

# MARY E. LOFTON

Postdoctoral Research Associate  
Virginia Polytechnic Institute and State University  
Department of Biological Sciences  
Co-supervisors: Dr. Cayelan Carey & Dr. Quinn Thomas  
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## EDUCATION

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**Virginia Polytechnic Institute and State University, Blacksburg, VA** **2016-2021**

Ph. D. in Biological Sciences

- Advisor: Dr. Cayelan Carey

**The College of William and Mary in Virginia, Williamsburg, VA** **2006-2010**

B.S. in Biology

- Graduated *summa cum laude*

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## PUBLICATIONS

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**Lofton, M.E.**, Howard, D.W., McClure, R.P., Wander, H.L., Woelmer, W.M., Hounshell, A.G., Lewis, A.S., Carey, C.C. In second round review at *Freshwater Biology*. Experimental thermocline deepening alters vertical distribution and community structure of phytoplankton in a four-year whole-reservoir manipulation.

**Lofton, M.E.**, Brentrup, J.A., Beck, W.S., Zwart, J.A., Bhattacharya, R., Brighenti, L.S., Burnet, S.H., McCullough, I.M., Steele, B.G., Carey, C.C., Cottingham, K.L., Dietze, M.C., Ewing, H.A., Weathers, K.C., LaDeau, S.L. In press at *Ecological Applications*. Using near-term forecasts and uncertainty partitioning to inform prediction of oligotrophic lake cyanobacterial density.

Lewis, A.S.L., Woelmer, W.M., Wander, H.L., Howard, D.W., Smith, J., McClure, R.P., **Lofton, M.E.**, Hammond, N.W., Corrigan, R.S., Thomas, R.Q., Carey, C.C. 2021. Increased adoption of best practices in ecological forecasting enables comparisons of forecastability. *Ecological Applications*. <https://doi.org/10.1002/eap.2500>

Howard, D.W., Hounshell, A.G., **Lofton, M.E.**, Woelmer, W.M., Hanson, P.C., Carey, C.C. 2021. Variability in fluorescent dissolved organic matter concentrations across diel to seasonal time scales is driven by water temperature and light in a eutrophic reservoir. *Aquatic Sciences*. <https://doi.org/10.1007/s00027-021-00784-w>

Lakoba, V., Wind, L., DeVilbiss, S., **Lofton, M.**, Bretz, K., Weinheimer, A., Moore, C., Baciocco, C., Hotchkiss, E., Hession, W. 2020. Salt dilution and flushing dynamics of an impaired agricultural-urban stream. *ACS EST Water*. <https://doi.org/10.1021/acsestwater.0c00160>

