

2014 Briefing Book

OHIO SEA GRANT COLLEGE PROGRAM



including

F.T. STONE LABORATORY

the **CENTER FOR LAKE ERIE AREA RESEARCH (CLEAR)**

and the **GREAT LAKES AQUATIC ECOSYSTEM RESEARCH CONSORTIUM (GLAERC)**

*NOAA Sea Grant Site Visit
November 13-14, 2014*



OHSU-TB-1501

A. PROGRAM MANAGEMENT AND ORGANIZATION

LEADERSHIP

Setting of the Program within the University

Dr. Jeffrey M. Reutter is Director of the Ohio Sea Grant College Program at The Ohio State University (OSU) which includes: Stone Laboratory, this country's oldest freshwater biological field station, the Center for Lake Erie Area Research (CLEAR), and the Great Lakes Aquatic Ecosystem Research Consortium (GLAERC), a consortium of Ohio colleges and universities. Dr. Reutter reports to two vice presidents at OSU: Dr. Caroline Whitacre, Vice President for Research, and Dr. Bruce McPheron, Vice President for Agricultural Administration and Dean of the College of Food, Agriculture, and Environmental Sciences. Stone Laboratory is the base for many of Ohio Sea Grant's research, education and outreach programs.

OHIO SEA GRANT MANAGEMENT TEAM COMPOSITION AND RESPONSIBILITIES

The Ohio Sea Grant College Program Management Team consists of the Director, Associate Director, Assistant Director, Extension Program Leader, and Business Manager.

Dr. Jeffrey M. Reutter, Director: 0.75 FTE

Serves as Program Director. Responsibilities include overseeing all aspects of the program including developing goals, objectives and policies for program; hiring and managing staff; maintaining facilities and equipment; overseeing fundraising and budgets; preparing and evaluating proposals; awarding grants and scholarships; planning events, public speaking, and donor development; developing Stone Lab curriculum and hiring faculty; coordinating of legislative and congressional interactions; and leading and serving on state, regional and national boards, task forces, committees and groups.

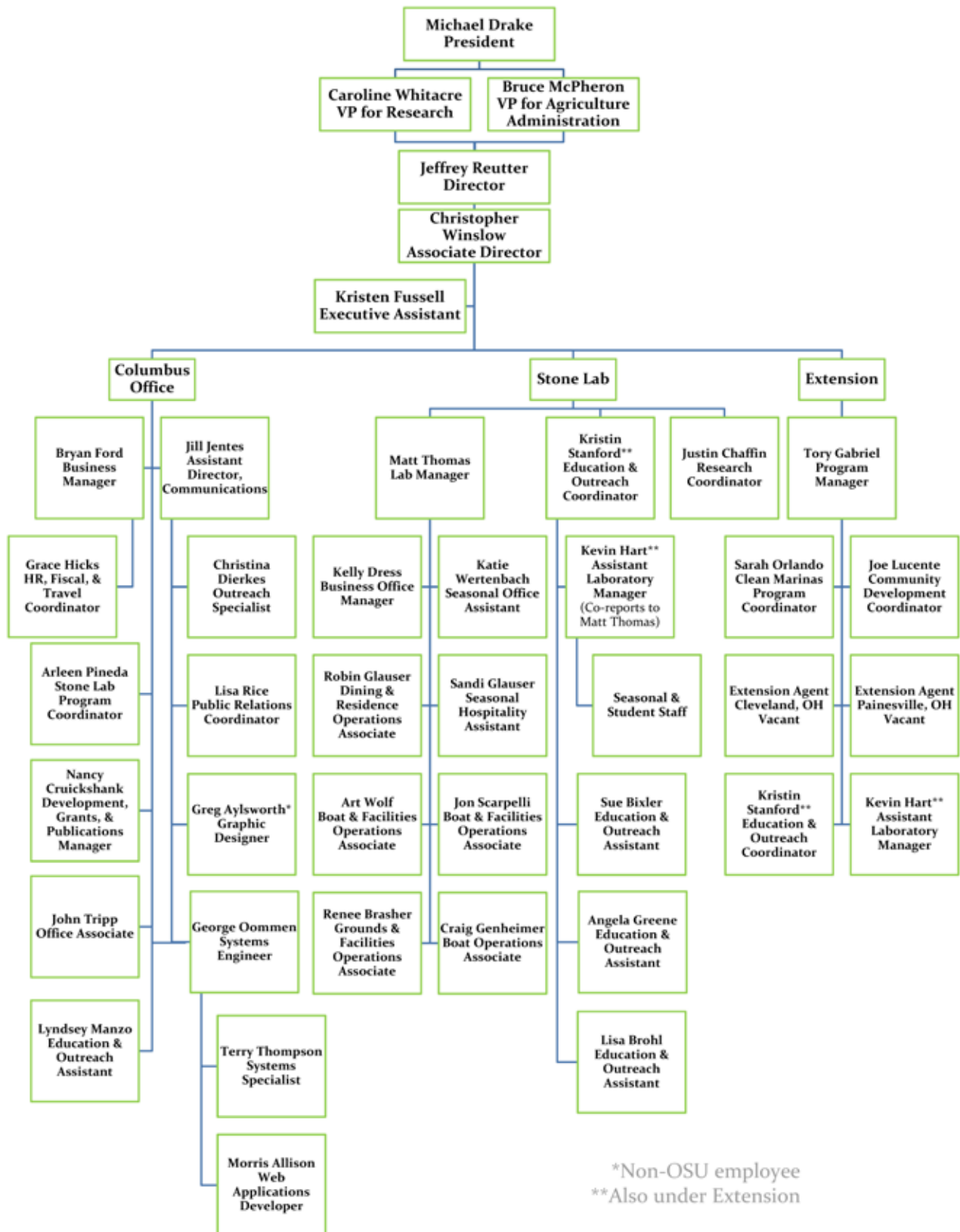
Dr. Christopher Winslow, Associate Director (hired December 2011 to replace Eugene Braig): 1.00 FTE

Is the number two person in the program and acts as the Director in the Director's absence, serves as Research Coordinator and liaison for Principal Investigators (PIs). Responsibilities include coordinating reporting to national office and omnibus submission; coordinating project funding with OSU Office of Sponsored Programs; providing university approvals on travel and expenditures; writing proposals and serving as principal investigator on grants; leading the regional coastal storms program with NOAA; leading the Asian Carp outreach effort for the Great Lakes Sea Grant Network; teaching at Stone Lab; and developing partnerships with agencies/stakeholders and collaborative proposal development.

Jill Jentes Banicki, Assistant Director-Communications: 1.00 FTE

Serves as the Communications Manager and media and university relations liaison for the program. Responsibilities include analyzing and developing strategies to increase program visibility and student recruitment; creating educational and marketing publications, displays, and web sites to broaden audience exposure; producing merchandise to increase fundraising efforts for non-profit Friends of Stone Lab group; generating grant proposals to expand outreach opportunities; and developing partnerships and collaborative projects at university, state and regional levels.

ORGANIZATIONAL CHART FOR OHIO SEA GRANT AND STONE LABORATORY



OHIO SEA GRANT MANAGEMENT TEAM COMPOSITION AND RESPONSIBILITIES (CONT'D.)

