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RESEARCH INTERESTS

Aquatic biogeochemistry

Whole-ecosystem manipulations

Ecological forecasting

EDUCATION

Ph.D. In Biological Sciences, 21 August 2020

Department of Biological Sciences, Virginia Tech, Blacksburg, VA

Advisor: Dr. Cayelan C. Carey

B.S. In Ecology, cum laude, 2012

Department of Ecology, Montana State University, Bozeman, MT

Advisor: Dr. Wyatt F. Cross

PUBLICATIONS IN REVISION, REVIEW, AND PREPARATION

McClure R.P., R.Q. Thomas, M.E. Lofton, W.M. Woelmer, and C.C. Carey. Near-term, iterative forecasting suggests high predictability of reservoir methane ebullition at weekly time scales. In prep for *Biogeosciences*

Lewis A.S., **R.P. McClure**, P.C. Hanson, C.C. Carey. Bottom-water temperatures drive changing rates of oxygen depletion in a drinking water reservoir. In prep for *Ecosystems*

Woelmer W.M., R.Q. Thomas, M.E. Lofton, **R.P. McClure**, and C.C. Carey. Near-term iterative forecasts of phytoplankton at multiple time scales demonstrate the effect of model time step and forecast horizon on predictability. In prep for *Ecological Applications*

PUBLICATIONS (n = 19)

- 2020 **McClure R.P.**, M.E. Lofton, K.M. Krueger, S. Chen, M.E. Schreiber, and C.C. Carey. Ecosystem-scale oxygen manipulations alter terminal electron acceptor pathways in a eutrophic reservoir. In Press at *Ecosystems*
- 2020 Hounshell A.G., **R.P. McClure**, M.E. Lofton, and C.C. Carey. Whole-ecosystem oxygenation experiments reveal substantially greater hypolimnetic methane concentrations and global warming potential in reservoirs during anoxia. *Limnology and Oceanography Letters*. DOI: 10.1002/lol2.10173
- 2020 Carey, C.C., W.M. Woelmer, M.E. Lofton, R.J. Figueiredo, B.J. Bookout, R.S. Corrigan, V. Daneshmand, A.G. Hounshell, D.W. Howard, A.S.L. Lewis, **R.P. McClure**, H.L. Wander, N.K. Ward, R.Q. Thomas. Advancing lake and reservoir water quality management with near-term, iterative ecological forecasting. In press at *Inland Waters*. DOI: 10.1080/20442041.2020.1816421
- 2020 Krueger K.M., C.E. Vavrus, M.E. Lofton, **R.P. McClure**, P. Gantzer, C.C. Carey, and M.E. Schreiber. Iron and manganese fluxes across the sediment-water interface in a drinking water reservoir. *Water Research*. DOI: 10.1016/j.watres.2020.116003
- 2020 **McClure R.P.**, M.E. Lofton, K.M. Krueger, S. Chen, J.C. Little, and C.C. Carey. The magnitude and drivers of methane ebullition and diffusion vary on a longitudinal gradient in a small freshwater reservoir. *JGR: Biogeosciences*. DOI: 10.1029/2019JG005205
- 2019 Doubek J.P., K.L. Campbell, M.E. Lofton, **R.P. McClure**, and C.C. Carey. Hypolimnetic Hypoxia Increases the Biomass Variability and Compositional Variability of Crustacean Zooplankton Communities. *Water*. DOI: 10.3390/w11102179
- 2019 Carey C.C., N.K. Ward, K.J. Farrell, M.E. Lofton, A.I. Krinos, **R.P. McClure**, K.C. Subratie, R.J. Figueiredo, J.P. Doubek, P.C. Hanson, P. Papadopoulos, and P. Arzberger. Enhancing collaboration between ecologists and computer scientists: lessons learned and recommendations forward. *Ecosphere* DOI: 10:e02753.
- 2019 Lofton M.E., **R.P. McClure**, S. Chen, J.C. Little, and C.C. Carey. Whole-ecosystem experiments reveal varying responses of phytoplankton functional groups to epilimnetic mixing in a eutrophic reservoir. *Water*. DOI: 10.3390/w11020222
- 2019 Munger Z.W., C.C. Carey, A.B. Gerling, J.P. Doubek, K.D. Hamre, **R.P. McClure**, M.E. Schreiber. Oxygenation and hydrologic controls on iron and manganese mass budgets in a drinking water reservoir. *Lake and Reservoir Management*. DOI: 10.1080/10402381.2018.1545811
- 2018 **McClure R.P.**, K.D. Hamre, M.E. Lofton, B.R. Neiderlehner, Z.W. Munger, S. Chen, M.E. Schreiber and C.C. Carey. Metalimnetic oxygen minima alter the vertical profiles of carbon dioxide and methane in a managed freshwater reservoir. *Science of the Total Environment*. DOI: 10.1016/j.scitotenv.2018.04.255

