Stacey A. Archfield, Ph.D.

12201 Sunrise Valley Drive, MS 430, Reston, VA 20190
+1.703.648.5868 / sarch@usgs.gov

EDUCATION

Doctor of Philosophy, Civil and Environmental Engineering, Tufts University, 2009
Master of Science, Geosystems, Massachusetts Institute of Technology, 2001
Bachelor of Science, Geology, Northeastern University, 1999
Minor in Mathematics

PROFESSIONAL APPOINTMENTS

U.S. Geological Survey, National Research Program
Research Hydrologist, 2013-Present
U.S. Geological Survey, Massachusetts-Rhode Island Water Science Center
Research Hydrologist, 2008-2013
Hydrologist (Project Chief), 2004-2008
Hydrologist, 1998-2004
Tufts University, Department of Civil and Environmental Engineering
Research Assistant, 2003-2009
Massachusetts Institute of Technology, Earth Resources Laboratory
Research Assistant, 2001
Harvard-Smithsonian Center for Astrophysics, Space Geodesy Group
Research Associate, 1999

VISITING APPOINTMENTS

University of Bristol, College of Engineering, United Kingdon, March-April 2013
Vienna University of Technology, Department of Hydrology and Water Resources Management, Austria, April-May 2013

HONORS AND AWARDS

2014 Editors' Citation for Excellence in Refereeing for *Water Resources Research* (2015).
Archfield and Vogel [2010] paper was featured in the EOS Research Spotlight: Eos Trans. AGU, 92(6), 52, doi:10.1029/2011EO060009. *Papers featured in the Research Spotlight are selected by the editors of the 18 journals published by the American Geophysical Union. Only 3 to 4 papers are selected bi-weekly to be featured.* (2011).
Hirsch, Moyer and Archfield [2010] paper was selected as one of four finalists for the William R. Boggess Award, *This award is given to a paper published in the Journal of the American Water Resources Association that best describes, delineates, or analyzes a major problem or aspect of water resources from either a theoretical, applied, or philosophical standpoint. (http://awramedia.org/jawra/2011/05/11/2011-boggess-finalists/)* (2011).
Selected to deliver the 2010 U.S. Geological Survey Chief Hydrologist Seminar (2010).
Outstanding Student Paper Award, American Geophysical Union Fall Meeting (2009).

Tufts University Civil & Environmental Engineering Department Littleton Professional Promise Award (2009).
U.S. Geological Survey Special Thanks for Achieving Results (STAR) awards, *Recognition of contributions to various studies* (2002; 2001; 1999).
Northeastern University Student Commencement Speaker (1999).
Northeastern University Wendy Breen Kline Professional Promise Award (1999).
Northeastern University Gregory Jarvis Scholarship Recipient (1999).
Northeastern University Student Body President (1997-1998).

PUBLICATIONS

Book chapters

Parajka, J., V. Andréassian, **S.A. Archfield**, A. Bárdossy, G. Blöschl, F. Chiew, Q. Duan, A. Gelfan, K. Hlavčová, R. Merz, N. McIntyre, L. Oudin, C. Perrin, M. Rogger, J.L. Salinas, H.G. Savenije, J.O. Skøien, T. Wagener, E. Zehe, and Y. Zhang (Contributors listed in alphabetical order except first author), 2013, "Chapter 10. Prediction of runoff hydrographs in ungauged basins." In: *Runoff Prediction in Ungauged Basins: Synthesis across Processes, Places and Scales*, Blöschl, G., M. Sivapalan, T. Wagener, A. Viglione, H. Savenije, (Eds.). Cambridge University Press, UK.

Archfield, S.A., 2013, "Chapter 11.7. Setting Environmental Flow Targets in Northeast USA." In: *Runoff Prediction in Ungauged Basins: Synthesis across Processes, Places and Scales*, Blöschl, G., M. Sivapalan, T. Wagener, A. Viglione, H. Savenije, (Eds.). Cambridge University Press, UK.

Refereed journal articles

M. Bassiouni, **S.A. Archfield**, and R.M. Vogel, *under review*, Use of panel regressions to estimate low-flow response to rainfall variability*, submitted to Water Resources Research on February 10, 2016.*

A. Pugliese, W.H. Farmer**,** A. Castellarin, **S.A. Archfield,** and R.M. Vogel, *under review*, Regional flow duration curves: geostatistical techniques versus multivariate regression, *submitted to Advances in Water Resources on October 12, 2015*.

Bhaskar, A.S., D.M. Hogan, and **S.A. Archfield**, 2016, Urban base flow with Low Impact Development, *Hydrologic Processes*, doi: 10.1002/hyp.10808.

Archfield, S.A, M. Clark, B. Arheimer, L.E. Hay, W.H. Farmer, H. McMillan, J. Seibert, J.E. Kiang, T. Wagener, A. Bock, K. Hakala, V. Andréassian, S. Attinger, A. Viglione, R.R. Knight, and T.M. Over, 2015, Accelerating advances in continental domain hydrologic modeling, *Water Resources Research*, 51, 10078–10091, doi:10.1002/2015WR017498.

R.M. Hirsch, **S.A. Archfield**, and L.A. De Cicco, 2015, A bootstrap method for estimating uncertainty of water quality trends, Environmental Modelling & Software, v. 73, November 2015, 148-166, doi: 10.1016/j.envsoft.2015.07.017.

Hirsch, R.M. and **S.A. Archfield**, 2015, Flood trends: Not higher but more often, *Nature Climate Change* 5, 198-199, doi:10.1038/nclimate2551.