- Hounshell, A.G., McClure, R.P., **Lofton, M.E.**, Carey, C.C. 2020. Whole-ecosystem oxygenation experiments reveal substantially greater hypolimnetic methane concentrations in reservoirs during anoxia. *Limnology & Oceanography Letters*. <https://doi.org/10.1002/lol2.10173>
- McClure, R.P., Schreiber, M.E., **Lofton, M.E.**, Chen, S., Krueger, K.M., Carey, C.C. 2020. Ecosystem-scale oxygen manipulations alter terminal electron acceptor pathways in a eutrophic reservoir. *Ecosystems*. <https://doi.org/10.1007/s10021-020-00582-9>
- Carey, C.C., Woelmer, W.M., **Lofton, M.E.**, Figueiredo, R.J., Bookout, B.J., Corrigan, R.S., Daneshmand, V., Hounshell, A.G., Howard, D.W., Lewis, A.S.L., McClure, R.P., Wander, H.L., Ward, N.K., Thomas, R.Q. 2020. Advancing lake and reservoir water quality management with near-term, iterative forecasting. *Inland Waters*. <https://doi.org/10.1080/20442041.2020.1816421>
- Krueger, K.M., Vavrus, C., **Lofton, M.E.**, McClure, R.P., Gantzer, P., Carey, C.C., Schreiber, M.E. 2020. Iron and manganese fluxes across the sediment-water interface in a drinking water reservoir. *Water Research* 182, 116003. <https://doi.org/10.1016/j.watres.2020.116003>
- McClure, R.P., **Lofton, M.E.**, Chen, S., Krueger, K.M., Little, J.C., Carey, C.C. 2020. The magnitude and drivers of methane ebullition and diffusion vary on a longitudinal gradient in a small freshwater reservoir. *JGR Biogeosciences* 125(3). <https://doi.org/10.1029/2019JG005205>
- Lofton, M.E.**, Leach, T.H., Beisner, B.E., Carey, C.C. 2020. Relative importance of top-down versus bottom-up control of lake phytoplankton vertical distributions varies among fluorescence-based spectral groups. *Limnology & Oceanography* 65(10). <https://doi.org/10.1002/lno.11465>
- Doubek, J.P., Campbell, K.C., **Lofton, M.E.**, McClure, R.P., Carey, C.C. 2019. Hypolimnetic hypoxia increases the biomass variability and compositional variability of crustacean zooplankton communities. *Water* 11(10), 2179. <https://doi.org/10.3390/w11102179>
- Carey, C.C., Ward, N.K., Farrell, K.F., **Lofton, M.E.**, Krinos, A.K., McClure, R.P., Subratie, K.C., Figueiredo, R.J., Doubek, J.P., Hanson, P.C., Papadopoulos, P., Arzberger, P. 2019. Enhancing collaborations between computer scientists and ecologists: lessons learned and recommendations forward. *Ecosphere* 10(5). <https://doi-org.ezproxy.lib.vt.edu/10.1002/ecs2.2753>
- Lofton, M.E.**, McClure, R.P., Chen, S., Little, J.C., Carey, C.C. 2019. Whole-ecosystem experiments reveal varying responses of phytoplankton functional groups to epilimnetic mixing in a eutrophic reservoir. *Water* 11(2), 222. <https://doi.org/10.3390/w11020222>
- Frassl, M.A., Hamilton, D.P., Denfeld, B.A., de Eyto, E., Hampton, S.E., Keller, P.S., Sharma, S., Lewis, A.S.L., Weyhenmeyer, G.A., O'Reilly, C.M., **Lofton, M.E.**, Catalán, N. 2018. Ten simple rules for collaboratively writing a multi-authored paper. *PLOS Computational Biology* 14(11): e1006508. <https://doi.org/10.1371/journal.pcbi.1006508>

- Doubek, J.P., Campbell, K.C., Doubek, K., Hamre, K.D., **Lofton, M.E.**, McClure, R.P., Ward, N.K., Carey, C.C. 2018. The effects of hypolimnetic anoxia on the diel vertical migrations of freshwater crustacean zooplankton. *Ecosphere* 9(7). <https://doi-org.ezproxy.lib.vt.edu/10.1002/ecs2.2332>
- Hamre, K.D., **Lofton, M.E.**, McClure, R.P., Munger, Z.W., Doubek, J.P., Gerling, A.B., Schreiber, M.E., Carey, C.C. 2018. In situ fluorometry reveals a persistent, perennial hypolimnetic cyanobacterial bloom in a seasonally anoxic reservoir. *Freshwater Science* 37(3): 483-495. <https://doi.org/10.1086/699327>
- McClure, R.P., Hamre, K.D., Niederlehner, B.R., Munger, Z.W., Chen, S., **Lofton, M.E.**, Schreiber, M.E., Carey, C.C. 2018. Metalimnetic oxygen minima alter the vertical profiles of carbon dioxide and methane in a managed freshwater reservoir. *Science of the Total Environment* 636: 610-620. <https://doi.org/10.1016/j.scitotenv.2018.04.255>
- Chen, S., Carey, C.C., Little, J.C., **Lofton, M.E.**, McClure, R.P., Lei, C. 2018. Effectiveness of a bubble-plume mixing system for managing phytoplankton in lakes and reservoirs. *Ecological Engineering* 113: 43-51. <https://doi.org/10.1016/j.ecoleng.2018.01.002>
- Carey, C.C.; McClure, R.P.; Doubek, J.P.; **Lofton, M.E.**; Ward, N.K.; Scott, D. 2018. *Chaoborus* spp. transport CH<sub>4</sub> from the sediments to the surface waters of a eutrophic reservoir, but their contribution to water column CH<sub>4</sub> concentrations and diffusive efflux is minor. *Environ. Sci. Technol.* 52(3):1165-1173. <https://doi.org/10.1021/acs.est.7b04384>
- Chen, S., Little, J.C., Carey, C.C., McClure, R.P., **Lofton, M.E.**, Lei, C. 2018. Three-dimensional effects of artificial mixing in a shallow drinking-water reservoir. *Water Resources Research* 54(1). <https://doi-org.ezproxy.lib.vt.edu/10.1002/2017WR021127>