- 2018 Doubek J.P., K.L. Campbell, K.M. Doubek, K.D. Hamre, M.E. Lofton, **R.P. McClure**, N.K. Ward and C.C. Carey. The effects of hypolimnetic anoxia on the diel vertical migration of freshwater crustacean zooplankton. *Ecosphere*. DOI: 10.1002/ecs2.2332
- 2018 Hamre K.D., M.E. Lofton, **R.P. McClure**, Z.W. Munger, J.P. Doubek, A.B. Gerling, M.E. Schreiber and C.C. Carey. In situ fluorometry reveals a persistent, perennial hypolimnetic cyanobacterial bloom in a seasonally anoxic reservoir. *Freshwater Science*. DOI: full/10.1086/699327
- 2018 Carey C.C., P.C. Hanson, J.P. Doubek, **R.P. McClure**. Oxygen dynamics control the burial of organic carbon in a eutrophic reservoir. *Limnology and Oceanography-Letters*. DOI: 10.1002/lol2.10057
- 2018 Engel F., K.J. Farrell, I.M. McCullough, F. Scordo, B.A. Denfield, H.A. Dugan, E. Eyto, P.C. Hanson, **R.P. McClure**, P. Noges, T. Noges, E. Ryder, K.C. Weathers, G.A. Weyhenmeyer. A lake classification concept for a more accurate global estimate of the dissolved inorganic carbon export from terrestrial ecosystems to inland waters. *The Science of Nature*. DOI: 10.1007/s00114-018-1547-z
- 2018 Chen S., C.C. Carey, J.C. Little, M.E. Lofton, **R.P. McClure**, C. Lei. Effectiveness of a bubble-plume mixing system for managing phytoplankton in lakes and reservoirs. *Ecological Engineering*. DOI: 10.1016/j.ecoleng.2018.01.002
- 2018 Carey C.C., **R.P. McClure**, J.P. Doubek, M.E. Lofton, N.K. Ward, D. Scott. *Chaoborus* spp. transport CH₄ from the sediments to the surface waters of a eutrophic reservoir, but their contribution to water column CH₄ concentrations and diffusive efflux is minor. *Environmental Science and Technology*. DOI: 10.1021/acs.est.7b04384
- 2018 Chen S., J.C. Little, C.C. Carey, **R.P. McClure**, M.E. Lofton, C. Lei. Three-dimensional effects of epilimnetic mixing in a shallow drinking-water reservoir: an experimental and numerical study. *Water Resources Research*. DOI: 10.1002/2017WR021127
- 2017 Hamre K.D., A.B. Gerling, Z.W. Munger, J.P. Doubek, **R.P. McClure**, K.L. Cottingham, C.C. Carey. Spatial variation in dinoflagellate recruitment along a reservoir ecosystem continuum. *Journal of Plankton Research*. DOI: 10.1093/plankt/fbx004
- 2016 Munger Z.W., A.B. Gerling, C.C. Carey, K.D. Hamre, Doubek, J.P. Doubek, S.D. Klepatzki, **R.P. McClure**, M.E. Schreiber. Effectiveness of hypolimnetic oxygenation for preventing accumulation of Fe and Mn in a drinking water reservoir. *Water Research*. DOI: 10.1016/j.watres.2016.09.038

PUBLISHED ONLINE DATA PRODUCTS

- 2020 Carey C.C., **R.P. McClure**, M.E. Schreiber, M.E. Lofton, and K.M. Krueger. 2020. Time series of iron (II) and sulfate concentrations for Beaverdam and Falling Creek Reservoirs in southwestern Virginia, USA during 2016. Environmental Data Initiative. <https://doi.org/10.6073/pasta/13c628ee3dc68d709c3a56cb61b9c747>