Singh, R., **S.A. Archfield**, and T. Wagener, 2014, Identifying dominant controls on hydrologic model parameter transfer from gauged to ungauged basins - a comparative hydrology approach, *Journal of Hydrology*, doi: 10.1016/j.jhydrol.2014.06.030, 2014.

Archfield, S.A., J.G. Kennen, D.M. Carlisle, D.M. Wolock, 2013, An objective and

parsimonious approach for classifying natural flow regimes at a continental scale, *River Research and Applications,* doi: 10.1002/rra.2710.

Archfield, S. A., A. Pugliese, A. Castellarin, J.O. Skøien, and J.E. Kiang, 2013, Topological and canonical kriging for design flood prediction in ungauged catchments: an improvement over a traditional regional regression approach?, *Hydrology and Earth System Science*, 17, 1575-1588, doi:10.5194/hess-17-1575-2013, 2013.

Archfield, S. A., Steeves, P. A., Guthrie, J. D., and Ries III, K. G., 2013, Towards a publicly available, map-based regional software tool to estimate unregulated daily streamflow at ungauged rivers, *Geoscientific Model Development*, 6, 101-115, doi:10.5194/gmd-6-101-2013.

Medalie, L., R.M. Hirsch, and **S.A. Archfield***,* 2012, Use of flow-normalization to evaluate nutrient concentration and flux changes in Lake Champlain tributaries, 1990–2009, *Journal of Great Lakes Research*, 38(1): 58–67, doi: 10.1016/j.jglr.2011.10.002.

Archfield, S. A., and R.M. Vogel, 2010, Map correlation method: Selection of a reference streamgage to estimate daily streamflow at ungaged catchments, *Water Resources Research*, 46, W10513, doi:10.1029/2009WR008481.

Hirsch, R.M., D. Moyer, and **S.A. Archfield**, 2010, Analysis of long-term surface water quality data using Weighted Regressions on Time, Discharge, and Season (WRTDS): motivations, method, and application to Chesapeake Bay River Input Monitoring data, *Journal of the American Water Resources Association*, 46(5):857-880, DOI: 10.1111/j.1752-1688.2010.00482.x.

Vogel, R.M., J. Sieber, **S.A. Archfield**, M.P. Smith, C.D. Apse and A. Huber-Lee, 2007, Relations among storage, yield and instream flow, *Water Resources Research*, 43, doi:10.1029/2006WR005226, 2007.

U.S. Geological Survey reports ***(Two formal colleague reviews are required for publication)***

Farmer, W.H., Knight, R.R., Eash, D.A., Hutchinson, K.J., Linhart, S.M., Christiansen, D.E., **Archfield, S.A**., Over, T.M., and Kiang, J.E., 2015, Evaluation of statistical and rainfall-runoff models for predicting historical daily streamflow time series in the Des Moines and Iowa River watersheds: *U.S. Geological Survey Scientific Investigations Report* 2015–5089, 34 p., http://dx.doi.org/10.3133/sir20155089.

Farmer, W.H., **S.A. Archfield**, T.M. Over, L.E. Hay, J.H. LaFontaine, and J.E. Kiang, 2014, A comparison of methods to estimate historical daily streamflow time series in the Southeastern United States, *U.S. Geological Survey Scientific Investigations Report* 2014-5231, 34 p., http://dx.doi.org/10.3133/sir2014-5231.

Linhart, S.M., J.F. Nania, D.E. Christiansen, K.J. Hutchinson, C.L. Sanders, Jr., and **S.A. Archfield**, 2013, Comparison between two statistically based methods, and two physically based models developed to compute daily mean streamflow at ungaged locations in the Cedar River Basin, Iowa: *U.S. Geological Survey Scientific Investigations Report* 2013–5111, 7 p.

Kiang, J.E., D. Stewart, **S.A. Archfield**, E.B. Osborne, and K. Eng, 2013, A National Streamflow Network Gap Analysis, *U.S. Geological Survey Scientific Investigations Report* 2013–5013, 79 p. plus one appendix as a separate file.

Linhart, S.M., J.F. Nania, C.L. Sanders, Jr., and **S.A. Archfield**, 2012, Computing daily mean streamflow at ungaged locations in Iowa by using the Flow Anywhere and Flow Duration Curve Transfer statistical methods: *U.S. Geological Survey Scientific Investigations Report* 2012–5232, 50 p.

Levin, S.L., **S.A. Archfield,** and A.J. Massey, 2011, Refinement and Further Evaluation of the Massachusetts Firm-Yield Estimator Model Version 2.0, *U.S. Geological Survey Scientific Investigations Report 2011-5125,* 49 p., plus CD–ROM.

Weiskel, P.K., S.L. Brandt, L.A. DeSimone, L.J. Ostiguy, and **S.A. Archfield**, 2010, Indicators of streamflow alteration, habitat fragmentation, impervious cover, and water quality for Massachusetts stream basins, *U.S. Geological Survey Scientific Investigations Report 2009–5272*, 70 p., plus CD–ROM.

Archfield, S.A., R.M. Vogel, P.A. Steeves, S.B. Brandt, P.K. Weiskel, and S.P. Garabedian, 2010, The Massachusetts Sustainable-Yield Estimator: A decision-support tool to assess water availability at ungaged sites in Massachusetts, *U.S. Geological Survey Scientific Investigations Report 2009-5227*, 41 p., plus CD–ROM.

Carlson, C.S. and **S.A. Archfield**, 2008, Hydrogeologic conditions and a firm-yield assessment for J.B. Converse Lake, Mobile County, Alabama, 1991-2006: *U.S. Geological Survey Scientific Investigations Report* 2008-5005.