Frank R. Lichtkoppler, Program Leader (retired 30 September 2014): 1.00 FTE

Tory Gabriel, Program Leader (effective 1 October 2014): 1.00 FTE

Serves as Extension Program Leader (~35% of time) and Extension Specialist (~65% of time). Program Leader responsibilities include extension program leadership, extension grant writing, budget development and grant management; assisting in overall extension outreach programming; and mentoring junior extension faculty & staff. Responsible for conducting education and outreach programming in Northwest Ohio and the Ohio shoreline relating to fisheries. Supervises six full-time employees.

Bryan Ford, Business Manager: 1.00 FTE

Manages fiscal/HR matters for Ohio Sea Grant and Stone Lab. Responsibilities include developing and monitoring budgets and fees; approving expenditures; developing strategies to enhance revenue and reduce expenses; developing and maintaining effective internal controls to ensure compliance with university, state and federal policies; overseeing all personnel concerns, including appointments, salaries and timekeeping. Supervises one full-time employee.

ADVISORY BOARDS AND SEEKING EXTERNAL ADVICE

Each extension specialist has an external private sector advisory committee, while the two specialists at Stone Laboratory use the Board of Directors of the Friends of Stone Lab (FOSL) as their committee. New committees will be formed when the new specialists are hired in Cleveland and Painesville. We also utilize an internal OSU Director's Advisory Council. Some of these committees have bylaws and a regular schedule of meetings (FOSL and Clean Marinas) while others are less active and meet irregularly. Some of the members are incredibly active volunteers and participate in fundraising activities, host meetings (e.g., State Legislature/Congressional Day), staff booths at sport and boat shows, volunteer in our offices and labs, and lead visitors at the South Bass Island Lighthouse, Aquatic Visitors Center and Gibraltar Island. While all Sea Grant Programs seek advice and input on priorities and needs from their advisory committees, Ohio Sea Grant is likely unique in the ways we utilize advisory committee members as volunteers.

Ohio Sea Grant has also worked very hard to establish active partnerships and collaborations with Ohio Environmental Protection Agency (OEPA), Ohio Department of Natural Resources (ODNR), the Ohio Division of Wildlife, the Lake Erie Commission, Old Woman Creek National Estuarine Research Reserve (OWC NERR), the Ohio Coastal Management Program, The Nature Conservancy (TNC), the Lake Erie Marine Trades Association (LEMTA), the Lake Erie Millennium Network, the International Joint Commission (IJC) and many more. In addition to being our partners, these groups are also our stakeholders. Our service on their boards and committees has given us unique opportunities to identify and understand their priorities and needs and to work together to address those needs. Scientists from these organizations also serve on our external review panels to assist us in determining which projects to support. This helps each group understand what the others are doing and reduces duplication. It also allows us to jointly fund projects, thereby enhancing our budget.

A final way Ohio Sea Grant seeks external advice is through regular evaluations and surveys conducted at boat shows and with all of our workshops and education/outreach programs. Because of the programs we host, we have been able to survey and understand the needs and priorities of state legislators, coastal county commissioners and mayors, science writers, charter captains, water treatment plant operators, farmers and more.

UNIQUE ASPECTS OF OHIO SEA GRANT

Stone Laboratory, on Gibraltar Island in Lake Erie, is part of Ohio Sea Grant. Through Stone Lab and The Ohio State University, Ohio Sea Grant offers 25 college courses each summer. Some of these courses are

designed for college undergraduate and graduate students, some are designed for teachers, and some are introductory courses allowing superior high school students to enroll along with college students. Since 2000, our students have come from 89 different colleges and universities and 316 high schools. Ohio Sea Grant manages 15 buildings on about 15 acres on South Bass and Gibraltar Islands in Lake Erie, including Jay Cooke's Castle, a National Historic Landmark, the historic South Bass Island Lighthouse, and the historic Put-in-Bay Fish Hatchery, which we have converted into an Aquatic Visitors Center that attracts over 20,000 visitors annually. We have created 22 endowments to support the program, and annually award scholarships totaling approximately \$30,000 to about 50 students, as well as 10 Research Experience for Undergraduates (REU) Scholarship awards totaling about \$45,000. We also award 15 scholarships to superior high school students at the Ohio Academy of Science's State Science Day.

At Stone Lab, Ohio Sea Grant has its own fleet of research vessels, a newly renovated Research Building and water quality lab, a Dining Hall, housing facilities, classrooms, and a Lecture Hall. Because we manage and maintain everything, we can respond immediately to problems and opportunities. Ohio Sea Grant uses these facilities to annually offer special workshops and programs for the State Legislature, the Ohio Congressional Delegation, Coastal County Commissioners and Mayors, science writers, charter captains, coastal property owners, the farming community, water treatment plant operators, and students in grades 4 to adults. Approximately 250 programs of this type with approximately 8,000 participants are offered annually. We attempt to make everything at the Lab serve Sea Grant's research, education, and outreach purposes, including 90 new solar panels, a solar thermal installation, and our own, donated monitoring buoy.

RECRUITING TALENT

RFP Priorities and Planning Process

Since 2010, 43% of Ohio Sea Grant's core budget has been dedicated to competitively funded research projects. Proposals for small grants (requesting up to \$10,000) from our development fund can be submitted at any time. Prior to 2012, proposals for large research grants (up to \$60,000 per year) were requested through a biennial request for proposals (RFP) disseminated to every college and university in Ohio, and investigators could request funding for up to three years. Allowing 3-year projects in a 2-year funding cycle resulted in a great deal of cross-over of projects between our biennial RFPs, with the result that in some years we had a very small amount of funding available for new projects. With encouragement from the Director's Advisory Council, new projects beginning in 2012 could only request funding for two years. The number of these biennial-crossing projects in 2012 was five, with three in 2014, and by strategically using our recent minibus funding, we will have zero continuing projects in 2016.

Preproposals submitted for the RFP cycle are reviewed by a panel consisting of Ohio Sea Grant staff and external academic and agency scientists. Based upon that panel's review, full proposals are either invited or discouraged; however, no preproposal is rejected based upon these evaluations.

Full proposals submitted to the RFP cycle are all subject to external, written peer review. Investigators are required to provide a list of potential reviewers with proposal submission. Investigators and reviewers are instructed to both avoid and list any possible conflicts. Each proposal is reviewed by at least three peers, with at least one not coming from the list recommended by the investigator. Investigators are also permitted to submit written responses to blinded peer reviews. An external panel of expert professionals and scientists from agencies, academia, industry, and non-governmental organizations reviews the proposals, their written evaluations, the investigators comments, and ranks the proposals. A representative from the National Sea Grant Office attends the panel meeting to ensure fairness and the absence of conflicts of interest. The Director of Ohio Sea Grant takes the recommendations of the panel into consideration when deciding which proposals to include in our biennial omnibus submission to the National Sea Grant College Program.

In recent years we have included representatives from the Old Woman Creek NERR, Ohio Coastal Management Program, the Lake Erie Commission, OEPA, ODNR, Ohio Division of Wildlife, Lake Erie Millennium Network, TNC in Ohio, and NOAA on our panels. In addition to being good scientists, they bring to the panel a clear understanding of management needs. Their participation has also created opportunities to leverage Sea Grant funds by co-funding projects with these organizations. These panels have also become advisory committees for the program. Since 2005, we have supported 47 principal or co-principal investigators in six colleges and 15 departments at Ohio State, 53 investigators in 23 departments at 13 other universities, and eight investigators at five other agencies and organizations.