- 2020 Carey C.C., H.L. Wander, W.M. Woelmer, M.E. Lofton, A.B. Gerling, **R.P. McClure**, J.P. Doubek, B.R. Niederlehner, and K.J. Farrell. 2020. Water chemistry time series for Beaverdam Reservoir, Carvins Cove Reservoir, Falling Creek Reservoir, Gatewood Reservoir, and Spring Hollow Reservoir in southwestern Virginia, USA 2013-2019. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/0d29704769868facec3e238e64d35557>
- 2020 Carey C.C., **R.P. McClure**, B.R. Niederlehner, M.E. Lofton, and A.G. Hounshell. 2020. Time series of dissolved methane and carbon dioxide concentrations for Falling Creek Reservoir and Beaverdam Reservoir in southwestern Virginia, USA during 2015-2019. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/e048414b480a2a1359192f5c8d30dcd1>
- 2020 **McClure R.P.**, M. E. Lofton, S. Chen, K. M. Krueger, J. C. Little, C. C. Carey. Methane ebullition and diffusion rates, turbulence, water temperature, and water depth data from Falling Creek Reservoir in the ice-free period of 2017. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/8f6e3f85f1ec816d9f55cbbf060a507c>.
- 2020 Carey C.C., B.J. Bookout, M.E. Lofton, **R.P. McClure**. Time series of high-frequency meteorological data at Falling Creek Reservoir, Virginia, USA 2015-2018. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/037384d2d5ae16cdc7450bf7a72792e3>.
- 2020 Carey C.C., **R. P. McClure**, A.B. Gerling, J.P. Doubek, S. Chen, et al. Time series of high-frequency profiles of depth, temperature, dissolved oxygen, conductivity, specific conductivity, chlorophyll a, turbidity, pH, oxidation-reduction potential, photosynthetic active radiation, and descent rate for Beaverdam Reservoir, Carvins Cove Reservoir, Falling Creek Reservoir, Gatewood Reservoir, and Spring Hollow Reservoir in Southwestern Virginia, USA 2013-2018. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/8f19c5d19d816857e55077ba20570265>
- 2019 Carey C.C., A.B. Gerling, J.P. Doubek, K.D. Hamre, **R.P. McClure**, et al. Secchi depth data and discrete depth profiles of photosynthetically active radiation, temperature, dissolved oxygen, and pH for Beaverdam Reservoir, Carvins Cove Reservoir, Falling Creek Reservoir, Gatewood Reservoir, and Spring Hollow Reservoir in southwestern Virginia, USA 2013-2018. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/e840c6c921afb43c326111b525de62b2>
- 2018 Carey C.C., A. B. Gerling, **R.P. McClure**, M.E. Lofton, and B.J. Bookout. Discharge time series for the primary inflow tributary entering Falling Creek Reservoir, Vinton, Virginia, USA 2013-2018. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/64ff214b987da2997f5c823b156b3334>
- 2018 Carey C.C., M.E. Lofton, A.B. Gerling, **R.P. McClure**, J.P. Doubek, et al. Water chemistry time series for Beaverdam Reservoir, Carvins Cove Reservoir, Falling Creek Reservoir, Gatewood Reservoir, and Spring Hollow Reservoir in southwestern Virginia, USA 2013-2017. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/7140e852f519fe8acd1f86927c0af763>
- 2017 Carey C.C., J.P. Doubek, **R.P. McClure**, P.C. Hanson. Organic carbon, temperature, oxygen, and inflow volume time series for Falling Creek Reservoir, Vinton, Virginia: Summer 2014. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/10545e44a05b1a688c1561d602ca8a62>

ORAL PRESENTATIONS

- 2020 **McClure R.P.**, R.Q. Thomas, M.E. Lofton, W.W. Woelmer, C.C. Carey. *Iterative near-term forecasts improve estimates of methane ebullition efflux from a small temperate reservoir.* Biological Sciences Research Day Invited Oral Presentations, February 2020. Blacksburg, Virginia. *Senior graduate student invited oral presentation.
- 2019 **McClure R.P.**, R.Q. Thomas, M.E. Lofton, W.W. Woelmer, ^{UG}A.M. Mickens, C.C. Carey. *Successful real-time prediction of methane ebullition rates in a eutrophic reservoir using temperature via iterative near-term forecasts.* American Geophysical Union 2019 Annual Meeting, December 2019. San Francisco, California, USA
- 2019 Mickens A.M.^{UG}, **R.P. McClure**, and C.C. Carey. *Predicting methane emissions in a eutrophic reservoir using an iterative near-term forecasting model.* REU Research Symposium, July 2019. Blacksburg, Virginia, USA.
- 2019 Krueger K.M., C. Vavrus, M. E. Lofton, **R.P. McClure**, P. Gantzer, C.C. Carey and M.E. Schreiber. *Metal Fluxes Across the Sediment-Water Interface in a Drinking Water Reservoir.* GSA Annual Meeting in Phoenix, Arizona, USA.
- 2018 **McClure R.P.**, M.E. Lofton, K.M. Kruger, S. Chen, J.C. Little, M.E. Schreiber and C.C. Carey. *The magnitude and drivers of methane emissions vary spatially along a reservoir continuum.* American Geophysical Union 2018 Annual Meeting, December 2018. Washington D.C., USA
- 2018 **McClure R.P.**, M.E. Lofton, K.M. Kruger, S. Chen, J.C. Little, M.E. Schreiber and C.C. Carey. *Hypolimnetic oxygenation increases methane ebullition in a eutrophic drinking water reservoir.* ASLO 2018 Summer Meeting, June 2018. Victoria, British Columbia.
- 2018 Lofton M.E., D. Howard, **R.P. McClure**, and C.C. Carey. *Whole-ecosystem mixing experiments suggest storms increase cyanobacterial recruitment from the sediments to the water column.* ASLO 2018 Summer Meeting, June 2018. Victoria, British Columbia.
- 2018 **McClure R.P.**, M.E. Lofton, K.M. Kruger, S. Chen, J.C. Little, M.E. Schreiber and C.C. Carey. *Hypolimnetic oxygenation increases methane ebullition in a eutrophic drinking water reservoir.* Interface of Global Change Graduate Research Symposium, April 2018. Blacksburg, Virginia.
- 2018 **McClure R.P.**, M.E. Lofton, K.M. Kruger, S. Chen, J.C. Little, M.E. Schreiber and C.C. Carey. *Whole-ecosystem experiments suggest nutrient subsidies and functional traits influence phytoplankton response to epilimnetic mixing.* Virginia Water Conference, March 2018. Richmond, Virginia.
- 2017 **McClure R.P.**, K.D. Hamre, M.E. Lofton, B.R. Neiderlehner, Z.W. Munger, S. Chen, M.E. Schreiber and C.C. Carey. *Metalimnetic oxygen minimum zones decouple diffusive CH₄ and CO₂ fluxes from seasonal turnover in a eutrophic reservoir.* Ecological Society of America Annual Meeting, August 2017. Portland, Oregon.

