

**CURRICULUM VITAE
MARC E. FRISCHER, Ph.D.**

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GENERAL BIOGRAPHY

Marc E. Frischer is Professor of Marine Sciences at the University of Georgia, Skidaway Institute of Oceanography. He received his Ph.D. from the University of South Florida in 1994 in Marine Sciences, specializing in Marine Microbiology, and earned an A.B. from Washington University in St. Louis in 1986. Prior to joining the faculty of the University of Georgia, Skidaway Institute of Oceanography in 1996 he completed a postdoctoral fellowship at Rensselaer Polytechnic Institute in Troy, NY.

RESEARCH STATEMENT

Professor Frischer is internationally recognized for his research on the role of microbial diversity in marine environments and the development and application of the tools of molecular biology in marine and aquatic ecology. Practical application of these research interests includes understanding factors that impact water quality and that affect the health of aquatic and marine systems and the organisms dependent on them. Understanding and predicting the impacts of climate change on marine food webs is a central focus of his current research. His research has taken him from the tropics to the poles. Professor Frischer has authored over 100 peer-reviewed publications, holds two U.S. patents, and speaks extensively on his research. Professor Frischer is a member of several scientific societies and sits on several governmental science and environmental policy advisory boards.

TEACHING PHILOSOPHY

It is my belief that teaching is facilitating learning. I do not teach; I attempt to facilitate learning. In the formal classroom setting this philosophy includes traditional lectures but lectures alone, in my assessment, are insufficient to achieve learning. My lecture style often incorporates discussion and or solicitation of ideas and questions from the class. We adhere to the schedule while intentionally allocating time for dialectic discussion. Individual or group projects are almost always a part of the courses that I teach. These projects typically involve students conducting literature research and reading on their own, writing assignments, and opportunities to present work and ideas. Feedback on exams is always provided, and I am always available and make time for meeting with students individually. Fostering learning skills is as important as absorbing and retaining specific information.

EDUCATION

1/94 - 12/95	Rensselaer Polytechnic Institute. Postdoctoral Research Associate. Supervisor, Sandra A. Nierzwicki-Bauer.
8/88 - 12/93	University of South Florida, St. Petersburg Florida. Ph.D., May 1994 Marine Microbiology

Dissertation Title: Natural Plasmid Transformation in the Marine Environment, May 1994. Supervisor, John H. Paul

- 8/82 - 12/85 Washington University, St. Louis MO. Bachelor of Arts in Biology, December 1985 Emphasis in Microbiology and Genetics.
- 1/85 - 5/85 Northeastern University, Boston, MA. School for Field Studies semester program in Marine Biology and Management. St. Johns, USVI.
- 9/78 - 6/81 Evanston Township High School, Evanston, IL

ADVANCED CERTIFICATIONS

Shrimp Pathology Short Course. University of Arizona. August 1996
SCUBA Dive Master
Certificate in Diversity and Inclusion (CDI). University of Georgia. December 2022.

PROFESSIONAL EXPERIENCE

- 2013 – Present University of Georgia, Skidaway Institute of Oceanography. Professor (Marine Microbiology and Molecular Biology)
- 2009 – 2017 University of Bergen (Uni Miljø Uni Environment A/S), Norway. Professor II
- 2006 – 2013 Skidaway Institute of Oceanography. Professor (Marine Microbiology and Molecular Biology)
- 2001 – 2006 Skidaway Institute of Oceanography. Associate Professor (Marine Microbiology and Molecular Biology)
- 2009 – 2016 University of Georgia, Marine Sciences. Adjunct graduate faculty
- 1998 – 2009 University of Georgia, Marine Sciences. Adjunct faculty.
- 1997 – Present Savannah State University, Marine Sciences. Adjunct faculty.
- 1997 – Present Georgia Institute of Technology, Civil and Environmental Engineering. Adjunct faculty
- 1996 - 2001 Skidaway Institute of Oceanography. Assistant Professor (Marine Microbiology and Molecular Biology)
- 1994 - 1995 Rensselaer Polytechnic Institute. Postdoctoral Research Associate. Supervisor, Sandra A. Nierzwicki-Bauer.
- 1991 - 1993 The Canterbury High School, St. Petersburg, Florida. Substitute Teacher. Instructor for Advanced Placement and General Biology.
- 1986 - 1988 Sigma Chemical Company, St. Louis, Mo. Protein Chemist
Development and production of yeast metabolites. Procedures commonly employed included affinity chromatography, gel electrophoresis, and enzyme assay. Other responsibilities included training of new personnel and supervision of large scale production processes.
- 1985 - 1986 Washington University, St. Louis, MO Dept. Biology

Assistant Research Associate and Teaching Assistant
Prepared and trouble shot a laboratory course in microbial genetics.

Summers
1981, 1983
Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL.
Medical Automation Research Unit: Technician.

AWARDS AND HONORS

US Fish & Wildlife. Distinguished Service Award for outstanding service towards the prevention of the spread of *Dreissena* mussels in the Western US. 2012.
PolarTREC recognition and appreciation for service to the polar research and education communities as a partner in education, outreach, and professional development. 2011 – 2012.
Sigma Xi Outstanding Doctoral Research Award. 1993
Institute of Biomolecular Science Summer Research Grants. 1990 and 1991.
Clearwater Power Squadron Research Grants. 1990 and 1991.
US Department of Energy certificate of appreciation. For outstanding contributions in deep microbiology research. 1994.

Patents

Genetically Modified *Vibrio*. M.E. Frischer and J.H. Paul. US Patent Nos. 5,273,902 and 5,610,028

Fellowships

Gulf Coast Oceanographic Fellowship for Academic Merit. 1991. \$8,000 award.
Jake B. Lake Fellowship for Academic Merit. 1992. \$9,000 award.
Visiting Guest Scientist, University of Bergen. 2005.

PROFESSIONAL SOCIETIES

American Society of Microbiology
2007 Advisor to Division N Chair (Microbial Ecology)
2006 Chair Division N (Microbial Ecology)
2005 Chair Elect Division N (Microbial Ecology)
Association for the Sciences of Limnology and Oceanography
2010 – 2013 Member of nominations committee
International Society of Microbial Ecology
The Oceanographic Society
Sigma Xi Scientific Research Society
8/88 - 12/93 USF Marine Science Advisory Committee

PROFESSIONAL ACTIVITIES

Scientific Advisory Boards

2005 – 2010	Georgia Coastal Advisory Council, State appointed member
2006 – Present	NOAA Gray's Reef Marine Sanctuary Research Advisory Panel
2008 – Present	Western Regional Zebra/Quagga Mussel Advisory Group
2010 – Present	Western Regional Panel – Laboratory Standards Working Group

2010 – Present Scientific Advisor – Center for a Sustainable Coast (Georgia USA)
2015 US EPA South Atlantic Bight Technical Board for Establishing
 Water Quality Nutrient Criteria
2017 – Present Georgia Shrimp Advisory Panel
2018 GA Dept of Education, Oceanography GA Standards of Excellence
 Advisory Committee (Oceanography)

Other Boards

2011 – 2025 Wilderness Southeast, Board Member
2016 – 2024 Wilderness Southeast, Board President
2025 Wilderness Southeast, Vice President (ex-officio)

Journal Editorial Boards

2014 – Present Food Webs, Associate Editor

Proposal & Promotion Review Panels

NIH ad hoc review panel; Cellular and Molecular Biology; 4/12/98 (2 proposals)
EPA Review panel; joint program on bioremediation; 4/30 – 5/1/98 (Primary reviewer 11 proposals – 60 proposals total)
DOE Environmental Science Management Program; June, 1999. Panel Chair – Bio and Phytoremediation group. (Primary reviewer 8 proposals, 33 proposals total)
NSF Biological Oceanography; November 16-19, 1999. (Primary reviewer 22 proposals, 119 proposals total)
NASA Human Exploration and Development of Space Program; January 25, 2001. (Primary reviewer 7 proposals, 18 proposals total)
EPA Ecological Risk Assessment STAR Fellowship; February 22-23, 2004. (Primary reviewer 9 proposals, 36 proposals total)
NSF Life in the Cold and Dark: cellular and genomic approaches to examining organism adaptations to polar environments. International Polar Year Proposal Review Panel; August 8-9, 2006. (Primary reviewer 8 proposals, 32 proposals total).
NSF Microbial Observatories Proposal Review Panel. January 24-25, 2008. (18 Proposals)
NSF CAREER Proposal Review Panel. November 22, 2010. (10 Proposals).
US EPA Promotion Review Panel. John Darling. 28 March 2013.
NSF Graduate Research Fellowship Program. January 24 & 27, 2014 (30 Proposals).
Sea Grant Omnibus Technical Review Panel. August 16-17, 2017 (7 Proposals).
NSF Biological Oceanography Review Panel Member; November 15-18, 2021. Reviewed 12 proposals.

Reviewership

Regular Reviewer for NSF, US DOE, NOAA, EPA, and the USDA. Typically review between 10 – 15 proposals per year.
2004 – Reviewed 3 proposals for the Scientific Foundation of Ireland (SFI)
2009 – Reviewed 1 proposal for the Austrian Science Fund (FWF)
2010 - Reviewed 1 proposal for the Austrian Science Fund (FWF)
2013 – Reviewed 2 proposals for Austrian Science Fund, 1 for Swedish Research Council
2015 – Reviewed 2 proposals for Austrian Science Fund.
2016-18 (*need to keep better track*)
2019 – Reviewed 2 proposals for NSF and 1 for Austrian Science Fund
2020 – Reviewed 6 manuscripts (*ISME Journal, Molecular Ecology, Frontiers in Zoology, Lakes and Reservoir Management, Coastal Marine Fisheries, Journal of Shellfish Research*)

- 2021 – Participated in NSF Biological Oceanography Panel Review (12 proposals). Reviewed proposal for the NC Sea Grant program, Reviewed 2 manuscripts (*Limnology and Oceanography, Diseases of Aquatic Organisms*).
- 2022 – Reviewed 5 manuscripts for various journals and 1 proposal for NSF.
- 2023 – Reviewed 4 manuscripts for various journals and 1 proposal for NC Sea Grant
- 2024 – Reviewed 7 manuscripts for various journals. Served on NSF proposal review panel (20 proposals reviewed)

Working Groups & Governmental Reports

2015 Alber, M., M. Frischer, D. I. Greenfield, J. D. Hagy, J. E. Sheldon, E. Smith, R. F. Van Dolah, and C. B. Woodson. (2015). An approach to develop numeric nutrient criteria for Georgia and South Carolina estuaries, p. 59. Technical report to the EPA, GA EPD, and SCDHEC.

2013 A Comprehensive Report on the Workshops “*Dreissena* Early Detection Best Practices” and “*Dreissena* Early Detection Laboratory Standards”. M. E. Frischer, C. Ferrara, K.L. Kelly and Sandra A. Nierzwicki-Bauer. Available at:
https://docs.wixstatic.com/ugd/0e48c2_0a194987b5e04c1c839de3b32a344314.pdf

2010 – Present WRP (Western Regional Panel) Dreissenid Detection Standards and Protocol Coordination Working Group. A charter working group of the 100th Meridian Initiative.

2010 Reliability of Early Detection of *Dreissena* spp. Larvae by Cross Polarized Light Microscopy, Image Flow Cytometry, and Polymerase Chain Reaction Assays. December 2010. Marc E. Frischer, Sandra A. Nierzwicki-Bauer, and Kevin K. Kelly. Available at:
https://www.doi.gov/sites/doi.gov/files/migrated/invasivespecies/isac/2011/upload/RRII_Final_Report_-2010.pdf

2009 A Comprehensive Report on the the Workshop “Early Detection of *Dreissena* Mussels in the West”. 21-22 January 2009. Marc Frischer and Karen Butler, Skidaway Institute of Oceanography. Available at:
[http://musselmonitoring.com/Mussel_Monitoring_Workshop_Report%20v3%20\(FINAL\).pdf](http://musselmonitoring.com/Mussel_Monitoring_Workshop_Report%20v3%20(FINAL).pdf)

2008 Zebra/Quagga Mussel Early Detection and Rapid Response: Blue Ribbon Panel recommendations for the Colorado Division of Wildlife. Cort Anderson, University of Idaho, David Britton, U.S. Fish & Wildlife Service, Renata Claudi, RNT Consulting Inc., Melanie Culver, University of Arizona, & Marc Frischer, Skidaway Institute of Oceanography. October 2008. Available at:
<http://hermes.cde.state.co.us/drupal/islandora/object/co:11054/datastream/OBJ/view>

2004 ETV (Environmental Technology Verification) Ballast Water Methods Workshop. Development of a standard operating procedure for the enumeration of ambient and surrogate bacteria for verification of ballast waters treatment technologies using membrane filtration. Providence Rhode Island, January 23-25, 2004.

Editorial Postions:

2014 – present *Food Webs*, Elsevier. Associate Editor.

Manuscript and Book Reviews

Regular Reviewer for Applied and Environmental Microbiology, Aquatic Microbial Ecology, ISME journal, Limnology and Oceanography, Microbial Ecology, Marine Biology, Journal of Shellfish Research, Diseases of Aquatic Organisms, Journal of Plankton Research, Molecular Ecology and Molecular Ecology Resources, PlosONE. Ad hoc reviewer for several other journals and publishers. Typically review between 5 – 10 manuscripts per year.

Meetings Organized

Dreissena Early Detection Best Practices Technical Workshop. 7-8 February 2012 – Fort Worth, Texas.
Dreissena Early Detection Laboratory Standards Technical Workshop. 9-10 February 2012 – Fort Worth, Texas.
Early Detection of *Dreissena* Mussels in the West 21-22 January 2009 – Denver Colorado
DOE BI-OMP Investigators Meeting. Meeting Chair. Sante Fe, NM. 1997
US EPA Hazardous Sediments Workshop. “Fundamental Research of Mercury Contamination: Transferring Technology to Develop Solutions”. Co-organizer (J.E. Kostka, F.M. Saunders). October 25-26, 1999, Savannah, GA.
DOE BI-OMP Investigators Meeting. Meeting Chair. Savannah, GA. March 29-31, 2001.

Presentations to public (lay) audiences (Since 2007)

The Mather Senior Residential Living Seminar Series, Evanston Il. Marine Pandemics: It’s Not Just People. December 28, 2023
Evening@Skidaway open lecture. Marine Pandemics: It’s Not Just People. October 10, 2023.
Available at: <https://www.youtube.com/watch?v=vQbEUUv02yQ>.
TEDxSavannah. Where Have Our Shrimpers Gone? May 25, 2023. Available at:
Georgia General Assembly, Coastal Delegation. Shrimp Black Gill. January 23, 2023.
Gwinnett Public Library Summer Oceans Presentation Series. Where have Georgia’s shrimp gone?
Changes in the Oceans. June 29, 2022. Available at: [youtube.com/watch?v=ZqpMrz_8W58](https://www.youtube.com/watch?v=ZqpMrz_8W58)
Evening@Skidaway open lecture. Climate change and shrimp black gill – is there a connection?
September 15, 2021. Available at: <https://www.youtube.com/watch?v=8afyAfQ2dKo&t=14s>
Evening@Skidaway open lecture. The Ocean, The Cradle of the Earth’s Biodiversity. Savannah, Georgia. December 10, 2019.
Sunrise Rotary Club. Shrimp black gill. Savannah, Georgia. November 7, 2019.
Skidaway Lab Night, Open to the public lab event at SkIO, May 15, 2018.
Life of Mind, presentation to the Cum Laude society, Savannah Country Day, Savannah Georgia, April 24, 2019.
Science Seminar Lab Tours, High School open lab event at SkIO, Microbial activity hands on lab demo. March 5, 2018.
Low Country Shrimping, A Fishery in Peril. Skidaway Island Landings Association, Sunset Sips Lecture Series. 17 August 2017.
Shrimp Black Gill – Status of the Fishery. Georgia Federal Legislative Retreat. Athens, Georgia. 29 August 2016.
Causes and fishery consequences of a major shrimp Black Gill outbreak in the US Southeast. Evening at Skidway public lecture 12 May 2015.
Causes and fishery consequences of a major shrimp Black Gill outbreak in the US Southeast. Savannah West Rotary Club. 1 April 2015.
Public forum on Climate Change, following a screening of the film “Chasing Ice”. 14 September 2013 (ca 400 attendees). Lucas Theater, Savannah Georgia.
The Oceans Role in Climate Change. Presentation in lecture series presented by the Senior Citizens Learning Center. 14 October 2013 (ca 75 attendees). Savannah, Georgia.

- Coliforms to Climate Change: Comprehensive Coastal Water Quality Monitoring in the 21st Century. US Green Building Council (USGBC) Savannah Branch lecture series. Lectuer part of a series to provide continuing education for LEEDS certification. Savannah, Georgia. 29 May 2012.
- The Effect of Climate Change on the Ecosystems of the Ocean. Coastal Ecology Dinner Lecture Series. Tybee Island Georgia. November 17 2011.
- The Skidaway River Estuary, A continuing saga of an anthropogenic eutrophication process. Visiting scientists from The Association of American Plant Food Control Officials (AAPFCO). February 25 2011.
- Bacterial Source Tracking in the Vernon River basin. November 18, 2010. Visitng group from the 2010 American Water Works Association Water Quality Technology Conference. Savannah, Georgia.
- Coliforms to Climate Change: Comprehensive Coastal Water Quality Monitoring in the 21st Century. Metter Rotary International Club meeting. Metter Georgia. November 29, 2010.
- Coliforms to Climate Change: Comprehensive Coastal Water Quality Monitoring in the 21st Century. Skidaway Community Lecture Series. October 11 & 13, 2010.
- The Ocean Makes Earth Habitable: The Microbes. Skidaway Institute of Oceanography public lecture series “Living with the Ocean”. March 30 and April 2, 2009. Savannah, Georgia.
- Skidaway Community Institute Lecture Series. May 7, 2007. In our backyard, the microbes around us.
- Veternarian pathologists visit to Skidaway Institute of Oceanography. November 13, 2007. Parasite detection by partial denaturing HPLC (DHPLC).

INSTITUTE SERVICE

1996 – 1999	Seminar Committee (Chair)
1996 – 2010	Library Committee
1999 – 2002	Space Committee
1996 – 2003	Coordinator of Georgia Research Alliance Activities (request preparation, fund administration)
1999 – 2000	Coastal Technology Development Center Design Committee
2000 – 2001	SkIO Director Search Committee
2003	SkIO Faculty Search Committee (Biological Oceanography Position)
2002 – Present	Joint SkIO/MECA Program Development Committee
2003 – 2004	Librarian Search Committee (member)
2004 – 2010	Skidaway Representative to the Georgia Coastal Advisory Council. Member of Coastal Incentive Grant Program Sub-Committee
2005	SkIO Faculty Search Committee (Coastal Environmental Chemist Position)
2006 – Present	Institute Radiation Safety Officer
2006 – 2007	Search Committee for Director of Georgia Sea Grant, member
2007 – 2008	Ecosystem Health Center Exploratory Working Group.
2008 – 2009	SkIO faculty search committee (Member) – Physical Oceanography
2010	Search Committee (Chair) – Zooplankton Ecology
2010 - Present	Promotion Committee
2103 – 2018	MARSCI Undergraduate Affairs Committee
2014 – 2015	SkIO/MARSCI faculty search committee, chair
2016 – Present	SkIO ship committee
2018-Present	Head Executive Advisory Committee
2018-Present	SkIO ship re-fit committee

2018-2019 UGA/SkIO faculty search committee, chair. Zooplankton Ecology/Biophysical Interactions faculty position.
2019 RV Savannah captain search committee, member.
2019 – 2020 UGA/SkIO faculty search committee, member. Biological Oceanography faculty positions.
2020 – 2023 Department of Marine Sciences Diversity, Equity, and Inclusion Committee, Co-Chair.
2020 - Present Department of Marine Sciences Curriculum Committee, Member.
2022 – Present Department Action Team (For DEI and other departmental initiatives)
2022 – Present Greer Promotion Review Committee

Faculty Mentors

2007 – 2009 Aaron Peck
2020 – Present Adam Greer
2022-Present Adrienne Hoarfrost

Faculty Committees

2005 – 2013 Liz Mann
2007 – 2009 Aaron Peck
2010 – 2013 Jim Nelson
2010 – 2013 Dana Savidge
2009 – 2013 Cathernine Edwards

Visitors

Sept 10-21, 2021 CJ Pickett, Swarthmore College
August 4-9, 2019 Stephen Landers, Troy University
Oct – Dec 2018 Arthur Pichler, University of Vienna, WasserCluster Lunz – Biologische Station GmbH, Lunz, Austria
November 2018 Radka Ptacnikova, University of Vienna, WasserCluster Lunz – Biologische Station GmbH, Lunz, Austria
November 2018 Jens Nejtgaard, Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Neuglobsow, Germany
November 2018 Stella Berger, Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Neuglobsow, Germany
October 2016 Alex Pezzuoli, Rensselaer Polytechnic Institute
October 2014 Christofer Troedsson, Uni Environment and Univ Bergen, Norway
June 2013 Sarah Culloty, University College Cork, Cork Ireland
August – Oct 2012 Anita Juen, University of Innsbruck, Austria
August – Oct 2011 Anita Juen, University of Innsbruck, Austria
December 2009 Anita Juen, University of Innsbruck, Austria
October 2009 Rob Condon, Bermuda Institute of Ocean Sciences (BIOS), UK
June 2009 Lucy Lee, Wilfrid Laurier University, Waterloo, Canada
January 2009 Patty Sobecky, Georgia Institute of Technology/The University of Alabama
December 2005 Ramunas Stepanauskas, Bigelow Laboratory for Ocean Sciences
April 2003 – Dec 2003 Jens Nejtgaard, University of Bergen
May 2003 Steve Geiger, Florida Marine Research Institute
Nov 15 – Dec 15, 2001 Jens Nejtgaard, University of Bergen (Co Host with P.G. Verity)
Dec 10-13, 2001 Bill Arnold and Steve Geiger, Florida Marine Research Institute

TEACHING

Lecture

- 2024 - Present
2023 University of Georgia, Seminar in Marine Sciences (MARS 8130)
University of Georgia. Microbial Ecology (MARS 4620/6620). Fall 2023, 16 enrolled. Co-taught with Mandy Joye.
- 2022 University of Georgia. Marine Ecology (MARS 8160). Spring 2020, 8 students. Co-taught with Amanda Spivak.
- 2021 University of Georgia, Microbial Ecology (MARS 4620/6620). Fall 2019, 14 enrolled. Co-taught with Mandy Joye.
- 2020 University of Georgia. Marine Ecology (MARS 8160). Spring 2020, 3 students. Co-taught with Amanda Spivak.
- 2019 University of Georgia. Microbial Ecology (MARS 4620/6620). Fall 2019, 23 enrolled. Co-taught with Mandy Joye.
- 2018 University of Georgia. Marine Ecology (MARS 8160). Fall 2018, 3 enrolled graduate students, 1 audit.
- 2012 Savannah State University. Introduction to Coastal Oceanography MSCI 5202. 11 graduate students. Lead Instructor, team taught with Jack Blanton, Clark Alexander, and Jay Brandes. Guest lectures by Aron Stubbins and Jens Nejstgaard.
- 2010 Savannah State University. Introduction to Coastal Oceanography MSCI 5202. 9 graduate students. Lead Instructor, team taught with Jack Blanton, Clark Alexander, and Jim Sanders. Guest lectures by Jay Brandes, Liz Mann, Catherine Edwards.
- 2009 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2009. Co-taught with P.G. Verity. 49 students
- 2009 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Spring Semester 2009. Co-taught with P.G. Verity. 39 students
- 2009 Georgia Southern University. Ecotoxicology lectures. With Aaron Peck and Risa Cohen. Ca 20 students (1 day visit, 2 lectures)
- 2008 MAREX Esienhower in service science teacher workshop. Water quality. July 12, 2007. Coastal water quality and bacteriology. Lecture and lab. 18 teachers.
- 2008 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2008. Co-taught with P.G. Verity. 37 students
- 2008 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Spring Semester 2008. Co-taught with P.G. Verity. 42 students

- 2007 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2007. Co-taught with P.G. Verity. 52 students
- 2007 MAREX Esienhower in service science teacher workshop. Water quality. July 12, 2007. Coastal water quality and bacteriology. Lecture and lab. 18 teachers.
- 2007 Workshop for Amstrong Atlantic University pre-service teachers. June 6, 2007. Environmental Microbiology. Lecture and field trip. 12 pre-service teachers.
- 2007 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Spring Semester 2007. Co-taught with P.G. Verity. 38 students
- 2006 Savannah State University: Directed Research In Bioinformatics. MSCI Fall Semester 2006.
- 2006 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2006. Co-taught with P.G. Verity.
- 2006 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Spring Semester 2006. Co-taught with P.G. Verity.
- 2005 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2005. Co-taught with P.G. Verity.
- 2005 Savannah State University: Marine Microbial Ecology MSCI 7802 Fall Semester 2005.
- 2004-Present Savannah Stateu University: Introduction to Coastal Oceanography MSCI 5202 (graduate course). Guest lecturer – Microbial Ecology.
- 2004 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2004. Co-taught with P.G. Verity.
- 2003 Savannah State University: Marine Microbial Ecology MSCI 7802 Fall Semester 2003.
- 2003 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2003. Co-taught with P.G. Verity.
- 2003 OTS Tropical Ecology Course (Mangroves and Coral Reefs). Panama, S. America. (two lectures and led a field trip).
- 2002 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Spring Semester 2003. Co-taught with P.G. Verity.
- 2001 Armstrong Atlantic University: Introduction to Oceanography OCEA 3100 Fall Semester 2001. Co-taught with P.G. Verity.
- 1997 – 1999 Coastal Oceanography. 2-week laboratory and lecture section on microbial ecology in jointly taught summer course at the Skidaway Institute of Oceanography.