Our strategic planning process includes conference calls and face-to-face meetings in Columbus, at Stone Lab, and at coastal extension offices with the entire program staff. Each person comes armed with the priorities of the various panels, committees, boards, and task forces they serve on. For the past 10 years we have had a focus on seven key problems/issues facing Lake Erie: sedimentation, nutrient loading, harmful algal blooms (HAB), the “dead zone,” aquatic invasive species (AIS), climate change, and coastal economic development. Visitors to our booths at boat and sport shows and participants in our workshops at Stone Lab and all along the coast are regularly asked to complete evaluations of our programs and to rank these seven priorities and suggest new priorities.

During the 4-5 year period of our strategic plans we meet 1-2 times/year to do a thorough, step-by-step evaluation of our progress toward achieving each item on the plan. Each staff members also routinely completes electronic reports documenting their efforts toward critical performance measures.

B. STAKEHOLDER ENGAGEMENT

LEADERSHIP

Leadership by Staff on Boards and Committees

Jeff Reutter

Chair, 2014, Great Lakes Sea Grant Network

US Co-Chair, 2013-present, Great Lakes Water Quality Agreement, Annex 4 (Nutrients), Objectives and Loadings Task Team

Member, 2013-present, Great Lakes Water Quality Agreement, Annex 2 (LaMPs) Subcommittee

Board of Trustees, 2009-present, The Nature Conservancy, Ohio, Chair of Policy Committee

Board of Trustees, 2013-present, The Alliance for the Great Lakes

US Co-Chair, 2006-present, Great Lakes Regional Research Information Network (GLRRIN)

US Co-Chair, 1998-present, Lake Erie at the Millennium Network for US and Canada

Member, 2000-present, NOAA Old Woman Creek NERR Advisory Committee

Member, 2011-12, Director’s Agricultural Nutrients and Water Quality Working Group (Ohio Agencies)

President, 2003-2005, National Association of Marine Laboratories (NAML)

US Co-Chair, 6 years; member, 1989-2012, Council of Great Lakes Research Managers, International Joint Commission

Member, 2010-2014, Ohio Phosphorus Task Force I & II

Chair, 2012-13, Ohio Phosphorus Task Force II, Loading and Concentrations Committee

Member, 2005-09, Ocean Research and Resources Advisory Panel (ORRAP)

Chair, 2007-09; member, 2007-present, Education Sub-Panel of the ORRAP

Member, 2006-08, Research to Applications Task Force (RATF) of the ORRAP

Member, 2006-08, NOAA Science Advisory Board Extension, Outreach and Education Work Group

Member, 2003-07, National Steering Committee, Global Ocean Observing System

Jeff Reutter (cont'd.)

Chair, 2003-07, IOOS Work Group for the National Sea Grant College Program
Board Member, 1992-2005, Great Lakes Protection Fund
President, 1998-99, The Ohio State University Chapter of Sigma Xi
Executive Committee, 2000-2003, Board of Oceans and Atmospheres, NASULGC
“Fellow” and Member, 2003-08, Ohio Academy of Science
Member, 1998-2012, Grant Making Committee, Lake Erie Protection Fund
Member, 2003-2006, Steering Committee, Great Lakes Observing System (GLOS)
Co-Chair, 1997-98, National Sea Grant 30th Anniversary Committee

Chris Winslow

Member, 2014-present, International Joint Commission (IJC) Science Advisory Board
Member, 2014-present, IJC Research Coordinating Committee
Advisory Board Member, 2014-present, Western Lake Erie Basin Conservation Effects Assessment Project (WLEB CEAP)
Chair, 2014-present, Request for Proposals (RFP) committee for NOAA’s Great Lakes Coastal Storms Program
President, 2013- present, Ohio Chapter of American Fisheries Society
Citizen Science Research Project Scientist, 2013-present, under National Science Foundation (NSF) grant with Bowling Green State University
Chair, 2012-present, Ohio Sea Grant’s Stone Lab Scholarship Selection Committee
Co-Chair, 2013, Re-Eutrophication of Lake Erie session (#37) at IAGLR
Member, 2011-present, International Association of Great Lakes Research
Member, 2014-present, American Fisheries Society (AFS)
Member, 2011-present, Ohio Chapter of the AFS
Faculty Advisor, 2012-present, Buckeye Friends of Stone Lab

Jill Jentes Banicki

Chair, 2004-2006, Great Lakes Sea Grant Network Communicators
Chair, 2006-present, Outreach and Education Committee, Great Lakes Regional Research Information Network (GLRRIN)
Member, 2007-present, Marketing Committee, Great Lakes Observing System (GLOS)
Member, 2007, Planning Committee, Great Lakes Sea Grant Network Conference
Member, 2007-present, OSU Outreach and Engagement Council
Member, 2007-present, OSU College of Food, Agricultural, and Environmental Sciences Communicators
Member, 2009-present, Planning Committee, OSU Communicators
Member, 2009-present, OSU Climate Change Outreach Team
Chair, 2011-present, OSU Climate Change Outreach Team
Team Lead, 2010-2013, Marketing Team, NOAA Climate Mini-Grant
Member, 2012-present, OSU Communicators Council

Justin Chaffin

Coordinator, 2013-present; Charter Boat Captain Sampling Program
Coordinator, 2013-present; Stone Laboratory Research Experience for Undergraduates Program
Member, 2014-present; Great Lakes Water Quality Agreement Annex 4
Member, 2013; Ohio Phosphorus Task Force subcommittee on phosphorus loading

Tory Gabriel

President Elect, 2014-present, Ohio Chapter of the American Fisheries Society
Ohio Alternate, 2013-present, Great Lakes Panel of Aquatic Nuisance Species Task Force
Member, 2012-present, Ohio AIS Committee, ODNR Division of Wildlife
Member, 2012-present, Education Committee, Ohio Sea Grant
Member, 2009-present, Public Relations Committee, Ohio Association of Extension Professionals
Faculty Co-Advisor, 2009-present, OSU Bass Fishing Club
Member, 2008-present, Planning Committee, Ohio 4-H Sea Camp
Member, 2008-present, Education/Continuing Education Committee, Ohio Chapter of the American Fisheries Society
Member, 2014, Small Grant Review Panel, Ohio Sea Grant
Member, 2011 and 2013, Ohio Envirothon Test Writing Committee, Ohio Department of Natural Resources
Member, 2009 and 2014, Planning Committee, Great Lakes Sea Grant Network Conference
Member, 2009-2011, Lake Erie Fish Marketing Committee, Ohio Sea Grant

Joe Lucente

President-Elect and President, 2014-2015, Ohio Epsilon Sigma Phi Chapter, National Extension Fraternal Organization, OSU Extension
Member, 2014, Ohio Joint Council of Extension Professionals Excellence in Extension Award Selection Committee
Member, 2013-present, National Working Waterfronts Network, Education and Outreach Committee
Member, 2013-present, Ohio Joint Council of Extension Professionals Personnel Committee
Chair, 2012-2013, NOAA National Sea Grant Sustainable Coastal Community Development Executive Committee
Member, 2011-2013, National Association of Community Development Extension Professionals National Galaxy Conference Recognition/Awards Committee
Elected Delegate, 2011-2012, Ohio Association of Extension Professionals Executive Committee
Appointed Member, 2011, OSU Community Access to Resources and Educational Services Grant Committee
Appointed Member, 2010, Maumee Valley Extension Education Research Area Regional Grants Committee
Elected Delegate, 2010-2010, Great Lakes Representative, National Sustainable Coastal Community Development Network
Member, 2008-2010, OSU Extension McSweeney Land Use Conference Committee
Elected Member, 2009-2010, West Region Senior Administrative and Professional Vita Review Committee
Member, 2010-present, OSU Extension Signature Program Review Committee
Invited Advisor, 2008-2010, OSU Extension Community Development Program Area Advisory Committee
Committee Member, 2008-2009, NOAA Sea Grant National Sustainable Coastal Community Development National Conference Committee
Member, 2012, Planning Committee, Great Lakes Sea Grant Network Conference
Member, 2014-2015, Planning Committee, Great Lakes Sea Grant Network Conference
Member, 2005-present, Marketing/Membership Service Committee, National Association of Community Development Extension Professionals
Member, 2005-present, Recognition Committee, National Association of Community Development Extension Professionals
Member, 2006-2008, State Charters Committee, National Association of Community Development Extension Professionals
Member, 2002-present, Great Lakes Sustainable Coastal Community Development Committee
Committee Member, 2005-2006, Lake Erie Balanced Growth Plan Steering Committee
Member, 2005-2012, Lucas County Emergency Operations Center Assessment Group
Member, 2003-present, Toledo Area Chamber of Commerce's Economic Development and Infrastructure Committees
Member, 2002-2010, Maumee River Remedial Action Plan Public Education and Outreach Committee