Archfield, S.A, and C.S. Carlson, 2006, Ground-Water Contributions to Reservoir Storage and the Effect on Estimates of Firm Yield for Reservoirs in Massachusetts: *U.S. Geological Survey Scientific Investigations Report* 2006-5045.

Waldron, M.C., and **S.A. Archfield,** 2006, Factors Affecting Firm Yield and the Estimation of Firm Yield for 47 Streamflow-Dominated Drinking-Water-Supply Reservoirs in Massachusetts: *U.S. Geological Survey Scientific Investigations Report* 2006-5044.

Archfield, S.A., and D.L. LeBlanc, 2005, Comparison of Diffusion- and Pumped-Sampling Methods to Monitor Volatile Organic Compounds in Ground Water, Massachusetts Military Reservation, Cape Cod, Massachusetts, July 1999-December 2002: *U.S. Geological Survey Scientific Investigations Report* 2005-5010.

Bent, G.C., and **S.A. Archfield**, 2002, A Logistic Regression Equation for Estimating the Probability of a Stream Flowing Perennially in Massachusetts: *U.S. Geological Survey Water-Resources Investigations Report* 02-4043, 45 p.

Software

Thompson, J.L., **S.A. Archfield**, J.G. Kennen, and J.E.Kiang, 2013, EflowStats: An R package to compute ecologically-relevant streamflow statistics, (Version 1.x) [Computer software]. U.S. Geological Survey, *https://github.com/USGS-R/EflowStats*.

Archfield, S.A. and Steeves, P.A., 2011, The Connecticut River Unimpacted Flow tool: A GIS-based tool to estimate daily streamflow at ungaged locations in the Connecticut River Basin (Version 1.x) [Computer software]. U.S. Geological Survey, *http://webdmamrl.er.usgs.gov/s1/sarch/ctrtool/index.html*.

Archfield, S.A. and Granato, G.E., 2010, The Massachusetts Sustainable-Yield Estimator: A decision-support tool to assess water availability at ungaged stream locations in Massachusetts (Version 1.x), [Computer software]. U.S. Geological Survey, *http://webdmamrl.er.usgs.gov/s1/sarch/software/sye_mainpage.htm.*

Archfield, S.A., 2010, Flow-Duration Calculator: A tool to compute the period-of-record flow-duration curve and selected quantiles, (Version 1.x), [Computer software]. U.S. Geological Survey, *provided to staff at The Nature Conservancy and Susquehanna River Basin Commission.*

Archfield, S.A., 2009, Bioperiods Flow Calculator: A tool to determine streamflow statistics for user-specified bioperiods, (Version 1.x), [Computer software]. U.S. Geological

Survey, *provided to the Connecticut Department of Environmental Protection and The Nature Conservancy.*

Archfield, S.A., 2009, Pond Calculator: An automated tool to determine pond stratification, (Version 1.x), [Computer software]. U.S. Geological Survey, *provided to staff at the National Park Service Cape Cod National Seashore*.

Conference proceedings

A. Pugliese, A. Castellarin, and **S. A. Archfield**. 2015, Combining Regional Regression Approaches with Geostatistical Techniques for Predicting Flood Quantiles in Ungauged Basins, In *Advances in Watershed Hydrology*, by T. Moramarco, S. Barbetta, and L. Brocca (Eds), Ch. 12, pp 221–40. Chelsea, Michigan, US: Water Resources Publications, LLC, 2015. ISBN: 978-188720185-8.

Archfield, S.A. and R.M. Vogel, 2009, The implications of discretizing continuous random variables: An example using the U.S. Geological Survey reporting standards for streamflow data, *Proceedings of the American Society of Civil Engineers World Environmental and Water Resources Congress*, Kansas City, Missouri, May 2009.

Archfield, S.A., R.M. Vogel, and S.B. Brandt, 2007, Estimation of flow-duration curves at ungaged sites in southern New England, *Proceedings of the American Society of Civil Engineers World Water and Environmental Resources Congress*, Tampa, FL, 2007.

Archfield, S.A. and R.M. Vogel, 2005, Reliability of reservoir firm yield determined from the historical drought of record, *Proceedings of the American Society of Civil Engineers World Water and Environmental Resources Congress*, Anchorage, Alaska, 2005.

INVITED SEMINARS AND WORKSHOPS

Department of Civil and Environmental Engineering, Tufts University, October 2015.

U.S. Geological Survey New England Water Science Center, October 2015.

U.S. Geological Survey Maryland-Deleware-D.C. Water Science Center, February 2015.

Department of Geography and Environmental Engineering, John Hopkins University, Baltimore, MD, November 2014.

National Research Program, Reston, VA, September 2014.

Department of Civil, Environmental and Infrastructure Engineering, George Mason University, October 2014.

U.S. Geological Survey Office of Surface Water Seminar Series, Reston, VA, August 2013.

U.S. Geological Survey Office of Surface Water Seminar Series, Reston, VA, June 2013.

U.S. Geological Survey Chief Hydrologist Seminar, Reston, VA, April 2010.

U.S. Geological Survey Water Use Workshop, Baltimore, MD, April 2010.

Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, PA, April 2010.

U.S. Geological Survey National Research Program Water Resources Discipline Research Seminar, Reston, Virginia, January 2009.

Department of Natural Resources Management and Engineering, University of Connecticut, February 2008.