- 1999 – 2007 Savannah State University Current Issues in Oceanography MSCI 4501
This course has been organized and taught every other semester since Fall 1999. The course is funded through a DOE grant as is being formally organized by a postdoc (Melissa Booth 1999-2001; Jennifer Brofft 2002 – 2007).
- 1998 – Present Regular Lecturer at Savannah State University through joint Skidaway Institute and Savannah State University programs. Approximately two programs per year (ranging from 1 to 3 lectures per program).
- 2001 – 2004 MECA “Rivers to Reefs” Teachers workshop on water quality. Provide a day of lecture and lab. Funded through the Eisenhower Program.

Workshops

- 2020 Rivers to Reef Educator Workshop. 8 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June, 2016. Instructor. Contributed shipday on RV Savannah.
- 2017 Rivers to Reef Educator Workshop. 16 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June, 2016. Instructor. Contributed shipday on RV Savannah.
- 2016 Rivers to Reef Educator Workshop. 16 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June, 2016. Instructor. Contributed shipday on RV Savannah.
- 2015 Rivers to Reef Educator Workshop. 16 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June, 2015. Instructor. Contributed shipday on RV Savannah.
- 2014 Rivers to Reef Educator Workshop (2). 32 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June & July, 2014. Instructor. Contributed shipday on RV Savannah.
- 2013 GK-12 Educator Workshop. Ocean Literacy. 18 elementary – high school teachers. Capstone Project Cruise – Follow-up on Ocean Literacy workshops. Two day cruise aboard the R/V Savannah. 3-4 October, 2013. Lead Instructor and Organizer.
- 2012 GK-12 Educator Workshop. Ocean Literacy. 18 elementary – high school teachers. One week intensive workshop focused on Ocean Literacy with a capstone 2 day cruise aboard the R/V Savannah. June 18-23, 2012. Lead Instructor and Organizer.
- 2012 Rivers to Reef Educator Workshop (1). Water Quality. 18 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. July 15-21, 2012. Instructor.
- 2011 GK-12 Educator Workshop. Ocean Literacy. 18 elementary – high school teachers. One week intensive workshop focused on Ocean Literacy with a capstone 2 day cruise aboard the R/V Savannah. July 5-9, 2011. Lead Instructor and Organizer.

- 2011 Rivers to Reef Educator Workshop (2). Water Quality. 18 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June 12-17 & July 10-15, 2010. Instructor.
- 2010 GK-12 Educator Workshop. Ocean Literacy. 16 elementary – high school teachers. One week intensive workshop focused on Ocean Literacy with a capstone 2 day cruise aboard the R/V Savannah. June 21-26, 2010. Lead Instructor and Organizer.
- 2010 Rivers to Reef Educator Workshop (2). Water Quality. 18 elementary – high school educators complete a transformative trip from the headwaters of the Altamaha River to the continental shelf. June 14-19 & July 11-16, 2010. Instructor.

Special Training (Laboratory Visits)

- 2021 CJ Pickett, Swarthmore College. Doliolid culture. Sept 10-21, 2021
- 2018 Arthur Pichler, University of Vienna, WasserCluster Lunz – Biologische Station GmbH, Lunz, Austria. Methods in Molecular Trophic Interaction studies, Development of prey-specific qPCR assays for the spiny water flea, *Bythotrephes cederstroemi*.
- 2016 Alex Pezzuoli, Rensselaer Polytechnic Institute. Methods in Molecular Trophic Interaction studies.
- 2015 Amy Fowler. South Carolina Institute of Marine Resources. Measuring crustacean respiratory activity.
- 2015 Pablo Balsiero. University of Bergen, Norway. January 12-25 2015. Molecular enabled gut content analysis of the blue mussel (*Mytilus edulis*). Ion Torrent Next Generation sequencing analysis.
- 2014 Pablo Balsiero. University of Bergen, Norway. March – May 2014 & Sept – Nov 2014. Molecular enabled gut content analysis of the blue mussel (*Mytilus edulis*). Ion Torrent Next Generation sequencing analysis.
- 2012 Anita Juen. University of Innsbruck, Austria. August – October 20, 2012. Molecular enabled gut content analysis of invasive worms. PNA-PCR and DHPLC analyses.
- 2011 Anita Juen. University of Innsbruck, Austria. August 31 – October 20, 2011. Molecular enabled gut content analysis of invasive worms. PNA-PCR and DHPLC training.
- 2011 Miguel Leal. CESAM Centre for Environmental and Marine Studies, Department of Biology, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro. February – March 2011

- 2009 Anita Juen. University of Innsbruck, Austria. December 14-16, 2009. Planning for parasite detection training period in 2010.
- 2008 Solveig Thorkildsen. University of Bergen, Norway. December 2008 (2 weeks). DHPLC training.
- 2008 Kevin Kelly and Michael Simonavice. US Department of the Interior, Bureau of Reclamation, Technical Service Center. Use of molecular probes and PCR assays for the specific detection of zebra mussel larvae. January 7-11, 2008.
- 2007 Rana Athar (Postdoctoral Fellow). Florida Agricultural and Mechanical University (FAMU). Determination of the physiological status of marine bacteria using the VSP technique. January 20 – 27, 2007.
- 2006 Mario Muscarella (undergrad student). Armstrong Atlantic State University. Determination of the physiological status of marine bacteria. September, 2006.
- 2006 Kevin Kelly and Denise Hosler. US Department of the Interior, Bureau of Reclamation, Technical Service Center. Use of molecular probes and PCR assays for the specific detection of zebra mussel larvae. September 11-13, 2006.
- 2006 Carla Labón. Universidad de Oviedo, Spain. Special training in molecular zooplankton ecology. Molecular characterization and tracking of appendicularians. August 15 – October 31, 2006
- 2006 Jens Nejstgaard, University of Bergen. Manuscript writing. March 2 to March 15, 2006.
- 2006 Paolo Simonelli, University of Bergen, Norway (Ph.D. student). Special training in molecular zooplankton ecology. Molecular characterization of copepod gut contents. Molecular Biology crash course. February – April, 2006.
- 2003 Jens Nejstgaard, University of Bergen. Special training in molecular zooplankton ecology. Molecular Biology crash course. April – December 2003.
- 2003 Steve Geiger, Florida Marine Research Institute. Use of molecular probes for the quantification of clam and scallop larvae. May, 2003.
- 2003 Bill Arnold and Steve Geiger, Florida Marine Research Institute. Use of molecular probes for the quantification of clam and scallop larvae. Dec 10-13, 2003.

Postdoctoral Students

- 2018 – 2020 Yunbiao Wang, Ph.D.
- 2012 - 2014 Thais Bittar, Ph.D. Relationship between the quality and composition of dissolved organic matter pools and the structure of prokaryotic pools. Untangling seasonal from climate variability.

- 2008 Sang-Man Cho, Ph.D. (Co-Supervisor with R.F. Lee). Parasite surveillance and relation to environmental contamination. (Department of Marine Biology and Aquaculture, Gyeongsang National University, 445 Inpyeong Tongyoeng, Gyeongnam 650-160, Republic of Korea.)
- 2005 – 2006 Christofer Troedsson, Ph.D. Molecular studies of the urochordate *Oikopleura*. Development of DHPLC methodology for parasite detection and studies of trophic interactions.
- 2002 – 2007 Jennifer Brofft, Ph.D. Genetic Expression of Assimilatory Nitrate Reductase in Marine Bacteria. Collaborative Education Programs with Savannah State University. Development of “Current Topics of Oceanographic” Course (Co-advisors, P.G. Verity and M.G. Gilligan)
- 1998 – 2003 Melissa Booth, Ph.D. Genetic Expression of Assimilatory Nitrate Reductase in Marine Bacteria. Collaborative Education Programs with Savannah State University. Development of “Current Topics of Oceanographic” Course (Co-advisors, P.G. Verity and M.G. Gilligan)

Ph.D. Students

- 2024 – Present Alyssa Fritz. University of Georgia, Department of Marine Sciences. DoLLAYER.
- 2021 – Present Emily Gipson. University of Georgia, Department of Marine Sciences. DoLMICROBE.
- 2011 - 2014 Miguel Leal. CESAM Centre for Environmental and Marine Studies, Department of Biology, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal. Co-Advise at SkIO with Jens Nejstgaard. Ph.D. Awarded December 2014.
- 2008 – 2013 Heidi Hammerstein. Viral Tracers as Sentinels of Septic System Integrity and Suitability in Coastal Environments (Co-advisor Paul Work, Degree will be granted from Georgia Institute of Technology). Graduated with terminal Masters May 2013.
- 1997 – 2002 Michelle Howard-Jones. Development of the Vital Stain and Probe Method to Distinguish the Physiologic Status of Individual Bacteria in the Marine Environment. (Co-advisors, P.G. Verity and T. Christina; Degree granted from Georgia Institute of Technology). Ph.D. Awarded 2002.
- 1998 – 2002 Andrew Allen. Distribution and Diversity of Marine Bacteria Capable of Utilizing Nitrate. (Co-advisors, P.G. Verity and D. Bronk; Degree granted from the University of Georgia). Ph.D. Awarded 2002.

Ph.D. & MS Student Committees

Patrick Duffy, University of Georgia, Department of Marine Sciences. Major Advisor Adam Greer
Benjamin Lowin, University of Georgia, Department of Marine Sciences, Major Advisor Sara Rivera-Callo

Kyle Aaron, University of Georgia, Department of Marine Sciences. Major Advisor Adam Greer. MS 2023.
Elijah O’Cain, Georgia Southern University. Major Advisor, Danny Gleason. MS, May 2017.
Alex Pezzuoli, Rensselaer Polytechnic Institute. Major Advisor, Sandra A. Nierzwicki-Bauer. Ph.D received December 2019.
Colin Williams, University of Georgia Dept. of Marine Sciences. Major Advisor, Patricia Yager. MS received May 2014.
Miguel Leal , University of Aveiro, Portugal (with Jens Nejstgaard). Major Advisor Ricardo Caldo 2012 – 2014; Ph.D. Received 2014.
Dr. Jeffrey King (Georgia Institute of Technology); Ph.D. Received 1999.
Jay Leverone (University of South Florida) 1998-2000; Ph.D. Received 2006.
Dr. Jacqueline Tront (Georgia Institute of Technology) 1999 - 2004
Rachel Porefsky (University of Georgia) 2004 – 2008
Christoffer Troedsson (University of Bergen), Doctoral Defense Opponent Feb 2005.
Dominique Lamay (University du Littoral, France) 2006.
Whitney Palefsky (University of Georgia – Ph.D.) 2006 – 2009.
Hege Westheim (University of Oslo, Norway), Doctoral Defense Opponent March 2008.
John Wimbush (SUNY Albany – MS). 2006 – 2009.

Master Students

2021 – 2025	Hunter Powell. University of Georgia (with Holly Bik)
2015 – 2018	Lauren Lamboley, Savannah State University
2014 – 2016	Ashleigh Price, Savannah State University
2012 – 2015	Kevin McKenzie, Savannah State University (with Tara Cox)
2010 – 2013	Zachary Tait, Savannah State University
2010 – 2025	LaGina Frazier, Savannah State University
2010 – 2018	Tina Walters, Savannah State University
2008 – 2012	Kelli Edwards, Savannah State University
2006 – 2008	Elza Bystrom, Georgia Institute of Technology Savannah
2005 – 2008	Denis Wafula, Savannah State University
2003 – 2006	Megan Singleton, Savannah State University
2002 – 2005	Whitney Palefsky, Savannah State University
1999 – 2001	Teressa Fu, Georgia Institute of Technology
1997 – 2000	Michele Healy, Georgia Institute of Technology <i>(Currently employed as an Environmental Engineer)</i>
1997-1999	Nikolle Reyes, Georgia Institute of Technology <i>(Currently enrolled in MBA program at GIT)</i>
1995 – 1999	Andrew Hansen, Rensselaer Polytechnic Institute <i>(Currently in Ph.D. program at the University of Hawaii, Marine Science)</i>
1998 – 2000	Brian McGrath, Rensselaer Polytechnic Institute <i>(Currently enrolled in MBA program at RPI)</i>
1994 – 1997	Jane Wyllie, Rensselaer Polytechnic Institute <i>(Currently employed as a Research Technician at the California Institute of Technology)</i>

Undergraduate Students

2025 (Semester@SkIO) Colin Bell, University of Georgia

2024 (summer REU) Grace Adusare, Savannah State University
2023 (Semester@SkIO) Julia Jacobs, University of Georgia
2023 (summer REU) Arianna Poston, Savannah State University
2023 (summer REU) Kaden Ramirez, Savannah State University
2022 (summer GTech) Claire Chojnacki, Georgia Tech
2021 (summer UGA) Grahm Hardy, University of Georgia
2021 (summer) Arlyn Santiago, University of Georgia. Ms. Santiago's internship was supported by the SeaGrant Community Engagement Intern program.
2021 (summer REU) Autumn Johnson, Savannah State University
2021 (summer REU) Glen Collins, Savannah State University
2020 Jasmine Gross, Virginia-Maryland College of Veterinary Medicine
** note, there were no summer interns in 2020 due to the COVID pandemic*
2019 (summer UGA) Alden Murphy, University of Georgia
2019 (summer) Max Braun, University of Miami
2019 (summer REU) Ashly Rivera, Savannah State University, GA
2019 (summer REU) Jordan Dishmon, Savannah State University, GA
2018 (summer REU) Mikaela O'Hare, Hollins University, Roanoke, VA
2018 (summer) Carolina Thornton, Universidad Catolica, Chile, South America
2017 (summer REU) Sarah Raigoza, Passaic County Community College, Paterson, NJ
2017-18 Elizabeth (LuLu) Lacey, University of Georgia
2017 (summer UGA) Natasha (Camille) Wommack, University of Georgia
2016-17 Erin Arneson
2016 (summer REU) Conor Torris, University of South Carolina, Columbia, SC
2015 (summer REU) Molly Bassette, Kansas State University, Manhattan, KS.
2015 (summer REU) Rufat Verdiyev, Stony Brook University, New York, NY.
2014 (summer REU) Candilianne Serrano-Zayas, Universidad Metropolitana-Cupey Campus, San Juan Puerto Rico
2014 (summer) Chistofer Drummonds, Savannah State University
2013 (summer REU) Chistofer Drummonds, Savannah State University
2012 (summer REU) Loumarys Lara-Rodriguez, University of Puerto Rico
2011 (summer REU) Kiara Gomez, Smith College
2011 (summer REU) Jasmine Davis, Savannah State University
2010 (summer REU) Jamie Daniels, Kennesaw State University
2009 (summer REU) Tekia Hamilton, Albany State University
2009 – 2011 Christy Pavel, Savannah State University
2005 – 2009 LaGina Fraizer, Savannah State University
2004 – 2005 Kenya Crawford, Savannah State University
2003 – 2005 Brian Williams, Savannah State University
2003 – 2004 Robert Settel, Savannah State University
2002 – 2004 John Braxton, Savannah State University
2002 – 2003 Juan Aragon, Armstrong Atlantic University
2000 – 2002 Heidi Hendrikson, Savannah State University
2000 – 2002 Sandra Pagen, Savannah State University
2000 – 2002 Christina Archer, Savannah State University
2000 – 2002 Tara Foy, Armstrong Atlantic State University
1999 – 2000 Roxanne Bower, Dalhousie University, Halifax, Canada
1998 – 2001 Victoria Ballard, Savannah State University
1999 - 2000 Barbara Webb, Savannah State University
1999 – 2000 Deangelo Stuart, Savannah State University
1999 – 2000 Cindy Janus, Savannah State University
1999 – 2000 Ms. Lourdes Pennill, Savannah State University

Interns

1/2011 – 8/2011	Mr. Hisham El Shaffey (recent GSU graduate)
6/2010 – 8/2010	Ms. Elizabeth (Ashley) Shaw (Colorado University)
6/2009 – 8/2009	Ms. Stephanie Chaing (Emory University)
8/2007 – 3/2008	Mr. David Olesner (Fachschul Manneheim, Germany)
2/2006 – 9/2006	Ms. Vivica Stokes (Fachschul Manneheim, Germany)
2/2006 – 9/2006	Ms. Noreen Ey (Fachschul Manneheim, Germany)
2/2006 – 9/2006	Ms. Verena Nagele (Fachschul Manneheim, Germany)
2/2005 – 9/2005	Ms. Annette Holzle (Fachschul Manneheim, Germany)
8/2004 – 10/2004	Ms. Tatjana Schneidt (Fachschul Manneheim, Germany)
2/2004 – 9/2004	Ms. Beatrice Gurita (Fachschul Manneheim, Germany)
2/2004 – 9/2004	Mr. Tobias Wizenmann (Fachschul Manneheim)
2/2004 – 6/2004	Mr. Bernhardt Wally, (Fachschul Hagenberg)
3/2003 – 7/2003	Ms. Filiz Adiyaman (Fachschul Mannheim, Germany)
1/2003 – 5/2003	Mr. Jens Larsen (Roskilde University, Denmark)
9/2002 – 3/2003	Ms. Sandra Walters (Fachschul Mannheim, Germany)
9/2002 – 3/2003	Ms. Rita Grübl (Fachschul Mannheim, Germany)
9/2002 – 3/2003	Ms. Corina Knapp (Fachschul Mannheim, Germany)
9/2002 – 3/2003	Mr Marc Mettenburger (Fachschul Mannheim, Germany)
8/2001 – 2/2002	Mr. Florian Rambow (Fachschul Mannheim, Germany)
3/2001 – 9/2001	Ms. Katrin Schmid (Fachschul Mannheim, Germany)
3/2001 – 9/2001	Mr. Andreas Mauer (Fachschul Mannheim, Germany)
9/2000 – 2/2001	Ms. Monika Neumann (Fachschul Mannheim, Germany)
3/2000 - 9/2000	Mr. Tomas Grübl (Fachschul Mannheim, Germany)
3/1998 – 9/1999	Ms. Ursula Aschenbach (Fachschul Mannheim, Germany)
9/1998 – 2/2000	Mr. Ronnie Juraske (Fachschul Mannheim, Germany)
3/2000 – 9/2000	Ms. Anke Blechschmidt (Fachschul Mannheim, Germany)
10/1998 – 4/1999	Mr. Michael Hauer (Fachschul Manneheim, Germany)
11/1998 – 10/1999	Ms. Joanna Murray (Armstrong Atlantic University, Savannah Georgia)

SYNERGISTIC ACTIVITIES

Southeast US regional shrimp black gill working group, lead organizer.

Participant in NSF Division of Biology Jumpstart Workshop “Reintegrating Biology”. December 4-6, 2019. Atlanta, GA.

Working co-director to advance methods for the early detection of *Dreissena* spp. mussels in the Western US.

Group Leader, Molecular methods for zooplankton trophic interactions, an international collaborative.

Institutional project leader on a US DOE collaborative program, a goal of which is to integrate research experiences into the undergraduate marine science curriculum at Savannah State University (SSU). SSU is an HBCU unit of the University System of Georgia.

Project participant on an NSF Collaboration to Integrate Research and Education, the goal of which is to broaden minority representation in marine sciences; one of the sister institutions is the HBCU Savannah State University.

Project participant on an NSF Biocomplexity project to study mangrove forest ecosystems.

Project participant on an NSF Biocomplexity project to study the haptophyte *Phaeocystis*.

Senior and junior-author on several collaborative projects to develop molecular methods to study microbial communities.

Senior and junior author on several collaborative projects to develop molecular methods to study planktonic bivalve larvae. These projects involve collaborations with other universities, state, and federal government labs, and management agencies.

Actively engaged in integrating research into the education programs associated with the University of Georgia Marine Extension Service.