- 2017 Lofton M.E., R.P. McClure, S. Chen, C.W. Harrell, J.P. Doubek, N.K. Ward, M.E. Schreiber and C.C. Carey. *Storms can both stimulate and inhibit phytoplankton communities: Lessons from a whole-ecosystem lake mixing experiment*. Ecological Society of America Annual Meeting, August 2017. Portland, Oregon.
- 2017 Doubek J.P., K.L. Campbell, K.M. Doubek, K.D. Hamre, C.W. Harrell, M.E. Lofton, **R.P. McClure**, N.K. Ward and C.C. Carey. *Hypoxia-induced trade-offs on zooplankton vertical distribution and community structure in reservoirs*. Ecological Society of America Annual Meeting, August 2017. Portland, Oregon.
- 2017 Finegold L.J.^{UG}, **R.P. McClure**, M.E. Schreiber, and C.C. Carey. *Epilimnetic mixing increases methane ebullition fluxes in a small eutrophic drinking water reservoir*. Virginia Tech Undergraduate Research Symposium, July 2017, Blacksburg, Virginia USA.
- 2017 **McClure R.P.**, M.E. Lofton, S. Chen, N.K. Ward, J.P. Doubek, C.W. Harrell, K. Kruger, B.R. Neiderlehner, M.E. Schreiber and C.C. Carey. *Management Alters Carbon Dioxide and Methane Dynamics within Drinking Water Reservoirs*. Virginia Water Conference, March 2017. Richmond, Virginia.
- 2017 Doubek J.P., K.L. Campbell, K.M. Doubek, K.D. Hamre, C.W. Harrell, M.E. Lofton, **R.P. McClure**, N.K. Ward and C.C. Carey. *Hypoxia-induced trade-offs on zooplankton vertical distribution and community structure in reservoirs*. Virginia Water Conference, March 2017. Richmond, Virginia.
- 2017 Lofton M.E., R.P. McClure, S. Chen, C.W. Harrell, J.P. Doubek, N.K. Ward, M.E. Schreiber and C.C. Carey. *Effects of Epilimnetic Mixing on Algae Populations: Implications for Management*. Virginia Water Conference, March 2017. Richmond, Virginia.
- 2017 Doubek J.P., K.L. Campbell, K.M. Doubek, K.D. Hamre, C.W. Harrell, M.E. Lofton, **R.P. McClure**, N.K. Ward and C.C. Carey. *Hypoxia-induced trade-offs on zooplankton vertical distribution and community structure in reservoirs*. Biological Sciences Research Day Invited Oral Presentations, February 2017. Blacksburg, Virginia.
- 2017 Lofton M.E., R.P. McClure, S. Chen, C.W. Harrell, K. Kruger, M.E. Schreiber, J.C. Little and C.C. Carey. *Simulated storms upend phytoplankton community structure: lessons from a whole ecosystem lake mixing experiment*. Biological Sciences Research Day Breakout Oral Sessions, February 2017. Blacksburg, Virginia.
- 2016 **McClure R.P.**, A.B. Gerling, J.P. Doubek, Z.W. Munger, M.S. Schreiber, P.A. Gantzer, J.C. Little and J. Morris. *Controlling Water Quality with Hypolimnetic Oxygenation in a Small, Eutrophic Reservoir*. Virginia Water Environment Association WaterJAM conference, September 2016. Virginia Beach, Virginia.
- 2016 **McClure R.P.**, K.D. Hamre, J.P. Doubek, Z.W. Munger, B.R. Neiderlehner and C.C. Carey. *Dynamic responses of greenhouse gases whole ecosystem manipulations in a eutrophic reservoir*. Global Change Center Graduate Student Research Symposium, April 2016. Blacksburg, Virginia.
* Received 3rd place presentation award.