Lyndsey Manzo

Member, 2014-present, NOAA Education Collective Impact Regional Work Group
Adjunct Instructor, 2014-present, Ashland University
Member, 2011-present, Center for Great Lakes Literacy
President, 2010-present, Great Lakes Educators of Aquatic and Marine Science
Board Member, 2009-present, National Marine Educators Association
Member, 2008-present, Sea Grant Educators Network
Member, 2005-present, Environmental Education Council of Ohio
Member, 2000-present, Science Education Council of Ohio
Pilot Test Teacher, 2014, SPECIES Climate Change and Its Impacts on Ecosystems – University of Michigan
Committee Member, 2012-2014, Ohio Department of Education Biology Performance Based Assessment
Rangefinding Committee
Committee Member, 2012, Ohio Department of Education Science OGT Alignment Review
Pilot Test Teacher, 2009, COSEE Great Lakes Fresh and Salt Curriculum
Member, 2007- 2010, Centers for Ocean Science Education Excellence (COSEE) Great Lakes Advisory Board

Sarah Orlando

Co-Coordinator, 2012-present, Great Lakes Clean Marina Network
Board Member, 2012-present, Steering Committee, Cleveland Water Alliance
Member, 2012-present, Clean Water Coalition, Erie County Soil & Water Conservation District
Board Member, 2012-2014, Advisory Committee, 4R Nutrient Stewardship Advisory Committee
Member, 2013-present, Year of Water Working Group, Cleveland Water Alliance
Member, 2013-2014, Stormwater Working Group, Cleveland Water Alliance
Member, 2013-2014, Cleveland Climate Change Adaptation Working Group, City of Cleveland Office of Sustainability

Kristin Stanford

Board Member, 2003-present, Lake Erie Islands Chapter of the Black Swamp Conservancy
Board Member and Chair, 2010-present, Lake Erie Islands Nature and Wildlife Center
Board Member, 2004-2012, Midwest Partners in Amphibian and Reptile Conservation
Member, 2012-present, Midwest Partners in Amphibian and Reptile Conservation
Member, 2007-present, Lake Erie Islands Historical Society (LEIHS)
Member, 2003-2011, American Society of Ichthyologists and Herpetologists (ASIH)
Member, 2004-2005, The Herpetologists League (HL)
Member, 2003-present, Society for the Study of Amphibians and Reptiles (SSAR)
Member, 2004-present, The Snake Ecology Group
Ph.D. Committee Member, 2013-present, Northern Illinois University
Member, 2006-present, Teaming With Wildlife

Matt Thomas

Board Member, 2010-present, Lake Erie Islands Chapter of the Black Swamp Conservancy
Board Member, 2000-present, Diving Control Board, OSU Office of Research Compliance
Board Member, 2009-present, Lake Erie Chapter of the Black Swamp Land Conservancy
Member, 2005-present, Research Advisory Committee, Friends of Stone Lab
Member, 2006-present, Lake Erie Millennium Network for US and Canada

PARTNERS AND STAKEHOLDERS

Ohio Sea Grant works with approximately 300 partner and stakeholder organizations (see partial list in the Partnerships table in PIER Management Metrics). Partners and stakeholders use the information we produce and support the work we do, and we do the same for them. We each serve on advisory committees, assist with fundraising, provide in-kind donations for special events and programs, assist in developing program priorities and conducting programs, co-fund projects, fund projects, and much more. Some of our key stakeholders are listed below.

- **4R Nutrient Stewardship Certification Program:** Ohio Sea Grant partnered with multiple agency, non-profit, industry, and university members to develop the 4R Nutrient Stewardship Certification Program, a voluntary, certification-based stewardship program for agricultural retailers. The program was modeled after the Ohio Clean Marinas Program, as well as the Forest Stewardship Council Certification Program, and was launched in spring of 2014.
- **Climate Explorations 4-H Curriculum:** Ohio Sea Grant in partnership with OSU Extension's 4-H Program and Byrd Polar Research Center are developing informal education climate change curriculum that will be used in the state's 4-H Program starting in 2015. This project brings 10 central Ohio partners together including six OSU departments, the Audubon Society, Columbus Zoo, Franklin Park Conservatory, and Columbus Metro Parks to help teach the public about climate change through new curriculum and public events.
- **Great Lakes Commission:** We collaborate with the Commission on outreach for the Great Lakes Regional Research Information Network and the Great Lakes Observing System (GLOS), and the Commission is a regional partner with the OSU Climate Change Outreach Team.
- **Great Lakes Observing System:** Ohio Sea Grant is the co-chair for the GLOS Education and Outreach Committee.
- **Great Lakes Research and Outreach Consortium:** Dr. Reutter led the effort for the region in 2006 to form the Great Lakes Research and Outreach Consortium (GLROC). This consortium of the seven Great Lakes Sea Grant Programs is designed to foster collaboration and make it easier for any one of the programs to accept funding for the entire region and subcontract to the other programs. The GLROC consortium was successfully used to route funding to collaborating programs on our NOAA Sectorial Applications Research Program project and our \$1.2 million regional coastal storms grant.
- **Great Lakes Regional Water Program:** To increase climate outreach collaboration with Cooperative Extension throughout the Great Lakes, Ohio Sea Grant partnered with OSU Extension and the Great Lakes Regional Water Program (Cooperative Extension agents specializing in watershed management) to develop tools that extension agents and other educators could use across the region for climate change outreach. Products included Climate Tools webinar sessions with professional development credit, as well as a climate change survey within the Extension network and focus group input for the greatlakesclimate.com repository tailored for general public, educators, and elected officials.
- **Lake Erie Charter Boat Association:** The Charter Boat Association is an active partner in many Ohio Sea Grant initiatives. They sponsor the annual Charter Captains Conference (along with the Division of Wildlife, US Customs and Border Protection, and the US Coast Guard), provide boats every year for 4-H Sea Camp, and provide speakers at many Ohio Sea Grant events. In many cases they act as an extension of Sea Grant Extension, as each captain has the potential to educate hundreds of fishermen each season on Lake Erie issues. Five captains volunteer their time to collect water samples and fish tissue samples to be analyzed by Stone Lab's new water quality laboratory and the OEPA.

