

Sheri Ann Floge, Ph.D.

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RESEARCH AND TEACHING INTERESTS

Using a combination of fieldwork and laboratory experiments I study how microbes interact with one another and their environment, the chemical reactions that mediate such interactions, and the resulting impact on ecosystem scale carbon and nitrogen cycling. In particular, I focus on how viruses alter host cellular metabolism, and consequent changes in ecosystem function. As a teacher and mentor, I strive to create an inclusive environment and to provide student-led research opportunities that challenge, enhance critical thinking skills, and foster teamwork and self-discovery.

EDUCATION

2011 - 2014	Ph.D. Oceanography , University of Maine, Orono, ME Dissertation title: <i>Virus infections of eukaryotic marine microbes</i> Dissertation advisors: W. H. Wilson and M. J. Perry
2002 - 2005	M.S. Oceanography , University of Maine, Orono, ME Thesis title: <i>Seasonal variation in colloidal chromophoric dissolved organic matter (CDOM) in the Damariscotta River Estuary</i> Dissertation advisor: M. L. Wells
1995 - 2000	B. S. Biochemistry , <i>cum laude</i> , State University of New York at Stony Brook

PROFESSIONAL APPOINTMENTS

2018 - present	Assistant Professor . Wake Forest University. Dept. of Biology.
2015 - 2018	Postdoctoral Fellow . The Ohio State University, Dept. of Microbiology.
2014 - 2015	Postdoctoral Research Associate . University of Arizona. Dept. of Ecology and Evolutionary Biology.
2011 - 2014	Graduate Student . University of Maine. School of Marine Sciences.
2010 - 2014	Research Associate . Bigelow Laboratory for Ocean Sciences, Maine.
2008 - 2010	Research Associate in Marine Microbial Biochemistry , Cellana, LLC, Hawaii.
2005 - 2008	Research Specialist . Darling Marine Center, University of Maine.
2002 - 2005	Graduate Research Assistant . Darling Marine Center, University of Maine.
2000 - 2002	Marine Resources Associate . Island Institute, Maine.

EXTRAMURAL GRANTS AND AWARDS IN SUPPORT OF RESEARCH

2018 - present	NSF Biological Oceanography Collaborative Award (lead PI) <i>Collaborative Research: Viral induced chemotaxis mediating cross-trophic microbial interactions and carbon flux</i>	\$620,972
2015 - 2018	A. O. Beckman Postdoctoral Fellowship (PI) <i>Quantifying the viral shunt: carbon flow across trophic levels</i>	\$189,604
2015	DOE-JGI Director's Discretionary Funds (idea development and project lead) <i>Synechococcus transcriptomic and metabolomic responses to viral and grazer predation</i>	>\$60,000

FIELD EXPERIENCE

2016 - 2017	Coastal Maine, <i>in situ</i> experiments
2003	R/V Wecoma, EcoHAB, North Pacific Ocean
2000 - 2002	PenBay Research Collaborative, >30 trips aboard lobster boats, Gulf of Maine
2001	R/V Connecticut, NURP, Gulf of Maine
2001	R/V Seward Johnson, PIRANA/ MANTRA, South Atlantic Ocean
1998	R/V Roger Revelle, South Pacific Ocean
1998	Institute of Marine Science, Zanzibar, Tanzania

PUBLICATIONS

- Zengler, K., K. Hofmockel, N. S. Baliga, S. W. Behie, H. C. Bernstein, J. B. Brown, J. R. Dinneny, **S. A. Floge**, S. P. Forry, M. Hess, S. A. Jackson, C. Jansson, S. R. Lindemann, J. Pett-Ridge, C. Maranas, E. A. Shank, O. S. Venturelli, M. D. Wallenstein, and T. Northen. 2019. EcoFABs: *Advancing microbiome science through standardized fabricated ecosystems*. *Nature Methods* (16) 567-571.
- Lawrence, S. A., **S. A. Floge**, J. E. Davy, S. K. Davy, and W. H. Wilson. 2017. *Exploratory analysis of Symbiodinium transcriptomes reveals potential latent infection by large dsDNA viruses*. In press, *Environmental Microbiology* (19) 3909-3919. doi:10.1111/1462-2920.13782.
- Vermont, A. I., J. Martínez Martínez, J. D. Waller, I. C. Gilg, A. H. Leavitt, **S. A. Floge**, S. D. Archer, W. H. Wilson, and D. M. Fields. 2016. *Virus infection of Emiliana huxleyi deters grazing by the copepod Acartia tonsa*. *Journal of Plankton Research* (38) 1194-1205.
- Gilg, I. C., S. D. Archer, **S. A. Floge**, D. M. Fields, A. I. Vermont, A. H. Leavitt, W. H. Wilson, and J. Martínez Martínez. 2016. *Differential gene expression is tied to photochemical efficiency reduction in virally infected Emiliana huxleyi*. *Marine Ecology Progress Series* (555) 13-27.
- Floge, S. A.**, K. R. Hardy, E. Boss and M. L. Wells. 2009. *Analytical intercomparison between type I and type II long-pathlength liquid core waveguides for the measurement of chromophoric dissolved organic matter*. *Limnology and Oceanography: Methods* (7) 260 – 268.
- Floge, S. A.** and M. L. Wells. 2007. *Variation in colloidal chromophoric dissolved organic matter in the Damariscotta Estuary, Maine*. *Limnology and Oceanography* (52) 32 – 45.
- Mulholland, M. R., **S. Floge**, E. J. Carpenter and D. G. Capone. 2002. *Phosphorous dynamics in cultures and natural populations of Trichodesmium spp.* *Marine Ecology Progress Series* (239) 45-55.
- Lin, S., **S. Henze**, P. Lundgren, B. Bergman and E. Carpenter. 1998. *Whole-cell immunolocalization of nitrogenase in marine diazotrophic Cyanobacteria, Trichodesmium spp.* *Applied and Environmental Microbiology* (64) 3052-3058.
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INVITED SEMINARS