- 2016 **McClure R.P.**, K.D. Hamre, J.P. Doubek, Z.W. Munger, B.R. Neiderlehner and C.C. Carey. *Dynamic responses of greenhouse gases to water quality management in a eutrophic reservoir*. Virginia Water Conference, March 2016. Richmond, Virginia.
- 2016 **McClure R.P.**, K.D. Hamre, J.P. Doubek, Z.W. Munger, B.R. Neiderlehner and C.C. Carey. *Dynamic responses of greenhouse gases to whole ecosystem manipulations in a eutrophic reservoir*. Department of Biological Sciences Research Day, February 6, 2016. Blacksburg, Virginia.
* Received 1st place breakout session oral presentation award.
- 2016 Doubek J.P., K.A. Bierlein, A.B. Gerling, K.D. Hamre, **R.P. McClure**, Z.W. Munger, R.J. Figueiredo, P.C. Hanson, C.C. Carey. *Hypoxia induced trade-offs on zooplankton vertical distribution and community structure in Virginia reservoirs*. Virginia Water Conference, March 2016. Richmond, Virginia.
- 2016 Hamre K.D., A.B. Gerling, Z.M. Munger, J.D. Doubek, **R.P. McClure**, K.L. Cottingham, and C.C. Carey. *Environmental drivers of algal recruitment along a reservoir continuum*. Tech Biological Sciences Research Day, February 6, 2016. Blacksburg, Virginia.

POSTER PRESENTATIONS

^{UG} = Undergraduate Student

- 2020 **McClure R.P.**, R.Q. Thomas, M.E. Lofton, W.M. Woelmer, and C.C. Carey. *Near-term iterative forecasting and data assimilation improve methane ebullition rate estimates in a small reservoir*. Ecological Society of America Annual Meeting, August 2020. Virtual.
- 2019 Thomas R.Q., C.C. Carey, M.E. Lofton, **R.P. McClure**, W.M. Woelmer. *Near-term iterative forecasting of water quality in a reservoir reveals relative forecastability of physical, chemical, and biological dynamics*. American Geophysical Union 2019 Annual Meeting, December 2019. San Francisco, California, USA
- 2019 Hounshell A.G., **R.P. McClure**, M.E. Lofton, and C.C. Carey. *Whole-ecosystem oxygenation experiments reveal substantially greater CH₄ production and efflux from reservoirs during anoxia*. American Geophysical Union 2019 Annual Meeting, December 2019. San Francisco, California, USA
- 2019 **McClure R.P.**, R.Q. Thomas, M.E. Lofton, W.M. Woelmer, A.M. Mickens^{UG}, and C.C. Carey. *Near-term iterative forecasting of reservoir methane ebullition using high-frequency water temperature data*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.
- 2019 Eyto E., A. Laas², A.R. Shahabinia, A. Baldocchi, A.R. Desai, A. Lupon, A. Lohila, B. Denfeld, B. Doyle, C.C. Carey, D. Bastviken, D. Reed, E.I. Room, F. Clayer, G. Weyhenmeyer, H. Chiemel, H. P. Grossart, H. de Wit, I. Woolway, I. Kokorite, J.E. Thrane, J. Bikse, J. Rusak, J. Encinas, L. Brighenti, M. Koschorreck, M. Aurela, R. Marce, R. Smyth, **R.P. McClure**, B. Obrador, S. Sadro, S. Kosten, N. Barros, P. Keller. *DC-FLUX – a GLEON initiative to measure diel CO₂ fluxes from lakes across the world*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.

