lisi Pei (UCAR PACE Fellow, 2015-2017)
Hong Do (SEAS Fellow, 2019-2021)
Yiwen Mei (SEAS, USGS Powell, and MCubed Fellow, 2020-2022) with A. Steiner and R. Rood
Satbyeol Shin (2022-present)

Doctorate students
Yasuyuki Akita (Ph.D., UNC-Chapel Hill, 2010) Dissertation committee member
Katie Holman (Ph.D., CILER Fellow, 2011)
Kevin Fries (Ph.D., UM CEE, 2014-2018) Diss. committee member, with B. Kerkez
Dennis Sugrue (Ph.D., UM CEE, 2018-2020) Diss. committee member, with Peter Adriaens
Abhiram Mullapudi (Ph.D., UM CEE, 2020-2021) Diss. committee member, with B. Kerkez
Daniel Phillips (Ph.D., UM SEAS, 2019-2021) Diss. committee member, with Joan Nassauer
Kirk Townsend (Ph.D., UM EES, 2020-2021) Diss. committee member, with Marin Clark
Chloe Whicker (Ph.D., UM CLASP, 2021-2023) Diss. committee member, with Mark Flanner
Jade Zhang (Ph.D., UM EES, 2020-2023) Diss. committee member, with Sierra Peterson
Yuanqui Feng (Ph.D., UM SEAS, 2019-present) Diss. committee member, with Joan Nassauer
Sarah Katz (Ph.D., UM EES, 2020-present) Diss. committee member, with Naomi Levin
Vianey Rueda (Ph.D., UM SEAS, 2022-present) Primary supervisor

Master's students
Thidavisuth Chunkrua (MS, Duke University, 2005) Co-supervised with Ken Reckhow
Ryan O'Banion (MS, Duke University, 2006) Co-supervised with Ken Reckhow
Jonathan Kult (MS, CILER Fellow, 2012) Co-supervised with Lauren Fry
Anthony Accioilli (MS, CILER Fellow, 2012) Co-supervised with Brent Lofgren
Bryan Comer (MS, CILER Fellow, 2013) Co-supervised with Lauren Fry
Nathan Kelly (MS, CILER Fellow, 2013) Co-supervised with Lauren Fry and Kent Campbell
Scott Loeffler (MS, CILER Fellow, 2015) Co-supervised with Becky Bolinger
Carlos Wah-Gonzalez (MS, NOAA EPP Fellow, 2015)
Houraa Daher (MS, UM AOSS, 2015-2016) Co-supervised with Becky Bolinger and Ricky Rood
Xiaolong Ji (MS, UM CLASP, 2016-2017) Co-supervised with Ricky Rood
Kim Channell (MS, UM CLASP, 2016-2017) Co-supervised with Ricky Rood

Christine Brown (MS, UM SEAS, 2019-2020) Master's thesis committee member
Zihao Chen (MS, UM SEAS, 2019-2020)
Meiye Wang (MS, UM SEAS, 2019-2020)
Helena Garcia (MS, UM SEAS, 2019-2021)
Jennifer Fuller (MS, UM SEAS, 2020-2021) Master's thesis committee member
Drew Pappas (MS, UM Communications, 2020-2021) Research supervisor
Danielle Cohn (MS, UM SEAS 2019-2021) Research supervisor
Ryan Armbrustmacher (MS, UM CEE 2021) Research supervisor
Yifan Luo (MS, UM SEAS, 2021-2022) Practicum and research project supervisor
Hannah Paulson (MS, UM SEAS, 2021-2022) Research project supervisor
Eamon Espey (MS, UM SEAS, 2021-2023) Research project supervisor
Sage Paris (MS, UM CEE, 2022-2023) Research supervisor
April Kim (MS, UM SEAS, 2021-2023) Research supervisor
Marjorie Cort (MS, UM SEAS, 2021-2023) Research supervisor
Mikela Dean (MS, UM SEAS, 2021-2023) Research supervisor
Caleb Wegener (MS, UM SEAS and CEE, 2022-present) Research supervisor
Taylor Mitchell (MS, UM SEAS, 2022-present) Thesis supervisor
Bhavarth Shah (MS, UM SEAS, 2022-present) Thesis supervisor
Maya Morgan (MS, UM SEAS, 2022-present) Thesis supervisor
Alexander Vandeweghe (MS, CEE, 2023-present)

