Dr. Jon Bossenbroek receives Fulbright Award

The faculty, staff, and students at the LEC extend a very special congratulations to Associate Professor Dr. Jon Bossenbroek, Fulbright Scholar Recipient for the 2013-2014 academic year! Dr. Bossenbroek will travel to Trinidad and Tobago to conduct research at the University of the West Indies, where he will work with economists and ecologists to evaluate the costs and benefits associated with marine aquatic invasive species in the Caribbean. We will miss seeing Dr. Bossenbroek around the LEC next year, but we can’t wait to hear about his research and what will no-doubt be some interesting tropical adventures!

Upcoming Events

Summer Naturalist Speaker Series at the LEC -- for all ages!
Find updated event information online: www.utoledo.edu/nsm/lec

7:00 p.m., Tues., Jun. 25: Backyard astronomy: the summer solstice sky. Dr. Will Fischer will talk about celestial motion and the many interesting things you can see in the night sky. After the talk, we will head outside for some solar observing (weather-permitting). Special thanks to our event partner: UT’s Ritter Planetarium!

7:00 p.m., Thur., July 11: Pollinators in your backyard. Returning speaker Erika Buri will discuss insect and animal pollinators, and their important contribution to biodiversity and the overall health of the terrestrial ecosystem. On the decline globally, we’ll learn about ways to support pollinators in your own backyard.

7:00 p.m., Thur., Aug. 15: Plants and backyard birds: the good, the bad, and the invasive. Birding expert Dr. Elliot Tramer will cover ways to attract a variety of birds to your backyard. Following the talk, we will take a short nature walk.

2013 Lake Erie Center Photo Contest -- The nature of our region, from Oak Openings to Maumee Bay
Take your best snapshots of your favorite nature topic around Lake Erie or the Maumee River watershed, including wildlife, plants, landscapes, or people in nature, then send them in by Oct. 4, 2013. Prizes (including VISA gift cards) will be awarded in multiple age categories. E-mail entries to meredith.gray@utoledo.edu, along with your name, age and photo locations. More info: utoledo.edu/nsm/lec.

Table of Contents

Dr. Jon Bossenbroek receives Fulbright Award; Upcoming events.......................... 1
Congratulations, Graduates!................................................................. 2
2013 Gk-12 Poster Show................................................................. 3
Algal bloom research in PNAS; 2013 Brundage Scholarship; FOLEC; LEC tours; Nowcast water quality report for MBSP......................... 4

Summer Science Day -- NEW for 2013!
Wednesday, July 9, 2013; 9 a.m. - 4 p.m. An extension of our popular week-long summer science camp, Summer Science Day is a full day of laboratory exercises, art, and outdoor activities, centered around the Lake Erie ecosystem. The program is for entering 4th and 5th grade students; cost is $30. Contact Rachel Lohner for more information and to register (419-530-8364; rachel.lohner@utoledo.edu).

“Barefoot at the Beach” clean-up at MBSP
Friday, June 28, 2013; clean-up 4 p.m. - 6 p.m., after-party celebration 6:30 p.m. - 8:30 p.m.: Barefoot Wine is teaming up with the Alliance for the Great Lakes and the LEC to host a public Adopt-a-Beach clean-up at the Lake Erie Beach at Maumee Bay State Park. Following the cleanup, volunteers age 21 and older are invited to attend a celebration featuring Barefoot Wine and surf-inspired fare at MBSP Lodge. Meet at the Barefoot Wine tent at the Lake Erie Beach at MBSP.

2013 Lake Erie Center Photo Contest -- The nature of our region, from Oak Openings to Maumee Bay
Take your best snapshots of your favorite nature topic around Lake Erie or the Maumee River watershed, including wildlife, plants, landscapes, or people in nature, then send them in by Oct. 4, 2013. Prizes (including VISA gift cards) will be awarded in multiple age categories. E-mail entries to meredith.gray@utoledo.edu, along with your name, age and photo locations. More info: utoledo.edu/nsm/lec.
Congratulations, Graduates!

It has been a busy and productive year so far, and we are pleased to announce several recent degree recipients! From the bottom left -- Environmental Sciences B.S. recipients Robert Mapes, Susanne Karsiotis, and Corey Becher (not pictured: Courtney Mobilian). Jason Ross completed his Environmental Sciences M.S. work on nearshore fish communities, directed by Dr. Chris Mayer (see page 4 for more about Jason). Tim Sullivan also completed an M.S. degree in Environmental Sciences, and he served as a fellow in the NSF Gk-12 program for two years. His thesis, "A Fine-scale Analysis of Spatial and Temporal Population Genetic Patterns in the Yellow Perch (Perca flavescens)”, was completed under the guidance of Dr. Stepien.