- 2019 Lewis A.S., A.G. Hounshell, **R.P. McClure**, N. Hammond, D.W. Howard^{UG}, M.E. Lofton, H.L. Wander, W.M. Woelmer, F. Birgand, P.C. Hanson, J.C. Little, M.E. Schreiber, and C.C. Carey. *Consequences of changing oxygen availability for carbon cycling in freshwater ecosystems*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.
- 2019 Wander H.L., B.J. Bookout, J.P. Doubek, A.G. Hounshell, D.W. Howard^{UG}, A.S. Lewis, M.E. Lofton, **R.P. McClure**, N.K. Ward, W.M. Woelmer, and C.C. Carey. *Zooplankton horizontal migration in an anoxic reservoir*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.
- 2019 Hounshell A.G., **R.P. McClure**, M.E. Lofton, and C.C. Carey. *Constraining greenhouse gas production and surface efflux from reservoirs with oxic and anoxic hypolimnia using whole-ecosystem oxygenation experiments*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.
- 2019 Woelmer W.M., B.J. Bookout, M.E. Lofton, **R.P. McClure**, R.Q. Thomas, and C.C. Carey. *Using an empirical approach to produce near-term iterative forecasts of chlorophyll-a in a drinking water reservoir*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.
- 2019 Thomas R.Q., R.J. Figueiredo, M.E. Lofton, **R.P. McClure**, W.M. Woelmer, C.C. Carey. *Near-term iterative forecasting with GLM-AED and daily data assimilation reveals the forecastability of water quality*. GLEON 21, All Hands Conference, November 2019. Huntsville Ontario, Canada.
- 2019 Mikens A.M.^{UG}, **R.P. McClure**, and C.C. Carey. *Predicting methane emissions in a eutrophic reservoir using an iterative near-term forecasting model*. REU Research Symposium, July 2019. Blacksburg, Virginia, USA.
- 2019 **McClure R.P.**, M.E. Lofton, M.E. Schreiber, K.M. Krueger, S. Chen, J.C. Little, and C.C. Carey. *Whole-reservoir oxygen manipulations change water column terminal electron acceptor processes*. Global Change Center Graduate Student Research Symposium, April 2019. Blacksburg, Virginia.
- 2018 **McClure R.P.**, M.E. Lofton, K.M. Kruger, L.J. Finegold, S. Chen, M.E. Schreiber, and C.C. Carey. *Hypolimnetic oxygenation may increase methane ebullition at the deepest site in a eutrophic drinking water reservoir*. Biological Sciences Research Day Poster Presentations, February 2018. Blacksburg, Virginia.
- 2017 **McClure R.P.**, M.E. Lofton, K.M. Kruger, L.J. Finegold, S. Chen, M.E. Schreiber, and C.C. Carey. *Hypolimnetic oxygenation may increase methane ebullition at the deepest site in a eutrophic drinking water reservoir*. GLEON 19, All Hands Conference, November 2017 Mohonk Mountain House, New York USA.
- 2017 Lofton M.E., **R.P. McClure**, S. Chen, C.W. Harrell, J.P. Doubek, N.K. Ward, M.E. Schreiber, J.C. Little and C.C. Carey. *Storms can both stimulate and inhibit phytoplankton communities: lessons from a whole-ecosystem lake mixing experiment*. GLEON 19, All Hands Conference, November 2017 Mohonk Mountain House, New York USA.

- 2017 Doubek J.P., K.C. Campbell, M.E. Lofton, **R.P. McClure**, and C.C. Carey. *Hypolimnetic anoxia intensifies the variability of crustacean zooplankton communities across four reservoirs*. GLEON 19, All Hands Conference, November 2017 Mohonk Mountain House, New York USA.
- 2017 Finegold L.J.^{UG}, **R.P. McClure**, M.E. Schreiber, and C.C. Carey. *Epilimnetic mixing increases methane ebullition fluxes in a small eutrophic drinking water reservoir*. Virginia Tech Undergraduate Research Symposium, July 2017, Blacksburg, Virginia USA.
- 2017 **McClure R.P.**, M.E. Lofton, K.D. Hamre, B.R. Niederlehner, Z.M. Munger, S. Chen, J.P. Doubek, M.E. Schreiber, and C.C. Carey. *Metalimnetic oxygen minimum zones decouple diffusive methane and carbon dioxide fluxes from seasonal turnover in a eutrophic reservoir*. Pacific Rim Applications and Grid Middleware Assembly (PRAGMA) 32 conference, Gainesville, Florida, April 2017.
- 2017 Lofton M.E., **R.P. McClure**, S. Chen, C.W. Harrell, J.P. Doubek, N.K. Ward, M.E. Schreiber, J.C. Little and C.C. Carey. *Storms can both stimulate and inhibit phytoplankton communities: lessons from a whole-ecosystem lake mixing experiment*. Pacific Rim Applications and Grid Middleware Assembly (PRAGMA) 32 conference, Gainesville, Florida, April 2017.
- 2017 **McClure R.P.**, M.E. Lofton, K.D. Hamre, B.R. Neiderlehner, Z.W. Munger, S. Chen, J.P. Doubek, M.E. Schreiber and C.C. Carey. *Metalimnetic oxygen minima accumulate dissolved methane and may alter diffusive efflux in a managed eutrophic reservoir*. Interfaces of Global Change Annual Symposium, April 2018, Blacksburg, Virginia.
- 2017 **McClure R.P.**, K.D. Hamre, B.R. Neiderlehner, Z.W. Munger, S. Chen, M.E. Schreiber and C.C. Carey. *Metalimnetic oxygen minimum zones decouple diffusive CH₄ and CO₂ fluxes from seasonal turnover in a eutrophic reservoir*. Biological Sciences Research Day Poster Presentations, February 2017. Blacksburg, Virginia.
- 2016 **McClure R.P.**, J.P. Doubek, K.D. Hamre, Z.W. Munger, B.R. Neiderlehner and C.C. Carey. *Metalimnetic oxygen minima accumulate methane in the water column and alter greenhouse gas efflux phenology from a eutrophic reservoir*. GLEON 18, All Hands Conference, June 2016. Gaming, Austria.
- 2015 **McClure R.P.**, J.P. Doubek, Z.W. Munger, B.R. Neiderlehner and C.C. Carey. *Dynamic responses of greenhouse gases to whole-ecosystem manipulations in a eutrophic reservoir*. GLEON 17, All Hands Conference, October 2015. Chuncheon, South Korea.
- 2015 **McClure R.P.**, C. Chen, K.D. Hamre, C.W. Harrell, Z.W. Munger, B.R. Neiderlehner and C.C. Carey. *Dynamic responses of greenhouse gases to whole-ecosystem manipulations in a eutrophic reservoir*. International Water Association Symposium, August 2015. Mountain Lake, Virginia.
- 2012 **McClure R.P.**, W.F. Cross, J.M. Hood, J.R. Junker, J.P. Benstead, A. Keasberry, D. Nelson. *Effects of temperature and body size on instantaneous growth rate of *Radix peregra* in Icelandic streams*. Montana State University Undergraduate Research Day, December 2012. Bozeman, Montana.