Active participant in Savannah Economic Development Authority activities. Member of the scientific advisory committee for the Coastal Technology Development Center)

COLLABORATIONS (Senior Co-authors and Co-PIs)

Arnold, William	Florida Marine Research Institute
Benson, Amy	U.S. Geological Survey
Blake, Norman	University of South Florida
Brandes, Jay	University of Georgia, Skidaway Inst of Oceanography
Bronk, Deborah	College of William and Mary/VIMS
Curran, Carla	Savannah State University
Feller, Ilka	Smithsonian Institute
Fowler, Amy	George Mason University
Gambill, Jill	University of Georgia
Geer, Patrick	Georgia Dept. of Natural Resources
Gibson, Deidre	Hampton University
Geiger, Stephen	Floriday Fish and Wildlife Research Institute
Gilligan, Matthew	Savannah State University
Hansen, Benni	Roskild University, Denmark
Hay, Mark	Georgia Institute of Technology
Hofmann, Eileen	Old Dominion University
Hoskins, Dionne	Savannah State University
Kenchington, Ellen	Canadian Dept. of Fisheries and Oceans
King, Jeffrey	US Army Corps (Savannah)
Kostka, Joel	Florida State University
Landers, Stephen	Troy University, Troy AL
Lee, Richard	Skidaway Institute of Oceanography
Luther, Mark	University of South Florida
Marelli, Dan	Florida State University
Maruya, Keith	Southern California Coastal Water Research Project (SCCWRP)
Myers, Steven	University of South Florida
Narváez, Diego	Old Dominion University

Nejstgaard, Jens A.	University of Bergen, Norway
Nierzwicki-Bauer, Sandra	Rensselaer Polytechnic Institute
Paffenhöfer, Gustav A.	Skidaway Institute of Oceanography
Patten, Bernie	University of Georgia
Paul, J.H.	University of South Florida
Radka Ptacnikova	WasserCluster Lunz – Biological Station GmbH
Saunders, Michael	Georgia Institute of Technology
Schmit, John Paul	US National Park Service, Washington DC
Shearer, Carol	University of Illinois
Sobecki, Patricia	Georgia Institute of Technology
Stepanauskas, Ramunas	Bigelow Laboratory for Ocean Sciences
Stubbins, Aron	Skidaway Institute of Oceanography
Thingstad, Frede	University of Bergen, Norway
Thompson, Eric	University of Bergen, Norway
Verity, Peter	Skidaway Institute of Oceanography
Walker, Anna	Mercer University Medical School
Windom, Herbert	Skidaway Institute of Oceanography
Yager, Patricia	University of Georgia
Zehr, Jonathan	University of California, Santa Cruz

MAJOR FIELD EXPERIENCE

2023	2 research cruise (12 days at sea) on the RV Savannah associated with the NSF supported DolMICROBE
2022	7 research cruises (22 days at sea) on the RV Savannah associated with the NSF supported DolMICROBE and DolEAGER projects. 1 additional day on the RV Savannah (Institute supported) for shrimp black gill stakeholders.
2021	10 short (2-day) and 2 10-day cruises on the SAB continental shelf associated with 2 NSF projects (DolMICROBE and DolEAGER)
2020	2 short (2 -day) cruises on the SAB continental shelf associated with 2 NSF projects (DolMICROBE and DolEAGER)
2018	Participant in NOAA Nancy Foster mission to Gray’s Reef. July 30 – August 9, 2018.
2017	10 short (2-day) cruises on SAB continental shelf associated with NSF Doliolid project (Chief Scientist). Each cruise included observing K-12 educators.
2016	Shrimp Black Gill research cruise with 21 industry stakeholders (Chief Scientist).
2016	12 short (2-day) cruises on SAB continental shelf associated with NSF Doliolid project (Chief Scientist). Each cruise included observing K-12 educators.
2015	Three short (2-day) cruises on SAB continental shelf associated with NSF Doliolid project (Chief Scientist). Each cruise included observing K-12 educators.
July 2013	Two week collection trip to several glaciers in Southeast Alaska
Summer 2013	Several short cruises on the SAB associated with Doliolid Studies and teacher workshops. R/V Savannah.

- April 2013 Response of pelagic food web to *Phaeocystis pouchetii* bloom (PhaeoEnigma). Barents Sea Cruise aboard the Norwegian MS Håkon Mosby. 29 April – 8 May 2013.
- Summer 2012 Several short cruises on the SAB associated with Doliolid Studies and teacher workshops. R/V Savannah.
- March 2012 Response of pelagic food web to *Phaeocystis pouchetii* bloom (PhaeoEnigma). Large-scale mesocosm experiment (senior participant). Marc 2-31, 2012. Bergen Norway
- January 2012 Barrow Alaska. Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the western coastal Arctic?
- Summer 2011 R/V Savannah Research Cruise – South Atlantic Bight. Doliolids. Five cruises. Co-Chief scientist with G.A.- Paffenhöfer
- June 2011 Ocean Acidification Mesocosm Experiment (senior participant). June 6 – July 2, 2011. Bergen Norway.
- May 2011 Quagga mussel sampling for QZAP studies. Lake Mohave, AZ and Colorado River. Co-expedition leader. May 22-27, 2011.
- April 2011 Barrow Alaska. Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the western coastal Arctic?
- January 2011 Barrow Alaska. Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the western coastal Arctic?
- August 2010 Barrow Alaska. Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the western coastal Arctic?
- Summer 2010 R/V Savannah Research Cruise – South Atlantic Bight. Doliolids. Three cruises. Co-Chief scientist with G.A.- Paffenhöfer
- February 2010 Barrow Alaska. Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the western coastal Arctic?
- February 2010 Dreissena mussle larvae collection for double blind early detection study. South Quail Reservoir, UT and Lake Mohave, AZ. Co-expedition leader. Jan 17-22, 2009.
- Summer 2009 Lake George Experimental Mesocosm (LaGEM). Differential effect of organic and inorganic nutrient fertilization on freshwater plankton community. Project leader with S.A. Nierzwicki-Bauer and J.C. Nejstgaard. July 25 – Aug 14, 2009.
- Summer 2009 R/V Savannah Research Cruise – South Atlantic Bight. Doliolids. Three cruises. Co-Chief scientist with G.A.- Paffenhöfer
- Fall 2008 Design and development of *in situ* pelagic mesocosm facility at Lake George, NY

Summer 2008 Field Studies in Lake George, NY. Molluscan fauna of Lake George.

Summer 2007 Field Studies in Lake George, NY. Impacts of acidic deposition on lake Bacterial communities and continuing fresh water mollusk studies.

Summer 2006 Field Studies in Lake George, NY. Impacts of acidic deposition on lake Bacterial communities and continuing fresh water mollusk studies.

Spring 2006 Mini-sabbatical in Norway (3 months). Initiating international collaborative efforts in the establishment of a new study field – Molecular Zooplankton Ecology.

Spring 2005 Experimental Studies in Norway (4.5 weeks). Molecular Approaches for *In Situ* Studies of Nitrate Utilization by Marine Bacteria (Project Director)

Fall 2004 Field Studies in Belize (2 weeks). Bacteria and Fungi Interaction in Mangrove Sediments and Leaf Debris.

Summer 2004 Field Studies in Lake George, NY. Zebra Mussels and Water Quality

Spring 2004 Field Studies in Belize (2 weeks). Bacteria and Fungi Interaction in Mangrove Sediments and Leaf Debris.

Summer 2003 Field Studies in Lake George, NY. Zebra Mussels

2003 Experimental Studies in Norway (5 weeks). The Biocomplexity of Phaeocystis. (P.D. P.G. Verity).

2003 Field Studies in Belize (2 weeks). Bacteria and Fungi Interactions in Mangrove Sediments and Leaf Debris.

2002 Oceanographic Cruises (2 Cruises). Patterns of Variability in Living and Dead Bacteria. South Atlantic Bight. R/V Savannah. (P.I. Marc Frischer).

2002 Oceanographic Cruise. R/V Wecoma (P.I. E. Sherr). May 2002.

2002 Field Studies in Belize (2 weeks). Bacteria and Fungi Interactions in Mangrove Sediments and Leaf Debris.

2002 Experimental Studies in Norway (4 weeks). The Biocomplexity of Phaeocystis. (P.D. P.G. Verity).

2002 Zebra mussel studies (4 weeks). Lake George, NY.

2001 Oceanographic Cruises (5 Cruises). Patterns of Variability in Living and Dead Bacteria. South Atlantic Bight. (P.I. Marc Frischer).

2001 Field Studies in Belize Mangrove Forrest (2 weeks). Bacteria and Fungi Interactions in Mangrove Sediments and Leaf Debris.

2000 Oceanographic Cruises (3 Cruises). Patterns of Variability in Living and Dead Bacteria. South Atlantic Bight. (P.I. Marc Frischer).

2000 Field Studies in Belize Mangrove Forrest (2 weeks). Bacteria and Fungi Interactions in Mangrove Sediments and Leaf Debris.

Summer 2000 Field Studies in Lake George, NY. Zebra Mussels

Summer 1999 Field Studies in Lake George, NY. Development of Zebra Mussel Specific Genetic Probe.

Spring 1999 Oceanographic Cruise. Vertical flux of phytoplankton blooms. Barrents Sea, Norway. (P.I. Paul Wassmann, Univ of Tromso).

1999 Oceanographic Cruise. R/V Cape Hatteras (G. Paffenhofer Chief Scientist).

1997-1999 Oceanographic Cruises (4 cruises). Patterns of variability in living and dead bacteria. South Atlantic Bight. (P.I. Marc Frischer).

1998 Oceanographic Cruise. Bacterial assimilatory nitrate reductase in natural bacterioplankton populations. South Atlantic Bight. (P.I. Marc Frischer).

Summer 1995-99 Development of Zebra Mussel Specific Genetic Probes. Lake George, NY Chief Scientist

Summer 1994	DOE Deep Subsurface Science Program, Origins program. Deep subsurface drilling. Bibo, NM.
Summer 1993	Oceanographic cruise. R/V Pelican. Distribution of marine virus'. (P.I. Paul, J.H.)
Summer 1992	Oceanographic cruise. R/V Pelican. Distribution of marine virus'. (P.I. Paul, J.H.)
Winter 1992	Oceanographic cruise. R/V Bellows. Survival of released grouper. (P.I. Wilson, R.R.)
Summer 1991	Oceanographic cruise. R/V Bellows. Gene expression in marine environment. (P.I. Paul, J.H.)
Summer 1990	R/V Cape Hatteras. Natural transformation in the marine environment. (P.I. Paul, J.H.)
Summer 1990	R/V Pelican. Natural transformation in the marine environment. (P.I. Paul, J.H.)
Summer 1989	R/V Pelican. Natural transformation in the marine environment. (P.I. Paul, J.H.)

FUNDING HISTORY

AWARDS

NSF (BIO OCE)

Do fine-scale water column structure and particle aggregations favor gelatinous-dominated food webs in subtropical continental shelf environments? Lead PI: Adam T. Greer. Co-PIs: Marc E Frischer, Jay. A. Brandes, and Laura M. Treible (SSU). \$1,444,777. January 2024 – December 2027.

NSF (Oceanographic Instrumentation)

Equipment: Oceanographic Instrumentation 2023 UGA/SkIO RV Savannah. Lead PI: Marc E. Frischer. Co-PIs: John Bichy and Adam T. Greer. \$184,619. July 2023 – June 2025.

NSF (FSML)

Acquisition of an Isotope Ratio Mass Spectrometer with liquid chromatography and elemental analyzer interfaces at the Skidaway Institute of Oceanography. Lead PI: Jay. A. Brandes. Co-PIs: Marc E. Frischer, Clark R. Alexander, and Natalie Cohen. \$404,295. September 2024 – August 2028.

Georgia Department of Natural Resources, Coastal Resources Division. eRFP for Shrimp Black Gill research. The influence of environmental factors in shrimp black gill: Management and fishery adaptation options? Lead PI Marc E. Frischer, Co-PI Jeb Byers. \$99,383.74. February 1, 2022 – January 1, 2024.

NSF (BIO/IOS)

EAGER: Cross-scale exploration of evolutionary mechanisms. Lead PI: Bradley Davidson, Co-PI M.E. Frischer. \$104,935 (UGA budget). October 1, 2020 – September 30, 2022.

NSF (BIO OCE)

The significance of doliolid microbial interactions: Do doliolids fundamentally alter the trophic structure and productivity of sub-tropical continental shelf food webs? Lead PI: Marc E Frischer, Co-PIs J.A. Brandes and A.T. Greer. \$1,080,019. September 1, 2020 – August 31, 2023.

NOAA (GA Sea Grant)

Optimizing Georgia's shrimp fishery in the age of Black Gill. Lead PI Marc E. Frischer. \$149,741 (Total project cost \$231,200). February 1, 2020 – January 31, 2022.

- University of Georgia (President’s Interdisciplinary Seed Grant Program)
Mitigating emerging disease impacts in fisheries: Adaptive strategies to ensure a safe, healthy seafood supply. Lead PI James E. Byers, Co-PIs M.E. Frischer and R. Hall. \$131,570. August 2019 – July 2021.
- NSF (FSML)
FSML: Acquisition of a Raman microscope at the Skidaway Institute of Oceanography. Lead PI Jay Brandes, Co-PIs, C. Buck, M. Frischer, D. Ohnemus, and W. Savidge. \$207,500. November 2019 – October 2021.
- New York State Department of Environmental Conservation
ARMOR: A new tool for managing the spread of invasive aquatic species in New York. Lead PI Sandra A. Nierzwicki Bauer, Co-PI M.E. Frischer. \$78,134. April 1, 2019 – March 31, 2022.
- NOAA (GA Sea Grant)
Shrimp Black Gill in Georgia. Lead PI Marc E. Frischer. \$209,657. February 1 2018 – January 31, 2020.
- NOAA (GA DNR) Coastal Incentive Grant Program (CIG) Cycle 20. Black Gill in the Southeast Shrimp Fishery. \$125,362 (total project cost \$250,725). Oct 2016 – Sept 2018.
- GA Sea Grant (NOAA).
Black Gill in Georgia Shrimp: Causes and Consequences. Lead PI Marc E. Frischer. \$139,171 (total project cost \$215,400). February 1 2016 – January 31, 2018.
- NSF (Biological Oceanography)
Collaborative Research: The cryptic diet of the globally significant pelagic tunicate *Doliolotta gegenbauri* (Uljanin, 1884). \$725,736 (\$535,533 UGA portion). February 2015 – January 2018.
- NSF (FSML)
FSML: Acquisition of instrumentation at the Skidaway Institute of Oceanography to establish a laboratory for Imaging Microbial Ecology (LIME). \$226,557 (Total Project Cost). July 2016 – June 2018.
- NOAA, Georgia Sea Grant
Black Gill Disease in Georgia Shrimp: Causes, Distribution and Transmission. Award NA14OAR4170084. \$139,347 (total project with matching contributions \$245,019). February 2014 – January 2016.
- NSF (FSML)
FSML: Acquisition of a next generation high throughput DNA sequencer (Ion Torrent) for the Skidaway Institute of Oceanography. \$118,690. September 2012 – August 2014.
- Arctic LLC
How will marine food webs in the coastal Arctic respond to increased runoff associated with permafrost melt? Pre-proposal. \$33,211. June 2012 – September 2012.
- NSF (Division Environmental Biology – DEB)
Collaborative research: Is the export of ancient, labile carbon from glacial ecosystems driven by the deposition of fossil fuel combustion byproducts? \$224,777 (SkIO portion). Lead PI Aron Stubbins. March 2012 – February 2014.
- NSF (Long Term Research Environmental Biology- LTREB). Patterns of ecosystem function and trophic status in well mixed subtropical estuaries undergoing anthropogenic modification. \$445,645. April 2006 – March 2011. (Lead PI was P. Verity, deceased Dec 2009, transferred to Frischer in 2010).
- NSF (Biological Oceanography)
Fecal pellets of doliolids and copepods: two different microworlds? \$585, 207. January 2011 – December 2013.
- NSF (Arctic Natural Science) Collaborative Research: Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the western coastal Arctic? \$351,776

- (SkIO portion). P. Yaeger (Lead PI, UGA), D. Bronk (VIMS). September 2009 - August 2012
- NSF (ODGE) Collaborative Project: Enhancing Diversity in Geoscience Education through Coastal Research in a Port City (EDGE) Track 2. \$400,873 (SkIO Portion). July 2009- June 2014.
- NSF (GK12 Program). Collaborative: New GK12: Building ocean literacy in a coastal community through science education and estuarine monitoring. \$458,070 (SkIO Portion). Co-PI P.G. Verity (at SkIO) lead PI C. Pride (at SSU). 2009-2014.
- US Department of Interior Bureau of Reclamation. Moderation of the Early Detection of *Dreissena* Mussels in the West. \$29,347. 21-22 January 2009 – Denver Colorado.
- NSF Biological Oceanography. Doliolid Blooms: What are the Driving Variables? Investigations of Trophic Interactions; \$608,820; 1/1/2009-12/31/2012.
- US Department of Interior Bureau of Reclamation. Parasite Discovery, Detection, and Potential Biological Control of the Quagga Mussel \$74,975. 2008.
- NOAA (GA DNR) Coastal Incentive Grant Program (CIG) Cycle XI. Viral tracers as sentinels of septic system integrity and suitability in coastal Georgia. Subcontract with Paul Work (GIT). \$51,112. Oct 2008 – Sept 2011.
- US Department of Interior Bureau of Reclamation. Molecular Analysis of Plankton Samples for Zebra Mussel Larvae. Open Contract.
- NOAA; Water Quality Evaluation and Monitoring Program in the Gray's Reef National Marine Sanctuary; \$29,930; 1/1/2005-12/31/2005.
- NOAA; The Role of Metal Contamination in the Proliferation of Antibiotic Resistance in Coastal Water-Borne Pathogens; \$534,311 (SkIO portion - \$60,013); 10/2004 – 9/2007; Co-PIs Ramunas Stepanauskas (PD), J. Vaun McArther, Travis C. Glenn, and Charles H. Jagone.
- NOAA; (GA DNR) Coastal Incentive Grant Program (CIG) Cycle VII. Biomonitoring of the Georgia Coast: Oysters as Sentinels of Coastal Water. \$248,236; 1/2005 – 12/2008. Co-PI K.A. Maruya.
- NOAA; (GA DNR) Coastal Incentive Grant Program (CIG) Cycle VII. Microbial Indexing of Saltmarsh Health and Recovery: Development of a Health/Productivity Index. 288,078; 1/2005 – 12/2008; Co-PIs J. King, D. Hoskins, C. Curran
- EPA; Section 319(h) Application. Vernon Basin Fecal Bacteria Assessment and TMDL Implementation Project. \$450,000 (SkIO \$270,000). Co-PI R. Scanlon.
- DOE; Molecular Approaches for In Situ Studies of Nitrate Utilization by Marine Bacteria; \$1,200,000; 11/2003 – 10/2006; Co-PIs M.G. Booth, P.G. Verity, D. Bronk, M.G. Gilligan
- NOAA; Development of Molecular Diagnostics to Allow Studies on the Life History and Transmission of a Dinoflagellate Parasite Infecting Estuarine Crabs; \$222,123; 1/01/03 – 12/31/05. National Sea Grant Biotechnology Program.
- DOE; Third Annual BI-OMP Investigators Workshop; 2001; \$20,400.
- NSF; BIOCOMPLEXITY: Bio-Feedback Basis Of Self Organization in Planktonic Ecosystems: *Phaeocystis* as a Model Complex Adaptive System; \$2,600,000; 2000–2005; Co-PI's P.G. Verity (senior), M. Hay and B. Patten.
- NSF; BIOCOMPLEXITY: Collaborative Research: Microbial and Nutrient Controls in Mangrove Ecosystems; \$4,500,000; 1999-2004; Co-PI's I.C. Feller (senior), R. Ulanowicz, J.M. Cheeseman, M.L. Fogel, M.E. Jacobson, S.B. Joy, C.E. Lovelock, K.L. Mckee, and C.A. Shearer.
- DOE Molecular Approaches for In Situ Studies of Nitrate Utilization by Marine Bacteria (Renewal). \$1,200,000. 12/2003-11/2006. Co-PI's P.G. Verity, M.G. Booth, and D.B. Bronk

- NSF: Collaboration to Integrate Research and Education in Marine Science. \$678,217 (SkIO); \$872,386 (SSU).; 2003-2008 Co-PI's P.G. Verity (SkIO); M.R. Gilligan, C.I. Franklin, J.R. Richardson (SSU).
- DOE; Molecular Approaches for *In Situ* Studies of Nitrate Utilization by Marine Bacteria; \$1,451,507; 2000-2003; Co-PIs M.G. Booth, P.G. Verity, D. Bronk, M.G. Gilligan. 11/2000 – 10/2003
- NSF; Patterns of natural variability in the physiologic status of marine bacteria; \$320,000; 1999-2002; Co-PI, P.G. Verity
- NSF; Distinguishing Between Living and Nonliving Bacteria in the Marine Environment: Evaluation of a Combined Molecular Probe and Vital Staining Procedure; \$150,000; 1997-1998; Co-PI, P.G. Verity.
- DOE; Molecular approaches for in situ identification of nitrate utilization by marine bacteria and phytoplankton; \$1,200,000; 1997-2000; Co-PI's, P.G. Verity, J. Zehr, D. Bronk, M.G. Gilligan.
- ONR; Biogeochemical factors affecting microbial transformation of co-occurring contaminants in sediments from a saltmarsh superfund site; 1997-2000; \$450,000; Co-PI's, J. Kostka, K. Maruya.
- ONR; Genetic regulation and anaerobic microbial catalysis of mixed waste bioremediation; ASSERT AWARD; \$194,044, (co-PI J.E. Kostka, K. Maruya)
- US EPA HSRC; Interactive roles of microbial and *Spartina* populations in mercury methylation processes in bioremediation of contaminated sediments in salt-marsh systems; 10/1/98-9/30/2000, EPA-HSRC, \$105,731, (co-PI J.E. Kostka, M.F. Saunders)
- South Carolina Sea Grant; Microbial Indicators and Phytoplankton and Bacterial Communities as Evidence of Contamination Caused by Changing Land Use Patterns; \$65,000; 1998; Co-PIs M. Fletcher, G.I. Scott, P.G. Verity, and K.A. Maruya.
- Georgia Coastal Incentive Grants Program: Coastal; Disease Database for Georgia Fishery Resources; 1998; \$5,000.
- NMFS; Use of genetic probes and artificial recruit collectors to monitor and enhance the success of bay scallop reseeded programs; 1997-1998; \$87,000; Co-PI, N. Blake.
- NY Sea Grant; Optimizing zebra mussel control and preventing dispersal through improved veliger detection using an rRNA probe; 1997-1999; \$120,000; Co-PI's, S.A. Nierzwicki-Bauer, C. Kraft.
- FL DEP; Development of a specific genetic probe for the hard clam, *Mercenaria mercenaria*; 1998-1999; \$40,000.
- NSF; Collaboration to Integrate Research and Education in Marine and Environmental Science and Biotechnology; 1998-2001; \$1,484,844; Co-PI's PV Verity, M.R. Gilligan, C.I. Franklin, J.R. Richardson
- NY Sea Grant; Development and Utilization of a genetic probe for zebra mussels; 1995-1996; \$187,000; Co-PI. S.A. Nierzwicki-Bauer.
- .
- *** Several Miscellaneous and Continuing Contracts with Florida DEP, USGS, and the Darrin Freshwater Institute (Rensselaer Polytechnic Institute) for genetic studies of bivalves. (Since 1998; ~\$100,000)

PROPOSALS PREPARED (Since 1997)

2024 None
2023 4 proposals submitted (US)

2022 2 proposals submitted (US)
2021 2 proposals submitted (US)
2020 3 proposals submitted (US)
2019 10 proposals submitted (US)
2018 3 proposals submitted (US)
2017 5 proposal submitted (US), 1 International (Austria).
2016 4 proposals submitted (US)
2015 5 proposal submitted (US)
2014 5 proposals submitted (US), 2 proposals submitted (Norway), 1 proposal submitted (EU, Spain)
2013 4 proposal submitted (US), 2 proposals submitted (Norway)
2012 8 proposals submitted (US), 1 proposal submitted (Norway).
2011 6 proposals submitted (US), 2 proposals submitted (Norway).
2010 5 Proposals submitted (US); 4 Proposal submitted (Norway); 2 Proposals submitted, as private consultant.
2009 8 Proposals submitted (US); 5 Proposals Submitted (Norway)
2008 12 Proposals submitted
2007 11 Proposals submitted
2006 6 Proposal submitted
2005 6 Proposals submitted
2004 11 Proposals submitted
2003 9 Proposals submitted
2002 11 Proposals submitted
2001 10 Proposal submitted
2000 12 Proposals submitted
1999 13 Proposals submitted
1998 12 Proposals submitted
1997 8 Proposals submitted

Proposals Prepared (Since 2000)

2024 None

2023

New York Department of Environmental Conservation (Invasive Species Research – DEC01-ISGP4-2023)

ARMOR II: A new tool for managing the spread of invasive aquatic species in New York. Lead PI, Sandra A. Nierzwicki Bauer (RPI), Co-PI, Jeremy Farrell (RPI), Co-PI Thilanka Munasinghe (RPI), Co-PI (subcontract), Marc E. Frischer. \$82,181 (UGA portion, \$11,009). April 2024 – March 2025. (*Rejected without review due to upload error during submission*)

Overall Objective: The overall objective of the ARMOR II project is the development of a real-time predictive model that can be used improve the efficiency and efficacy of detecting and mitigating new introductions of invasive species by small watercraft into New York water bodies.