Special Session on Low-Flow Hydrology, U.S. Geological Survey National Surface Water Conference and Hydroacoustics Workshop, St. Louis, Missouri, April 2007.

CONFERENCE PRESENTATIONS

[* invited; + international]

B. J. Fleming, **S.A. Archfield**, R.M. Hirsch, and J.E. Kiang, 2016, Changes in duration, frequency, and magnitude of low flows in the Chesapeake Bay watershed, American Metereological Society 2016 Annual Meeting, New Orleans, LA, January 2016.

Farmer, W.H., **S.A. Archfield**, T.M. Over, and J.E. Kiang, 2015, Regional variability in the accuracy of statistical reproductions of historical time series of daily streamflow at ungaged locations, American Geophysical Union 2015 Fall Meeting, San Francisco, CA, December 2015.

Bhaskar, A.S., D.M. Hogan, and **S.A. Archfield**, 2015, How does low impact development affect urban base flow?, American Geophysical Union 2015 Fall Meeting, San Francisco, CA, December 2015.

Pugliese, A., W.H. Farmer, A. Castellarin, **S.A. Archfield**, and R.M. Vogel, 2015, Prediction of regional flow duration curves: geostatistical techniques versus multivariate regression, American Geophysical Union 2015 Fall Meeting, San Francisco, CA, December 2015.

Bhaskar, A.S., D.M. Hogan, and **S.A. Archfield**, 2015, Urbanization with low impact development and effects on stream base flow, Geological Society of America Annual Meeting, Baltimore, MD, November 2015.

Pugliese, A., A. Castellarin, **S.A. Archfield**, and W.H. Farmer, 2015, Geostatistical prediction of stream-flow regime in southeastern United States, European Geosciences Union 2014 General Assembly, Vienna, Austria, May 2015.

Kiang, J.E., **S.A. Archfield**, D. Stewart, and K. Eng, 2015, Assessing Gaps in the U.S. Geological Survey Streamgage Network, European Geosciences Union 2014 General Assembly, Vienna, Austria, May 2015.

LaFontaine L.E. Hay, **S.A. Archfield**, W.H. Farmer, and J.E. Kiang, 2015, Linking Statistically- and Physically-Based Models for Improved Streamflow Simulation in Gaged and Ungaged Watersheds, Fifth Interagency Conference on Research in the Watersheds (ICRW5), North Charleston, SC, March 2015.

Archfield, S.A. and R.M. Vogel, 2014, Fitting three- and four-parameter probability distributions to daily streamflow, American Geophysical Union 2014 Fall Meeting, San Francisco, CA, December 2014.

Howden, N.J.K., T.P. Burt, F. Worrall, **S.A. Archfield**, and R.M. Vogel, 2014, The dependence structure of daily hydrological processes, American Geophysical Union 2014 Fall Meeting, San Francisco, CA, December 2014.

Farmer, W.H., T.M. Over, R.M. Vogel, **S.A. Archfield**, and J.E. Kiang, 2014, Resampling Gaged Networks to Provide Uncertainty Estimates for Daily Streamflow Predictions in Ungaged Basins, American Geophysical Union 2014 Fall Meeting, San Francisco, CA, December 2014.

Kiang, J.E., **S.A. Archfield**, and L.E. Hay, 2014, Daily Flow Estimation in Ungaged Basins - USGS progress and perspectives, American Water Resources Association 2014 Annual Water Resources Conference, Washington, DC, November 2014.

Kiang, J.E., **S.A. Archfield**, 2014, National Water Census – Daily Flow Estimation and Ecological Flows for Ungaged Locations, USGS National Water Quality Workshop, Shepherdstown, WV, October 2014.

Archfield, S.A. and R.M. Vogel, 2014, Fitting three- and four-parameter probability distributions to daily streamflow, UCOWR / NIWR / CUAHSI 2014 Annual Conference, Medford, MA, June 2014.

Archfield, S.A., J.G. Kennen, D.M. Carlisle, and D.M. Wolock, 2014, An objective and parsimonious approach for classifying natural flow regimes at a continental scale, UCOWR / NIWR / CUAHSI 2014 Annual Conference, Medford, MA, June 2014.

Farmer, W.H., **S.A. Archfield**, T.M. Over, and J.E. Kiang, 2014, A quantitative comparison of prediction methods for daily streamflow time series, UCOWR / NIWR / CUAHSI 2014 Annual Conference, Medford, MA, June 2014.

Over, T.M., W.H. Farmer, **S.A. Archfield**, and J.E. Kiang, 2014, Disaggregation of streamflow by an index-station flow ratio method, UCOWR / NIWR / CUAHSI 2014 Annual Conference, Medford, MA, June 2014.

Archfield, S.A., J.G. Kennen, D.M. Carlisle, and D.M. Wolock, 2014, An objective and parsimonious approach for classifying natural flow regimes at a continental scale, 2014 Joint Aquatic Sciences Meeting, Portland, OR, May 2014.

Kiang, J.E., **S.A. Archfield**, and L.E. Hay, 2014, Daily Flow Estimation in Ungaged Basins for the USGS National Water Census, 2014 Joint Aquatic Sciences Meeting, Portland, OR, May 2014.

Thompson, J.L., **S.A. Archfield**, J.G. Kennen, and J.E.Kiang, 2014, EflowStats: An R package to compute ecologically-relevant streamflow statistics, 2014 Joint Aquatic Sciences Meeting, Portland, OR, May 2014.

Archfield, S.A., R.M. Hirsch, A. Viglione, and G. Blöschl, 2014, Using a peaks-over-threshold approach to assess changes in flood magnitude, volume, duration, and frequency across the United States, European Geosciences Union 2014 General Assembly, Vienna, Austria, May 2014.