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## GRANTS/AWARDS

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*Total amount of grant, scholarship, and award earnings to date:* \$62,200

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| <b>VT College of Science Outstanding Doctoral Student Award</b>  | <b>2021</b> |
| <b>Interfaces of Global Change (IGC) Power Talk Competition – 1<sup>st</sup> place</b>   | <b>2021</b> |
| ○ Competition among members of an interdisciplinary graduate education program to give three minute research talks; \$200  |             |
| <b>Noel Krieg Graduate Fellowship</b>  | <b>2020</b> |
| ○ Competitive scholarship in the Virginia Tech Department of Biological Sciences for students who have demonstrated excellence in teaching and research; \$1,200 |             |
| <b>VT College of Science Roundtable Make-A-Difference Scholarship</b>  | <b>2019</b> |
| ○ Competitive scholarship for students whose research is likely to have an important impact outside the Virginia Tech campus; \$10,000                           |             |
| <b>VT Biological Sciences Research Day Poster Competition – 2<sup>nd</sup> place</b>   | <b>2019</b> |

- Mary and George Schaeffer Stream Team Excellence Award** **2018**
- Awarded by the faculty of the Stream Team research group at Virginia Tech to a graduate student in support of freshwater ecology research; \$1,000
- William R. Walker Graduate Research Fellow Award** **2018**
- Competitive scholarship for students studying water resources; \$3,300
- Global Lakes Ecological Observatory Network (GLEON) Travel Award** **2017-19**
- Competitive travel award for students to attend GLEON conferences; \$5,000 to date
- Graduate Research Development Fund** **2017**
- Competitive small grant program to augment graduate student dissertation research at Virginia Tech; \$1,000
- Virginia Lakes and Watersheds Association Leo Bourassa Scholarship** **2017**
- Competitive scholarship awarded to students studying water resources in Virginia on the basis of academic performance and contribution to the field of water resources; \$3,000
- Virginia Water Resources Research Student Competitive Grant** **2017**
- Awarded to students conducting cutting-edge research on water issues in Virginia; \$5,000
- NSF Graduate Research Fellowship Program Honorable Mention** **2017**
- Enhanced access to supercomputing time and cyberinfrastructure resources in support of graduate research
- VT Biological Sciences Research Day Breakout Talk Competition – 2<sup>nd</sup> place** **2017**
- Interfaces of Global Change (IGC) Fellowship** **2016-2017**
- Awarded to competitive applicants to an interdisciplinary graduate education program designed to address global change concerns at Virginia Tech; \$27,120 & tuition
- Monroe Scholar** **2006-2010**
- Designation awarded to top 7% of incoming freshman class at William and Mary based on admissions profile; \$3000
- JP Morgan-Chase National Merit Scholar** **2006**
- Designation awarded to about 15,000 students nationwide each year on the basis of PSAT scores as well as a student's academic record and submitted essay; \$2500

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**TEACHING EXPERIENCE**

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**Instructor of Record** **Fall 2021**  
**Freshwater Ecology**

Virginia Tech, Blacksburg, VA

- Delivered lectures for a 32-student, 4000-level course covering physical, chemical, and biological interactions of freshwater ecosystems
- Oversaw laboratory curriculum, equipment, and facilities
- Supervised and mentored two graduate student laboratory teaching assistants
- Administered all exams and assigned all grades

**Graduate Teaching Assistant****Fall 2019-2020****Freshwater Ecology**

Virginia Tech, Blacksburg, VA

- Co-taught two sections of eighteen students with another TA, both in-person and virtual
- Prepared, executed, and assessed all lab activities, including five field trips
- Mentored student groups through an intensive, semester-long research project
- Assisted in grading lecture exams and final papers and presentations

**Science Teacher****2013-2015****High School Biology and Environmental Science**

Miller School of Albemarle, Charlottesville, VA

- Taught five sections of ten to sixteen students
- Developed syllabus and course structure, including lab and field study components
- Administered all tests and assigned all grades
- Average score of 3.75 for AP Environmental Science students on AP exam
- Served as academic advisor and mentor to a cohort of seven students