Undergraduate
Molly Moynihan (Hollings Fellow, 2010) Co-supervised with Craig Stow
Joeseph Smith (Hollings Fellow, 2010) Co-supervised with Craig Stow
Kandace Kea (EPP Fellow, 2012)
Andrea Paine (UROP Fellow, 2012-2013) Co-supervised with Alicia Ritzenthaler
Cameron Carpenter (UM CEE, 2014-2015) Co-supervised with Becky Bolinger
Hannah Rockwell (UM CEE, 2015) Co-supervised with Becky Bolinger
Micki Johns (UM CEE, 2015)
Hannah Jones (UM CEE, 2015)
Eric Chapman (UROP Fellow, 2015-2016)
Jing Xu (Data Science, 2019)
Mairna Askar (Computer Science, 2019-2021)
Karl Kirchner (Mathematics, 2019-2020)
Mutaman Alnaseri (UROP Fellow, 2019-2020)
Jenna Sherwin (UROP Fellow, 2020-2021)
Jessica Zenas (UROP Fellow, 2020-2021)
Anika Satish (UROP Fellow, 2020-2021)
Sydney Swider (UM Computer Science, 2020-2021)
Jennani Jayaram (Mathematics, 2019-2022)
Austin Chen (UM Data Science, 2021-2022)
Ashleigh Craig (UM Information Analysis, 2021-2022)
Samriddhi Gupta (UM Data Science; 2021-2022)
Victor Lin (UM Data Science; 2021-2022)
Alexander Vandeweghe (UROP Fellow, 2019-2022)
Iain Robb (UM Computer Science; 2021)
Ari Basch (UM Computer Science, 2021-2023)
Troy Sorensen (UM Data Science; 2021-2023)
Anna Gossard (UROP Fellow; UM CEE, 2021-present)
Rachel Rubanguka (SROP Fellow; 2021-present)
Lara Tobias-Tarsh (UM CLaSP; 2021-present)
Manish Venumuddula (UROP Fellow, 2020-present)
Camila Castenada (SROP Fellow, 2023)

Certifications

Licensed Professional Engineer (Civil - Massachusetts)
Certified Soil Evaluator (Massachusetts: 2000 – 2010)

Technical Reports

Consulting engineering project team leader or contributing author on the following reports:

Evaluation of Water and Wastewater Disinfection Alternatives, City of Manchester, Connecticut (2004). Stearns & Wheler, LLC.

Stormwater Disposal Study - Manomet Avenue, Town of Plymouth, Massachusetts (2003). Stearns & Wheler, LLC.

Fecal Coliform Evaluation and Mitigation Planning for the Allen's Harbor Watershed, Town of Harwich, Massachusetts (2002). Stearns & Wheler, LLC.

Marstons Mills Middle School Wastewater Treatment Facility Capacity Evaluation, Town of Marstons Mills, Massachusetts (2002). Stearns & Wheler, LLC.

Stormwater Assessment Report, Town of Wellfleet, Massachusetts (2001). Stearns & Wheler, LLC.

Hydrogeologic Assessment - Bromfield School Wastewater Disposal Site, Town of Harvard, Massachusetts (2001). Stearns & Wheler, LLC.

Annual Landfill Groundwater Monitoring Report, Town of Norfolk, Massachusetts (1999-2000). Stearns & Wheler, LLC.

Annual Municipal Landfill Monitoring Reports, Town of Barnstable, Massachusetts (1996-2000). Stearns & Wheler, LLC.

Wastewater Facilities Planning Report - Evaluation of Alternatives (Phase II), Town of Barnstable, Massachusetts (1999). Stearns & Wheler, LLC.

Needs Assessment Report for Comprehensive Wastewater Management Planning Study, Town of Chatham, Massachusetts (1999). Stearns & Wheler, LLC.

Cape Cod Community College Wastewater Facilities Planning Analysis, Town of Barnstable, Massachusetts (1997). Stearns & Wheler, LLC.

Landfill Closure Construction Documentation Report, Town of Barnstable, Massachusetts (1997). Stearns & Wheler, LLC.

Other Professional Activities

Editorial Board: Environmental Modelling & Software (2010 - 2015)

Reviewer: Advances in Water Resources, Canadian Journal of Fisheries and Aquatic Sciences, Climatic Change, Earth Interactions, Ecological Engineering, Ecological Indicators, Environmental Engineering Science, Environmental Health Perspectives, Environmental Management, Environmental Modelling & Software, Environmental Monitoring and Assessment, Environmental Science & Technology, Hydrological Processes, Journal of the American Water Resources Association, Journal of Climate, Journal of Environmental Management, Journal of Experimental Marine Biology and Ecology, Journal of Geophysical Research - Solid Earth, Journal of Great Lakes Research, Journal of Hydrology, Journal of Hydrologic Engineering, Journal of Hydrometeorology, Journal of Water Resources Planning and Management, Marine Environmental Research, Science of the Total Environment, Water Research, Water Resources Research, Weather and Forecasting