Georgia Sea Grant (NOAA). In Situ Sentinel Shrimp – A Novel eDNA-Based Approach for Biodiversity Assessment of Georgia’s Complex Estuarine Systems. (Pre-Proposal). \$149,383. February 2024 – January 2026. Lead PI, M.E. Frischer. Co-PI Larry Bowman (Univ of Tenn).

Overall Objective: The proposed project will develop a novel eDNA-based approach to estimate biodiversity in Georgia's waters and to establish baselines needed to manage invasive species, endangered species, and shrimp disease threats.

NSF (Ocean Instrumentation). Equipment: Oceanographic Instrumentation 2023 UGA/SkIO RV Savannah. \$184,619. April 2023 – March 2025. Lead PI, M.E. Frischer. Co-PIs, Adam Greer and John Bichy.

Overall Objective: This project will purchase and make available for general shared-use a multiple opening and closing net system optimized for use in shallow productive coastal waters and deployable by smaller research vessels including the RV Savannah at the Skidaway Institute of Oceanography where the net system will be housed and maintained. The project will purchase a MOCNESS-1/4 net system manufactured by Biological Environmental Sampling Systems, Inc.

2022

NSF (BIO OCE). Do fine-scale water column structure and particle aggregations favor gelatinous-dominated food webs in subtropical continental shelf environments? \$1,444,777. January, 2024 – December, 2026. Lead PI, Adam Greer. Co-PIs, Marc Frischer, Jay Brandes, Laura Treible.

Overall Objective: In this proposal, utilizing a combination of novel field-based in situ tools and methodologies, we will explore the hypothesis that oceanographic mechanisms concentrating phytoplankton or detrital aggregates into layers or patches play a critical role in determining the community composition of zooplankton on continental shelves.

NSF (FSML). Equipment: FSML: Acquisition of an isotope ratio mass spectrometer with liquid chromatography and elemental analyzer interfaces at the Skidaway Institute of Oceanography. \$404,297. May 1, 2023 – April 30, 2025. Lead PI, Jay Brandes. Co-PIs, Marc Frischer, Clark Alexander, Natalie Cohen.

Overall Objective: Proposal is to fund an isotope ratio mass spectrometer plus Elemental Analyzer, nano-EA, and Liquid chromatography interfaces.

2021

NOAA (Georgia Sea Grant). Ascidians, Georgia's Next Aquaculture Product? Lead PI Marc E. Frischer, Co-PIs: Natalie Cohen and Thomas Bliss. \$149,555 (request) \$74,789 (match), \$224,344 (Total). February 1, 2022 – January 1, 2024. (*Declined*).

Georgia Department of Natural Resources, Coastal Resources Division. eRFP for Shrimp Black Gill research. The influence of environmental factors in shrimp black gill: Management and fishery adaptation options? Lead PI Marc E. Frischer, Co-PI Jeb Byers. \$99,383.74. February 1, 2022 – January 1, 2024. (*Awarded*).

2020

Georgia Environmental Protection Division (Watershed Protection Branch, Nonpoint Source Program). TRASH TMDL for the Vernon River Watershed. Lead PI: Laura Walker (City of Savannah). Co-PI M.E. Frischer \$5,040 (UGA budget). Total request, \$53,000, total project cost \$ 88,500). January 2021 – March 2022. (*Declined*)

NSF (BIO/IOS)

EAGER: Cross-scale exploration of evolutionary mechanisms. Lead PI: Bradley Davidson, Co-PI M.E. Frischer. \$104,935 (UGA budget). October 1, 2020 – September 30, 2022. (*Awarded*)

- NSF (BIO OCE)
The significance of doliolid microbial interactions: Do doliolids fundamentally alter the trophic structure and productivity of sub-tropical continental shelf food webs? Lead PI: Marc E Frischer, Co-PIs J.A. Brandes and A.T. Greer. \$1,080,019. September 1, 2020 – August 31, 2023. (*Awarded*)
- 2019**
- NSF (DEB – Evolution and Ecology of Infectious Diseases)
Cross-scale effects of temperature on an emerging marine parasite. Lead PI James (Jeb) Byers, Co-PIs: Marc E. Frischer and Richard J. Hall. \$2,247,795. August 1, 2020 – July 31, 2025. (*Declined*).
- NSF (BIO OCE)
Hidden Structures: The importance of thin layers and particle aggregations in doliolid bloom formation on productive subtropical continental shelf environments. Lead PI Adam T. Greer, Co-PIs Marc E. Frischer and Jay Brandes. \$1,107,974. February 1, 2020 – January 31, 2024. (*Declined*).
- NSF (FSML)
FSML: Acquisition of a Raman microscope at the Skidaway Institute of Oceanography. Lead PI Jay Brandes, Co-PIs, C. Buck, M. Frischer, D. Ohnemus, and W. Savidge. \$207,500. November 2019 – October 2021. (*Awarded*)
- NOAA (Georgia Sea Grant). Optimizing Georgia’s Shrimp Fishery in the Age of Black Gill. Lead PI: Marc E. Frischer, Co-PIs: James (Jeb) Byers, Richard Hall, Kyle Johnsen. \$149,741 (request), \$81,459 (match). February 1, 2020 – January 31, 2022. (*Awarded*)
- University of Georgia (President’s interdisciplinary Seed Grant Program). Mitigating emerging disease impacts in fisheries: Adaptive strategies to ensure a safe, healthy seafood supply. Lead PI: James (Jeb) Byers, Co-PIs: Marc E Frischer and Richard Hall. \$131,570. (*Awarded*)
- NOAA (National Sea Grant – Exploring New Aquaculture Opportunities). START: Sessile Tunicates: An Aquaculture Resource Treasure. Lead PI Marc E. Frischer, Co-PIs: Thomas Bliss, Adam Stemle, Gary Burtle, Bryan Fluech, Lauren Stefaniak, Danny Gleason. \$99,970 (request), \$58,181 (match), \$158,151 (Total). September 1, 2019 – August 31, 2020. (*Declined*)
- NSF (BIO OCE)
Collaborative Research: The significance of microbial interactions in the life and ecology of the globally significant pelagic tunicate *Doliolletta gegenbauri*: A trophic twist. Lead PI Marc E. Frischer, Co-PI Jay Brandes. Collaborative Co-PIs Amanda Kaltenberg and Carol Pride, Savannah State University. \$759,800. Sept 2019 – Aug 2022. (*Declined*).
- New York Department of Environmental Conservation (Aquatic Invasive Species Spread Prevention DEC01-ISGP1a-2019)
ARMOR: A new tool for managing the spread of invasive aquatic species in New York. Lead PI, Sandra A. Nierzwicki Bauer (RPI), Co-PI, Jeremy Farrell (RPI), Co-PI (subcontract), Marc E. Frischer. \$78,134 (UGA portion, \$18,993). April 2019 – March 2020. (*Awarded*)
- NOAA (GA Sea Grant)
Optimizing Georgia’s Shrimp Fishery in the Age of Shrimp Black Gill (preliminary proposal) - INVITED. Lead PI, Marc E Frischer, Co-PIs James (Jeb) Byers, Richard Hall, and Kyle Jensen. Estimated Budget (Requested from GASG, \$149,094, Cost Share, \$118,948). Feb 1, 2020 – January 31, 2022.
- NOAA (GA Sea Grant)
Assessing the Feasibility and Value of Real-time Water Quality Monitoring in the Coastal Environment (preliminary proposal) – INVITED.

Lead PI Russel Clark (GT), Co-PI's Kimberly Cobb (GT) and Marc E Frischer. Estimated Budget (Requested from GASG, \$??, Cost Share, \$??). Feb 1, 2020 – January 31, 2022.

2018

NSF (BIO OCE)

Collaborative Research: The dolphin microbiome. Lead PI. Collaborative PI, Tara Cox, Savannah State University. \$507,331. March 2019 – February 2022. (*declined*).

NSF (BIO OCE)

Collaborative Research: The significance of microbial interactions in the life and ecology of the globally significant pelagic tunicate *Dolioletta gegenbauri*: A trophic twist. Lead PI Marc E. Frischer. Collaborative Co-PIs Amanda Kaltenberg and Carol Pride, Savannah State University. \$727,485. Sept 2018 – Aug 2021. (*declined*).

GA DNR Coastal Incentive Grant Program (CIG) Cycle 21.

Partnering with Ecotourism to Enhance Coastal Literacy and Public Access to Georgia's Coastal Resources. Lead PI Marc E. Frischer. \$315,994 (total project cost). Requested federal funds \$155,664. October 1, 2018 – September 30, 2020. (*awarded*).

2017

NOAA (GA Sea Grant)

Shrimp Black Gill in Georgia (Full Proposal). Lead PI Marc E. Frischer. \$209,657. February 1 2018 – January 31, 2020.

NOAA (GA Sea Grant)

Shrimp Black Gill in Georgia (Preliminary Proposal). Lead PI Marc E. Frischer. Budget not specified. February 1 2018 – January 31, 2020.

NSF Biological Oceanography (RUI)

Collaborative: New Approaches for Quantifying Coral Larval Supply in the Caribbean. Co-PIs, D. Gleason and M. Weissburg. \$517,469 (UGA).

US EPA. (Georgia SEED Program)

Fecal Coliform Dynamics with the Coastal Region of the Ogeechee River Basin. January 1, 2018 – December 1, 2019. Total award request \$130,217.

NSF (DEB Ecosystem Science Program)

Preliminary Proposal: Collaborative: The Combined Stressors of Cultural Salinization and Eutrophication - A New Explanation for Cyanobacterial Dominance in Cool Low Nutrient Lakes? Lead PI at RPI S.A. Nierzwicki Bauer. Preliminary Proposal, budget not specified.

INTERNATIONAL 2017

FWC (Austrian National Science Foundation)

Is *Bythotrephes* not invasive at home due to prey adaption (English translation). Lead PI. Radka Ptacnikova. No Budget. We will host postdoctoral research associated with this project.

2016

NSF (EAGER).

Quantifying Coral Larval Supply in the Caribbean. With Danny Gleason. (\$120,000).

US EPA (Georgia SEED Program).

Wilshire Canal Sediment Legacy Bacteria Identification and Best Management Practices for their Removal in Canal Drainage System . UGA (\$30,000) total project \$80,000).

NSF (FSML)

FSML: Acquisition of instrumentation at the Skidaway Institute of Oceanography to establish a laboratory for Imaging Microbial Ecology (LIME). \$226,557 (Total Project Cost). July 2016 – June 2018.

NSF (DEB Ecosystem Science Program)

Preliminary Proposal: Collaborative: The Combined Stressors of Cultural Salinization and Eutrophication - A New Explanation for Cyanobacterial Dominance in Cool Low Nutrient Lakes? Lead PI at RPI S.A. Nierzwicki Bauer. Preliminary Proposal, budget not specified.

GA DNR Coastal Incentive Grant Program (CIG) Cycle 20.

Black Gill in the Southeast Shrimp Fishery. Lead PI Marc E. Frischer. \$250,725 (total project cost). Requested federal funds \$125,362. October 1, 2016 – September 30, 2018.

2015

GA Environmental Protection Division (EPD). Fecal Coliform Dynamics within the Coastal Region of the Ogeechee River Basin. Lead PI L. Walker (City of Savannah). Total project cost \$180,000 (request \$70,000, match \$70,000, cash \$40,000), UGA-SkIO (request \$35,000, match \$16,400). February 1, 2016 – December 1, 2017.

GA Sea Grant (NOAA). Black Gill in Georgia Shrimp: Causes and Consequences. Lead PI Marc E. Frischer. \$139,171 (total project cost \$215,400). February 1 2016 – January 31, 2018. *Awarded.*

GA DNR Coastal Incentive Grant Program (CIG) Cycle 18.

Science Supporting New Policy: Bacteriophage tracking of on-site waste water treatment facilities (septic systems) integrity in coastal Georgia. Lead PI Marc E. Frischer. \$273,546.65 (total project cost). Requested federal funds \$136,771.23. *Declined.*

GA Sea Grant (NOAA). Preliminary Proposal: Black Gill in Georgia Shrimp: Causes and Consequences. Lead PI Marc E. Frischer. Estimated \$136,891 (total project cost \$220,215). February 1 2016 – January 31, 2018. *Invited.*

NSF (DEB Ecosystem Science Program)

Preliminary Proposal: Collaborative: The Combined Stressors of Cultural Salinization and Eutrophication - A New Explanation for Cyanobacterial Dominance in Cool Low Nutrient Lakes? Lead PI at RPI S.A. Nierzwicki Bauer. Preliminary Proposal, budget not specified. *Invited.*

2014

NSF (BIO OCE)

Collaborative Research: The cryptic diet of the globally significant pelagic tunicate *Doliolletta gegenbauri* (Uljanin, 1884). Lead PI Marc E. Frischer. Collaborative Co-PI Deidre M. Gibson, Hampton University. \$535,553. Feb 2015 – Jan 2018. *Recommended for Funding.*

NSF (Research Coordination Network)

Decapod Crustacean Transcriptomics Research Coordination Network. Lead PI Donald L. Mykles. Frischer, Project Collaborator. Submitted August 2014. *Declined but in negotiation to join an existing RCN.*

NSF (GEO/OCE - Education & Human Resources - Ocean Sciences)

Bridge to Research in Marine Sciences: A Summer REU Program in Savannah, Georgia. Lead PIs at Savannah State University T. Cox and C. Hintz. Frischer, Frischer, Project Collaborator. \$542,783 (budget all at SSU). March 2015 – February 2020. *Recommended for Funding.*

NSF (ARC)

Collaborative Research: Does more equal less? How will pelagic microbial food webs respond to increased terrestrial organic matter inputs from a thawing western Arctic? \$1,745,219. Jan 2015 – Dec 2018. *Declined.*

NSF (DEB Ecosystem Science Program)

Preliminary proposal: Is Salt the New P? The Combined Stressors of Cultural Salinization and Eutrophication – A New Explanation for Cyanobacterial Dominance in Cool Low Nutrient Lakes? Lead PI at RPI S.A. Nierzwicki Bauer. Preliminary Proposal, budget not specified. *Not Invited.*

INTERNATIONAL 2014

Norwegian Research Council (FREBIO)

Trophodynamics of marine microbial ecosystems during a coastal bloom: high temporal resolution sampling and next-generation sequencing approaches. (HYPERBLOOM). Lead PI C. Troedsson. *Declined.*

Norwegian Research Council (HAVET OG KYSTEN)

TROPHISH: Variability in trophic transfer efficiencies and consequences for fisheries production in coastal systems. Lead PI A. King. *Declined.*

European Union (Spain)

Effects of increased CO₂ and UV on Fe and Cu- mediated oxidative stress on the plankton food web productivity: Study at the ecosystem level (mesocosms). 256,000 euros. Lead PI M. Segovia Azcorra. Jan 2015 – Dec 2018. *Pending.*

2013

NSF (BIO OCE)

Collaborative Research: The geo-metabolomics of a tidal salt marsh: A molecular examination of microbial phylogeny, functional diversity and carbon cycle function. Lead PI Thais Bittar. Co-PI M.E. Frischer. \$501,803. Feb 2014 – Jan 2017. *Declined.*

NOAA, Georgia Sea Grant

Black Gill Disease in Georgia Shrimp: Causes, Distribution and Transmission. \$139,347 (total project with matching contributions \$245,019). February 2014 – January 2016. *Awarded*

NSF (BIO OCE)

Zooplankton Response to Future Ocean Change in Upwelling Systems (ZOO-FOCUS). Lead PI Jens C. Nejstgaard. Co-PI M.E. Frischer. \$788,738. Jan 2014 – Dec 2017. *Declined.*

NSF (DEB)

Preliminary proposal: Synergistic effects of salinization and changing inorganic to organic nutrient ratios (SION) on planktonic ecosystems. Lead PI at SkIO Stella Berger, Co-Pis Frischer and Nejstgaard. Lead PI at RPI S.A. Nierzwicki Bauer. Preliminary Proposal, budget not specified. *Declined.*

NORWAY 2013

Norwegian Research Council (NRC) HAVKYST
Metagenetics in marine benthic diversity monitoring (METAMON) Lead PI Thomas Dahlgren. 6 979 000 NOK (~1.14 million USD) *Awarded*.

Norwegian Research Council (NRC) HAVKYST
Effects of colored Dissolved Organic Matter In Norwegian fjord ecosystems (DOMINO)
Lead PI Paolo Simonelli. 8 362 000 NOK (~1.4 million USD) *Declined*.

2012

Belmont Forum and G8 Research Councils Initiative on Multilateral Research Funding –
International Opportunities Fund (Freshwater Security Theme)

Combined effects of climate change and acidification: regional responses of freshwater systems in a global perspective (EsCARGlo). Lead PI Sandra A. Nierzwicki-Bauer (RPI). Co-PIs M.E. Frischer and J.C. Nesjgaard (SkIO). Several others from RPI and 4 international partners. Total project cost 569 K€. Aug 2013 – July 2016. *Declined*.

NSF (ARC)

Collaborative Research: DOES MORE EQUAL LESS? How Will Pelagic Microbial Food Webs Respond To Increased Terrestrial Organic Matter Inputs From A Melting Western Arctic? Lead PI Marc E. Frischer (SkIO). Co-PIs J.C. Nejstgaard (SkIO), R. Sipler (VIMS). \$1,210,010 (SkIO portion). *Declined*.

Arctic LLC

How will marine food webs in the coastal Arctic respond to increased in the Alaska portion of the ALCC. Lead PI Rachel Sipler (VIMS). Co-PIs, Bronk, D.A., (VIMS), Frischer, M.E., (SkIO) Nejstgaard, J.C., (SkIO) and Sutton, T.M. (Univ Alaska, Fairbanks). \$342,998 (\$112,538, SkIO portion). *Pending (Award Dependent on Availability of Matching NSF funds)*.

The Camille and Henry Dreyfus Foundation, Inc. Postdoctoral program in environmental chemistry, 2012.

Molecular level associations between dissolved organic matter (DOM) and bacterial communities in \$60,000. *Declined*.

Belmont Forum and G8 Research Councils Initiative on Multilateral Research Funding –
International Opportunities Fund (Freshwater Security Theme). PRE-PROPOSAL

Combined effects of climate change and acidification: regional responses of freshwater systems in a global perspective (EsCARGlo). Lead PI Sandra A. Nierzwicki-Bauer (RPI). Co-PIs M.E. Frischer and J.C. Nesjgaard (SkIO). Several others from RPI and 4 international partners. *Invited*.

US Department of Education (Title II, Part A, Improving Teacher Quality Grants Program)

Rivers to Reef Educator Workshop. Requested \$59,338 (total). SkIO portion \$7,070. June – July 2013. With Grays Reef and Georgia Aquarium. *Declined*.

NSF (DEB – LTREB)

Preliminary Proposal: Patterns of ecosystem function and trophic status in a well-mixed subtropical estuary: Response to climate change and other ongoing anthropogenic influences. Preliminary Proposal, budget not yet specified. *Declined*.

NSF (FSML)

FSML: Acquisition of a next generation high throughput DNA sequencer (Ion Torrent) for the Skidaway Institute of Oceanography. \$118,690. September 2012 – August 2014. *Awarded*.

NORWAY 2012

Norwegian Research Council (NRC) FEIMEDBIO

Settling, growth and feeding impact of the biofouling Tunicate, *Ciona intestinalis*, in a Norwegian coastal system. Lead PI Christoffer Troedsson. 7 873 000 NOK (~1.3 million USD) *Awarded*.

2011

- NSF (Arctic Natural Sciences)
Collaborative Research: Does more equal less? How will pelagic microbial food webs respond to increased humic carbon from a melting western Arctic?
\$1,210,010. June 2012 – May 2016.
- NSF (Biological Oceanography)
RUI Collaboration: Caribbean coral recruitment in the contemporary reef landscape: larval supply, reef attractiveness, and post-settlement survival. Requested \$506,083. . January 2012 – December 2014.
- NSF (Biological Oceanography)
Collaborative Research: PHAEOFUTURE: *Phaeocystis* and increasing CO₂ -- Counterintuitive Positive Effect on Food Web Transfer in High Latitude Seas? Requested \$753,593. February 2012 -- January 2015.
- NSF (Chemical Oceanography)
Collaborative research: Geochemistry and reactivity of exported Congo River organic matter. Requested \$351,946 (SkIO portion). Lead PI Aron Stubbins. January 2012 – December 2014.
- NSF (Long Term Research Ecology Biology).
LTREB Renewal: Patterns of ecosystem function and trophic status in well-mixed subtropical estuaries: Response to ongoing anthropogenic influences. Requested \$476,822. January 2012 – December 2016.
- NSF (Division Environmental Biology – DEB)
Collaborative research: Is the export of ancient, labile carbon from glacial ecosystems driven by the deposition of fossil fuel combustion byproducts? Requested \$224,777 (SkIO portion). Lead PI Aron Stubbins. January 2012 – December 2013.

2010

- US Department of Education (Title II, Part A, Improving Teacher Quality Grants Program)
Rivers to Reef Educator Workshop. Requested \$66,316 (total). Skio portion \$11,383. June – July 2011. With Grays Reef and Georgia Aquarium.
- NSF (Ocean Acidification)
Ocean Acidification Category 1: Response of high latitude pelagic food webs to an acidified ocean. Requested \$588,542 (SkIO portion). January 2011 – December 2012.
- NSF (Arctic Natural Sciences)
Collaborative Research: Will climate-driven shifts in nitrogen sources influence coastal Arctic spring plankton communities? Requested \$940, 697 (SkIO portion) January 2011 – December 2013
- NSF (Biological Oceanography)
Fecal pellets of doliolids and copepods: two different microworlds? Requested \$585, 207. January 2011 – December 2013
- US Department of Education (Title II, Part A, Improving Teacher Quality Grants Program)
Rivers to Reef Educator Workshop. Requested \$66,316 (total). Skio portion \$11,383. June – July 2010. With Grays Reef and Georgia Aquarium.