- **Lake Erie Marine Trade Association:** LEMTA provides free booth space for us at the Cleveland Boat Show, and we collaborate on the leadership of the Ohio Clean Marinas Program. Since 2009, LEMTA has sponsored an Ohio Sea Grant Day at the Cleveland Boat Show each year, providing opportunities for Ohio Sea Grant to provide presentations and donating a portion of the day's proceeds to Ohio Sea Grant.
- **Lake Erie Nature and Science Center:** The Lake Erie Nature and Science Center, a non-profit organization focused on education and wildlife rehabilitation in Bay Village, attracts about 200,000 visitors/year. The center provides free office space for a Sea Grant Extension Specialist and we provide hands-on fishing programs for families and youth, help to connect local schools with real-time scientific data to use in the classroom, and offered an aquatic invasive species workshop for teachers, among other programs.
- **Medina, Ohio Retail Market Analysis:** Ohio Sea Grant, OSU Extension and the OSU Center for Regional Analysis co-led the development of a retail market analysis for the City of Medina, Ohio and learned that its retail market area represents 37 of 42 active retail sectors. Public officials in Medina learned that total actual retail sales were \$1,254,230,000 while its potential sales were estimated at \$1,054,181,379 indicating an overall surplus of retail sales. The retail market analysis will enable Medina officials to concentrate on business recruitment in its underserved retail business sectors.
- **National Park Service Rails, Trails and Conservation Assistance Program:** This National Park Service Program provides financial support for staff facilitating the Western Reserve National Heritage Area Feasibility Study civic engagement and public participation project. A separate stakeholder advisory group has been formed for this project that has thus far reached more than 250 stakeholders in northern Ohio.
- **NOAA Coastal Services:** Ohio Sea Grant worked with NOAA Coastal Services in 2012 and 2013 to help disseminate GLRI-funded research findings through the program's climate change webinar series.
- **ODNR Division of Watercraft:** Ohio Sea Grant partnered with the division to develop the Ohio Clean Marinas Program. They provide us with raw data on boat sales used in our reports to aid dealerships with maintaining the appropriate inventory.
- **ODNR Division of Wildlife:** Ohio Sea Grant personnel Eugene Braig and Dave Kelch collaborated with the Division of Wildlife to revise the comprehensive State Management Plan for Aquatic Invasive Species. This document guides Ohio policy and interagency activities within the state. The revised plan was submitted to the national Aquatic Nuisance Species Task Force (ANSTF) in October 2012 and approved and implemented in March 2013. This ongoing collaboration was initiated by an \$8,750 grant from the Great Lakes Commission in 2007 and continued as two grants from the ODNR totaling \$25,000 and running to 2012. Braig continues to chair the state's stakeholder advisory committee on aquatic invasive species and serves as Ohio's alternate representative to the Mississippi River Basin Panel of the ANSTF; Tory Gabriel serves as the state's alternate representative on the Great Lakes Panel.

We partner with the Division on the outreach program at our Aquatic Visitors Center at the historic state fish hatchery at Put-in-Bay on South Bass Island. The Division owns the facility and leases it to us for \$1/yr (5-yr lease renewed in 2014). We maintain/improve it and lead the outreach program that attracts over 20,000 visitors per year to learn about Great Lakes science and critical issues facing Lake Erie. We staff the facility with current and former Stone Lab students who gain valuable teaching experience.

Division experts serve on our technical review panels to evaluate research proposals, and we provide feedback on research sponsored by the Division. Division scientists annually lead an REU project at Stone Lab where students learn to insert radio transmitters into walleye and track them.

Division scientists have also competed successfully for Sea Grant funding on a project to remove a dam in a Lake Erie tributary and observe the impact on walleye movement and spawning.

The Division contributes to our annual Charter Captains Conference, various outreach and policy efforts, and many other Sea Grant programs and projects. The recently published, 232-page, full-color, *Ohio Lake Erie Birding Trail Guidebook* is a great example of our partnership.

- **OEPA:** Ohio Sea Grant sits on the interagency Harmful Algal Bloom Workgroup organized by the OEPA. Through this group, Ohio Sea Grant and the OEPA partnered with the Ohio Departments of Natural Resources and Health on related outreach. The OEPA certifies water professionals in the state of Ohio and partnered with Sea Grant/Stone Lab to develop workshops on algae identification and algal toxins that apply toward maintaining professional certification. These workshops are still held at Stone Lab and attract 40 students annually. OEPA, through its Ohio Environment Education Fund, has also supported equipment purchases in our water quality lab and our training programs for students and water treatment plant managers.
- **Office of Coastal Management:** The Coastal Office in collaboration with the ODNR Division of Soil and Water Conservation sponsors the Ohio Clean Marinas Program and the Ohio Clean Boater Program by annually dedicating a portion of their Coastal Management Assistance Grant (CMAG) funding. Coastal Management also provides free office space to Ohio Sea Grant staff to coordinate our Clean Marinas program. The Coastal Office has dedicated \$42,000 - \$54,000 of CMAG funding to the program each year, 2010-2014. In 2015, the ODNR Division of Watercraft is joining as a partner to expand both the Clean Marinas and Clean Boater Programs statewide.
- **Ohio Lake Erie Commission:** Ohio Sea Grant is an official advisor to the Commission. We serve on their grants committee, collaborate on proposals, co-fund projects, and they serve on our review panels.
- **Ohio Local Government Leadership Academy:** Ohio Sea Grant leads programming in leadership and capacity development by establishing multiple partnerships (Mahoning County, Lucas County, Hancock County, Wyandot County, Ohio Township Association) to implement curriculum focused on local government leadership practices to further support research on learning, development and leadership styles of local government officials in the Lake Erie watershed.
- **Ohio Travel Association:** This industry association with more than 700 members is a partner in the coordination of the Ohio Tourism Leadership Academy and provides staff support for program promotion, coordination of venues, and feedback for curriculum development. Ohio Sea Grant co-sponsors the group's Ohio Tourism Leadership Academy and provides funding for the annual *Economic Impact of Tourism in the Lake Erie Region of Ohio* report given to all Ohio visitor bureaus.
- **Old Woman Creek National Estuarine Research Reserve (OWC NERR):** Ohio Sea Grant uses the OWC NERR site as a frequent meeting location, our courses at Stone Lab use it for field trips, we have adopted their Coastal Training Program Coordinator as an Ohio Sea Grant Extension Specialist, we co-fund projects, and we aid each other in evaluating research proposals. Ohio Sea Grant serves on OWC NERR's advisory council.