Pictured above are our spring 2013 Ph.D. recipients and their advisors -- L to R: Amanda Haponski, Justin Chaffin, Lindsey Pierce, Tom Bridgeman, Carol Stepien, Jon Bossenbroek, Chris Mayer, and Nate Manning. Dissertation topics are as follows:

Amanda Haponski (with Dr. Stepien): Evolutionary, biogeographic, and population genetic patterns of walleye and other Sander; Justin Chaffin (with Dr. Bridgeman): effects of low nitrogen concentrations on phytoplankton dynamics in eutrophic lakes; Lindsey Pierce (with Dr. Stepien): Evolution and detection of the fish Viral Hemorrhagic Septicemia virus (VHSV); Nate Manning (with Drs. Mayer and Bossenbroek): The effects of turbidity on yellow perch in Western Lake Erie. Congratulations, all!
2013 Gk-12 Poster Show

The signature event of our Gk-12 program is the annual high school student poster show held at the LEC each April. The 2013 competition featured 45 presentations by more than 100 high school students from all eight of our Gk-12 schools. Awards were given to the top high school student projects. We also presented awards to outstanding graduate student fellows. The poster gala was attended by over 250 guests including high school and university administrators, teachers, parents, graduate students, and professors.

Fellow Awards

• Excellence in Student Mentoring: Nathan Reaver
• Outstanding Gk-12 Fellow: Danielle Long

Student Awards

• Honorable Mention
  Christopher Kos, Derek Corey-Goodman, Adam Koehler, and Tyler Cox -- Start High School
  Effects of Acid Rain on Shellfish

• Honorable Mention
  Duncan Shalda, Bailey West, Joely Fry -- Start High School
  Roy C. Air Quality

• Third Place
  Joey Heidenescher -- Toledo Early College High School
  Contagious Yawning: The Effect of Subliminal Yawns on the Distracted Mind

• Second Place
  Casey Kimball and Justine Rice -- Toledo Early College HS
  VHSv Awareness: How Much Do You Know?

• First Place
  Clay High School Team
  Effects of Family Life on Social & Academic Health of Children

• Most Creative
  Casey Kimball and Justine Rice (pictured top right) -- Toledo Early College High School
  VHSv Awareness: How Much Do You Know?
Record-breaking algal blooms in Lake Erie may be a sign of things to come

The LEC’s Dr. Tom Bridgeman is part of a national research team whose work on algal blooms and climate change was recently published in the *Proceedings of the National Academy of Sciences of the U.S.*

In the paper, the authors outline how the largest harmful algal bloom in Lake Erie’s recorded history (occurring summer 2011) was likely caused by a confluence of changing farming practices and meteorological conditions, and may be a harbinger of future algal blooms in the lake.

The paper explores the role of several factors that contributed to the 2011 bloom, including land use, agricultural practices, precipitation, temperature, wind, lake circulation, and surface runoff, and analyzed the likelihood of future blooms in the lake.

The authors report that the total amount of agricultural land and crop choices in the Lake Erie watershed have changed only slightly since 2008 and do not explain the 2011 bloom. By contrast, farming practices, such as fertilizer use and tillage, have changed during the last decade in ways that are conducive to increased runoff of nutrients into the lake. Furthermore, a series of intense storms and runoff events resulted in record-breaking levels of phosphorus -- a nutrient that fuels algal growth -- in the lake during the late spring. After the bloom began to form, an extended period of weak circulation and warm weather further promoted its growth.

All of these factors are likely to continue to occur in the future, due to evolving land management practices and climate change, thus increasing the chances of future blooms.


---

Jason Ross receives 2013 Brundage Scholarship

Congratulations to Lake Erie Center M.S. student Jason Ross winner of the 2013 Dr. Robert Brundage Memorial Scholarship! Dr. Brundage (pictured) was a much-loved community activist, scholar and musician who passed away in 2009. The scholarship was created by the Western Lake Erie Waterkeeper Association (WLEWA) to honor Dr. Brundage and to recognize an LEC graduate student working on Great Lakes issues.

Jason’s thesis research focuses on developing a program for monitoring near-shore fish communities, through the cooperation of the Ohio Department of Natural Resources, Division of Wildlife, and the Ohio Environmental Protection Agency, to be implemented in the long-term monitoring program. He is also examining community-habitat associations in an effort to quantify the probability of occurrence and abundance of species. Jason will defend his thesis in June; his advisor is Dr. Christine Mayer.

**Friends of the Lake Erie Center program**

Become a part of the LEC famij! Your annual, tax-deductible contribution will help support research, education, and outreach as we work to protect our region’s most valuable natural resource - Lake Erie! We are a vibrant and active facility, located on the shores of Lake Erie in Oregon, Ohio, where students, scientists, agency partners, political leaders, and members of the public come together on Great Lakes environmental issues. Browse this newsletter and our website to learn more about what we do, or stop by and visit us. We appreciate your support! To join, online visit: [https://give2ut.utoledo.edu/folec.asp](https://give2ut.utoledo.edu/folec.asp).

**Take a tour of the Lake Erie Center!**

Summer is a busy time at the LEC, as the field season swings into high gear and students and faculty spend much of their time pursuing research. Stop by on a Wednesday at 10 a.m. for a guided tour, during which you’ll have a chance to see many of our researchers at work. To arrange a group tour or activity, contact Rachel (419-530-8364; rachel.lohner@utoledo.edu).

---

**Know before you go!**

Before you head to the Lake Erie beach at Maumee Bay State Park this summer, check the [Nowcast water quality report](http://www.ohionowcast.info)! The LEC’s [Environmental Remediation and Restoration Laboratory](http://www.utoledo.edu/nsm/lec) manages the forecast data.

**Visit:** [http://www.ohionowcast.info](http://www.ohionowcast.info)