**Science Teacher****2010-2013****High School Biology and Environmental Science**

Saint James School, Hagerstown, MD

- Taught four sections of eight to fifteen students
- Collaborated on syllabus and curriculum development, including lab component
- Administered all tests and assigned all grades
- Served as academic advisor and mentor to a cohort of seven students

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**MENTORING EXPERIENCE**

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**Graduate Student Teaching Assistant Mentor****Fall 2022**

Virginia Tech, Blacksburg, VA

- Supervised and mentored two graduate student teaching assistants of a freshwater ecology laboratory course in curriculum and assessment development, lecturing, administering laboratory and field research activities, and grading

**Undergraduate Research Assistant Mentor****2016-2020**

Virginia Tech, Blacksburg, VA

- Have trained and mentored five undergraduate research assistants in data collation and management, analytical chemistry assistance, and field work preparation
  - **Dexter Howard** (2016-2020) – independent senior thesis resulting in a peer-reviewed publication on carbon cycling reservoirs; has received \$8,000 in grants and scholarships due to ecosystem research; field work, analytical chemistry, and data management technician
  - **Jacob Wynne** (2019-2020) – project examining relationships between presence of photosynthetic pigments, fluorescence, and algal biomass in reservoirs; field work, analytical chemistry, and data management technician
  - **Niall Goard** (2018-2019) – field work technician
  - **Joseph Famularo** (2016-2017) – field work and data management technician
  - **Charlotte Harrell** (2016-2017) – field work and analytical chemistry technician

<b>High School Student Mentor</b>	<b>2010-2015</b>
Miller School of Albemarle, Charlottesville, VA	2013-2015
Saint James School, Hagerstown, MD	2010-2013
<ul style="list-style-type: none"> <li>○ Served as academic advisor and mentor for seven high school students each year</li> </ul>	

## WORK EXPERIENCE

<b>Research Assistant</b>	<b>2015-2016</b>
<b>Biological Sciences Analytical Chemistry Lab and Carey Lab</b>	
Virginia Polytechnic Institute and State University, Blacksburg, VA	
<ul style="list-style-type: none"> <li>○ Conducted water quality sampling of freshwater reservoirs in Roanoke, VA</li> <li>○ Conducted total and soluble nutrient analyses of water samples</li> <li>○ Performed data quality control and analysis of long-term water chemistry datasets</li> </ul>	

## DATA PUBLICATIONS

- Lofton, M.E.**, Howard, D.W., McClure, R.P., Wander, H.L., Woelmer, W.M., Hounshell, A.G., Lewis, A.S., Carey, C.C. Time series of phytoplankton biovolume at the depth of the vertical chlorophyll maximum in Falling Creek Reservoir, Vinton, VA, USA 2016-2019 ver 1. *Environmental Data Initiative*. 2021.  
<https://doi.org/10.6073/pasta/2de760e8b72e474c31e42526f5360f9a>
- Hession, W.C., Lehmann, L.T., Wind, L.L., **Lofton, M.E.** High-frequency time series of stage height, stream discharge, and water quality (specific conductivity, dissolved oxygen, pH, temperature, turbidity) for Stroubles Creek in Blacksburg, Virginia, USA 2013-2018 ver 1. *Environmental Data Initiative*. 2020.  
<https://doi.org/10.6073/pasta/42727d38837cb4bdf04ce4e0d158ea92>
- McClure, R.P., **Lofton, M.E.**, Chen, S., Krueger, K.M., Little, J.C., Carey, C.C. 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*. 2019. <https://doi.org/10.6073/pasta/8f6e3f85f1ec816d9f55cbbf060a507c>.
- Carey, C.C., Bookout, B.J., **Lofton, M.E.**, McClure, R.P. Timeseries of high-frequency meteorological data at Falling Creek Reservoir, Virginia, USA 2015-2018. *Environmental Data Initiative*. 2019.  
<https://doi.org/10.6073/pasta/037384d2d5ae16cdc7450bf7a72792e3>
- Carey, C.C., **Lofton, M.E.**, Gerling, A.B., McClure, R.P., Doubek, J.P., Niederlehner, B.R., Farrell, K.J. Water chemistry timeseries for Beaverdam Reservoir, Carvins Cove Reservoir, Falling Creek Reservoir, Gatewood Reservoir, and Spring Hollow Reservoir in southwest Virginia, USA 2013-2018. *Environmental Data Initiative*. 2019.  
<https://doi.org/10.6073/pasta/08a8d297003c8e8593f888980f52bbcf>
- Carey, C.C., **Lofton, M.E.**, Hamre, K.D., Doubek, J.P., McClure, R.P. Time-series of high-frequency profiles of fluorescence-based phytoplankton spectral groups in Beaverdam Reservoir, Carvins Cove Reservoir, Falling Creek Reservoir, Gatewood Reservoir, and Spring Hollow Reservoir in southwestern Virginia, USA 2013-2018. *Environmental Data Initiative*. 2018. <http://doi.org/10.6073/pasta/2e39f35a792ced2d63271143d8afc011>