- **OSU Climate Change Outreach Team:** The Ohio State University Climate Change Outreach Team began in 2009 as a partnership among 10 Ohio State departments, including Byrd Polar Research Center, Ohio State Extension, and Ohio Sea Grant to combine resources and strategically plan ways to disseminate climate change information to the general public. Over the past six years, the team has created two websites (changingclimate.osu.edu and regional repository greatlakesclimate.com) with climate change resources for Extension and a successful webinar series to bring together experts from around the region to teach the public about climate-related topics. Ohio Sea Grant leads the team's efforts, which includes the largest live eLearning program within the University, website clearinghouses, and new formal and informal Great Lakes climate curricula.
- **OSU Communicators Planning Committee:** For five years, Ohio Sea Grant has led a professional development conference at Stone Lab, hosting communicators and outreach specialists from across the University's Columbus campus and five branch campuses. This conference has led to free displays and advertising for Ohio Sea Grant at multiple campuses, departments, and athletic events, as well as features within college magazines and websites.
- **Point Place and the City of Toledo's Business Retention and Expansion Projects:** Ohio Sea Grant led an effort requested by the Point Place Business Association and the City of Toledo, OH to conduct a business retention and expansion program to ascertain the status of the Point Place business corridor. As a result, the Point Place Business Association and city learned that 41 businesses will retain 240.5 jobs and that nine of the 41 businesses reported plans to expand, modernize or renovate their businesses with eight of these firms planning to add jobs within the next 12 months. The number of new employees expected to be added is estimated to represent between 35-44 new full-time jobs, an estimated \$23,861-\$29,997 in additional income tax revenue to Toledo and estimated \$1,060,500-\$1,333,200 in personal income to the metro Toledo economy. We are leading an effort with LEMTA, Ohio Clean Marinas Program and ODNR Office of Coastal Management to conduct a business retention and expansion survey of Ohio's Lake Erie marina industry. Data will be used to inform trade associations, relevant state agencies, coastal county economic development officials and coastal business associations about marina business concerns, employee training issues, retention of employees, business expansion/closure plans and potential new job creation.
- **Sea Camp:** Ohio Sea Grant partners with Ohio State University Extension 4-H, ODNR Division of Watercraft, and Cleveland Metroparks Youth Outdoors to provide a hands-on Lake Erie experience for teenagers. Sea Camp graduates learn biological sampling techniques as well as recreational skills including sport fishing, sailing, snorkeling, and powerboat operation. Pending passage of the exam, participants leave the program with a boating license.
- **Upper Midwest/Great Lakes Landscape Conservation Cooperative (LCC):** The Upper Midwest and Great Lakes LCC is a partnership of more than 30 agencies and organizations that are working to connect science and natural resources management through the Great Lakes. Ohio Sea Grant worked with the group to help disseminate several of its climate-related research projects and findings through the program's climate change webinar series.
- **Village of Edgerton's Sustainable Coastal Community Vision Plan:** Ohio Sea Grant, OSU Extension and OSU Extension's Sustainable Development Initiative co-led the development of the Village of Edgerton, Ohio's sustainable coastal community vision plan. The plan approaches community and economic development, education, planning and research from a sustainable perspective, incorporating the cornerstones of sustainability.

C. COLLABORATIVE NETWORK/ NOAA ACTIVITIES

Ohio Sea Grant strives to be a good collaborator and leader of multi-state, regional and national programs and a good team player on these programs with NOAA and other groups. Some of our collaborative efforts follow.

Asian Carp Regional Coordinating Committee: Ohio Sea Grant coordinated efforts to increase education and awareness of Asian Carp in the Great Lakes. All Great Lakes Sea Grant programs received funding to collaboratively develop a bibliography of existing education and outreach materials; summarize existing education and outreach materials; develop a regional PowerPoint to be used for education and outreach; compile a regional network of speakers capable of disseminating accurate Asian Carp information; and survey current research being conducted to summarize projects and identify information gaps.

Center for Great Lakes Literacy: Developed in 2011, the Center for Great Lakes Literacy (CGLL) is a collaborative effort led by Sea Grant educators throughout the Great Lakes watershed and supported through Great Lakes Restoration Initiative (GLRI) funding. The center fosters informed and responsible decisions that advance basin-wide stewardship by providing hands-on experiences, educational resources and networking opportunities that promote Great Lakes literacy among an engaged community of educators, scientists and citizens. Ohio Sea Grant plays key roles in facilitating teacher professional development, developing regional curriculum, and designing program evaluation tools for CGLL.

Center for Ocean Sciences Education Excellence-Great Lakes: Former Ohio Sea Grant investigator Rosanne Fortner led COSEE since its inception in 2005. This collaboration brings Great Lakes Sea Grant programs together with educators and researchers to enhance Great Lakes science literacy. In late 2010, Ohio Sea Grant's Lyndsey Manzo, along with Fortner, helped lead the development of the Great Lakes Literacy Principles and website, funded by COSEE California. Manzo is continuing to lead collaborative education efforts for the Great Lakes Sea Grant Network.

Great Lakes Charter Captain Industry: By request of the U.S. Army Corps of Engineers, Ohio Sea Grant led an effort to conduct research on the economic impact of the Great Lakes charter sport fishing industry with all Great Lakes Sea Grant Programs. Results were utilized in the U.S. Army Corps of Engineers GLMRIS report to Congress and have been accepted for publication in *Fisheries* with a print date of late 2014 or early 2015.

Great Lakes Integrated Sciences and Assessments Center: Ohio Sea Grant Extension is a partner with the University of Michigan/Michigan State University Great Lakes Regional Integrated Sciences and Assessments Center (GLISA) and assists GLISA in outreach and education efforts from 2010-2015.

Great Lakes Observing System: The Great Lakes Observing System (GLOS), a regional node of the national Integrated Ocean Observing System (IOOS), is a 501(c)(3) corporation that provides public access to real time data for multiple users of Great Lakes resources. Led by the Ohio Sea Grant and Michigan Sea Grant programs, the GLOS Education and Outreach Committee was formed to help identify user needs, formulate key deliverables, and initiate a strategic education and outreach effort for GLOS (glos.us).

Great Lakes Restoration Initiative (GLRI): Ohio Sea Grant coordinated development of two major three-year projects from the seven regional Sea Grant Programs totaling \$3.3 million to the GLRI. We also coordinated 13 research proposals from a number of universities working on Lake Erie and partnered with the Lake Erie Commission to create synthesis and summary documents on all proposals submitted to the GLRI by Ohio agencies.

Great Lakes Sea Grant Network's Aquatic Invasive Species Projects: Since 2010, Ohio Sea Grant has partnered with the Great Lakes Sea Grant Network on five projects addressing the spread of AIS in the region. Three of these have been led by MN Sea Grant (GLRI), and focused on education and outreach to a wide range of clientele. Two others have been led by WI Sea Grant (NOAA-NSI and GLRI) and focused on preventing AIS spread from tournament angling. These projects also involved the national Habitattitude™ and Stop Aquatic Hitchhikers! campaigns.

Great Lakes Sectoral Application Research Project: Ohio Sea Grant led an effort with Minnesota and Wisconsin Sea Grant to secure \$300,000 to conduct research and focus groups in Toledo, OH and Duluth, MN regarding Great Lakes climate change. Data allowed for creation of a matrix that is used to help prepare and inform Great Lakes ports, harbors and storm water management facilities in an era of climate variability and uncertainty.

Great Lakes Tipping Points Land Use Tool: Ohio Sea Grant partnered with the Great Lakes SCCD Network (OH, IL-IN, WI, PA, NY, MI and MN) led by Illinois-Indiana Sea Grant, to develop "Tipping Points and Indicators," a collaborative program that helps decision makers and watershed planning groups across the Great Lakes protect natural resources and enhance local economies. The program uses interactive maps and simulators to encourage community participation and provide insight into how future development will move ecosystems closer to or further from tipping points. Together with recommended policies, ordinances, and outreach efforts, these features help decision makers develop sustainable, watershed-specific land use strategies.

Green Marina Education and Outreach Projects: Led by Michigan Sea Grant, in partnership with Ohio Sea Grant and Wisconsin Sea Grant, the project team worked together to develop education and outreach materials (online and print) to promote Clean Marinas programs and to enable access to consistent best management practices for Great Lakes marinas. Ohio Sea Grant is a co-coordinator of the Great Lakes Clean Marina Network, a partnership of state agency, industry, and university representatives to continue to work on Clean Marinas after the conclusion of the project.