Kiang, J.E., W.H. Farmer, **S.A. Archfield**, and T.M. Over, 2014, A Quantitative Comparison of Prediction Methods for Daily Streamflow Time Series at Ungaged Sites, European Geosciences Union 2014 General Assembly, Vienna, Austria, May 2014.

Archfield, S.A., J.G. Kennen, D.M. Carlisle, D.M. Wolock, 2013, An objective and parsimonious approach for classifying natural flow regimes at a continental scale, American Geophysical Union 2013 Fall Meeting, San Francisco, CA, December 2013.

Thompson, J.L., **S.A. Archfield**, J.G. Kennen, and J.E.Kiang, 2013, EflowStats: An R package to compute ecologically-relevant streamflow statistics, American Geophysical Union 2013 Fall Meeting, San Francisco, CA, December 2013.

Kiang, J.E., **S.A. Archfield**, D. Stewart, and K. Eng, 2013, Assessing Gaps in the U.S. Geological Survey Streamgage Network, American Geophysical Union 2013 Fall Meeting, San Francisco, CA, December 2013.

Howden, N.J.K., T.P. Burt, F. Worrall, and **S.A. Archfield**, 2013, Detecting change in long hydrological time series: moving on from double-mass curves, American Geophysical Union 2013 Fall Meeting, San Francisco, CA, December 2013.

[+]Singh, R., **S.A. Archfield**, T. Wagener, 2013, The implications of hydrologic similarity definitions for model regionalization, 2013 IAHS-IASPO-IASPEI Joint Assembly, Gothenburg, Sweden, July 2013.

Archfield, S.A., J.G. Kennen, D.M. Carlisle, D.M. Wolock, 2013, An objective and parsimonious approach for classifying natural flow regimes at a continental scale, 2013 American Water Resources Association Summer Specialty Conference on Environmental Flows, Hartford, Connecticut, June 2013.

[+]Fleming, B.J. and **S. A. Archfield**, 2013, Understanding catchment classification and similarity through correlation in streamflow time series, European Geosciences Union 2013 General Assembly, Vienna, Austria, April 2013.

Archfield, S.A. and T. Wagener, 2012, Catchments as filters: Understanding catchment

processes through annual duration curves, American Geophysical Union 2012 Fall Meeting, San Francisco, CA, December 2012.

Fleming, B.J. and **S. A. Archfield**, 2012, Catchment classification and similarity using correlation in streamflow time series, American Geophysical Union 2012 Fall Meeting, San Francisco, CA, December 2012.

Howden, N.J.K., T.P. Burt, F. Worrall, and **S.A. Archfield**, 2012, Non-stationarity in long hydrological time series: cumulative sums, autocorrelation and temporal scale-shifting, American Geophysical Union 2012 Fall Meeting, San Francisco, CA, December 2012.

Archfield, S.A. and R.M. Vogel, 2012, Fitting three- and four-parameter probability distributions to daily streamflow, American Water Resources Association 2012 Annual Water Resources Conference, Jacksonville, Florida, November 2012.

Over, T.M. and **S.A. Archfield**, 2012, Tests of Seemingly-Unrelated Regression for Estimation of Regional Daily Flow-Duration Curves, American Water Resources Association 2012 Annual Water Resources Conference, Jacksonville, Florida, November 2012.

Kennen, J.G., **S.A. Archfield**, J. E. Kiang, N. L. Booth, 2012, The National Water Census: Developing a National Framework for Serving Hydroecological Information to Stakeholders, American Water Resources Association 2012 Annual Water Resources Conference, Jacksonville, Florida, November 2012.

Linhart, S.M., J.F. Nania, C.L. Sanders, and **S.A. Archfield**, 2012, Computing Daily Mean Streamflow using the Flow Anywhere and Flow Duration Curve Transfer Statistical Methods at Ungauged Locations in Iowa, American Water Resources Association 2012 Annual Water Resources Conference, Jacksonville, Florida, November 2012.

[+]**Archfield, S.A.,** A. Pugliese, A. Castellarin, J.E. Kiang, and J.O. Skoien, 2012, "Performance of statistical interpolation to traditional methods for design-flood prediction in ungauged basins in the southeast United States", 3rd Statistics in Hydrology Working Group (STAHY) International Workshop on Statistical Methods for Hydrology and Water Resources Management, Tunis, Tunisia, October 2012.

[+]**Archfield, S.A.,** A. Pugliese, A. Castellarin, J.E. Kiang, and J.O. Skoien, 2012, "Performance of topological and canonical kriging to traditional methods for design-flood prediction in ungauged basins in the southeast United States," European Geosciences Union 2012 General Assembly, Vienna, Austria, April 2012.

[+]**Archfield, S.A.**, P.A. Steeves, J.D. Guthrie, and K. Ries, 2012, "A publically-available, web-based software tool to estimate daily streamflow at ungauged locations in the northeast United States," European Geosciences Union 2012 General Assembly, Vienna, Austria, April 2012.

[+]Singh, R., **S.A. Archfield**, T. Wagener, and R.M. Vogel, 2012, "Transferring rainfall runoff model parameters to ungauged catchments: Does the metric by which hydrologic similarity is defined actually matter?" European Geosciences Union 2012 General Assembly, Vienna, Austria, April 2012.

Archfield, S.A., P.A. Steeves, J.D. Guthrie, and K. Ries, 2012, "An interactive, GIS-based application to estimate continuous, unimpacted daily streamflow at ungauged locations in the Connecticut River Basin," 2012 American Water Resources Association Spring GIS Specialty Conference, March 2012.