- Carey, C.C., Gerling, A.B., Doubek, J.P., Hamre, K.H., McClure, R.P., **Lofton, M.E.**, Farrell, K.J. 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*. 2018. <http://doi.org/10.6073/pasta/e9b8ee83bc7fad6dcdf439a41ad80a3c>
- Carey, C.C., Gerling, A.B., McClure, R.P., **Lofton, M.E.**, Bookout, B.J. Discharge time series for the primary inflow tributary entering Falling Creek Reservoir, Vinton, Virginia, USA 2013-2018. *Environmental Data Initiative*. 2018. <http://doi.org/10.6073/pasta/561d241db61b64caeddb29bcac91156c>
- Carey, C.C., McClure, R.P., Gerling, A.B., Doubek, J.P., Chen, S., **Lofton, M.E.**, Hamre, K.D. 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*. 2018. <http://doi.org/10.6073/pasta/1fc7d2a5c69c6a651793dba06d375ae2>

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**PRESENTATIONS (Presenter(s) underlined)**

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- Lofton, M.** Predicting phytoplankton community dynamics: understanding water quality responses to global change. Invited virtual seminar. Cary Institute of Ecosystem Studies, Sept. 2021.
- Lofton, M.**, Howard, D., McClure, R., Wander, H., Woelmer, W., Hounshell, A., Lewis, A., Cayelan, C. Whole-ecosystem experiments reveal that thermocline deepening shifts the peak biomass depth and community structure of phytoplankton in a eutrophic reservoir. Virtual oral presentation. Association for the Sciences of Limnology and Oceanography, Jun. 2021.
- Lofton, M.** Predicting phytoplankton community dynamics: understanding water quality responses to global change. Virtual oral presentation. Dissertation defense seminar. Jun. 2021.
- Lofton, M.**, Howard, D., McClure, R., Wander, H., Woelmer, W., Hounshell, A., Lewis, A., Cayelan, C. Whole-ecosystem experiments reveal that thermocline deepening shifts the peak biomass depth and community structure of phytoplankton in a eutrophic reservoir. Virtual oral presentation. Interfaces of Global Change Research Symposium, Apr. 2021.
- Lofton, M.**, Howard, D., McClure, R., Wander, H., Woelmer, W., Hounshell, A., Lewis, A., Cayelan, C. Thermocline deepening deepens maximum phytoplankton biomass and affects phytoplankton community structure in a eutrophic reservoir. Virtual oral presentation. Interfaces of Global Change Research Symposium, Apr. 2021.
- Lofton, M.E.** Howard, D.W., McClure, R.P., Carey C.C. Phytoplankton species richness is positively related to depth peak magnitude: a four-year analysis of phytoplankton depth distributions. Virtual poster presentation. Global Lake Ecological Observatory Network, Oct. 2020.