Lake Erie Watersnake Post Delisting Monitoring: Ohio Sea Grant researcher Dr. Kristin Stanford and Northern Illinois University professor Dr. Richard King continue to lead the 5-year (2011-2015) post-delisting monitoring plan (PDMP) for US Fish and Wildlife Service for the recently federally delisted Lake Erie Watersnake. The plan will continue to monitor the populations of the endemic snake, assess prey density and examine for changes in life history characters. Other scheduled PDMP activities continue throughout the year including an intensive outreach campaign to inform local residents, transient boaters and tourists.

Lake Erie Wetland Sampling to Assess Restoration Progress: Ohio Sea Grant is leading the pre- and post-monitoring of fish communities located near restoration efforts led by TNC, Ducks Unlimited, and the US Fish and Wildlife Service (Howard's Farm, Blausey wetland, Ottawa National Wildlife Refuge, and Cedar Point National Wildlife Refuge).

NOAA Bay Watershed Education Training: The Bay Watershed Education Training (B-WET) is an environmental education program, funded by NOAA's Office of Education that promotes locally relevant learning through hands-on experiences for K-12 students. Ohio Sea Grant, in conjunction with Illinois-Indiana, Pennsylvania and New York Sea Grants, facilitated *Great Lakes "F-Ex" (Field Experiences) for Great Lakes Educators* and *Great Lakes, Great Stewards* from 2012 - 2014. These programs incorporated teacher education workshops with year-long support and funding for student participation in Meaningful Watershed Educational Experiences (MWEEs) and environmental stewardship projects throughout the Lake Erie basin.

NOAA Great Lakes Coastal Storms Program: Ohio Sea Grant administered a \$1,200,000 small grants program for NOAA's Coastal Storm Program. Ohio (1) developed the grant RFP, (2) established an Advisory Board consisting of all Great Lakes States and NOAA storms specialists to review proposals, (3) sought final funding recommendations based on proposal ranking from a Coordinating Committee consisting of all eight Great Lakes Sea Grant Directors, (4) awarded the grants, and (5) is currently monitoring and collecting results.

NOAA Ship Time Support: This funding is critically important to the operation of our research fleet (*RV Gibraltar III*, *MV Biolab*, and *RV Erie Monitor*) to support our research, education and outreach programs on Lake Erie. Chartered time for various programs and events is diverse and includes STEM education for middle school field trips, support of competitive research by academic investigators, projects on priority Lake Erie issues from our REU Scholarship Program, and outreach functions for elected officials and decision-makers.

Nutrient Loading and Harmful Algal Blooms (HABs): Ohio Sea Grant has focused on this problem throughout our history but with greater intensity for the past 10 years. Dr. Reutter served on the Ohio Phosphorus Task Force I & II and chaired the subcommittee to determine the load reductions needed to solve the problem. He also served on the Directors' Agricultural Nutrients and Water Quality Working Group (ODNR, OEPA, and Ohio Dept. of Agriculture). Dr. Reutter also serves on Annex 2 (LaMPs) and 4 (Nutrients) of the Great Lakes Water Quality Agreement (US and Canada) and is the US Co-Chair of the Objectives and Loadings Task Team to develop appropriate nutrient loads to address the problem on all five Great Lakes. Ohio Sea Grant is one of the most visible leaders addressing this problem at the state, regional, and national levels. The Joyce Foundation supported our efforts from 2011-present.

Ohio Business Retention and Expansion Program: Ohio Sea Grant worked with the University of Florida Extension Service (3-day training for 18 faculty), the New York Sea Grant College Program, Cornell University Cooperative Extension Service and State University of New York (2.5-day training for 10 faculty) to train faculty and professional associates on the topics of business retention and expansion. As a result, the University of Florida Extension Service will utilize the Ohio curriculum to serve Florida communities in helping them understand local economies, create and retain jobs and build community capacity, and New York Sea Grant has committed to utilize our curriculum for four years (2014-2017) as a programming focus regarding their strategic plan for coastal community development.

Ohio Monofilament Recycling Program: Ohio Sea Grant promotes recycling of fishing line and marine debris awareness in its Ohio Clean Marinas and Ohio Clean Boater Programs. Recently, Ohio Sea Grant is leading an initiative in partnership with the NOAA Marine Debris Program, the Boat US Foundation, and a local partner, Partners for Clean Streams, to generate a formal website, database, and tracking system for monofilament recycling bins and collection throughout Ohio.

Proper Disposal of Unwanted Medications Project: Ohio Sea Grant is a partner in this project, led by Pennsylvania Sea Grant, to help support education and outreach activities on the proper disposal of unwanted medications (UWM). Ohio Sea Grant worked with the Lorain County Sheriff's Departments Drug Enforcement Task Force to help support two county-wide drug takeback events, and reached almost 8,500 individuals with proper disposal of UWM information via programs and presentations throughout the project.

Western Lake Erie Basin Conservation Effects Assessment Project (WLEB CEAP): Ohio Sea Grant's Director and Associate Director currently act as Advisory Board members to assess progress on this US Department of Agriculture NRCS and TNC project. The project assesses the effectiveness of environmental conservation practices at reducing the impacts of agriculture on the surrounding ecosystems. This helps ensure that funding for these practices is distributed in a way that makes the most of available resources. In addition to our advisory role, Ohio Sea Grant is also leading the communication and outreach efforts associated with this project (lakeerieceap.com).

D. PROGRAM CHANGES RESULTING FROM 2010 SITE VISIT

The 2010 Site Review Team (SRT) had two recommendations and four suggestions.

RECOMMENDATIONS

1. When discussing the economic impact of tourism on the state and region, federal tax revenue should be included along with the state and local tax receipts. **Ohio Sea Grant Response:** Will do! We already had the information but had not been including it because almost all tourism-related funding comes from state and local sources.
2. The effective communication of the strategic agenda of the program would be strengthened with the development of an executive summary version of the strategic plan. **Ohio Sea Grant Response:** We agree! A 4-page executive summary of the “Ohio Sea Grant 2010-14 Strategic and Implementation Plan” was prepared and was included with our call for preproposals in March 2011. The new 2014-18 Strategic Plan also has a summary.

SUGGESTIONS

1. Stone Lab merchandise should include OHSG branding. **Ohio Sea Grant Response:** This is a good suggestion and one that is easy to implement because almost everything that we produce already recognizes Sea Grant, Stone Lab, OSU, NOAA, etc.
2. In order to further enhance institutional leadership capability, the director should qualitatively involve the leadership team in cultivating existing and future relationships, in support of continued success in the program. **Ohio Sea Grant Response:** Good suggestion. The director already did that but has enhanced his efforts even more in the past three years.
3. OHSG program should consider developing a stronger system of involvement between the extension agents and the researchers. **Ohio Sea Grant Response:** Our initial intent was to assign an agent to each project. That has not been as successful as we wanted and we wanted to do more. To address this we have been soliciting reviews and comments from all members of the staff on preproposals and having at least one extension specialist sit on every review panel to help us understand the outreach value of the proposals. Dr. Winslow has also developed a PowerPoint presentation briefly explaining all of our research projects and why they are important. All of the staff have heard this presentation and have access to Dr. Winslow’s slides for their own presentations. In each issue of *Twine Line* we summarize a successful research project and a project that is just getting started. Finally, in our new database management system that includes a new electronic reporting system for research projects, all extension staff will be notified when investigators update their reports. This will allow them to keep current on research results.