NORWAY 2010

- Norwegian Research Council (NFR – FRIBIO)
DNA from archival fixed tissues – New Approaches (Rorskerprosjekt). Lead PI Christofer Schander.
- Norwegian Research Council (NFR – FRIBIO)
Response of pelagic food webs to warmer, acidified oceans. Lead PI Eric Thompson.
- Norwegian Research Council (NFR – FRIBIO)
A novel cross-disciplinary approach to solve an old enigma: the food-web transfer of the mass-blooming phytoplankter phaeocystis. Lead PI Jens Nejtgaard.
- Norwegian Research Council (NFR)
ZOOplankton on the Move: the role of alien mesozooplankters In Norwegian coastal waters (ZOOM-IN). Lead PI Josefin Titelman.

FRISCHER BIOLOGICAL CONSULTANTS – 2010

- US Fish & Wildlife Service Request for Proposals Implementation of Three Highest Priority Actions in the Quagga-Zebra Mussel Action Plan for Western U.S. Waters (QZAP).
Pilot Laboratory Testing Program For the Early Detection of Zebra and Quagga Mussels in Western U.S. Waters. Requested \$15,000. June 2010 – 2011.
- US Fish & Wildlife Service Request for Proposals Implementation of Three Highest Priority Actions in the Quagga-Zebra Mussel Action Plan for Western U.S. Waters (QZAP).
Two Workshops Addressing Critical Impediments to the Expansion of Western Early Detection Monitoring Programs. Requested \$15,000.

2009

- NSF (Arctic Natural Science) Collaborative Research: Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the wester coastal Arctic? \$351,776 (SkIO portion). P. Yaeger (Lead PI, UGA), D. Bronk (VIMS). September 2009 - August 2012
- NSF (Arctic Natural Sciences)
Collaborative Research: Will climate-driven shifts in nitrogen sources influence coastal Arctic spring plankton communities? Requested \$901,372 (SkIO portion) (Lead PI Frischer). January 2010 – December 2012
- NSF (Ecology of Infectious Diseases)
Collaborative Research: The role of diet, cannibalism and waterborne transmission of protist parasites as epidemic triggers in the generalist estuarine predator *Callinectes sapidus* Requested \$834,019 (SkIO portion) (Lead PI J Byers). June 2009 – May 2013
- NSF (Symbiosis Defense, and Recognition)
Collaborative Research: Ecological Hotspots of Gene Exchange in Estuarine Environments: Emergent Property of *Vibrio*-Oyster Commensalism Requested \$290,450 (SkIO portion) (Lead PI P Sobecky). June 2009 – May 2012
- NSF (Polar Programs)
Collaborative proposal ESCAP II: Grazing mortality of *Phaeocystis antarctica* and related processes. Requested \$248,500 (SkIO portion) (Lead PI K. Tang). April 2010 – March 2013
- NOAA (California Sea Grant)
OPC Preliminary Proposal. Critical coastal areas as natural laboratories: developing new tools to understand the impacts of land-based pollutants on ecosystem health. Requested \$600,000 (total). Lead Institute – U.S. Geological Survey (Lead PI Kathryn Kuivila). SkIO PIs M. Frischer and R. Lee. 2/2010 – 2/2013. Submitted 13 March 2009.

NSF (OCE Biological Oceanography)

The Enigma of Rare *Phaeocystis* Colony Blooms in Subtropical Waters -
Are they Inhibited by Zooplankton? Requested \$648,046 (Lead PI, PG Verity). 1/01/2010 –
12/31/2013.

GA DNR Coastal Incentive Grant Program (CIG) Cycle XII.

Baseline evaluation of dog fecal contribution to water quality and public bathing
safety on Tybee Island public beaches. Requested: Requested \$31,935 (Total
Project Cost \$66,720). Co-PI: Paul Wolff (City of Tybee). 10/2009 – 09/2010.

NORWAY - 2009

Norwegian Research Council (NFR – FRIBIO)

The fate of *Phaeocystis*: molecular in situ quantification of trophic and info-chemical
interactions of a globally significant phytoplankter. (Forskerprosjekt) Application Number:
ES446555. Requested 5915 thousand NOK. January 2010 – December 2013

Norwegian Research Council (NFR – FRIBIO)

Juvenile scallop thermal adaptation: nature or nurture? (Forskerprosjekt)
Application Number: ES446944: Requested 11301 thousand NOK. January 2010 –
December 2013

Norwegian Research Council (NFR – FRIBIO)

Plankton food webs in the future ocean: effects of temperature, CO₂ and
bloom structure. (Forskerprosjekt) Application Number: ES447397
Requested 11071 thousand NOK. April 2010 – March 2013

Norwegian Research Council (NFR – INFRASTRUKTUR)

The Norwegian Marine Mesocosm Centre -An Advanced National Facility for
Environmental and Climate studies on Marine Ecosystems (Annen prosjektstøtte)
Application Number: ES446855 Requested 309000 thousand NOK. January 2010 –
December 2019

Norwegian Research Council (NFR – NORKLIMA)

Will foodwebs in Norway's fjords be more resilient to climate change then currently
predicted? The increased importance of larvaceans. (Forskerprosjekt) Application Number:
ES453276T Requested 5345 thousand NOK. May 2010 – April 2013

2008

NSF (Ecology of Infectious Diseases)

Collaborative Research: The role of diet, cannibalism and waterborne
transmission of protist parasites as epidemic triggers in the generalist estuarine
predator *Callinectes sapidus*. Requested \$834,019 (SkIO Portion). Co-PI Lee
(SkIO), J. Byers (UGA). 6/2009 – 5/2011.

NSF (OCE - OPPORT FOR ENHANCING DIVERSITY)

Collaborative Project: Enhancing Diversity in Geoscience Education through
Coastal Research in a Port City (EDGE) - Track 2. Requested \$400,874 (SkIO
portion). Co-PI P. Verity (SkIO). C. Pride (Lead PI, SSU).

NSF (IOS - SYMBIOSIS DEF & SELF RECOG)

Collaborative Research: Ecological Hotspots of Gene Exchange in Estuarine
Environments: An Emergent Property of *Vibrio*-Oyster Commensalism.
Requested \$290,369 (SkIO portion). Lead PI P. Sobecky (at GSU). 12/2008 –
11/2011.

NSF (GK12 Program)

- Collaborative: New GK12: Building ocean literacy in a coastal community through science education and estuarine monitoring. Requested \$458,070 (SkIO Portion). Co-PI P.G. Verity (at SkIO) lead PI C. Pride (at SSU). 2009-2014.
- NSF (Arctic Natural Sciences)
Collaborative Research: Does competition for nitrogen between autotrophs and heterotrophs control carbon fluxes in the wester coastal Arctic? Requested \$351,776 (SkIO portion). P. Yaeger (Lead PI, UGA), D. Bronk (VIMS). August 2009 - July 2012
- NSF (Arctic Natural Sciences)
Collaborative Research: Will climate -driven shifts in nitrogen sources influence coastal Arctic spring plankton communities? Requested \$901,372 (SkIO portion). D. Bronk (VIMS). August 2009-July 2009.
- US Department of Interior Bureau of Reclamation.
Moderation of the Early Detection of *Dreissena* Mussels in the West. \$29,347. 21-22 January 2009 – Denver Colorado.
- NSF (Antarctic Organisms and Ecosystems)
Collaborative proposal ESCAP-II: Grazing mortality of Phaeocystis Antarctica and related processes. Requested \$134,862 (SkIO Portion), \$366,515 (VIMS Portion). PI K.W. Tang. 2009-2012.
- US Department of the Interior (US Bureau of Reclamation – S&T Program)
Parasite Discovery, Detection, and Potential Biological Control of the Quagga Mussel. Requested \$75,000. 2008
- GA DNR Coastal Incentive Grant Program (CIG) Cycle XI. Viral tracers as sentinels of septic system integrity and suitability in coastal Georgia. Submitted 2/4/2008. Requested \$260,169 (Total Project Cost \$522,802). PI: Paul Work (GT-SAV)
- NSF (Biological Oceanography Feb 15, 2008)
Biological vs. Environmental Controls on Blooms of Phaeocystis Colonies in Subtropical Waters; Why Don't They Occur Regularly? Requested \$621,549. Co-PI P.G. Verity. 2009-2012.
- NSF (Biological Oceanography Feb 15, 2008)
Doliolid Blooms: What are the Driving Variables? Investigations of Trophic Interactions. Requested \$608,820. Co-PIs P.A Paffenhöfer and D.M. Gibson (Hampton University). 2009-2012.
- 2007**
- National Sea Grant (Aquatic Invasive Species Research and Outreach) – Pre-proposal
AISR: Parasite Discovery, Detection, and Potential Biological Control of the Quagga Mussel (*Dreissena bugensis*). Co-PI Daniel Molloy and Kevin Kelly. Estimated Request - \$225,000.
- NSF (Undergraduate Research Program) – Preproposal
URM Preliminary Proposal – Plant-Microbe Interactions: A Research-based Framework to Prepare Ethnically Diverse Undergraduates for Graduate Research. Co-PIs Chandra I. Franklin, Peter G. Verity, Judy Awong-Taylor University
- NSF (Arctic Natural Sciences, Nov 10, 2007)
Collaborative Research: Will Climate-driven Shifts in Nitrogen Sources Influence Coastal Arctic Spring phytoplankton Communities? Co-PI P.G Verity. \$709,815. 2008-2011.

- NSF (Arctic Natural Sciences, Nov 10, 2007)
Collaborative Research: Does Competition for Nitrogen Between Autotrophs and Heterotrophs Set the Upper Limit on Net Community Production in the Pelagic Arctic? Co-PIs Patricia Yaeger & Deborah Bronk. \$330,453 (SkIO Portion) 2008-2011.
- NSF (Biological Oceanography Aug 15, 2007)
Biological vs. Environmental Controls on Blooms of Phaeocystis Colonies in Subtropical Waters; Why Don't They Occur Regularly? Requested \$576,175. Co-PI P.G. Verity. 2008-2011.
- NSF (Major Research Instrumentation)
MRI: Acquisition of an isotope-ratio mass spectrometer facility for east Georgia. Requested \$353,250. Lead PI. J. Brandes. Co-PIs M.E. Frischer, W. Savidge, and S. Wakeham.
- Norwegian Research Foundation (HAVBRUK)
Juvenile scallop performance: nature or nurture? Requested \$9,565,000 NOK. Lead PI Thorolf Magnesen (Univ of Bergen).
- NSF (Microbial Genome Sequencing Program).
EST Sequencing and Comparative Genomics of the Globally Significant Marine Phytoplankton *Phaeocystis globosa*. Requested \$161,260 (SkIO portion). Lead PI A. Allen. Co-PIs J. Badger, P.G. Verity, M. Frischer. Submitted 3/8/07.
- Florida Fish and Wildlife Commission
Development of an 18S rDNA targeted molecular probe for detection and quantification of larval stages of the eastern oyster, *Crassostrea virginica*, in the Pensacola Bay system. Requested \$48,661 (SkIO portion). PI M.E. Frischer. Co-PIs W. Arnold, S. Gieger, and D. Marelli. Submitted February 2007.
- NSF (Environmental Genomics)
Collaborative Research: Freshwater bacteria community response to acidification, a metagenomic approach. Requested \$155,299 (SkIO portion). Lead PI B. Methé (TIGR). Co-PI's M. Frischer and S. Nierzwicki-Bauer.
- GA Sea Grant (Preproposal)
Blue crab health surveillance: An applied science-based tool for managing disease outbreaks in the Georgia blue crab fishery. Requested \$145,583. Lead PI M. Frischer, Co-PI R. Lee.
- GA Sea Grant (Preproposal)
Emerging diseases of Black Sea Bass cultured in southeast United States. Requested \$145,583. Lead PI R. Lee, Co-PI M. Frischer.
- NSF (Biological Oceanography Feb 15, 2007)
Contributions of Growth and Mortality to Patterns of Seasonal Succession in Bacterial Diversity in a Subtropical Salt Marsh Estuary. Requested \$633,867. Co-PI P.G. Verity. 2007-2010.
- 2006** NOAA (CHRP)
Modeling tools and management strategies to address impacts of hypoxia in southeastern estuaries. Requested \$2,248,024. 2007-2012. Lead PI P.G. Verity. Co-PIs S. Bricker, M. Frischer, C. Tilburt, M. Alber, J. Butler, B. Gane.
- NFR (Norwegian Research Council)
Juvenile scallop performance: nature or nurture? Requested 9065000 NOK total (ca. \$1,400,000 USD). Lead PI T. Magnesen (Univ Bergen, Norway), Co-PIs M. Frischer (SkIO, USA), G. Dahle (Inst. Marine Research, Bergen Norway), J-M

- Sevigny (Fisheries and Oceans, Canada), R. Tremblay (University of Quebec, Canada), F. Pernet (Institute Resherche Zones Cotiers, Canada). 2006-2009.
- NSF (Biological Oceanography)
Dynamics of prey-specific DNA in copepod guts and fecal pellets: towards a molecular method for assessing in situ zooplankton feeding. Requested \$673,813. Lead PI M.E. Frischer. Co-PI P.G. Verity and G.A. Paffenhöffer. 2006-2009.
- NSF (Microbial Observatories)
Collaborative Research : Microbial Observatory: Acidified Lakes Microbial Observatory (ALaMO). Requested \$1,715,609 (SkIO Portion \$540,420). SkIO lead PI M.E. Frischer. Co-PI S.A. Nierzwicki-Bauer, C.W. Boylen, and D. Millard. 2007-2011.
- NOAA (MultiStressor Program)
MultiStress07: Disease and Parasite Occurrence as Indicators and Consequences of Stressed Coastal Ecosystems. Requested \$4,994,048 (SkIO Portion \$3,855,431). M.E. Frischer (project director) with 19 Co-PIs. 2007-2012.
- NSF (Arctic National Sciences)
Collaborative Research: Does competition for nitrogen between autotrophs and heterotrophs set the upper limit on net community production in the pelagic Arctic? Requested \$960,417 (SkIO Portion \$342,979). Project PI (P.L. Yager), Co-PIs M.E. Frischer and D.A. Bronk. Aug 2007 – July 2010.
- 2005**
- NOAA Modeling, Prediction, and Management Strategies to Address Nutrient Loading and Hypoxia in Southeastern USA Estuaries. Requested \$1,872,468 (total). Co-PIs P.G. Verity, M. Alber, and S. Bricker.
- NSF Microbial Observatory: Skidaway Estuary Microbial Observatory. Submitted 10/27/2005. Requested \$1,772,657. Co-PI P.G. Verity & E. L. Mann
- NSF Microbial Observatory: Collaborative Research: Microbial Observatory of Mangroves (MOM). Requested \$357,113 (SkIO portion). Submitted 10/27/2005
- NFR Norwegian Research Council. High resolution molecular analysis of Norwegian Great Scallop populations – Different stocks? Submitted June 2005. Requested 560,000 NOK (\$85,000). Co-PI Thorolf Magnesen
- NSF Biological Oceanography. Examination of Variability in Feeding by Individual Copepods Using Molecular Approaches. Submitted 2/14/2005. Requested \$711,302. Co-PI P.G. Verity.
- GA DNR Coastal Incentive Grant Program (CIG) Cycle VIII. Molecular Approaches to the Discovery of Emergent Diseases in Commercial Fish and Shellfish in Coastal Georgia. Submitted 1/2005. Requested \$269,226 (Total Project Cost \$538,453). PI: R.F. Lee.
- 2004**
- NOAA Nutrient Loading and Hypoxia in SE USA Estuaries. Requested \$243,150 (SkIO portion). Submitted 10/24/2004; PD P.G. Verity.
- NSF Causes and Consequences and Nitrification in a Salt Marsh Dominated by Iron Cycling. Requested \$493,022; Submitted 8/15/2004; W.B. Savidge (Lead PI)
- NSF Microbial Observatory: Skidaway Estuary Microbial Observatory. Submitted 8/23/2004. Requested \$1,874,530. Co-PI P.G. Verity
- NSF Microbial Observatory: Collaborative Research: Microbial Observatory of Adirondack Lakes (ALAMO). Requested \$499,876 (SkIO portion). Submitted 8/23/2004.

- NSF Microbial Observatory: Collaborative Research: Microbial Observatory of Mangroves (MOM). Requested \$643,942 (SkIO portion). Submitted 8/23/2004
- Helen V. Froehlich Foundation Lake George Conservation: Basic and Advanced Research to Manage Lake Resources. Requested \$76,381 (SkIO portion). Submitted 5/28/2004. Co-PI C. Alexander.
- NOAA Oceans and Human Health Initiative. The role of metal contamination in the proliferation of antibiotic resistance in coastal water-borne pathogens. Submitted April 2004. Requested \$534,311 (SkIO \$60,013). PI Ramunas Stepanauskas.
- GA DNR Coastal Incentive Grant Program (CIG) Cycle VII. Biomonitoring of the Georgia Coast: Oysters as Sentinels of Coastal Water. Submitted 1/7/2004. Requested \$224,118 (Total Project Cost \$448,236). PI: K.A. Maruya.
- GA DNR Incentive Grant Program (CIG) Cycle VII. Microbial Indexing of Saltmarsh Health and Recovery: Development of a Health/Productivity Index. Submitted 1/8/2004. Requested \$288,078 (Total Project Cost \$871,506). Co-PI: J. King.
- NSF Division of Environmental Biology (DEB). Collaborative Research: Dynamics of Decay: Interactions Among Wood-Rotting Fungal and Bacterial Species and their Impact on Nutrient Cycling on a Floodplain. Submitted 1/9/2004. Requested \$294,748 (Total Project Cost \$708,8920). Project Director: C.A. Shearer, Co-PIs R.D. Fitzhugh, J.P. Schmit.
- NSF Biological Oceanography (OCE). Collaborative Research: Return of the Blue Crab to a Georgia Estuary? Recovery After Near Eradication by the Parasitic Dinoflagellate, Hematodinium. Submitted 2/13/2004. Requested \$386,626 (Total Project Cost \$611,461). Project Director: R.F. Lee, Co-PI D. Hoskins.
- NSF Biological Oceanography (OCE). Is the VSP (Vital Stain and Probe) Technique An Accurate Indicator of Individual Bacterail Cell Activity in the Marine Pelagic Environment. Submitted 2/12/2004. Requested \$470,858 Co-PI P.G. Verity.
- 2003**
- EPA Section 319(h) Application. Vernon Basin Fecal Bacteria Assessment and TMDL Implementation Project. Submitted 6/30/2003. Requested \$270,000 (Total Project Cost \$450,000). PI: R. Scanlon.
- NSF A Molecular Approach to an Old Problem: Quantification of Prey-Specific Feeding by Copepods. \$619,430. Submitted 8/15/2003. Co-PI: P.G. Verity. Collaborator: J.C. Nejstgaard (University of Bergen)
- NSF Microbial Observatory: Response of Estuarine Microbial Communitis to Incipient Eutrophication Associated with Human Activity and Land Development. \$1,066,382. Submitted 7/22/2003. Co-PI P.G. Verity
- NSF Quantitative Discrimination Among Living, Nonliving, Active, and Inactive Bacteria in Estuarine and Shelf Sediments. \$435,316. Submitted 2/15/2003. Co-PI P.G. Verity
- NSF ITR: Application of Support Vector Machine Learning as an Analytical Tool to Quantify and Predict Temporal Patterns in Estuarine Ecosystems. \$2,568,646. Submitted 2/2003. Co PI's P.G. Verity and R. Greenlaw
- NSF Genome Sizing and EST Analysis of the Marine Protist Phaeocystis. \$1,393,967. Co PI's P.G. Verity and L. Medlin
- NYSERDA Interactions Between Acid Deposition, Mercury, and Biota in Adirondack Lakes. \$276,112. Co PI's S.A. Nierzwicki-Bauer.
- DOE Molecular Approaches for In Situ Studies of Nitrate Utilization by Marine Bacteria (Renewal). \$1,525,303. Submitted 2/2003. Co-PI's P.G. Verity, M.G. Booth, and D.B. Bronk.
- NOAA Coastal Habitats Research Program: Recruitment patterns of the Asian green

mussel, *Perna viridis*: influence of biotic and abiotic factors on invasion success. (Pre-Proposal) \$75,000. Submitted 3/2003. Co-PI's. W. Arnold and N. Smith. Florida Sea Grant Program.

2002

- DOE The Impact of Plankton and Microbial Community Structure, Biomass, and Rate Processes on Carbon Export Accompanying Iron Fertilization in the Southern Ocean. \$400,000 (estimated). Submitted 1/22/2002. Co-PI P.G. Verity and J. Anderson.
- NSF A New Approach to an Old Problem: Molecular Quantification of Prey in Copepod Guts and Fecal Pellets. \$665,755. Submitted 2/2002. Co-PI P.G. Verity
- National SeaGrant, Marine Biotechnology Program (Pre-Proposal). Development of Molecular Diagnostics to Allow Studies on the Life History and Transmission of a Dinoflagellate Parasite Infecting Estuarine Crabs. \$123,000 (estimated). Co-PI R.F. Lee. Submitted 2/15/2002
- National SeaGrant, Marine Biotechnology Program (Pre-Proposal). Molecular Microbial Indicators of Eutrophication in Southeastern USA Estuaries. \$289,633 (estimated). Co-PI P.G. Verity. Submitted 2/15/2002
- National SeaGrant, Marine Biotechnology Program (Pre-Proposal). Interactions between the salt marsh grass *Spartina alterniflora* and sediment microbes controlling the fate of heavy metal contaminants in the salt marsh ecosystem. \$300,000 (estimated). Co-PI C. Franklin. Submitted 2/15/2002.
- NOAA: Detection and Management of Long-term Trends in Estuarine Water Quality Related to the Urbanization of Coastal Georgia. \$273,642. Submitted 3/2002. Co-PI P.G. Verity. Georgia Sea Grant.
- DOE: The Impact of Plankton and Microbial Community Structure, Biomass, and Rate Processes on Carbon Export Accompanying Iron Fertilization in the Southern Ocean.
- NSF: Transmission of a Parasitic Dinoflagellate Into Estuarine Crabs. \$377,475 (63 days R/V Savannah requested). Co-PI R.F. Lee. Submitted 2/15/2002.
- NSF: From Cell to Sea: Understanding Processes that Regulate Microbial Structure and Function. \$479,529 (48 days R/V Savannah requested). Co-PI P.G. Verity. Submitted 2/15/2002
- NSF: Collaborative Research: An Interdisciplinary Study of larval Dispersion in a Coastal Lagoon. \$204,367. Co-PI W. Arnold. Submitted 2/15/2002.
- NSF: C-RUI: Are Nutrient and Mercury Cycling Emergent Properties of Interactions Between the Grass *Spartina alterniflora* and Associated Microbial Communities in Saltmarsh Systems? \$444,339 (Collaborative request \$1,273,695). Co-PIs C.Franklin, and J. Richards. Submitted 12/28/2002.

2001

- GA CZM Detection and Management of Long-Term Trends in Estuarine Water Quality Related to the Urbanization of Coastal Georgia. \$273,642. Co-PI P.G. Verity.
- NSF: Collaboration to Integrate Research and Education in Marine Science. \$678,217 (SkIO); \$872,386 (SSU). Co-PI's P.G. Verity (SkIO); M.R. Gilligan, C.I. Franklin, J.R. Richardson (SSU). Submitted May 10, 2001
- NSF: Is the Rate of Uranium Removal in Salt Marsh Sediments Coupled to the Rate of Anaerobic Metabolism? \$235,069. Co-PI H. Windom. Submitted August 15, 2001.
- EPA: Rates of and Controls on Volatile Emissions of Mercury from Salt Marshes. \$658,572. Co-PI H. Windom. Submitted August, 2001.