- Lofton, M.E.**, Brentrup, J.A., Beck, W.S., Bhattacharya, R., Brighenti, L.S., Burnet, S.H., McCullough, I.M., Stewart, S., Zwart, J.A., Carey, C.C., Cottingham, K.L., Ewing, H.A., LaDeau, S.L., Weathers, K.C. Variance partitioning to improve cyanobacteria forecasts. Oral presentation. Global Lake Ecological Observatory Initiative, Huntsville, ON, Canada, Nov. 2019.
- Lofton, M.E.**, Brentrup, J.A., Beck, W.S., Bhattacharya, R., Brighenti, L.S., Burnet, S.H., McCullough, I.M., Stewart, S., Zwart, J.A., Carey, C.C., Cottingham, K.L., Ewing, H.A., LaDeau, S.L., Weathers, K.C. Near-term forecasts of cyanobacterial blooms in a large, oligotrophic temperate lake: identifying sources of uncertainty. Poster presentation. Global Lake Ecological Observatory Initiative, Huntsville, ON, Canada, Nov. 2019.
- Lofton, M.E.**, Beck, W.S., Bhattacharya, R., Brentrup, J.A., Brighenti, L.S., Burnet, S.H., McCullough, I.M., Stewart, S., Zwart, J.A., Carey, C.C., Cottingham, K.L., Ewing, H.A., LaDeau, S.L., Weathers, K.C. State-space Bayesian models enable near-term forecasts of phytoplankton blooms in a large, north temperature lake. Poster presentation. Ecological Forecasting Initiative Conference, Washington, D.C., May 2019.
- Lofton, M.E.**, Leach, T.H., Beisner, B.E., Carey, C.C. Relative importance of top-down versus bottom-up control of phytoplankton vertical distributions in north temperate lakes. Oral presentation. Interfaces of Global Change Research Symposium, Blacksburg, VA, Apr. 2019.
- Lofton, M.E.**, Leach, T.H., Beisner, B.E., Carey, C.C. Relative importance of top-down versus bottom-up control of phytoplankton vertical distributions in north temperate lakes. Oral presentation. Association for the Sciences of Limnology and Oceanography, San Juan, Puerto Rico, Feb. 2019.
- Lofton, M.E.**, McClure, R.P., Woelmer, W.M., Ward, N.K., Carey, C.C. 2018 Annual Report-Back. Oral presentation. Western Virginia Water Authority, Roanoke, VA, Dec. 2018.
- Lofton, M.E.**, Leach, T.H., Beisner, B.E., Carey, C.C. Relative importance of top-down versus bottom-up control of phytoplankton vertical distributions in north temperate lakes. Poster presentation. Global Lake Ecological Observatory Network, Rottneest Island, WA, Australia, Dec. 2018.
- Lofton, M.E.**, McClure, R.P., Chen, S., Little, J.C., Carey, C.C. Whole-ecosystem experiments reveal varying responses of phytoplankton functional groups to epilimnetic mixing in a eutrophic reservoir. Oral presentation. Association for the Sciences of Limnology and Oceanography, Victoria, BC, Canada, Jun. 2018.
- Lofton, M.E.**, McClure, R.P., Chen, S., Little, J.C., Carey, C.C. Whole-ecosystem experiments reveal differential responses of phytoplankton functional groups to epilimnetic mixing. Poster presentation. Interfaces of Global Change Research Symposium, Blacksburg, VA, Apr. 2018.
- Lofton, M.E.**, McClure, R.P., Chen, S., Little, J.C., Carey, C.C. Phytoplankton community composition determines the effectiveness of epilimnetic mixing systems. Oral presentation. Virginia Water Conference, Richmond, VA, Mar. 2018.
- Lofton, M.E.**, McClure, R.P., Chen, S., Little, J.C., Carey, C.C. Whole-ecosystem experiments suggest nutrient subsidies and functional traits influence phytoplankton response to epilimnetic mixing. Poster presentation. Virginia Tech Biological Sciences Research Day, Blacksburg, VA, Feb. 2018.



**Lofton, M.E., McClure, R.P., Doubek, J.P., Farrell, K., Krueger, K.M., Carey, C.C., Schreiber, M.E.** 2017 Annual Report-back. Oral presentation. Western Virginia Water Authority, Roanoke, VA, Dec. 2017.

**Lofton, M.E., McClure, R.P., Chen, S., Little, J.C., Carey, C.C.** Whole-ecosystem experiments suggest nutrient subsidies and functional traits influence phytoplankton response to epilimnetic mixing. Poster presentation. Global Lake Ecological Observatory Network, New Paltz, New York, USA, Nov. 2017.

**Lofton, M.E., McClure, R.P., Chen, S., Krueger, K.M., Harrell, C.W., Doubek, J.P., Ward, N.K., Schreiber, M.E., Little, J.C., Carey, C.C.** Storms can both stimulate *and* inhibit phytoplankton communities: lessons from a whole-ecosystem lake mixing experiment. Oral presentation. Ecological Society of America, Portland, Oregon, USA, Aug. 2017.