Archfield, S.A. and J.E. Kiang, 2011, "Response of the United States streamgauge network to high- and low-flow periods," American Geophysical Union 2011 Fall Meeting, San Francisco, CA, December 2011.

[+]**Archfield, S.A.,** A. Castellarin, J.O. Skøien, and J.E. Kiang, 2011, "Coupling topological

and canonical kriging for design-flood prediction in ungauged basins in the southeastern United States," European Geosciences Union Leonardo Conference Series on the Hydrological Cycle Floods in 3D: Processes, Patterns, Predictions, Bratislava, Slovakia, November 2011.

Archfield, S.A. and P.A. Steeves, 2011, "An interactive, GIS-based application to estimate continuous, unimpacted daily streamflow at ungauged locations in the Connecticut River Basin," U.S. Geological Survey National Map User's Conference, Denver, CO, May 2011.

***Archfield, S.A.** and Levin, S.L., 2011, "Estimation of daily streamflow time series at ungaged basins using the map correlation method," 8th Annual Water Resources Conference, Amherst, MA, April 2011.

[+]**Archfield, S.A.**, R. Singh, T. Wagener, and R.M. Vogel, 2011, "Estimation of daily streamflow time series at ungauged basins using the map correlation method," European Geosciences Union 2010 General Assembly, Vienna, Austria, April 2011.

***Archfield, S.A.**, D. Wolock, D. Calisle, J. Kennen, K. Eng, and J. Kiang, 2011, "An updated hydroclassification of streamflows at minimally-altered streamgages for the conterminous United States," 2011 U.S. Geological Survey National Surface Water Conference and Hydroacoustics Workshop, Tampa, FL, March 2011.

***Archfield, S.A.,** 2011, "Estimation of daily streamflow time series at ungaged basins using the map correlation method," 2011 U.S. Geological Survey National Surface Water Conference and Hydroacoustics Workshop, Tampa, FL, March 2011.

Wolock, D., **S.A. Archfield,** D. Calisle, J. Kennen, K. Eng, and J. Kiang, 2010, "An updated hydroclassification of streamflows at minimally-altered streamgages for the conterminous United States," American Geophysical Union 2010 Fall Meeting, San Francisco, CA, December 2010.

Archfield, S.A., R.M. Hirsch, and R.M. Vogel, 2010, "Prediction intervals for estimated water-quality concentrations and fluxes with serially-correlated residuals," American Geophysical Union 2010 Fall Meeting, San Francisco, CA, December 2010.

[+]**Archfield, S.A.**, R.M. Vogel, T. Waneger, and R. Singh, 2010, "Rainfall-runoff model calibration at an ungauged catchment using the map-correlation method," European Geosciences Union 2010 General Assembly, Vienna, Austria, May 2010.

***Archfield, S.A.**, R.M. Vogel, T. Wagener, and R. Singh, 2009, "Rainfall-runoff model calibration at an ungauged catchment using the map-correlation method," American Geophysical Union Fall Meeting 2009, San Francisco, CA, December 2009 (Received an American Geophysical Union Outstanding Student Paper Award for this presentation).

***Archfield, S.A.**, R.M. Vogel, P.A. Steeves, S.B. Brandt, P.K. Weiskel, and S.P. Garabedian, 2009, "A decision-support tool to assess water availability at ungaged sites in Massachusetts," Northeast Association of Fish and Wildlife Agencies 65th Annual Northeast Fish and Wildlife Conference, Lancaster, Pennsylvania, April 2009.

Archfield, S.A., R.M. Vogel, P.A. Steeves, S.B. Brandt, P.K. Weiskel, and S.P. Garabedian, 2009, "A decision-support tool to assess water availability at ungaged sites in Massachusetts," Geological Society of America 44th Annual Northeastern Section Meeting, Portland, Maine, April 2009.

[+]Gao, Y., **S.A. Archfield,** and R.M. Vogel, 2009, "Estimation of Daily Streamflow Series at Ungaged Sites in the Semi-arid Volta Basin of West Africa," European Geosciences Union 2009 General Assembly, Vienna, Austria, April 2009.

***Archfield, S.A.**, 2008, "The Massachusetts Sustainable-Yield Estimator: A decision-support tool to estimate continuous daily streamflow at ungaged locations in

Massachusetts," Joint meeting of the U.S. Geological Survey and The Nature Conservancy, Regional-Scale Streamflow-Ecology Relationships, Seattle, Washington, April 2008.

Archfield, S.A., and P.A., Steeves, 2008, "A Desktop Application to Assess Sustainable Basin Yields and Surface-Water Resources in Massachusetts," Association of American Geographers Annual Meeting, Boston, Massachusetts, April 2008.

Massey, A. J., L.J. Ostiguy, and **S.A. Archfield**, 2008, "Bathymetric Surveying: Determination of the minimum number of water-depth measurements needed to characterize reservoir storage," Association of American Geographers Annual Meeting, Boston, Massachusetts, April 2008.

Steeves, P.A., and **S.A. Archfield**, 2008, "A Desktop Application to Assess Sustainable Basin Yields and Surface-Water Resources in Massachusetts," American Water Resources Association Spring Specialty Conference on GIS and Water Resources, San Mateo, CA, March 2008.

Allaire, M. and **S.A. Archfield**, 2007, "USGS Firm-Yield Estimator Model: Evaluating the influence of small reservoirs on ground-water recharge," Geological Society of America Annual Meeting, Denver, CO, October 2007.