- Floge, S. A.** *Marine viruses: major players in planktonic food webs and carbon cycling*. College of Marine Sciences Seminar Series. University of South Florida, St. Petersburg, FL. 2018.
- Floge, S. A.** *Marine viruses: planktonic food webs and carbon cycling*. Marine and Environmental Biology Seminar Series. University of Southern California, Los Angeles, CA. 2018.
- Floge, S. A.**, J. D. Waller, J. J. Layman, D. M. Fields, and M. B. Sullivan. *Quantifying the viral shunt: carbon flow in marine planktonic food webs*. Arnold O. Beckman Symposium, Irvine, CA. 2017.
- Floge, S. A.**, S. Roux, B. Bowen, R. Lau, L. Silva, T. Woyke, T. Northen, and M. B. Sullivan. *Under attack! How a marine cyanobacterium responds to virus infection and grazer predation*. 12th Annual DOE Joint Genome Institute Genomics of Energy and Environment Meeting Metabolomics Workshop. Walnut Creek, CA. 2017.
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Floge, S. A. and W. H. Wilson. *Beyond the lytic cycle: Persistent virus infections in marine microbial ecology*. ASLO Ocean Sciences Meeting – Tutorial Presentation. Honolulu, HI. 2014.

Floge, S. A., H. L. Pound, and W. H. Wilson. *Persistent virus infections in eukaryotic marine phytoplankton*. Gordon Research Seminar - Marine Microbes. Lucca, Italy. 2012.

SCIENTIFIC PRESENTATIONS

Floge, S. A., C. Howard-Varona, S. Roux, B. P. Bowen, R. Lau, L. P. Silva, R. Lau, S. Schwenck, S. Schwartz*, T. Woyke, T. R. Northen, and M. B. Sullivan. *Synergistic effects of combined viral and protistan predation on marine cyanobacterium Synechococcus physiology*. Ocean Sciences Meeting, San Diego, CA. 2020. *Wake Forest Undergraduate

Floge, S. A., J. D. Waller, J. J. Layman*, N. J. Poulton, D. M. Fields, and M. B. Sullivan. *Marine viruses stimulate carbon flux to lower and higher trophic levels*. Ocean Carbon Biogeochemistry Workshop. Woods Hole, MA. 2019. *Undergraduate student.

Floge, S. A., J. D. Waller, J. J. Layman, N. J. Poulton, D. M. Fields, and M. B. Sullivan. *Evaluating the viral shunt: Do viruses enhance or reduce nutrient flow to higher trophic levels?* ASLO Aquatic Sciences Meeting. Honolulu, HI. 2017

Bragdon, B*., **S. A. Floge**, J. J. Layman, D. M. Fields, and M. B. Sullivan. *Effect of myovirus infection on Synechococcus photosynthetic efficiency*. ASLO Aquatic Sciences Meeting. Honolulu, HI. 2017.

Floge, S. A., S. D. Archer, A. H. Leavitt, A. I. Vermont, J. Martínez Martínez, I. C. Gilg, D. M. Fields, W. H. Wilson. *Biochemical responses of *Emiliana huxleyi* to virus infection and potential impact on carbon flow*. Aquatic Virus Workshop 7. St. Petersburg, FL. 2013.

Floge, S. A., H. L. Pound* and W. H. Wilson. *Persistent virus infections in eukaryotic marine phytoplankton*. Aquatic Virus Workshop 6. Texel, Netherlands. 2011. *Undergraduate student.

Floge, S. A., J. Boehme and M. L. Wells. *Seasonal changes in colloidal chromophoric organic matter in the Damariscotta River Estuary, Maine*. ASLO Aquatic Sciences Meeting. Santa Fe, NM. 2007.

Floge, S. A. and M. L. Wells. *Changes in colloidal CDOM in relation to phytoplankton abundance in the Damariscotta River Estuary, Maine*. ASLO Aquatic Sciences Meeting. Salt Lake City, UT. 2005.