**Lofton, M.E., McClure, R.P., Chen, S., Harrell, C.W., Ward, N.K., Doubek, J.P., Campbell, K.L., Krueger, K.M., Schreiber, M.E., Little, J.C., Carey, C.C.** Unexpected phytoplankton community structure response to a simulated storm: lessons from a whole-ecosystem lake mixing experiment. Oral presentation. Interfaces of Global Change Symposium, Blacksburg, Virginia, USA, Apr. 2017.

**Lofton, M.E., McClure, R.P., Chen, S., Harrell, C.W., Doubek, J.P., Ward, N.K., Schreiber, M.E., Little, J.C., Carey, C.C.** Storms can both stimulate *and* inhibit phytoplankton communities: lessons from a whole-ecosystem lake mixing experiment. Poster presentation. Pacific Rim Applications and Grid Middleware Assembly (PRAGMA) 32 conference, Gainesville, Florida, Apr. 2017.

**Lofton, M.E., McClure, R.P., Chen, S., Harrell, C.W., Krueger, K., Schreiber, M.E., Little, J.C., Carey, C.C.** Effects of epilimnetic mixing on algae populations: implications for management. Oral presentation. The Virginia Water Conference, Richmond, Virginia, Mar. 2017.

**Lofton, M.E., McClure, R.P., Chen, S., Harrell, C.W., Ward, N.K., Doubek, J.P., Campbell, K.L., Krueger, K.M., Schreiber, M.E., Little, J.C., Carey, C.C.** Unexpected phytoplankton community structure response to a simulated storm: lessons from a whole-ecosystem lake mixing experiment. Oral presentation. Virginia Tech Biological Sciences Research Day, Blacksburg, Virginia, USA, Feb. 2017.

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## LEADERSHIP ROLES

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### **Global Lake Ecological Observatory Network GSA Chair 2018-2020**

- Coordinate poster sessions, abstract books, workshops, and activities for GLEON professional meetings
- Write blogs, maintain GSO email account, assess travel grant and workshop applications, and facilitate communication between GLEON and graduate student members
- Serve as GSA representative on GLEON steering committee

### **Interfaces of Global Change Program GSO President 2018-2019**

Virginia Tech, Blacksburg, VA

- President for graduate student organization for graduate student program providing interdisciplinary training in research areas pertaining to global change
- Organizing GSO board meetings, guest speakers, professional development opportunities, and social activities for graduate students

**Interfaces of Global Change Program GSO Vice-President** **2017-2018**

Virginia Tech, Blacksburg, VA

- Vice-president for graduate student organization for graduate student program providing interdisciplinary training in research areas pertaining to global change
- Assist president in organizing GSO board meetings, guest speakers, professional development opportunities, and social activities for graduate students

**Field Crew Manager** **2016-2019**

Virginia Tech, Blacksburg, VA

- Co-lead a crew of 6-8 people to conduct sampling 2-3 times weekly in local reservoirs
- Responsibilities include scheduling, equipment care, maintenance, organization, and preparation, arranging transportation, and coordinating with Western Virginia Water Authority employees in re: water quality, management, and research plans

**Environmental Initiatives Coordinator** **2013-2015**

Miller School of Albemarle, Charlottesville, VA

- Developed cross-curricular programming such as Trout in the Classroom, volunteer opportunities at environmental non-profits in Charlottesville, and Adopt-A-Stream

**Task Force Chair for Instruction and Program Accreditation Committee** **2014-2015**

Miller School of Albemarle, Charlottesville, VA

- Chaired committee of eight faculty and staff to review the school's instruction and program and assess compliance with written standards of the Virginia Association of Independent Schools
- Oversaw drafting and was primary editor for Miller School's Instruction and Program report as part of the school's application for re-accreditation through VAIS

**Interim Science Department Chair** **2014-2015**

Miller School of Albemarle, Charlottesville, VA

- Served as acting department chair while department chair was on leave; ran department meetings and attended curriculum committee meetings to advocate for science curriculum changes

**Faculty Mentor** **2014-2015**

Miller School of Albemarle, Charlottesville, VA

- Mentored a new science faculty member through regular meetings and class observations

**Coach** **2013-2015**

**Equestrian and Girls' Soccer**

Miller School of Albemarle

- Varsity girls' soccer head coach
- Was assistant instructor for beginning hunt seat equestrian students

