

## LSG Oyster Operations Center Opens on Grand Isle; Hatchery to Receive \$3 Million to Rebuild

It's been nearly seven years since Hurricane Katrina swept away Louisiana Sea Grant's oyster hatchery on Grand Isle. The facility had tanks, filters and other equipment for producing oysters; a laboratory for studying the bivalves; and housing for the director and graduate students. But, the end of the facilities in 2005 did not spell the end of the program's mission to conduct research, produce commercial oyster larvae and demonstrate alternative cultivation techniques. After the storm, genetic research and other oyster studies continued in a travel trailer where staff also slept. Culture and grow-out tanks were pulled from the wreckage or replaced on the grounds, and operations resumed.

When another dangerous storm, Hurricane Gustav, bore down on the Louisiana coast in 2008, John Supan, LSG's molluscan shellfish specialist and hatchery director, moved all of the equipment and supplies he could from harm's way, but the hatchery was destroyed again. Oyster study and production then moved into the Louisiana Department of Wildlife and Fisheries (LDWF) Grand Isle Fisheries Laboratory, and staff and students moved into a rented apartment a few miles down the island. The old site was sold.

Now, the hatchery is well on the road to permanent recovery and a welcome co-location of all its facilities with the June opening of a new 1,440-square-foot operations center and a \$3 million grant to fund a new hatchery building.

"We've been waiting years to get our house back," Supan said of the operations center. "We were very much looking forward to it. This is where I hang my hat four nights out of seven. We have happily rented an apartment, but now it's time to move to our permanent location."

The new residence is a modular construction. It is elevated 15 feet on piers, features storm-resistant windows, and is designed to withstand the 140 mph winds that mark a Category 5 hurricane. Upstairs are

sleeping quarters for seven people. Downstairs will facilitate the operation of an existing oyster demonstration farm with a pier, bins to store culture equipment and supplies, and a place to pressure-wash culture gear and oysters.

The demonstration farm was established three miles from the original hatchery in 2000 and survived the ravages of Katrina and subsequent storms. It was designed to test the



Top to bottom: Oyster Operations Center; map of the proposed oyster farming zone as seen from the center's balcony; overlooking the demonstration farm from the bay-side balcony; tanks in the hatchery.



applicability of long-line oyster systems in Louisiana. It also was designed to be accessed by a 250-foot pier that was never built.

Long-line farms are widely used in Australia to grow oysters in mesh bags suspended in the water column from a series of cables that are anchored to riser posts. Through this pilot

project, researchers have shown that the system works well in Louisiana and has many practical and economic advantages over the oyster reefs currently and historically used on state water bottoms. However, Supan and his students have to wade out in waist-deep water to access the lines several times each week.

"We will soon have a new pier leading from the operations center to the farm," Supan said. "This will make access to our research and brood stocks a lot easier."

Supan is expanding his research into two other off-bottom oyster culture techniques in a new Grand Isle Oyster Farming Zone administered by the Grand Isle Port Commission. One is the OysterGro system from Acadiana, Canada, a floating cage system that is less hardware-intensive than the long-line system. Designed in a grid, it will feature eight, two-acre farms and include 40-foot navigation lanes to allow boats to pass.

"The systems we focus on are commercially used in other parts of the world where people are making money with them," he said.

The new residence is named "La Maison des Huitres," which is French for House of Oysters. About \$300,000 in Federal Emergency Management Agency money funded it.

Now that housing has been restored, the challenge of reestablishing the permanent hatchery site remains. The planned 7,056 square-foot building will be constructed at the same elevation as the operations center using \$3 million in Natural Resource Damage Assessment funds from the 2010 Deepwater Horizon oil spill. In addition to housing Supan's research, the new hatchery will contribute to coastal recovery by supplying millions of seed oysters for oyster reef restoration.

Supan said he expects to remain at the LDWF lab for two more seasons while the new hatchery is under construction.



On the web:

<http://www.laseagrant.org/adserv/hatchery.htm>

## CSAP Students for 2012

Twelve students pursuing master's degrees currently are participating in the Coastal Science Assistantship Program (CSAP), a partnership between the Louisiana Coastal Protection and Restoration Authority (CPRA) and Louisiana Sea Grant that provides students with up to three years of financial support.

CSAP participants receive \$25,000 annually while working on applied coastal ecosystem restoration research important to CPRA. The program also creates a pool of researchers and scientists from which CPRA can recruit.

CSAP students for 2012 include:



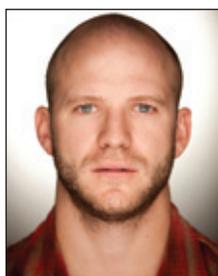
**James Bouanchaud** is studying geotechnical engineering in the Department of Civil and Environmental Engineering at Louisiana State University. His research focuses on

determining the strength of marsh cordgrass, and he has constructed an apparatus to assist in his work. Bouanchaud hopes to pursue a career as an engineer upon graduation.