- GA SeaGrant Why Have Blue Crabs Disappeared from Several Estuarine Marshes in Coastal Georgia? \$121,299. Co-PI. R.F. Lee. Submitted April 27, 2001.
- NSF: ECOHAB: Outbreaks of Hematodinium sp. Disease in Blue Crab Populations in Salt Marsh Estuaries. \$438,703. Co-PI's Richard Lee, Chunyan Li. Submitted January 30, 2001.
- NSF: Biological Oceanography: Collaborative Research: Tracking Marine Invertebrate Larvae: A Multidisciplinary Approach to Elucidate Larval Life History. \$187,136 (Senior PI W. Arnold). Submitted February, 2001.
- GA SeaGrant: Application of Biotechnological Methods to study Plant-microbe Interactions in a Saltmarsh Ecosystem. Preproposal. \$90,000. Co-PI's Chandra Franklin.
- GA SeaGrant: Bacterial Communities as Living Resource Indicators of Coastal Ecosystem Health. Preproposal. \$243,000. Co-PI's P.G. Verity, R. Hodson, J. Sullivan.
- NSF; IGERT: Signals in the Sea. \$2,700,000. Senior PI M.E. Hay

2000

- NSF; BIOCOMPLEXITY: Bio-Feedback Basis Of Self Organization in Planktonic Ecosystems: *Phaeocystis* as a Model Complex Adaptive System; \$2,600,000; 2000–2005; Co-PI's P.G. Verity (senior), M. Hay and B. Patten.
- DOE; Molecular Approaches for *In Situ* Studies of Nitrate Utilization by Marine Bacteria; \$1,451,507; 2000-2003; Co-PIs M.G. Booth, P.G. Verity, D. Bronk, M.G. Gilligan.
- DOE; Third Annual BI-OMP Investigators Workshop; \$20,400.
- NSF: Biological Oceanography: Microbial Responses to Coastal Eutrophication. \$778,758. Co-PI's P.G. Verity.
- NSF; Research Coordination Network: Life, Death and Metabolic Activity in Heterotrophic Marine Bacteria. \$484,943. Co-PI's P.G. Verity, B. Sherr, E. Sherr, and P. del Giorgio.
- NSF; ITR/ACS: Automated Image Analysis and Classification in a Distributed Environment. \$3,037,781. Senior PI P.G. Verity
- NSF; IGERT: Signals in the Sea. \$2,700,000. Senior PI M.E. Hay
- NOAA; LUCES: Use of Sediment Parameters as Indicators of Temporal and Spatial Trends in Land-Use/Ecosystem Response. \$667,526. Co-PI's H.L. Windom, C.R. Alexander.
- NOAA; LUCES: Linkages Between Nutrients, Bacteria, and Phytoplankton as Indicators of Changing Land Use Patterns in SE USA Estuaries. \$597,254.
- SeaGrant; Marine Biotechnology: Development of In Vitro Methods and Genetic Engineering Technology for *Spartina alterniflora* to Assess the Ecological Impact of Heavy Metal Contamination in Saltmarsh Ecosystems. \$150,000. Co-PI C.I. Franklin.
- SeaGrant; Marine Biotechnology: Molecular Microbial Indicators of Nitrogen Eutrophication in Southeastern US Estuarine Environments. \$298,987. Co-PI P.G. Verity
- GRA; Establishment of an Aquatic Molecular Pathology Center. \$540,000. Co-PI's H.L. Windom, R. Lee.

INVITED TALKS & WORKSHOPS

- Georgia Association of Marine Educators (GAME). The fragile food web: mysteries to inspire students. Invited Keynote speaker. October 26, 2024.
- GeeChee Sailing Club. Warming seas and Georgia Shrimp. October 14, 2024.
- Salt Strong Fishing Club. The effects of climate change will affect all of us and in unexpected ways: Shrimp Black Gill – an emerging disease in Georgia's shrimp. September 16, 2024.
- The Mather Invited Guest Speaker Program. Marine Pandemics: It's Not Just People. December 28, 2023. Evanston, Illinois.

- Evening@Skidaway open lecture. Marine Pandemics: It's Not Just People October 11, 2023.
Available at: <https://www.youtube.com/watch?v=vQbEUUv02yQ>
- TEDx Savannah 2023. Where Have Our Shrimpers Gone? May 25, 2023. Available on YouTube
<https://tedxsavannah.com/talks/where-have-our-shrimpers-gone/>
- Georgia General Assembly, Coastal Delegation. Shrimp Black Gill. January 23, 2023.
- Sunrise Rotary Club. Shrimp Black Gill. October 27, 2022.
- Gwinnett Public Library Summer Oceans Presentation Series. Where have Georgia's shrimp gone?
Changes in the Oceans. June 29, 2022. Available at: [youtube.com/watch?v=ZqpMrz_8W58](https://www.youtube.com/watch?v=ZqpMrz_8W58)
- Evening@Skidaway open lecture. Climate change and shrimp black gill – is there a connection?
September 15, 2021. Available at: <https://www.youtube.com/watch?v=8afyAfQ2dKo&t=14s>
- ARMOR: Advanced Response Model for Organism Removal (with Sandra A. Nierzwicki-Bauer and
Jeremy Farrell). Webinar presentation organized by the Invasive Mussel Collaborative
(invasivemusselcollaborative.net/). Webinar available for viewing
at: <https://invasivemusselcollaborative.net/event/webinar-using-boater-data-to-inform-risk-models/>.
October 28, 2020, 80 attendees.
- The Ocean: The Cradle of the Earth's Biodiversity. Evening@Skidaway public lecture. December 10,
2019. Savannah, GA.
- Shrimp Black Gill. Sunrise Rotary Club. November 7, 2019. Savannah, GA.
- Shrimp Black Gill in the South Atlantic Bight. Is Climate Change Responsible? US Forest Service
visit to Skidaway Campus. November 21, 2019. Hosted by Jill Gambill.
- Shrimp Black Gill in Georgia. Georgia Association of Marine Education (GAME) 2019 Annual
Conference. November 8-10, 2019. Savannah, GA.
- Shrimp Black Gill. Georgia Sea Grant Graduate Fellow Onboard Research Panel. September 28,
2018. Savannah, GA.
- Georgia's shrimp fishery in the age of black gill: new approaches to forecast the Georgia fall white
shrimp harvest. Coastal Georgia Research Colloquium '18. Coastal Georgia Center, Savannah,
Georgia. September 12, 2018.
- Zebra mussels in Lake George, NY: History & Current status (with Sandra A. Nierzwicki-Bauer).
Webinar presentation organized by the Invasive Mussel Collaborative
(invasivemusselcollaborative.net/). Webinar available for viewing at:
<https://invasivemusselcollaborative.net/2018/08/24/webinar-case-studies-in-manual-removal-of-invasive-mussels/>.
September 6, 2018, 79 attendees.
- Black Gill in the South Atlantic Shrimp Fishery. Louisiana State University, Department of Fisheries,
Wildlife and Forestry. 7 March 2018, Baton Rouge, LA. With Bryan Fluech.
- Black Gill in the South Atlantic Shrimp Fishery. GA CRD Brown Bag Seminar Series, 20th
Anniversary Seminar Series. February 27, 2018. Brunswick, GA.
- Revealing in situ Zooplankton Diets Using Molecular Approaches. Leibniz-Institute of Freshwater
Ecology and Inland Fisheries (IGB), Stechlin/OT Neuglobsow, GERMANY. September 25,
2017.
- Shrimp Black Gill: Causes, Consequences and Research Opportunities. University of Bergen, Bergen,
NORWAY. September 29, 2017.
- Causes and Fishery Consequences of a Major Shrimp Black Gill Outbreak in the U.S. Southeast.
College of Charleston, Fort Johnson Marine Science Seminar Series. Charleston, SC January 15,
2016.
- Causes and fishery consequences of a major shrimp Black Gill outbreak in the US Southeast. Evening
at Skidaway public lecture 12 May 2015.
- Causes and fishery consequences of a major shrimp Black Gill outbreak in the US Southeast.
University of Arizona. 27 April 2015.
- Causes and fishery consequences of a major shrimp Black Gill outbreak in the US Southeast.
Savannah West Rotary Club. 1 April 2015.

- Inferring trophic interactions in complex systems from molecular-based gut content analyses.
Transitioning to the mainstream, a decade of progress. Universidade de Aveiro, Departamento de Biologia. Invited seminar. 4 September 2014.
- Coliforms to climate change: comprehensive coastal water quality monitoring in the 21st century.
Presentation to the semester of study at the Darrin Fresh Water Institute, Bolton Landing, NY. November 11, 2013.
- Coliforms to climate change: charting a course for Uni Miljø in the 21st century. Presentation to Uni Miljø, Bergen Norway April 26, 2013.
- The effect of permafrost melting on future coastal Arctic food webs: The microbial battle for nitrogen. Presentation to the semester of study at the Darrin Fresh Water Institute, Bolton Landing, NY. Dec 12, 2012.
- More equals less? The dynamic role of microbes in aquatic systems on a changing planet. Invited seminar, Rensselaer Polytechnic Institute, Troy, NY. May 17, 2012.
- Bacterial Source Tracking in the Vernon River basin. November 18, 2010. Visiting group from the 2010 American Water Works Association Water Quality Technology Conference. Savannah, Georgia.
- Mesocosm and enclosure systems for the exploration of community complexity and responses to environmental perturbations: Examples from the near Arctic and Lake George. Presentation to the Semester of Study at the Darrin Fresh Water Institute, Bolton Landing, NY. November 8, 2010.
- Coliforms to Climate Change: Comprehensive Coastal Water Quality Monitoring in the 21st Century. Metter Rotary International Club meeting. Metter Georgia. November 29, 2010.
- Coliforms to Climate Change: Comprehensive Coastal Water Quality Monitoring in the 21st Century. Skidaway Community Lecture Series. October 11 & 13, 2010.
- Coliforms to Climate Change: Comprehensive Coastal Water Quality Monitoring in the 21st Century. September 30, 2010. SkIO Faculty Seminar.
- The Ocean Makes Earth Habitable: The Microbes. Skidaway Institute of Oceanography public lecture series “Living with the Ocean”. March 30 and April 2, 2009. Savannah, Georgia.
- Early Detection Microscopy- and PCR-Based Detection and Enumeration of Dreissenid Larvae in the Plankton: History and a Primer. Early Detection of *Dreissena* Mussels in the West Workshop Jan 21-23, 2009. Denver, Colorado.
- Comparison of Microscopy and PCR for Dreissenid larvae detection. Report of Phase I Round Robin Study. Early Detection of *Dreissena* Mussels in the West Workshop Jan 21-23, 2009. Denver, Colorado.
- University of Bergen, Invited Seminar. DHPLC Studies – Progress and Future Directions. December 2008.
- National Marine Educators Association (NMEA) Expert Panel. Ocean Literacy #4 The Ocean Makes the Earth Habitable: The Microbes. Savannah, GA. June 2008.
- State of Colorado – Blue Ribbon Panel zebra/quagga mussel sampling, monitoring and ID Methods. August 26 – 28, 2008.
- NSF NEON Planning Workshop. Integrating microbiology into the NEON Grand Challenges. February 14-17, 2008. Baton Rouge, LA.
- University of Bergen, Biology Department. DHPLC post sales reality: The promise and challenges of DHPLC as a tool for organisms discovery. December 13, 2007.
- 32nd annual Eastern fish health workshop. Frischer, M.E., C. Troedsson, T.L. Walters, and R.L. Lee. (2007). Parasite detection and discovery by denaturing HPLC (DHPLC). June 18-22. Gettysburg, PA.
- 100th Meridian Initiative. Frischer, M.E., K. Kelly, and T.L. Walters. 2007. Molecular detection of zebra and quagga mussel larvae. Mitigating the North American western expansion of *Dreissena*. Meeting of the 100th Meridian Initiative. Las Vegas, NV. January 31, 2007.

- University of Georgia, Department of Marine Sciences. November 14, 2006. Crustacean Inner Space: Parasite Detection and Discovery by Partial Denaturing HPLC (dHPLC).
- University of Bergen, SARS International Center of Molecular Biology. June 2005. Molecular Approaches for In Situ Studies of Nitrate Utilization by Marine Bacteria.
- SUNY Albany, School of Biodiversity and Conservation. October 29, 2004. Molecular Approaches For *In Situ* Studies of Nitrate Utilization by Marine Bacteria.
- American Society of Limnology and Oceanography. Molecules to microzooplankton: the application of molecular approaches in microzooplankton ecology. Invited Presentation. June 14-18, 2004. Savannah, Ga.
- Clean Coast, Savannah, GA. February, 2004. Where have all the blue crabs gone and will they come back?
- University of Wisconsin, Milwaukee. March, 2002. Towards ‘Environomics’: Uptake and molecular studies of nitrate assimilation by marine heterotrophic bacteria
- University of Georgia, MECA. July 2002. Water Quality Workshop. Bacterial Indicators of Water Quality.
- University of Maine, Darling Marine Center. August 1, 2001. Bioremediation of Contaminated Saltmarshes: Molecular Approaches Towards Assessing the Role of Complex Microbial Communities
- University of Georgia, MAREX. July 26, 2001. Water Quality Workshop. Bacterial Indicators of Water Quality.
- University of Delaware. October 4, 2001. Towards ‘Environomics’: Uptake and molecular studies of nitrate assimilation by marine heterotrophic bacteria
- Skidaway Institute of Oceanography. March 8, 2001. From Molecules to Mussels, Part II. Promotion seminar.
- Georgia Southern University. February, 2001. Bioremediation of Contaminated Saltmarshes: Molecular Approaches Towards Assessing the Role of Complex Microbial Communities.
- Genomics Research in Georgia Symposium. November 2000. Marine Bioinformatics. Armstrong Atlantic University, Savannah, GA. (Invited Speaker).
- Southeastern Branch meeting of the American Society of Microbiology. October 26-28, 2000. Molecular Approaches Towards Assessing the Role of Complex Microbial Communities. Statesboro, GA. (Invited Speaker).
- Georgia Association of Marine Educators Annual Conference. October, 2000. Assessing and Interpreting Changing Water Quality in Georgia’s Coastal System. (Invited Speaker).
- Medical University South Carolina. May 5, 2000. Bioremediation of Contaminated Saltmarshes: Molecular Approaches Towards Assessing the Role of Complex Microbial Communities
- University of Delaware School of Marine Sciences. April 4, 2000. Bioremediation of Contaminated Saltmarshes: Molecular Approaches Towards Assessing the Role of Complex Microbial Communities
- Florida State University Department of Oceanography Spring Seminar. March 3, 2000. From molecules to mussels: use of molecular genetic probes for tracking of planktonic bivalve larvae.
- Liberty County Workshop on Septic Systems in Coastal Georgia. February 22, 2000. Microbial indicators and bacterial communities as indicators of land use. Keynote Speaker.
- Georgia Association of Marine Educator Annual Conference. October, 1999. Keynote Speaker.
- Sapelo Island National Estuarine Research Reserve Workshop on Septic Systems in Coastal Georgia. April 5, 1999. Microbial indicators and bacterial communities as indicators of land use. Keynote Speaker.
- Darrin Fresh Water Institute Lecture Series. Current status of zebra mussels in Lake George, NY. August, 1999. Lake George, NY.
- Savannah State University Biology Symposium. Bioremediation of contaminated saltmarsh environments. The role of molecular biology. March, 1999. Savannah, Ga.

- M.E. Frischer. Zebra mussels in North America, prospects for Georgia. Invited speaker International Rotary Club, Savannah chapter. March, 1999.
- Armstrong Atlantic University. Bioremediation of contaminated saltmarsh environments. The role of molecular biology. April, 1999. Savannah, Ga.
- American Society of Microbiology North East Regional Branch Meeting. Distinguishing between living and non-living bacteria in diverse aquatic environments. July 31, 1998. Lake George, NY.
- Georgia Institute of Technology, Department of Biology. Use of 16S rRNA targeted phylogenetic-specific probes to characterize microbial communities from the deep subsurface. October 9, 1997. Atlanta, GA
- Lake George Zebra Mussel Symposium II. Current status of the zebra mussel in Lake George and the potential future impact. August, 1996. Lake George, NY.
- University of North Carolina Marine Sciences. Interaction between zebra mussels and microbial populations. June, 1996. Moorehead City, NC.
- University of Georgia. Microbiology seminar series. Characterization of microbial communities from the deep subsurface environment using 16S rRNA and other molecular approaches. January, 1996. Athens, GA.
- New York Natural History Conference IV. Development of genetic probes for studying zebra mussel veligers. April, 1996. Albany, NY.
- American Water Works Association. Water Supply Symposium. Solutions for complying with current and future regulations. Development and utilization of genetic probes for measurement of zebra mussel veligers and waterborne protozoa. November, 1995. Syracuse, NY.
- American Society of Microbiology, Northeastern Branch. Probing subsurface bacteria. November, 1995. Albany, NY.
- Georgia Institute of Technology. Biology Seminar. Use of 16S rRNA targeted phylogenetic-specific probes to characterize microbial communities from the deep subsurface. October, 1997
- Skidaway Institute of Oceanography. Seminar Series. From molecules to mollusks, the use of genetic probes in environmental science. November, 1997
- University of North Carolina, Wilmington. Biology Seminar Series. From molecules to mollusks, the use of genetic probes in environmental science. November, 1997

ABSTRACTS (Selected): Student Authors

- Frischer, M.E.**, Braun, M.J., Tomamichel, M.M. and Byers, J.E. Shrimp black gill disease is climate driven but the catastrophic decline of the Georgia commercial fishery is likely a result of socioeconomic factors. Aquatic Sciences Meeting. March 36-31, 2025. Charlotte, North Carolina.
- Mann, M-K.G., Duffy, P.I., **Frischer, M.E.** and Greer, A.T. Upwelling intrusions drive colonial radiolarian aggregations and associated zooplankton dynamics in a shelf ecosystem. Aquatic Sciences Meeting. March 36-31, 2025. Charlotte, North Carolina.
- Gipson, E.E., Minniefield, A., Duffy, P.I., Treible, L.M., Greer, A.T., Brandes, J., and Frischer, M.E. Dietary plasticity differentiates trophic niches of doliolids and salps. Aquatic Sciences Meeting. March 36-31, 2025. Charlotte, North Carolina.
- Fritz, A.R., Braun, M.J. and **Frischer, M.E.**, Optimizing DNA preservation methods for molecular gut content analysis studies in field collected gelatinous zooplankton. Aquatic Sciences Meeting. March 36-31, 2025. Charlotte, North Carolina.
- Duffy, P.I., **Frischer, M.E.**, Treible, L.M., Gipson, E.E., and Greer, A.T. Pulses of productivity, patches, and pelagic tunicates: fine-scale aggregations influence trophic structure. Aquatic Sciences Meeting. March 36-31, 2025. Charlotte, North Carolina.
- Adusare, G., Braun, M., and **Frischer, M.E.** (2025). Evaluating the efficacy of dry storage of shrimp gill tissue on FTA cards for PCR-based monitoring of the ciliate responsible for shrimp black gill disease. ASLO 2025 Aquatic Sciences Meeting. March 36-31, 2025. Charlotte, North Carolina.

- Gipson, E.E., Brandes, J.A., Greer, A.T., and **Frischer, M.E.** (2024). Interannual variability in gelatinous zooplankton trophic relationships and potential trophic plasticity. UGA Marine Sciences Student Research Symposium. May 17th, 2024, Athens, GA.
- Irwin, B., Tomamichel, M., Frischer, M., Hall, R., Davis, A., Bliss, T. Rohani, P. Byers, J.. Structured decision making for managing the threat of infectious disease in fisheries. American Fisheries Society, 154th Annual Meeting. September 15-19, 2024, Honolulu, Hawai'i.
- Tomamichel, M.M., Walters, T.L., Fox, E.M.K., Rivera, A., O'Hare, M., Minniefield, A., Braun, M., Hall, R.J., **Frischer, M.E.**, and Byers, J.E. Changes in transmission rates drive seasonal patterns of shrimp black gill disease caused by the parasitic apostome ciliate *Hyalophysa lynni*. American Society of Parasitologists (ASP) 99th Annual Meeting. June 14-17, 2024. Denver, Colorado. *Won Best Student Presentation award (June 16, 2024), ~ 60 in attendance.*
- Duffy, P.I., **Frischer, M.E.**, Treible, L.M., Gipson, E.E., and Greer, A.T. Investigating life-stage specific doliolid distributions in relation to water column structure in the South Atlantic Bight. 7th Zooplankton Production Symposium. March 17-24, 2024. Hobart, Australia. *Best Student Presentation Award.*
- Frischer, M.E.**, Pereira, T.J., Walters, T.L., El-Shaffey, H.M., Brandes, J.A., and Bik, H.M. Microbial Interactions with the Pelagic Tunicate *Doliolletta gegenbauri* – A Crossroad with the Ocean Microbiome. Abstract ID 1488863. Ocean Sciences Meeting 2024. February 18-23, 2024. New Orleans, LA.
- Ramirez, K.L., Gipson, E.E., **Frischer, M.E.** 2024. Patterns in POM stable isotopic composition and fluorescence induction and relaxation (FIRE) Fv/Fm values on the South Atlantic Bight (SAB). Ocean Sciences Meeting 2024. February 18-23, 2024. New Orleans, LA.
- Greer, A.T., Aaron, K.D., Duffy, P.I., Brown, S., Treible, L.M., and **Frischer, M.E.** 2024. Vertical oceanographic structure influences zooplankton trait distributions: from larval fishes to the fragile food web. Ocean Sciences Meeting 2024. February 18-23, 2024. New Orleans, LA.
- Gipson, E.E., Minniefield, A., Ramirez, K., Duffy, P., Greer, A.T., Brandes, J., and **Frischer, M.E.** 2024. Trophic plasticity of doliolids in continental shelf zooplankton food web. Ocean Sciences Meeting 2024. February 18-23, 2024. New Orleans, LA.
- Duffy, P.I., **Frischer, M.E.**, Treible, L.M., Gipson, E.E., and Greer, A.T. 2024. Seasonal dynamics of life-stage specific doliolid distributions in the South Atlantic bight, in relation to water column structure. Ocean Sciences Meeting 2024. February 18-23, 2024. New Orleans, LA.
- Tomamichel, M., Lowe, K, Arnold, K, **Frischer, M.E.**, Irwin, B. Osenberg, C, Hall, R., and Byers, J. (2023). The effect of temperature, host, and parasite traits on parasite-induced mortality in fisheries: a meta-analysis. Ecological Society of America. Portland, OR. August 6-11, 2023.
- Tomamichel, M., Lowe, K, Arnold, K, **Frischer, M.E.**, Irwin, B. Osenberg, C, Hall, R., and Byers, J. (2023). The effect of temperature, host, and parasite traits on parasite-induced mortality in fisheries: a meta-analysis. Ecology and Evolution of Infections Diseases. University Park, PA. May 22-25, 2023.
- Duffy, P.I., **Frischer, M.E.**, Treible, L.M., Gipson, E.E., and Greer, A.T. (2023). Fine-scale ecological response of a gelatinous filter feeding grazer to monthly changes in water column structure. International Workshop on Western Boundary Current – Subtropical Continental Shelf Interactions. Savannah, Georgia. May 22-24, 2023.
- Greer, A.T., Aaron, K.D., Duffy, P.I., Treible, L.M., **Frischer, M.E.** (2023). Resolving the influence of water column structure on biological production and mesozooplankton traits in the South Atlantic Bight. International Workshop on Western Boundary Current – Subtropical Continental Shelf Interactions. Savannah, Georgia. May 22-24, 2023.
- Frischer, M.E.** (2022). The influence of environmental factors in shrimp black gill: management and fishery adaptation options? Presented at the GCRC Georgia Coastal Colloquium '22. Richmond Hill, Georgia. October 19, 2022. ~ 80 participants.
- Aaron, K.D., Duffy, P.I., Treible, L.M., **Frischer, M.E.**, and Greer, A.T. (2022). A trait-based spatial analysis of mesozooplankton distribution using a new towed shadowgraph imaging system in the