E. LAST 5 YEARS: OUR MOST PRODUCTIVE AND SUCCESSFUL IN HISTORY

- **Change in Stone Lab Management Structure:** On 1 April 2008, the entire operation at Stone Lab was placed under the leadership of the Ohio Sea Grant Director. Programmatically this had always been the case, but now the facilities, housing, and dining hall operations were added. These had previously reported to the Vice President for Facilities Operation and Development (FOD) and the Vice President for Student Affairs. It took until 2010 to fully implement the changes and modify all of the position descriptions. FOD and Student Affairs had been reporting a combined annual operating deficit of \$350,000/year. The new model eliminated that deficit and resulted in improved user satisfaction, increased donations, more grants, and huge improvements to the Laboratory's facilities and programs.
- **Donations and Endowments:** With the assistance of the Friends of Stone Lab, we have created one new endowment (total endowments now 20), are working on three more, and have received five planned gifts from parts of the donor's estate (three of these have been created within the last year).
- **New Construction and Renovation at Stone Lab:** The 2005 Site Visit recommended that we strive to improve the facilities at Stone Lab, and the new management structure is allowing that to happen. Some of the projects completed from 2011-14 include: renovation of the water quality laboratory (including new equipment), renovation of the interior and exterior of the Research Building including restoration of the chimney, restoration of the first floor of Stone Laboratory on Gibraltar Island, rewiring of six buildings, replacing roofs on 12 buildings, repairing and dredging docks, repairing sidewalks and sewer lines, remodeling the South Bass Island Lighthouse and two cottages, adding a whole-building generator to the Research Building, installing new high-speed Internet and WiFi service for all Stone Lab facilities, repairing and launching *RV Buckeye* for harmful algal bloom research east of Cleveland, adding four video cameras that provide live video feeds on the Ohio Sea Grant website, launching a new monitoring buoy north of Gibraltar Island, installing high efficiency furnaces, air-conditioning the Lighthouse, replacing windows in the main office, insulating two buildings, replacing outboard motors with 4-cycle models, placing defibrillators in three locations, and much more.
- **Renewable Energy at Stone Lab:** In 2012 we installed solar thermal on the Stone Lab Dining Hall roof. Almost all of the hot water used in the dining hall, our greatest user of hot water, comes from solar thermal. Also in 2012 we built a solar pavilion with solar panels. In 2013, we also installed solar panels on the roof of Stone Lab. Building on the research, education and outreach focus of Sea Grant, these panels test seven different solar production strategies and the output is viewable on the Ohio Sea Grant website. Using a grant from Royal Bank of Canada and the Friends of Stone Lab, we replaced all toilets and showerheads at Stone Lab with low-flow units, saving over \$6,000 annually.

- **Staff Changes:** Ohio Sea Grant's staff has changed dramatically since 2010 and has never been stronger. Rick Shaffer, our Business Manager, moved to a different position within the University and was replaced by Bryan Ford in November 2010. John Hageman, Stone Laboratory Manager since 1987, retired in 2011 and was replaced by Matt Thomas. Kevin Hart, a Stone Lab student in 2008 and Field Station Assistant in 2011, was hired in November 2011 to replace Matt Thomas as Assistant Lab Manager. Dave Kelch, our Sea Grant Extension Specialist in North Central Ohio since 1980, retired in May 2012. Dave's position will be advertised in autumn 2014. Frank Lichtkoppler, our Extension Specialist and Program Leader in Northeast Ohio since 1981, retired 30 September 2014. Frank's position in Northeast Ohio will be posted in autumn 2014. Tory Gabriel became our Extension Program Leader when Frank retired. Colleen Wellington, our Clean Marinas Coordinator, resigned her position in 2011 and was replaced by Sarah Orlando, a 2007 Stone Lab REU student advised by Dr. Winslow, who was then hired as a Field Station Assistant in 2008 and Assistant Lab Manager in 2009. Christina Dierkes was hired as our Technical Editor in November 2011. Eugene Braig, our Assistant Director, resigned his position in December 2011 to move to a position in the OSU School of Environment and Natural Resources, and continues to teach Sea Grant workshops at Stone Lab. Eugene was replaced by Dr. Christopher Winslow, a former graduate student researcher and faculty member at Stone Lab. Dr. Winslow was promoted to Associate Director in 2014. Terry Thompson was hired in February 2012 as an IT Support Specialist. Dr. Kristin Stanford, a 10-year graduate student at Stone Lab from Northern Illinois University, was hired into a newly created position as the full-time Stone Lab Education and Outreach Coordinator and Research Scientist in July 2012. Melinda Huntley, our Tourism Extension Director, resigned her position to become the Executive Director of the Ohio Travel Association in August 2012. Dr. Justin Chaffin, a 2005 Stone Lab student and 2006 REU was hired into a newly created position as the Stone Lab Research Coordinator and Manager of the Water Quality Laboratory in December 2012. Doris Smith, our Human Resources/Fiscal Coordinator, moved to a departmental leadership position at OSU and was replaced by Grace Hicks in November 2012. Morris Allison was hired in January 2013 as our Assistant Web Developer. Lisa Rice was hired in August 2014 as a Communication and Marketing Specialist.
- **State Line Item:** When most programs were receiving significant budget cuts or being eliminated, we have been able to maintain annual funding. In the 2013-15 biennium we were zeroed out of the budget, but programs, communities, and individuals all along the Ohio coast and from throughout the state came to our rescue, with eighty groups signing a letter urging the Governor to restore funding. The city councils of Toledo, Marblehead, and Sandusky unanimously passed resolutions for the Governor urging him to restore the budget. The budget was restored soon after.
- **Coastal County Commissioners, Mayors and Decision-Makers Day on Lake Erie:** Initiated in 2008, this event, patterned after our State Legislature/Congressional Day (initiated in 1982), continues to grow and is a huge success. The one-day event attracts approximately 80 people and includes a presentation to enhance understanding of critical issues facing Lake Erie, lunch and Gibraltar Island tour, a visit to the Aquatic Visitors Center and the South Bass Island Lighthouse, a science cruise on one of the Lab's research vessels, and brief presentations by our partners including OEPA, ODNR, the Lake Erie Commission, and the Ohio Coastal Management Program.

- **Clean Marinas and Shrink-Wrap Recycling:** This program now includes 44 certified and 33 pledged clean marinas. We have also collaborated with private businesses to recycle shrink-wrap from boats and convert it into plastic spacers on highway guardrails. More than 2.3 million pounds of plastic covering over 400 miles of highway have been prevented from entering landfills, and five other programs have implemented our shrink-wrap recycling program in their states.
- **REU Program:** Our Research Experience for Undergraduates (REU) Scholarship Program, initiated in 2005 and supported entirely with donated endowment funds, continues to flourish. These students take a 5-week course at Stone Lab for which they are in class three days/week. On their three off days, they work on a research project led by scientists from Ohio Sea Grant, the Ohio Division of Wildlife, Ohio EPA, or the US Geological Survey. Through 2014, 104 students have participated in the program and received scholarships valued at \$345,055. Dr. Justin Chaffin, our Stone Lab Research Coordinator, is a 2006 graduate of this program. Dr. Chaffin manages our water quality lab and our work on nutrient loading and harmful algal blooms. He is also currently testing drinking water in our Laboratory for seven coastal communities. Sarah Orlando, our Clean Marinas Coordinator, was a 2007 REU working with Dr. Winslow. Sarah went on to be a Field Station Assistant at Stone Lab, then Assistant Lab Manager, then got an MS Degree at Texas A&M before returning as our Clean Marinas Coordinator. Other graduates have gone on to doctoral programs and very successful careers all over the world. One former REU is in Costa Rica and one just returned from Greenland.