**James Ialleggio** is studying wildlife biology in the Department of Renewable Natural Resources at Louisiana State University. He is researching the effects of flooding stress on

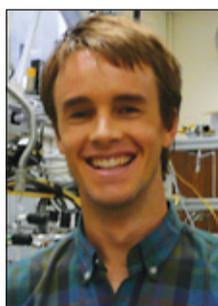


*Spartina patens*, also known as salt marsh hay, and whether increased nutrients, approximating riverine influence, can influence below-ground root mass. He is also looking into the effect of increased nutrient concentrations on altering palatability and taste of various plants such as *Spartina patens*, *Sagittaria lancifolia* and *Panicum hemitomon* (maiden cane grass) for *Myocastor coypus*, also known as nutria or the "river rat." His career goals are "to continue to play, for better or worse, in the mud."



**Chad Judy** is working on a master's degree in wetland management in the Department of Environmental Science at Louisiana State University. His research involves applying oil from the Deepwater

Horizon oil spill to phragmites, common tall grass reeds, and monitoring the plants' various responses. Judy ultimately plans to earn a doctorate in ecology, teach and conduct research at the university level.



**Matthew Pendergraft** is pursuing a master's degree in environmental science in the Department of Earth and Environmental Sciences at Tulane University and is part of the Stable

Isotope Laboratory. His research consists of using a programmed-temperature pyrolysis/combustion system to determine the absence or presence of oil in sediments, as well as "fingerprint" oil from the 2010 BP Gulf of Mexico oil spill. He hopes to identify which weathering processes are acting on the oil and how they are changing it, as well as to compare how the oil weathers in different environments. His career goals are to work in environmental science and make a positive impact in the field.

**Cyndhia Ramatchandirane** is concentrating on coastal geology in the Department of Earth and Environmental Sciences at Tulane University. Her research focuses on the formation of wetlands in the Chenier Plain of southwest Louisiana.



Specifically, she is studying the interaction of sedimentation processes, including fluvial, storm and coastal wave action, with hopes that a stronger understanding of sedimentation rates and transport processes for wetland building will aid in coastal restoration strategies. After earning her master's, she would like to continue working in coastal science and restoration for several years before pursuing a doctorate.

**Timothy Rosen** is pursuing a master's degree in watershed hydrology in the School of Renewable Natural Resources at Louisiana State University. His research focuses on quantifying the long-term suspended sediment



yield of Louisiana coastal rivers. The research is split into three different subsections: Chenier Plain rivers, the main stem Mississippi River and the Atchafalaya River Basin. He hopes to continue to advance watershed management through the application of sound research and community outreach.



**Kevin Trosclair**, a master's student in the Department of Earth and Environmental Sciences at the University of New Orleans, is researching wave transformation in salt marshes, specifically addressing the role of the marsh edge in

lessening storm-generated waves. His research includes field observations during winter storms, re-analysis of existing data, as well as use of numerical models to better understand physical processes and the resulting erosion. Trosclair plans to continue working in the area of coastal hydrodynamics upon graduation. Ideally, he would like to assist in the ongoing efforts to restore coastal Louisiana.

Additional current CSAP students are:

- **Victoria Bachelier**, Department of Biological Sciences, Nicholls State University
- **Ruwaida Bari**, Department of Renewable Resources, University of Louisiana at Lafayette
- **Sara Moore**, Department of Earth and Environmental Sciences, University of New Orleans
- **Minhaz Shahriar**, Civil Engineering and Construction Engineering Technology Programs, Louisiana Tech University
- **Jared Theriot**, Department of Oceanography and Coastal Sciences, Louisiana State University

For more information on the program and how to apply, visit [www.laseagrant.org/ops/assistantship.htm](http://www.laseagrant.org/ops/assistantship.htm).

# Louisiana Sea Grant Research Update

## Students' Storm Sensor Provides more Bang for Buck

A group of nine Louisiana State University undergraduate students are on a quest to gather better storm surge data less expensively.

The students' prototype storm surge sensor collects surge depth, wave action and water direction data with a 40-pound, watertight device that looks a bit like an attic vent. "We can collect several days of surge data on a memory card in the sensor," said Michael Stanton, one of the students who helped develop the apparatus. "When the water recedes, we go collect the sensor and retrieve the information."

Once fully tested, the prototype will serve as the model for the construction of more sensors. A day or two before a hurricane makes landfall, several of the students' sensors will be stationed in populated coastal areas. "The objective is to collect data from developed areas," said Carol Friedland, assistant professor in the Department of Construction Management and Industrial Engineering at LSU. Friedland is the faculty advisor on the Undergraduate Research Opportunities Program (UROP) project, funded by Louisiana Sea Grant. The information collected will be used to build better models to predict how storm surge impacts urban-like settings.

Cost is what makes the students' sensor unique. Similar devices already on the market cost \$6,000 to \$10,000. The UROP students' sensor runs about \$1,600, resulting in more data for the dollar.

"The next stage in the project is to have the

sensors relay the data they collect in real-time to a central hub," said Friedland. "Right now, if a sensor is lost in a storm, the data is lost. But if it is sending information to a remote computer, then we have data for that location up until the moment the device is lost."

Working on the storm surge sensor project with Stanton are students Zach Buschlen, Paul Ford, Eddy Wu, Jacob Partain, Frank Bohn, Gerald Knapp, Ian Bizette and Matt Flynn.