- South Atlantic Bight. *Association for the Sciences of Limnology and Oceanography* 2022, Virtual Meeting. February 24 – March 4, 2022.
- Duffy, P.I., Treible, L.M., **Frischer, M.E.**, Greer, A.T. (2022). Identifying favorable oceanographic conditions for bloom formation of doliolids using in situ imagery. *Association for the Sciences of Limnology and Oceanography* 2022, Virtual Meeting. February 24 – March 4, 2022.
- Johnson, A.J.H., **Frischer, M.E.**, Huang, M., and Minniefield, A. (2021). Development and validation of UriStain™ tissue staining to quantify ciliate infections in shrimp gill by light microscopy. SSU Bridge to Marine Sciences Summer REU program. July 22, 2021. Savannah, Georgia.
- Collins, G. Jr., **Frischer, M.E.**, and Minniefield, A. (2021). Ascidians for Georgia aquaculture? Nutritional value and summer recruitment to artificial substrates. as a new aquaculture species in Georgia? SSU Bridge to Marine Sciences Summer REU program. July 22, 2021. Savannah, Georgia.
- Tomamichel, M.M., Byers, J.E., Hall, R.J., Walters, T.L., and **Frischer, M.E.** (2021). Seasonal changes in transmission of and recovery from *Hyalophysa lynni* in commercial shrimp. Ecological Society of America. August 2-6, 2021. Virtual.
- Frischer, M.E. (2021). Optimizing Georgia's shrimp fishery in the age of black gill. Georgia Sea Grant Research Symposium. May 19-21, 2021. Virtual.
- Pereira, T.J., Frischer, M.E., Walters, T.L., Bik, H.M. (2021). The microbiome of the pelagic tunicate *Dolioletta gegenbauri*, a link between the grazing and microbial food web? *Association for the Sciences of Limnology and Oceanography* 2021, Virtual Meeting. June 22-27, 2021.
- Duffy, P.I., **Frischer, M.E.**, Treible, L.M., Brandes, J.A, and Greer, A.T. (2021). Resolving spatial variability and ecological context for pelagic tunicates using in situ imaging. *Association for the Sciences of Limnology and Oceanography* 2021, Virtual Meeting. June 22-27, 2021.
- Gibson, D.M., Walters, T.L., **Frischer, M.E.** (2021). Cultivation of the marine pelagic tunicate *Dolioletta gegenbauri* (Uljanin 1884). *Association for the Sciences of Limnology and Oceanography* 2021, Virtual Meeting. June 22-27, 2021.
- Ptacnikova, R., Pichler, A., Nejtgaard, J.C., **Frischer, M.E.**, and Walters, T.L. (2021). Overlooked impacts of the predatory cladoceran *Bythotrephes* in its native area. *Association for the Sciences of Limnology and Oceanography* 2021, Virtual Meeting. June 22-27, 2021.
- Frischer, M.E. (2021). Optimizing Georgia's shrimp fishery in the age of black gill. Georgia Sea Grant Annual meeting. January 19-22, 2021. Virtual.
- Frischer, M.E.**, Walters, T.L., Gibson, D.M., Arneson, E., Lacy, L.E., Lamboley, L.M., and Brandes, J.A. (2020). Revisiting the trophic role of doliolids. Are doliolids detritivores? 2020 Ocean Sciences Meeting (AGU/ASLO/TOS). February 16-21, 2020. San Diego, CA.
- Rivera, A., Walters T.L., Zuidema, S.R., Kendrick, M.R., Kingsley-Smith, P.R., **Frischer, M.E.** (2020). The re-acquisition of shrimp Black Gill infections by penaeid shrimp; oceanic or estuarine sources? 2020 Ocean Sciences Meeting (AGU/ASLO/TOS). February 16-21, 2020. San Diego, CA.
- Füssy, Z., Grigoriev, I.V., Barry, K., Schmutz, J., Hayes, R.D., Healey, A., Brussaard, C.P.D., **Frischer, M.E.**, Arrigo, K.R., Allen, A. Comparative genomics of *Phaeocystis* species to reveal cold adaptations. 2020 Ocean Sciences Meeting (AGU/ASLO/TOS). February 16-21, 2020. San Diego, CA.
- Farrell, J.L., **Frischer, M.E.**, Eichler, L.W., Stanek, J. and Nierzwicki-Bauer, S.A. (2020). ARMOR: A new tool for managing the spread of invasive aquatic species. 2019 Northeast Aquatic Plant Management Society (NEAPMS) 21st Annual Meeting. January 14-16, 2020. Lake Placid, New York.
- Farrell, J.L., **Frischer, M.E.**, Eichler, L.W., Stanek, J. and Nierzwicki-Bauer, S.A (2019). ARMOR for the queen's shield. A new tool for managing the spread of invasive aquatic species in New York. North American Invasive Species Management Association (NAISMA) 2019 Joint Annual Conference. September 30, 2019 – October 2, 2019. Saratoga Springs, NY.

- Ptacnikova, R., Pichler, A., Nejstgaard, J.C., Walles, T., **Frischer, M.E.**, and Petrussek, A. (2019). Impacts of the predatory cladoceran *Bythotrephes longimanus* on zooplankton communities in Austrian alpine lakes. 11th Symposium for European Freshwater Sciences. June 30 – July 5, 2019. Zagreb, Croatia.
- Pichler, A., **M.E. Frischer**, Walters, T.L., Nejstgaard, J.C., Walles, T., Petrussek, A., and Ptacnikova, R. (2019). Molecular gut content analysis of the predatory cladoceran *Bythotrephes longimanus* on zooplankton communities in Austrian alpine lakes. 11th Symposium for European Freshwater Sciences. June 30 – July 5, 2019. Zagreb, Croatia.
- Frischer, M.E.** (2019). Shrimp black gill in Georgia: knowns and unknowns. Georgia Marine Extension and Georgia Sea Grant 2019 Research Symposium. April 4-5, 2019. Brunswick, Georgia.
- Frischer, M.E.** (2019). START: Sessile Tunicates: An Aquaculture Resource Treasure? Georgia Marine Extension and Georgia Sea Grant 2019 Research Symposium. April 4-5, 2019. Brunswick, Georgia.
- O'Hare, M., Walters, T.L., Wommack, C. and **Frischer, M.E.** (2019). The use of sentinel brown shrimp (*Farfantepenaeus aztecus*) to observe transmission of the black gill ciliate. *Association for the Sciences of Limnology and Oceanography* 2019, Puerto Rico.
- Richard, K., Pham, J., Brofft-Bailey, J., **Frischer, M.E.** and Dunn, P.H. (2018). *Hematodinium* in Georgia: Where are we today? Ninth International Crustacean Congress (ICC IX). May 22-25, 2018. Washington, DC.
- Frischer, M.E.**, Lee, R.F., Byers, J. and Johnsen, K. (2018). Climate connections? New approaches to forecast the Georgia fall white shrimp harvest in the age of shrimp black gill. Georgia Sea Grant Research Symposium 2018. May 30-31, 2018. Athens, Georgia.
- Kendrick, M.R., **Frischer, M.E.**, Brunson, J., Gooding, E., Byers, J., Geer, P. and Kingsley-Smith, P. (2018). The role of climate in driving disease dynamics in the commercially-important white shrimp, *Litopenaeus setiferus*. National Shellfisheries Association 110th Annual Meeting. March 18-22, 2018. Seattle, Washington.
- Raigoza, S., and **Frischer M.E.** (2018). Mortality and efficacy of three over the counter anti-parasitic medications for treating shrimp black gill. Paper #ED34A-2382. Presented at 2018 Ocean Sciences Meeting, Portland, OR, 12-16 Feb.
- Frischer, M.E.**, Walters, T.L. and Price, A.R. (2017). Distribution, Ecology and Role of a Parasitic Ciliate on Commercial Penaeid Shrimp in the US Southeast Atlantic: Insights Gained Using Molecular Interaction Tools. 3rd Symposium on Molecular Analysis of Trophic Interactions. 13-15 September 2017. Upsalla, Sweden.
- Lamboley, L.M., Walters, T.L. and **Frischer, M.E.** (2017). Quantitative Significance of Different Prey Types in the *In Situ* Diet of *Dolioletta gegenbauri*. (2017). 3rd Symposium on Molecular Analysis of Trophic Interactions. 13-15 September 2017. Upsalla, Sweden.
- Walters, T.L. and **Frischer, M.E.** (2017). Molecular Gut Profiling of *Dolioletta gegenbauri* in the South Atlantic Bight Shelf: What Are They Eating? 3rd Symposium on Molecular Analysis of Trophic Interactions. 13-15 September 2017. Upsalla, Sweden.
- Fleuch, B., Johnsen, K. **Frischer, M.E.** (2017). Shrimp Black Gill Tracker, a New Smartphone Application to Facilitate Shrimper Participation in Monitoring the Prevalence of Black Gill. 147 Annual Meeting of the American Fisheries Society. 20-4 August 2017. Tampa, Florida.
- Frischer, M.E.** (2017). Shrimp Black Gill: Continuing Research Challenges to Support Georgia's Largest Fishery. Georgia Sea Grant Research Symposium 2017. 1-2 June 2017, Athens, Georgia.
- O'Cain, E.D., Gleason, D.F., **Frischer, M.E.**, Fogarty, N.D. and Ruzicka, R. (2017). Development of a molecular assay for Caribbean coral identification. Association of Marine Laboratories of the Caribbean 38th Scientific Conference. 22-26 May 2017, Mérida, Yucatán México
- Lopez, N.B., Gibson, D.M., Rodriguez, A., Walters, T.L., **Frischer, M.E.** (2017). Spatial and Temporal Trends of Zooplankton Communities in the South Atlantic Bight (SAB). *Limnology and Oceanography*. Honolulu, HI, USA. February 26- March 3, 2017.

- Frischer, M.E., Price, A.R.,** Geer, P., **Frede, R.L.,** Fowler, A.E., Byers, J.E., Landers, S.C. and Lee, R.F. (2017). Is Shrimp Black Gill Killing Shrimp? American Fisheries Society, Georgia Branch. Statesboro, GA. January 24-26, 2017.
- Frischer, M.E.,** Walters, T.L., Gibson, D.M., Nejtgaard, J.C., Troedsson, C. (2016). Molecular Quantification of Zooplankton Gut Content: The Case For qPCR. Association for the Sciences of Limnology and Oceanography. New Orleans, LA, USA. February 21-26, 2016.
- Price, A.R.,** Fowler, A.E., Frede, R., Walker, A.N., Lee, R.F. **Frischer, M.E.** (2016). Mortality and Morbidity Associated with a New Ciliate Infection of Shrimp that Causes Shrimp Black Gill in the Coastal Southeast USA. Association for the Sciences of Limnology and Oceanography. New Orleans, LA, USA. February 21-26, 2016.
- Bassette, M.A., Verdiyev, R., Price, A.R.,** Walters, T.L., Landers, S.C., Walker, A.N., Geer, P.J., **Frischer, M.E.** (2016). Identification of the Causal Agent of Shrimp Black Gill in the Coastal Southeast USA. Association for the Sciences of Limnology and Oceanography. New Orleans, LA, USA. February 21-26, 2016.
- Bittar, T.B., Berger, S.A., **Walters, T.L.,** Mann, E.L., Spencer, R.G.M., Stubbins, A., **Frischer, M.E.,** and Brandes, J.A. (2016). Effects of low versus high freshwater discharge on the concentration and character of dissolved carbon, and on the microbial community composition in the Skidaway River Estuary (Southeast USA). Association for the Sciences of Limnology and Oceanography. New Orleans, LA, USA. February 21-26, 2016.
- Frazier, L.M., Walters, T.L.,** Gibson, D.M., **Frischer, M.E.** (2016). The Development and Application of a Molecular Assay to Detect *In situ* Predation of the Pelagic Tunicate, *Doliolletta gegenbauri* in the South Atlantic Bight (Continental Shelf, USA). Association for the Sciences of Limnology and Oceanography. New Orleans, LA, USA. February 21-26, 2016.
- Walters, T.L., Frazier, L.M.,** Gibson, D.M., Paffenhöfer, G-A., **Frischer, M.E.** (2016). Molecular Gut Content Profiling to Investigate the *In Situ* Grazing and Selectivity of the Doliolid *Doliolletta gegenbauri* in Summer Continental Shelf Intrusion Waters of the South Atlantic Bight, USA. Association for the Sciences of Limnology and Oceanography. New Orleans, LA, USA. February 21-26, 2016.
- Frischer, M.E.,** Bulski, K., **Walters, T.L.,** and Lee R.F. (2015). Molecular-Enabled Identification, Detection and Seasonal Pattern Of The Causative Agent Of Shrimp Black Gill In The Coastal Southeast USA. 40th Annual Eastern Fish Health Workshop. March 2-6, 2015. Mt. Pleasant, SC.
- Lee, R.F., Bulski, K., Geer, P. and **Frischer, M.E.** (2015). Black Gill in Penaeid Shrimp: Pathology and Transmission Studies. 40th Annual Eastern Fish Health Workshop. March 2-6, 2015. Mt. Pleasant, SC.
- Frischer, M.E., Walters, T.L.,** Bulski, K., Walker, A.N., Mathes, T., Geer, P. and Lee, R.F. (2015). Shrimp black gill in the coastal southeast USA, causes and consequences: Integrating high throughput sequencing data with other large datasets. American Society of Limnology and Oceanography. Granada, Spain February 23-27, 2015.
- Balseiro, P., **Sandnes, S.K.,** Strohmeir, T., Strand, Ø., Kjelby, M., **Frischer, M.E.,** and Troedsson, C. (2015). Molecular trophic interaction between blue mussel and their prey in a controlled upwelling system in Lysefjorden, Norway, using next generation sequencing. American Society of Limnology and Oceanography. Granada, Spain February 23-27, 2015.
- Hammerstein, H.C.,** Walker, L.E., Work, P.A. and **Frischer, M.E.** (2014). New Method for Detection of Failing Septic Systems. Georgia Association of Water Professionals 2014 Annual Conference and Exposition. July 20-23 2014. Savannah, Georgia.
- Frischer, M.E., Z.P. Tait,** V.D. Baylor, R.E. Sipler, Q.N. Roberts, A. Stubbins, D.A. Bronk (2014). Linked carbon and nitrogen cycling in the coastal Arctic, will organic carbon release from thawing permafrost impose bacterial nitrogen limitation? IMBER Open Science Community 2014 'Future Oceans'. June 24-27 2014. Bergen, Norway.
- Nierzwicki-Bauer, S.A., S.A. Berger, J.C. Nejtgaard, L.E. Ahrens, J.L. Farrell, N. Tanenbaum, and **M.E. Frischer** (2014). A mesocosm experiment to test organic vs. inorganic nutrient loading

- effects on the pelagic microbial food web of Lake George, New York. Joint Aquatic Science Meeting (JASM). Bridging genes to ecosystems: Aquatic science at a time of rapid change. May 18-23. Portland, OR.
- Lee, R.F., **M.E. Frischer (presenting author)**, A.N. Walker, T. Methes, K. Bulski and P. Geer (2014). Shrimp black gill in the coastal southeast: causes, distribution and transmission. National Shellfisheries Association 106th Annual Meeting. March 29 – April 2, 2014. Jacksonville, Florida.
- McKenzie, K.A. K.L. Edwards, T.M. Cox and **M.E. Frischer**. (2014). Exploring the bottlenose dolphin microbiome. Ocean Science Meeting Honolulu, Hawaii, 23-28 February
- McKenzie, K.A. K.L. Edwards, M.E. Frischer and T.M. Cox. (2014). Exploring the bottlenose dolphin microbiome. Southeast and Mid-Atlantic Marine Mammal Symposium, Wilmington, NC, 28-30 March
- Drummond, K. McKenzie, K.A. Edwards, K.L. **Frischer, M.E.** and T.M. Cox. (2014). A previously undescribed dominant component of the common bottlenose dolphin *Tursiops truncatus* microbiome is a novel fusobacterium Ocean Science Meeting Honolulu, Hawaii, 23-28 February
- Drummond, K. McKenzie, K.A. **Frischer, M.E.** and T.M. Cox. (2014). Fusobacterium: A major component of the common bottlenose dolphin *Tursiops truncatus* microbiome. Southeast and Mid-Atlantic Marine Mammal Symposium, Wilmington, NC, 28-30 March
- McKenzie, K. K.L. Edwards, **M.E. Frischer** and T.M. Cox. (2013). Exploring the bottlenose dolphin microbiome. 20th Biennial Conference on Marine Mammals, Otago University, Dunedin, New Zealand, 9-13 December
- Leal MC, Ferrier-Pagès C, Thompson ME, Calado R, **Frischer ME**, Nejstgaard JC (2013) Herbivory in scleractinian and soft corals. Poster-Nejstgaard, MTI-2, 2nd International Symposium on the Molecular Detection of Trophic Interactions, Lexington, Kentucky, USA, May 13-17, 2013.
- Leal MC, Nejstgaard JC, Thompson ME, Calado R, **Frischer ME** (2013) Molecular assessment of feeding and digestion in zooxanthellate cnidarians. Oral-Leal, MTI-2, 2nd International Symposium on the Molecular Detection of Trophic Interactions, Lexington, Kentucky, USA, May 13-17, 2013.
- Frischer ME**, Nejstgaard JC, Troedsson C, Leal MC, Maloy AP, Culloty SC (2013) Inferring trophic interactions in marine invertebrates from molecular-based gut content analyses. Transitioning to the mainstream, a decade of progress. Oral-Frischer, MTI-2, 2nd International Symposium on the Molecular Detection of Trophic Interactions, Lexington, Kentucky, USA, May 13-17, 2013.
- Frazier LM, Walters, TL., Paffenhöfer GA, **Frischer ME** (2013). Development and application of a molecular assay for in situ identification of potential predators of the pelagic tunicate, *Doliolletta gegenbauri*. Oral-Frazier, MTI-2, 2nd International Symposium on the Molecular Detection of Trophic Interactions, Lexington, Kentucky, USA, May 13-17, 2013.
- Walters TL, Frazier LM, Paffenhöfer GA, **Frischer ME** (2013). Molecular profiling of zooplankton diet using PNA-PCR and denaturing high performance liquid chromatography (PNA-PCR-DHPLC). Oral-Walters, MTI-2, 2nd International Symposium on the Molecular Detection of Trophic Interactions, Lexington, Kentucky, USA, May 13-17, 2013.
- Calado R, Leal MC, Eiras FR, Neto G, Queiroga H, Cleary DFR, Rotllant G, Guerao G, Gomes NCM, da Silva JM, Giménez L, Anger K, Pechenik JA, Nejstgaard JC, **Frischer ME** (2013) Project NO RESET - Shedding light over the trophic regimes of brachyuran crab larvae supplied to coastal habitats before and during upwelling events. Oral-Calado, MTI-2, 2nd International Symposium on the Molecular Detection of Trophic Interactions, Lexington, Kentucky, USA, May 13-17, 2013.
- Tait, Z.S., Baylor, V.D., Sipler, R.E., Roberts, Q.N., Stubbins, A., Bronk D.A., Frischer, M.E. (2013). Will increased terrestrial carbon flux from melting permafrost stimulate increased bacterial nitrate uptake in the Arctic Ocean? American Society of Limnology and Oceanography. New Orleans, LA. February 17-22, 2013.

- Walters, T.L., Frazier, L.M., G.A. Paffenhöfer and Frischer, M.E. (2013). Molecular profiling of zooplankton gut content using PNA-PCR and denaturing high performance liquid chromatography (PNA-PCR-DHPLC). American Society of Limnology and Oceanography. New Orleans, LA. February 17-22, 2013.
- Frischer, M.E., Leal, M.C., Thompson, M.E. Calado, R. and Nejstgaard, J.C. (2013). Molecular assessment of heterotrophy and prey digestion in symbiotic corals. American Society of Limnology and Oceanography. New Orleans, LA. February 17-22, 2013.
- Hammerstein, H.C., Work, P.A. and Frischer, M.E. (2013). Coliphage Versus Fluorescent Dye as Tracers of Fecal Contamination Sources In Coastal Waters. Sixth International Perspective on Water Resources and the Environment (IPWE) 2013. January 7-9, 2013. Izmir, Turkey
- Berger, S., M.E. Frischer, J.C. Nejstgaard, L.E. Ahrens, J.L. Farrell, N Tenenbaum and S.A. Nierzwicki-Bauer (2012). Organic vs. inorganic nutrient loading effects on the pelagic microbial food web of Lake George, New York – a first mesocosm experiment. MESOAQUA International Symposium – Recent Achievements and Future Direction in Aquatic Mesocosm Research. Herakion, Crete, Greece. October 16-19, 2012.
- Romanova, N., A. Tsiola and M.E. Frischer (2012). Dynamics of prokaryotic community growth in response to *Skeletonema/Phaeocystis* bloom succession. MESOAQUA International Symposium – Recent Achievements and Future Direction in Aquatic Mesocosm Research. Herakion, Crete, Greece. October 16-19, 2012.
- El Shaffey, H., M.E. Thompson, T.L. Walters, G.A. Paffenhöfer, and Frischer, M.E. (2012). Bacterial communities associated with the pelagic tunicate *D. gegenbauri* and their fecal pellets: what is their origin?. American Society of Limnology and Oceanography. Salt Lake City, Utah. February 20-24, 2012.
- Tait, Z.S., V.D. Baylor, R.E. Sipler, Q.N. Roberts, D.A. Bronk, and M.E. Frischer. (2012). Will permafrost melting impose nitrogen limitation on coastal bacterial communities in the western Arctic? American Society of Limnology and Oceanography. Salt Lake City, Utah. February 20-24, 2012.
- Berger, S., L.M. Birsa, and M.E. Frischer. (2012). Resilience of the Skidaway River estuary; can human induced ecosystem impairment be reversed in a well-mixed subtropical estuary?. American Society of Limnology and Oceanography. Salt Lake City, Utah. February 20-24, 2012.
- Frischer et al (whole lab). Are we pooping in our backyard? (2012). Tybee Island Water and Energy Fair. Tybee Island, GA. February 11, 2012. Presented by Heidi Hammerstein.
- Frischer et al (whole lab). The Microbial World Around Us. (2012). Tybee Island Water and Energy Fair. Tybee Island, GA. February 11, 2012. Presented by Heidi Hammerstein.
- Hammerstein, H.C., Baylor V.D., Frazier, L.M., Frischer, M.E., Work, P.A. (2012). Viral Tracers as Sentinels of Septic System Integrity and Suitability in Coastal Environments. Tybee Island Water and Energy Fair. Tybee Island, GA. February 11, 2012
- Edwards, K.L., Cox T.M., and Frischer M.E. (2011). Composition of bacterial communities from the spleen of stranded bottlenose dolphins *Tursiops truncatus* from the Atlantic coast of the United States. 19th Biennial conference on the biology of marine mammals. Hosted by The Society for Marine Mammalogy. Tampa Bay, Florida. November 27 – December 2, 2011.
- Frischer, M.E., L.M. Birsa, and P.G. Verity. The Skidaway River Estuary: The continuing saga of an anthropogenic eutrophication process. American Society of Limnology and Oceanography. San Juan Puerto Rico. February 13-18, 2011. SESSION Co-Chair with D. Bronk. S-59 Advancing the Science and Ethics of Plankton Ecology: The legacy of Peter Verity.
- Walters, T.L., C.A. Pavel, L.M. Frazier, M.E. Thompson, D.M. Gibson, G-A. Paffenhöfer, and M.E. Frischer. Molecular gut content profiling of *Dolioletta gegenbauri* in southeastern subtropical continental shelf intrusion waters: what are they eating? American Society of Limnology and Oceanography. San Juan Puerto Rico. February 13-18, 2011.