Archfield, S.A., R.M. Vogel, and S.B. Brandt, 2007, "Estimation of continuous daily streamflow at ungaged sites in southern New England," Massachusetts Water Resources Center Fifth Annual Water Resources Conference, Amherst, MA, April 2007.

Archfield, S.A., 2006, "The effect of ground water on estimates of reservoir firm yield," American Geophysical Union Joint Assembly, Baltimore, MD, April 2006.

FUNDING AS PRINCIPAL OR CO-PRINCIPAL INVESTIGATOR

[+ Principal Investigator]

Current projects

+Long-term trends in hydrologic variables *(Project duration: 2015-Present; Funding source: U.S. Geological Survey National Water Availability and Use Program, National Research Program)*

Assessment of Water Availability and Streamflow Characteristics in the Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative for Current and Future Climatic and Landscape Conditions (*Project duration: 2014-Present; Project Lead: Jacob LaFontaine, U.S. Geological Survey; Funding source: Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative)*

+Water availability for ungauged rivers: An intergrative, multi-model approach to estimate water availability at ungauged rivers across the United States *(Project duration: 2014-Present; Funding source: John Wesley Powell Center for Analysis and Synthesis)*

National comparison of models to estimate daily streamflow at ungaged basins, *(Project duration: 2011-Present; Project Lead: Julie Kiang, U.S. Geological Survey; Funding source: U.S. Geological Survey National Water Census Initiative)*

+An updated hydroclassification of streamflows at minimally-altered streamgages for the conterminous United States *(Project duration: 2010-Present; Funding sources: U.S. Geological Survey National Water-Quality Assessment Program, U.S. Geological Survey National Water Census Initiative)*

National network gap analysis of U.S. Geological Survey streamgages *(Project duration: 2011-Present; Program Director: Julie Kiang, U.S. Geological Survey; Funding source: U.S. Fish and Wildlife Service)*

Past projects

+An interactive, GIS-based application to estimate continuous, unimpacted daily streamflow at ungaged locations in the Connecticut River Basin *(Project duration: 2008-2011; Funding sources: New England Association of Fish and Wildlife Agencies, The Nature Conservancy, U.S. Army Corps of Engineers)*
[Selected as a highlighted project to be used as a foundation for developing State Wildlife Action Plans across the 13 New England states.]

+Refinement and further evaluation of the Massachusetts Firm-Yield-Estimator model version 2.0 *(Project duration: 2007-2011; Funding sources: U.S. Geological Survey Cooperative Water Program, Massachusetts Department of Environmental Protection)*

+Development of a Sustainable-Yield Estimator application to determine water availability at ungaged locations in Massachusetts *(Project duration: 2006-2010; Funding sources: U.S. Geological Survey Cooperative Water Program, Massachusetts Department of Environmental Protection)*

PROFESSIONAL SERVICE

Editorial boards

Editorial Board Member, *Hydrology and Earth Systems Sciences*, 2012-Present**,** Journal Impact Factor: 3.148.

Journal manuscripts

Manuscript reviewer for the journals:
Water Resources Research, Hydrology and Earth Systems Sciences, Journal of Hydrology, Water Research, Journal of Hydrologic Engineering, Environmental Modeling & Software, Journal of Environmental Quality, Journal of Hydroinformatics, Water Resources Management, River Research and Applications, Journal of Mountain Science, Hydrological Sciences Journal, Hydrology Research, Hydrological Processes

Review panels

National Academies of Science, Engineering and Medicine (NAS), National Cooperative Highway Research Program (NCHRP) Panel to develop and evaluate a request for proposals titled, "Applying Climate Change Information to Hydrologic and Hydraulic Design of Transportation Infrastructure" (member), 2016.
USGS Surface Water and Geomorphology Peer Review Panel (member), 2014.
Reviewer for USGS OSW stats projects, 2013
USGS Surface Water and Geomorphology Peer Review Panel (member), 2010.

Proposal reviews

Hydrologic Sciences Competition, *National Science Foundation - Division of Earth Sciences*, Spring 2013 (1 proposal); Fall 2012 (2 proposals).
Agency for Toxic Substances and Disease Registry, *Center for Disease Control*, Fall 2012 (1 proposal).
PSEG Institute for Sustainability Studies, *Montclair State University*, Summer 2012 (2 proposals).

Briefings and News Releases

Presentation titled, "USGS work on streamflow estimation at ungaged sites," to the USGS/NASA Coordination Committee, January 2014.
Technical release on recent findings of Kiang et al. [2013]: http://www.usgs.gov/newsroom/article.asp?ID=3685#.Ui85RpLVD_g
Briefing on the findings of Kiang *et al.* [2013] to the *Office of the Assistant Secretary for Water and Science, U.S. Department of the Interior*, September, 2013.

Internal planning documents

J.E. Kiang, **S.A. Archfield**, K. Eng, R.M. Hirsch, T. Kenney, C. Konrad, A. Veilleux, and D. Wolock, Streamflow Information Assessments: A Plan for the National Streamflow Information Program

External reviewer for other government agency reports

Reviewer for chapter titled, "Water, Wastewater, and Sanitation" in the Second Urban Climate Change Resources Network (UCCRN) Assessment Report on Climate Change and Cities, September 2014.
Reviewer for *Center for Disease Control Agency for Toxic Substances and Disease Registry* reports titled, "Supplement 2: Descriptions and Characterizations of Water-Level Data and Groundwater" and "Supplement 4: Simulation of Three-Dimensional Groundwater Flow," September 2012.
Reviewer, *Environmental Protection Agency Technical Guide* titled, "Identifying and protecting healthy watersheds: A technical guide," 2009.