**Coach and Dorm Parent** **2010-2013**

**Girls' Soccer and Lacrosse; Upper Girls' Dormitory**

Saint James School, Hagerstown, MD

- Varsity girls' soccer and JV girls' lacrosse head coach
- Lived *in loco parentis* to forty girls ages sixteen to eighteen

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## PROFESSIONAL DEVELOPMENT

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### **Inclusive Pedagogy: How Student Identities Matter**

Virtual; Spring 2022

- Self-paced 12-module course examining how student identities affect the classroom experience and how instructors can construct courses to be maximally inclusive

### **Universal Design for Learning (UDL)**

Virtual; Spring 2022

- Self-paced course introducing instructors to fundamental concepts in UDL

### **Ecological Forecasting Initiative Research Coordination Network Workshop**

Virtual; May 2020

- Two-day workshop focusing on using National Ecological Observatory Network data products for ecological forecasting and designing an ecological forecasting challenge

### **Ecological Forecasting Initiative Summer Short Course**

Boston University; July 2019

- One week intensive training on concepts and methods in near-term iterative forecasting

### **PhycoTech Algal Identification and Ecology Workshop**

PhycoTech; July 2018

- One week intensive training with Dr. Ann St. Amand, phytoplankton taxonomy expert

### **Bayesian Statistics Workshop, Millbrook, NY**

Cary Institute of Ecosystem Studies; December 2017

- Was accepted to a competitive two-day workshop on Bayesian approaches in ecological modeling

### **National Science Teachers Association Regional Conference, Richmond, VA**

Greater Richmond Convention Center; October 2014

### **Advanced Placement Summer Institute: Environmental Science, Williamsburg, VA**

College of William and Mary; July 2013

### **Klingenstein Summer Institute, Lawrenceville, NJ**

Lawrenceville School; June 2012

- Was accepted to a competitive summer program affiliated with Columbia University for promising independent school teachers with two to five years of experience
- Completed two weeks of intensive seminars and coursework around themes in independent school education, including innovative instruction, best practices in science education, and promoting diversity and strong school communities

### **AP Environmental Science Workshop, Watertown, CT**

Taft School; July 2011

### **The Association of Boarding Schools New Teacher Academy, Boston, MA**

Boston University; July 2010

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## SERVICE

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- **Peer reviewer**, Journal of Plankton Research, Water Research, Harmful Algae, Ecological Applications, Frontiers in Marine Science, Lake and Reservoir Management (have conducted at least one review for each listed journal in the past year)
- **Exhibitor**, Virginia Science Festival Virginia Tech Stream Team exhibit, Blacksburg, VA (2017-2019)
- **Stream clean-up volunteer**, Stroubles Creek, Blacksburg, VA (Mar 2018)
- **Guest speaker**, Franklin County High School Moment of Science, Rocky Mount, VA (Mar 2018)
- **Science communication outreach video**, IGC Symposium, Blacksburg, VA (Apr 2017)
- **Activity table monitor**, SEEDS Nature Center, Blacksburg, VA (Apr 2017)
- **Interfaces of Global Change service events:**
  - Gilbert Linkous Elementary School Science Fair, Blacksburg, VA (2017-2019)
  - Reception greeter for Brian Richter invited seminar, Blacksburg, VA (Apr 2017)
- **Judge**, Blue Ridge Highlands Regional Science Fair, Radford, VA (2015-2018)
- **Water quality monitor**, Virginia's Save Our Streams program, Virginia (2014-2016)
- **Organic farm volunteer**, Friends Farm, Williamsburg, PA (summer 2011)
- **Girl Scout Outreach Chair**, Kappa Delta Sorority, Williamsburg, VA (2009-2010)
- **Kindergarten TA**, Matthew Whaley Elementary School, Williamsburg, VA (2006-2010)

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## MEMBERSHIPS

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- **ASLO** (Association for the Sciences of Limnology and Oceanography)
- **GLEON** (Global Lake Ecology Observatory Network)
- **VLWA** (Virginia Lakes and Watershed Association)

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## SKILLS

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- **Languages:** French (proficient; spoken and written)
- **Scientific skills/technologies:** experience with Lachat flow injection/chromatography analysis, total/dissolved carbon analyzer, and various water quality sondes; microscope experience with phytoplankton identification
- **Computer programs/models:** R, process-based water quality simulation model (General Lake Model – Aquatic EcoDynamics), Bayesian statistical models (rjags)