FELLOWSHIPS

- 2018 Department of Biological Sciences GSDA Fellow. Blacksburg, Virginia (Virginia Tech)
*Awarded for Spring 2019 Semester
- 2017 Interfaces of Global Change Fellow. Blacksburg, Virginia (Virginia Tech)
*Awarded for 2017-2018 academic year
- 2016 Interfaces of Global Change Fellow. Blacksburg, Virginia (Virginia Tech)
*Appointed 2016 Social Chair
- 2015 Western Virginia Water Authority Fellow. Blacksburg, Virginia (Virginia Tech)
*Appointed from 2015-2017
- 2012 NSF – REU Student Fellowship. Reykjavik, Iceland (Montana State)
*Awarded for Summer 2012

FUNDING AND AWARDS

- 2020 Invited graduate student oral presentation; Biological Sciences Research Day, Virginia Tech
- 2018 1st Place oral presentation; Global Change Center Research Symposium, Virginia Tech
- 2018 Honorable Mention: Dave Pearson Watershed Excellence Award, Virginia Water Conference
- 2017 Mary and George Schaeffer Stream Team Excellence Award; \$1000
- 2017 GLEON 18 and 19 Travel Award; ~\$2000
- 2017 Runner-up of the Sigma Xi Ph.D. Research Award
- 2017 3rd Place poster presentation; Biological Sciences Research Day, Virginia Tech
- 2016 Global Change Center SEED Grant, *co-author*; \$5000
- 2016 Virginia Tech Graduate Research Development Program (GRDP); \$1000
- 2016 Virginia Lakes and Watershed Association, Leo Bourassa Scholarship; \$2000
- 2016 3rd Place oral presentation; Global Change Center Research Symposium, Virginia Tech
- 2016 1st Place oral presentation; Biology Research Day, Virginia Tech
- 2015 NSF Science Across Virtual Institutes (SAVI) Travel Grant; \$900

ADVISING AND TEACHING EXPERIENCE

- 2020 Guest lecture on Lake Ecosystem Modeling (Project EDDIE) for Environmental Data Analysis class instructed by Elizabeth Cook, October 2020. (Barnard College, New York)
- 2019 Project EDDIE Undergraduate macrosystems workshop, November 2019. (Virginia Tech, Virginia)
- 2019 Project EDDIE Undergraduate lake modeling and teleconnections workshop, October 2019. (Virginia Tech, Virginia)
- 2019 Volunteer reviewer for NSF-GRFP preparatory course; Fall Semester (Virginia Tech, Virginia)
- 2019 Freshwater Ecology Laboratory Teaching Assistant; Fall Semester (Virginia Tech, Virginia)
- 2019 NSF-REU Student Fellowship Mentor; Ashley M. Mickens; 3 months. (Miami University of Ohio, Ohio)
- 2018 Freshwater Ecology Laboratory Teaching Assistant; Fall Semester (Virginia Tech, Virginia)
- 2018 Undergraduate internship advisor; Beatrice Scott; 5 months. (Barnard College, New York)
- 2018 NSF-REU Student Fellowship Mentor; Leah J. Finegold; 3 months. (Oberlin College, Ohio)
- 2018 Undergraduate internship advisor; Miles Goodall; 20 months. (Virginia Tech, Virginia)
- 2017 Project EDDIE undergraduate lake modeling and teleconnections workshop, November 2017. Virginia Tech, Virginia
- 2017 Project EDDIE undergraduate lake modeling workshop, October 2017. Virginia Tech, Virginia
- 2016 Project EDDIE undergraduate lake modeling workshop, August 2016. Virginia Tech, Virginia