- Bronk, D.A., M.E. Frischer, P.B. Bradley, M.P. Sanderson, Q. Roberts, J.C. Nejstgaard, M. Booth, and J. Brofft. The quest to define who is doing what in the plankton communities. American Society of Limnology and Oceanography. San Juan Puerto Rico. February 13-18, 2011.
- Birsa, L.M., M.E. Frischer, and P.G. Verity. Are the gelatinous plankton increasing in the Skidaway River estuary? American Society of Limnology and Oceanography. San Juan Puerto Rico. February 13-18, 2011.
- Nejstgaard, J.C., M.E. Frischer, C. Troedsson, P. Simonelli, J. Anderson, M. Zirbel, and P.G. Verity. The quest to define who is doing what in the plankton communities. American Society of Limnology and Oceanography. San Juan Puerto Rico. February 13-18, 2011.
- Frischer et al (whole lab). Are we pooping in our backyard? (2011). Tybee Island Water and Energy Fair. Tybee Island, GA. January 25, 2011. Presented by Heidi Hammerstein.
- Frischer et al (whole lab). The Microbial World Around Us. (2011). Tybee Island Water and Energy Fair. Tybee Island, GA. January 25, 2011. Presented by Heidi Hammerstein.
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- Frischer, M.E. (2010). Advancing the science and ethics of plankton ecology: The legacy of Peter Verity. Invited Keynote plenary address. Southeastern Estuarine Research Society (SEERS) meeting. November 4-6, 2010, St. Augustine Florida.
- Edwards, K.L., T.M.Cox, and M.E.Frischer.(2010) Bacteria associated with the spleen of stranded bottlenose dolphin *Tursiops truncatus* from the Atlantic coast of the United States. Southeast and Mid-Atlantic Marine Mammal Symposium. Virginia Beach, VA. March 26-28 2010.
- Hammerstein, H.C., V.D. Baylor, L.M. Fraizer, P.A. Work, and M.E. Frischer. (2010). Viral Tracers as Sentinels of Septic System Integrity and Suitability in Coastal Environments. 110th American Society of Microbiology General Meeting, San Diego Californian, May 23-27, 2010.
- Walters, T.L., C.A. Pavel, L.M. Frazier, M.E.T. Peck, S. Chiang, M. Leandre, D.M. Gibson, G.A-Paffenhöfer, and M.E. Frischer. Phytoplankton and bacterioplankton profiling of *Dolioletta gegenbauri* in subtropical continental shelf intrusion waters. What are they eating? American Society of Limnology and Oceanography. Santa Fe, NM. 6-11 June, 2010.
- Pavel, C.A., T.L. Walters, Peck, M.E., L.M. Frazier, G.A-Paffenhöfer, and M.E. Frischer. (2010). A molecular based method for the analysis of doliolid feeding rates. American Society of Limnology and Oceanography. Santa Fe, NM. 6-11 June, 2010.
- DeLeon, N.I., R.F. Lee, M.E. Frischer, K.L. Brinkley, and P.A. Sobecky. (2009). Culture-independent bases characterization of the microbial community present in the hemolymph of the blue crab, *Callinectes sapidus*. American Society of Limnology and Oceanography. May 17-21. Philadelphia, Pennsylvania.
- Messick, G., J. Jacobs, R. Lee, T. Walters, K. Brinkley, S. Cho, M.E. Frischer, E. Schott, S. Chung and R. Wood. Crustaceans as indicators of ecosystem health. National Shellfish Society 2009 Annual Meeting. March 22-26, 2009.
- Frischer, M.E., K. Brinkley, T.L. Walters, R.F. Lee. Marine disease detection and discovery by novel DHPLC (Denaturing High Performance Liquid Chromatography) technology. 34th annual Eastern fish health workshop. Lake Placid New York. April 27 – May 1, 2009.
- Lee, Lucy E.J., A. Christie, M.E. Frischer, T. Soin, G. Smagghe, H. Braid, and R. Hanner. (2009). OLGA: A case of mistaken ID. In Vitro Biology Meeting. June 6-10, Charleston, SC.
- Frischer, M.E., C. Troedsson, P. Simonelli, J.C. Nejstgaard, D.M. Gibson, G.-A. Paffenhöfer. (2008). Molecular gut content profiling in gelatinous zooplankton: will it work and what will we learn? American Society of Limnology and Oceanography. January 25-30. Nice, France.
- Simonelli, P., J.C. Nejstgaard, C. Troedsson, H.H. Jakobsen, M.E. Frischer. (2008). Molecular gut content analysis in to determne prey-specific feeding by copepods in natural plankton. American Society of Limnology and Oceanography. January 25-30. Nice, France.

- Troedsson, C., J.-M. Bouquet, P. Simonelli, M.E. Frischer, J.C. Nejstgaard, D.L. Aksnes, E. Thompson. (2008). Molecular gut content analysis in gelatinous zooplankton: a quantitative assay. American Society of Limnology and Oceanography. January 25-30. Nice, France.
- Frazier, L.M., V.D. Baylor, M.E. Frischer. (2008). Identification of bacteriological water quality hazards using a bacterial source tracking approach in a subtropical urban estuary. American Society of Limnology and Oceanography. January 25-30. Nice, France.
- Gibson, D.M., M.E. Frischer, G-A. Paffenhöfer. (2008). Doliolid blooms: what are the driving variables? Investigations of trophic interactions. American Society of Limnology and Oceanography. January 25-30. Nice, France.
- Frischer, M.E., C. Troedsson, R.F. Lee, T.L. Walters, K. Brinkley, P. Simonelli, V. Stokes, V. Näegele, and J.C. Nejstgaard. (2008). Detection and discovery of crustacean parasites by 18S rDNA targeted denaturing high performance liquid chromatography (DHPLC). American Society of Limnology and Oceanography. March 2-7. Orlando, Florida.
- Simonelli, P., C. Troedsson, J.C. Nejstgaard, and M.E. Frischer. (2008). Looking for the best methods to isolate prey DNA in the plankton and inside copepod guts. American Society of Limnology and Oceanography. March 2-7. Orlando, Florida.
- Troedsson, C., P. Simonelli, V. Näegele, J.C. Nejstgaard, and M.E. Frischer. (2008). Quantification of copepod gut content by differential length amplification PCR (DLA-QPCR). American Society of Limnology and Oceanography. March 2-7. Orlando, Florida.
- Smith, J.S., M.C. Singleton, K.A. Maruya, and M.E. Frischer. (2007). Oysters (*Crassostrea virginica*) as sentinels for coastal water quality and land use in Georgia, USA. SETAC North American Meeting. November 11-15. Milwaukee, Wisconsin.
- Curran, M.C., M.E. Frischer, J.K. King, T.L. Walters, and T. Mace. (2007). Construcing an index of salt marsh (*S. alterniflora*) health and productivity. Estuarine Research Foundation. November 4-8. Providence, RI.
- Wafula, D.N., and M.E. Frischer. (2007). Ecological significance of the diversity of nitrate utilizing marine heterotrophic bacteria: Effect of nitrogen limitation on growth. 107th General Meeting of the American Society of Microbiology. May 21-25. Toronto, Canada.
- Frischer, M.E., C. Troedsson, T.L. Walters, and R.L. Lee. (2007). Parasite detection and discovery by denaturing HPLC (DHPLC). 32nd annual Eastern fish health workshop. June 18-22. Gettysburg, PA.
- Frischer, M.E., C. Troedsson, T.L. Walters, V.C. Stokes, P. Simonelli, and R.L. Lee. (2007). Crustacean inner space: parasite detection and discovery by partial denaturing HPLC (DHPLC). MTI-Symposium. March 1-3. Innsbruck, Austria.
- Troedsson, C., M.E. Frischer, J.C. Nejstgaard, and E.M. Thompson. (2007). Towards quantitative *in situ* estimates of zooplankton feeding: I. Quantification of ingestion and particle trapping by an Appendicularian as a function of prey size and shape. MTI-Symposium. March 1-3. Innsbruck, Austria.
- Nejstgaard, J.C., M.E. Frischer, P. Simonelli, C. Troedsson, M. Brakel, F. Adiyaman, A.F. Sazhin, and L.F. Artigas (2007). Toward quantitative *in situ* estimates of zooplankton feeding: II. Use of qPCR to estimate feeding on specific prey by copepods. MTI-Symposium. March 1-3. Innsbruck, Austria.
- P. Simonelli, C. Troedsson, J.C. Nejstgaard, V. Näegele, K. Zech, and M.E. Frischer. (2007). Toward quantitative *in situ* estimates of zooplankton feeding: III. A novel approach to account for digestion of prey DNA in predator guts. MTI-Symposium. March 1-3. Innsbruck, Austria.
- Zech, K., P. Simonelli, B.L. Larsen, C. Troedsson, J.C. Nejstgaard, and M.E. Frischer. (2007). Methodological constraints: A comparison of different techniques for the isolation of phytoplankton genomic DNA. MTI-Symposium. March 1-3. Innsbruck, Austria.
- Frischer, M.E., K. Kelly, and T.L. Walters. (2007). Molecular detection of zebra and quagga mussel larvae. Mitigating the North American western exapansion of *Dreissena*. Meeting of the 100th Meridian Initiative. Las Vegas, NV. January 31, 2007.

- Singleton, M.C., J.M. Danforth, E.L. Pulster, J.S. Smith, K.A. Maruya, and M.E. Frischer. (2007). Georgia Oyster Watch (GEOW) – Can oysters be utilized as integrative monitors of bacteriological and chemical water quality? American Society of Limnology and Oceanography Winter Meeting. Santa Fe, New Mexico.
- Fraizer, L., J. Brofft, V. Baylor, M.E. Frischer. (2007). Comparative analysis of the assimilatory nitrate reductase gene in response to nutrient amendment and simulated upwelling in a Norwegian fjord. American Society of Limnology and Oceanography Winter Meeting. Santa Fe, New Mexico.
- Frischer, M.E., R.L. Lee. (2006). Evidence for a free-living life stage of the blue crab parasitic dinoflagellate, *Hematodinium* sp. American Society of Limnology and Oceanography Summer Meeting. Victoria, Canada. p. 40.
- Wafula, D., J.E. Brofft, and M.E. Frischer. (2006). Ecological significance of *nasA* gene diversity in marine heterotrophic bacteria. SEERS Meeting. Savannah, GA.
- Troedsson, C., M.E. Frischer, J.C. Nejtgaard, E.M. Thompson. (2006). Molecular quantification of differential ingestion and particle trapping rates by the appendicularian *Oikopleura dioica* as a function of prey size and shape. American Society of Limnology and Oceanography Summer Meeting. Victoria, Canada. p. 124.
- Fraiser, L. J. Brofft, V. Baylor, and M.E. Frischer. (2006). Dynamics of nitrate assimilating bacteria in response to simulated upwelling events as determined by *nasA* (assimilatory nitrate reductase) sequence analysis. American Society of Limnology and Oceanography Winter Meeting. Hawaii.
- Singleton, M.C., J.M. Danforth, M.E. Frischer, E.L. Pulster, and K.A. Maruya. (2006) Georgia Oyster Watch (GeOW): Can oysters be utilized as integrative monitors of bacteriological and chemical water quality? American Society of Limnology and Oceanography Winter Meeting. Hawaii.
- Smith, J.S., E.L. Pulster, M. Singleton, J. Danforth, M.E. Frischer, and K.A. Maruya. (2005). Biomonitoring for the Georgia coast: Oysters (*Crassostrea virginica*) as sentinels of coastal water quality. SETAC Conference November 2005.
- Singleton, M.C., J. Danforth, and M.E. Frischer. (2005). Georgia Oyster Watch (GeOW) – Can oysters be utilized as integrative monitors of bacteriological and chemical water quality?. SEERS Meeting. Savannah, GA.
- Frischer, ME, VD Baylor, TL Walters, JM Danforth, JC Nejtgaard, and PG Verity. (2005). The rich get richer: individual cell and community bacterial response to an induced bloom of *Phaeocystis pouchetii*. American Society of Limnology and Oceanography. June 19-24, 2005
- Walters, T.L., T.F. Foy, V.D. Baylor, J.M. Danforth, and M.E. Frischer. (2005). Succession of bacterial communities associated with the decomposition of mangrove leaves. American Society of Limnology and Oceanography. June 19-24, 2005
- Singleton, M.C., J.M. Danforth, M.E. Frischer, P. Winnubst, K.L. Smalling, E.L. Pulster, and K.A. Maruya. (2005). Georgia Oyster Watch (GeOW)- Can oysters (*Crassostrea virginica*) be utilized as integrative monitors of bacteriological and chemical water quality? 137th American Fisheries Society Joint Annual Meeting. September 11-15, 2005 Anchorage, Alaska.
- Jacobson, M, J. Burns, B. Smallwood, D. Thornton, I. Romero, M. Vargas, D. Koffler, G. Rudnick, C. Lee, M. Fogel, M. Woller, M. Frischer, and T. Foy. (2004). Nutrient acquisition in trees, microbial activity, biogeochemical processes and community structure in response to natural and induced nutrient gradients in a mangrove ecosystem. INTERCOL, July 26-30, 2004. Amsterdam, The Netherlands.
- Frischer, M.E. (2004) Ratio of Bioluminescent to Total Bacteria as an Indicator of Human Impact in Coastal Estuarine Systems American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.
- Frischer, M.E. (2004) Molecules to microzooplankton: the application of molecular approaches in microzooplankton ecology. Invited Presentation. American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.

- Foy, T.F., M.E. Frischer, T.L. Walters, J.M. Danforth, J.P. Schmit, and C.A. Shearer. (2004). Bacterial and fungal abundance, diversity, and response to nutrient enrichment in mangrove sediment and leaf litter. American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.
- Baylor, V.D., T.L. Walters, M.H. Howard, P.G. Verity, and M.E. Frischer. (2004). Bacterial response at the community and individual cell levels to an induced bloom of *Phaeocystis pouchetii*. American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.
- Arnold, W.S, G.L. Hitchcock, M.E. Frischer, R. Wanninkhof, and Y.P. Sheng. (2004). Dispersal of an introduced larval cohort in a coastal lagoon. American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.
- Brofft, J., J. Braxton, P. Verity, and M. Frischer. (2004). Dynamics among nitrate assimilatory reductase gene (*nasA*) phylotypes during an induced *Phaeocystis pouchetii* bloom. American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.
- Nejstgaard, J.C. and M.E. Frischer. (2004). Quantitative molecular detection of prey in copepod guts. American Society of Limnology and Oceanography. June 14-18, 2004. Savannah, Ga.
- Baylor, V.D., T.L. Walters, M.H. Howard-Jones, P.G. Verity, and M.E. Frischer (2004). Does bacterial activity at the community and individual cell level reflect each other? Response of a marine bacterial community during an induced bloom of the haptophyte alga *Phaeocystis pouchetii*. American Society for Microbiology General Meeting, 2003, Washington, DC
- Frischer, M.E. (2004). Molecular approaches for in situ studies of nitrate utilization by marine bacteria. Biotechnology Investigations – Ocean Margins Program Annual Investigators Workshop. January 8-9, 2004. Mayaguez, PR.
- Brofft, J., J. Braxton, R. Settle, P. Verity, and M.E. Frischer (2004). Dynamics among nitrate assimilatory reductase gene (*nasA*) phylotypes during an induced *Phaeocystis pouchetii* bloom. Biotechnology Investigations – Ocean Margins Program Annual Investigators Workshop. January 8-9, 2004. Mayaguez, PR.
- Schmit, J.P., C.A. Shearer, M.E. Frischer, T.F. Foy, J.M. Danforth, and T.L. Walters. (2003). Bacterial and fungal abundance, diversity, and response to nutrient enrichment in mangrove forests. Mycology Society of America General Meeting. July 27-31, 2003. Pacific Grove, California.
- M.G. Booth, D.A. Bronk, M.P. Sanderson, A.E. Allen, P.G. Verity, and M.E. Frischer. (2003). Linking expression and regulation of assimilatory nitrate reductase in heterotrophic bacteria with uptake of inorganic nitrogen. American Society for Microbiology General Meeting, 2003, Washington, DC
- M.E. Frischer, T.F. Foy, J.M. Danforth, T.L. Walters, J.P. Schmidt, and C.A. Shearer. (2003). Bacterial and fungal abundance, diversity, and response to nutrient enrichment in mangrove sediment and litter. American Society for Microbiology General Meeting, 2003, Washington, DC
- Frischer, M.E., J.M. Danforth, R.M. Bower, and W.S. Arnold. (2003). A genetic probe for the Sea Scallop (*Placopeten magellanicus*): Molecular approaches for tracking larval dispersion. 14th International Pectinid Workshop. St. Petersburg, FL April 23-29, 2003.
- Frischer, M.E., M.G. Booth, A.E. Allen, H. Hendrickson, P.G. Verity, D.A. Bronk, and M.P. Sanderson. (2002) Combined Molecular and Chemical Tracer Approaches for In Situ Identification of Nitrate Utilization by Marine Bacteria. (2002). Joint AGU-ASLO meeting, Hawaii.
- Nejstgaard, J.C., M.E. Frischer, C.L. Raule, and P.G. Verity. (2002). Amplifying prey ribosomal RNA Genes: A promising method for determining complex zooplankton feeding interactions. American Society of Limnology and Oceanography. June 10-14, 2002. Victoria, British Columbia.
- M.E. Frischer, A.S. Hansen, J.A. Wyllie, J. Wimbush, J. Murray, and S. A. Nierzwicki-Bauer (2002). Specific Amplification of the 18S rRNA gene as a method to detect Zebra Mussel (*Dreissena polymorpha*) Larvae in Plankton Samples. 11th International Conference on Aquatic Invasive

- Species. Washington, DC. 11th International Conference on Aquatic Invasive Species. Washington, DC.
- Wimbush, J., P.A. Vescio, B.R. McGrath, A.S. Hansen, D.B. King, S. Danielsen, and S.A. Nierzwicki-Bauer (2002). Eradication of a new zebra mussel infestation in Lake George, NY: A potentially successful integrated approach. 11th International Conference on Aquatic Invasive Species. Washington, DC. 11th International Conference on Aquatic Invasive Species. Washington, DC.
- Benson, A.J., J.D. Williams, D.C. Marelli, M.E. Frischer, and J.M. Danforth (2002). Establishment of the green mussel, *Perna viridis* (Linnaeus 1758), (Mollusca: Mytilidae) on the west coast of Florida.
- Booth, M.G., A.E. Allen, M.P. Sanderson, D.A. Bronk, P.G. Verity, and M.E. Frischer. (2001). Determination of *nasA* expression and nitrate utilization using molecular and physio-chemical approaches to characterize marine heterotrophic bacterial nitrate assimilation. International Society of Microbial Ecology Meeting. Amsterdam, Netherlands.
- Frischer, M.E., J.M. Danforth, M.H. Jones, T. Foy, J.P. Schmit, and C. Shearer. (2001). Bacterial and Fungal Responses to Nutrient Enrichment in Mangrove Sediment and Leaf Litter. International Society of Microbial Ecology Meeting. Amsterdam, Netherlands.
- Allen, A.E., M.G. Booth, M.E. Frischer, P.G. Verity, D.A. Bronk, M.P. Sanderson, and H. Hendrickson. (2001). Relationship between abundance and diversity of assimilatory nitrate reductase and ¹⁵N uptake of nitrate in heterotrophic marine bacteria. International Society of Microbial Ecology Meeting. Amsterdam, Netherlands.
- Howard-Jones, M.H., V.D. Ballard, S.C. Williams, P.G. Verity, and M.E. Frischer. (2001). Distinguishing between living, non-living, and inactive cells in the marine environment. American Society of Limnology and Oceanography, Albuquerque, NM.
- Allen, A.E., M.G. Booth, M.E. Frischer, P.G. Verity, J.P. Zehr, and S. Zani. Diversity of Assimilatory Nitrate Reductase Genes in Heterotrophic Bacteria and their Detection in the Marine Environment. American Society for Microbiology General Meeting, 2001, Orlando, FL.
- M.E. Frischer, J. M. Danforth, S. E. Pagan, R. Juraske, A. Blechschmidt and P.G. Verity. Ratio of Bioluminescent to Total Bacteria as an Indicator of Human Impact in Coastal Estuarine Systems. American Society for Microbiology General Meeting, 2001, Orlando, FL. N35.
- Booth, M.G., M.E. Frischer, P.G. Verity, and M.G. Gilligan. (2001). Impact of Undergraduate Research Experience at Savannah State University. DOE BI-OMP Annual Investigators Meeting. March 29-31 2001, Savannah, Georgia
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OTHER PRODUCTS

Videos

1. TEDx Savannah 2023. Where Have Our Shrimpers Gone? May 25, 2023. Available on YouTube <https://tedxsavannah.com/talks/where-have-our-shrimpers-gone/>
2. Doliolid selective feeding. <https://www.youtube.com/watch?v=cgVMDUZO7kg>. October 2018.
3. What do doliolids eat for breakfast? <https://www.youtube.com/watch?v=zcWPbJXJhjY>
4. Georgia teachers participate in UGA Skidaway Institute research cruises <https://www.youtube.com/watch?v=O9Pq32bRBqw>
5. Skidaway Inst Black Gill Cruise 10 22 15 <https://www.youtube.com/watch?v=dGeRnqdk9m8>
6. Black Gill in Georgia Shrimp <https://www.youtube.com/watch?v=xJQkORTHuVE>
7. Ocean Sampling Day 2015 @ UGA Skidaway Institute <https://www.youtube.com/watch?v=5c8JuzvLUH8>

Audio Broadcasts

1. Aging Septic, Rising Seas Threaten Georgia Waterways. (September 2020). By Emily Jones and Mary Landers. GPG npr <https://www.gpbnews.org/post/aging-septic-rising-seas-threaten-georgia-waterways>

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