Committee leadership and membership

Leader, USGS Working Group to detect and attribute trends in peak-flows as well as develop methods for adjusting flood-frequency curves when non-stationarity is detected, 2016-Present. *Workgroup membership is comprised of approximately 15 members from USGS offices around the United States.*
Task leader, Hydrologic Services and Hazards in Multiple Ungauged Basins Working Group, *International Association of Hydrological Sciences Scientific Decade (2013-2022) -- Panta Rhei: Change in Hydrology and Society*, 2013-Present.
Member, Anthropogenic and Climatic Controls on Surface Water Availability Working Group, *International Association of Hydrological Sciences Scientific Decade (2013-2022) -- Panta Rhei: Change in Hydrology and Society*, 2013-Present.
Member, U.S. Geological Survey National Water Census Ad Hoc Advisory Committee, 2010-2012. *The Ad Hoc Advisory Committee is a group of national stakeholder*

organizations that provide input on the priorities for the U.S. Geological Survey National Water Census Initiative.

Member, Pennsylvania Instream Flow Committee, 2009-2012.

Member, Surface-Water Hydrology Committee, Environmental and Water Resources Institute, American Society of Civil Engineers, 2008-2013

Member, Human Water Use Work Group, U.S. Geological Survey National Water Census Implementation Plan, September 2009-January 2010.

Member, Ecological Water Use Work Group, U.S. Geological Survey National Water Census Implementation Plan, September 2009-January 2010.

Invited panel member

Panel member, *Northeastern University Science Career Forum*, Boston, MA, February 2013.

Panel member for session titled, "StreamStats Panel Discussion," *2011 National Surface Water Conference and Hydroacoustics Workshop*, Tampa, FL, March 2011.

Panel member for session titled, "Networking for a career in public service", *Tufts University symposium on Preparing for a Career in Public Service*, Medford, MA, October 2010.

Panel member for session titled "Approaches for Building a Hydrologic Foundation for Regional Analysis of Flow-Ecology Relations," *Joint meeting of the U.S. Geological Survey and The Nature Conservancy on Regional-Scale Streamflow-Ecology Relationships*, Seattle, WA, April 2008.

Session organization

Lead Convener, 2015; 2014; 2013; 2012; 2011; 2010, European Geosciences Union General Assembly.

Lead Convener, 2014, American Geophysical Union Fall Meeting.

Co-convener, 2014, UCOWR-NIWR-CUAHSI 2014 Annual Conference.

Co-convener, 2013, American Geophysical Union 2013 Fall Meeting.

Co-organizer, 2010; 2009, World Environmental and Water Resources Congress (ASCE-EWRI).

TEACHING AND MENTORING EXPERINCE

Courses

Course Organizer, Summer short course on Prediction in Ungaged Basins, with support from the USGS John Wesley Powell Center for Synthesis and Analysis and The Consortium for the Advancement of Hydrologic Science Inc., June 6-10, 2016.

Instructor, QW1075 - Statistical Methods for Environmental Data Analysis, U.S. Geological Survey Training Course, May 4-8, 2016. (Course coordinator: Lori Sprague)

Instructor, QW1075 - Statistical Methods for Environmental Data Analysis, U.S. Geological Survey Training Course, May 12-16, 2014. (Course coordinator: Lori Sprague)

Lectures

Department of Geography and Environmental Engineering, Johns Hopkins, Course EN.570.353 – Hydrology, November 2014

Department of Civil and Environmental Engineering, Worcester Polytechnic Institute, Course CE 574 - Water Resources Management, November 2009.

External examiner

William Asquith, Ph.D. candidate, "Univariate Distributional Analysis with L-moment Statistics using R," Department of Civil and Environmental Engineering, *Texas Tech University, Lubbock, Texas,* Graduated: February 2011.

Graduate student committees

Faith Kuria, Ph.D. candidate, "Uncertainty Analysis of Water Supply Reservoir Yields, and Minimum Length of Streamflow Record Required for Pre-specified Reservoir Yields, Department of Civil and Environmental Engineering," *Tufts University*, *Medford, Massachusetts*, Graduated: April 2014.

Alessio Pugliese, M.S. candidate, "Geostatistical Interpolation Techniques," *University of Bologna, Italy,* Graduated: July 2012.

William Farmer, M.S. candidate, "Development of Gridded/Catchment Monthly Streamflow Time Series for the United States, South Africa and the Nile River Basin," Department of Civil and Environmental Engineering, *Tufts University*, *Medford, Massachusetts*, Graduated: November 2011.

David Roman, M.S. candidate, "Multivariate Models of Watershed Suspended Sediment Loads for the Eastern United States," Department of Civil and Environmental Engineering, *Tufts University*, *Medford, Massachusetts*, Graduated: June 2010.

Other teaching and mentoring experience

Mentor, U.S. Geological Survey (USGS) Mentoring Program, 2013-2015

Mentor, Women in Geosciences Mentoring Programme, European Geosciences Union, 2011-2015.

Mathematics tutor, Northeastern University, September 1998-June 1999. *Sole mathematics tutor for student atheletes; provided weekly tutoring sessions in undergraduate courses including algebra, beginning and advanced calculus (Calculus Levels I through IV) and differential equations.*

PROFESSIONAL MEMBERSHIPS

American Geophysical Union (AGU)
European Geosciences Union (EGU)
Earth Sciences Women's Network (ESWN)