OUTREACH

- 2019 Coordinator and developer of the new Virginia Tech Stream Team website. August – December 2019.
- 2019 Volunteer teaching assistant for Ecological Forecasting Workshop; GLEON 21, Hunstville Ontario, Canada. November 2019.
- 2019 Virginia Science Festival Stream Team Exhibit; Virginia Tech, Blacksburg VA, USA. November 16
- 2018 Virginia Science Festival Interfaces of Global Change Exhibit; Virginia Tech, Blacksburg VA, USA. October 27

- 2017 Virginia Science Festival Interfaces of Global Change Exhibit; Virginia Tech, Blacksburg VA, USA. November 4
- 2017 Gilbert Linkous Science Fair Interfaces of Global Change Exhibit; Gilbert Linkous Elementary School, Blacksburg VA, USA. March 15

RESEARCH AND COMMUNICATION WORKSHOP PARTICIPATION

- 2019 GLEON 21 Graduate Student Association Workshop; Ecological Forecasting Huntsville, Ontario, Canada. November 4
- 2019 GLEON 21 Graduate Student Association Workshop; Scientific Writing Huntsville, Ontario, Canada. November 4
- 2018 American Geophysical Union (AGU) $p\text{CO}_2$ sensor workshop Grand Hyatt, 1000 H St NW, Washington D.C., December 9
- 2017 GLEON 19 Graduate Student Association Workshop; Machine Learning and ggplot2 in R Mohonk Mountain House NY, USA, November 27
- 2017 Susan B. Hassol Communicating Climate Science Workshop Virginia Tech, Blacksburg VA, USA, November 3
- 2017 Ecological Society of America Fostering Creativity Workshop Portland Oregon, USA, August 12.
- 2017 General Lake Model – Aquatic Eco-Dynamics (GLM-AED) Workshop Madison WI, USA, January 9 – 12
- 2016 GLEON 18 Graduate Student Association Workshop; Data management and lake physics in R Lunz and Gaming, Austria, July 3
- 2016 Forestry Graduate Student Association Plotting in R workshop Cheatam Hall Virginia Tech, Blacksburg VA, USA. April 8
- 2016 Website development workshop Latham Hall Virginia Tech, Blacksburg VA, USA. Friday February 25
- 2015 GLEON 17 Graduate Student Association Workshop; Lake Modeling and GRAPLEr training Chuncheon, South Korea. Monday, October 12
- 2015 Science Communication Workshop; Alan Alda Center for Communicating Science Skelton Center Virginia Tech, Blacksburg VA, USA. Friday, October 30
- 2015 GRAPLE (GLEON Research And PRAGMA Lake Expedition) Workshop at Virginia Tech June 15 – 20

RESEARCH POSITIONS HELD

- 2015 Freshwater Science Research Technician:
Biological Sciences, Virginia Tech VA
Location: Blacksburg, Virginia
(Dr. Cayelan C. Carey)
- 2014-2015 Evolutionary Sciences Research Internship:
The Guppy Project, University of California, Riverside CA
Location: Trinidad and Tobago, West Indies
(Dr. David N. Reznick)
- 2013-2014 Ecology Research Technician:
Montana State University, Bozeman MT
Location: Yellowstone & Missouri Rivers, Fort Lewis, MT
(Dr. Wyatt F. Cross)
- 2011-2012 Ecology REU Scholarship:
Montana State University, Bozeman MT
Location: Reykjavik, Iceland
(Dr. Wyatt F. Cross and Dr. James M. Hood II)
- 2008-2012 Freshwater Ecology Lab Technician:
Montana State University, Bozeman MT
Location: Yellowstone National Park
(Dr. Wyatt F. Cross and James R. Junker)

SKILLS

Field skill	Swift Water Rescue Technician (II), Wilderness First Aid and CPR
Programming	Code in R and MATLAB

CURRENT SOCIETAL MEMBERSHIPS

American Geophysical Union (AGU)

Association for the Sciences of Limnology and Oceanography (ASLO)

Ecological Society of America (ESA)

Global Lake Ecological Observatory Network (GLEON)

Virginia Lakes and Watershed Association (VLWA)