## Outreach via the Airwaves

Many issues concerning the Louisiana coast escape the awareness of the general public. In hopes of increasing community knowledge of environmental matters, a monthly talk show airs on Baton Rouge Community Radio.

"Louisiology," focuses on prominent coastal and environmental topics, featuring the science behind the issues as well as current research efforts, findings, and opinions of graduate students and faculty at Louisiana State University, as well as experts in the environmental field.

The idea for the show was April Newman's, a graduate student in the School of Renewable Natural Resources at LSU. After recruiting Ben Branoff and Eric Roy, LSU graduate students studying oceanography, and environmental sciences professor Vincent Wilson, Louisiology became a reality.

"We want people who aren't scientists to better understand how the environment works," said Branoff. "Through the show we can present problems related to an area and explain the science behind such issues. We hope to alleviate some of these issues, as problems can be better solved if people understand them more clearly."

The show – which is sponsored by Louisiana Sea Grant – began in November 2011. Six programs have broadcast as of this writing, covering topics such as Mississippi River floods, air quality, wetland management and the Baton Rouge aquifer. The final show will air in October, but the crew would like to continue if there is enough funding and public interest.

Each show is conceptualized and produced by one or more graduate students from the School of the Coast and Environment and the School of Renewable Natural Resources. The final products air on WHYR 96.9 FM the second Friday of every month from 8-9 a.m.

"This is an information-driven project that raises awareness of environmental problems," said Wilson. "We want to bring environmental issues to the public eye and foster scientific learning. The public can become

more knowledgeable regarding environmental problems and become more involved."

"This has been extremely enjoyable and a great experience," said Branoff. "We're very grateful to Sea Grant for funding and helping us to teach Baton Rouge more about the environment."

"Louisiology" podcasts can be found at <http://www.mixcloud.com/CEGO/>.

## Asian Carp Nutritional Analysis Underway

The next step in turning an invasive species – Asian carp – into a processed food source has started. The nutrient content of canned bighead, buffalo and silver carp is under study in order to develop a nutrition fact panel for each species. Knowing the nutritional components is useful in promoting a well-rounded, healthy product. Ultimate plans are to package and distribute the fish to developing and disadvantaged countries.

"Food sold must meet certain requirements," said Lucina Lampila, seafood technology specialist with Louisiana Sea Grant and the LSU AgCenter. "We're looking for a shelf-stable product with high-quality or complete protein, and the included fish bone contributes minerals, most importantly calcium and phosphorus."

A 2010 earthquake near Port-au-Prince, Haiti, killed an estimated 316,000 people, leaving countless children orphaned and 1.3 million people homeless.

Through the efforts of Louisiana Sea Grant, the LSU AgCenter and Operation Blessing – a non-denominational Christian humanitarian organization that provides disaster aid – a shipment of canned Asian carp was delivered to a Haitian orphanage following the devastation to provide its residents with additional protein.



Louisiology producers Benjamin Branoff (left), April Newman and Eric Roy



Storm surge sensor



Asian carp ready for canning

That shipment was well-received, and now Operation Blessing is looking to assemble a 40,000-pound shipment while Lampila completes her nutritional analysis.

“Two varieties of canned carp were developed: carp in a tomato sauce as well as brine,” said Lampila. Because of the difficulty in deboning Asian carp, the fish are canned without removing the bones. The canning process, however, makes the bones soft and digestible.

“The tomato sauce adds flavor and a bit of fiber to the product, and apparently was the favorite at the orphanage. One of the things we noted was the odor-masking aspect of the tomato sauce. The fishy aroma was virtually gone, and exploring that masking could be interesting. Most people in the U.S. do not like the fishy smell, while those in other countries have a decided preference for a stronger aroma. The smell is still there with the brine, so it will be interesting to see which product is more preferable in different locales.”

While Lampila completes her nutritional analysis – to be done sometime in the summer of 2012– efforts are underway to identify a cannery to package more carp for Haiti and other communities in need.

“There is a federal program, Food for Peace, that supplies food to countries all over the world,” said Lampila. “To qualify, the food products must be made in America. The carp we’re using is local. If we are able to can it here, then there is potential to put a new shelf-stable product into the program.”

For more information:

- Operation Blessing: [www.ob.org](http://www.ob.org)
- Food for Peace: [www.usaid.gov](http://www.usaid.gov)

### Cost/Benefit of Foreign Workers Analyzed

Following an initial study commissioned by the Louisiana Seafood Promotion and Marketing Board (LSPMB), Louisiana Sea Grant is funding efforts led by LSU AgCenter agricultural economics professor Ashok Mishra to further assess the economic impact of new H2-B visa temporary worker regulations. Despite substantial upfront costs to participate in the H2-B program, increasing labor shortages have forced many Louisiana seafood businesses to rely on foreign workers.

Current federal regulations require employers to provide transportation, housing and meals to foreign workers, in addition to paying competitive wages. However, newly proposed legislation would require employers to increase wages for H2-B workers from \$8 per hour to \$15 per hour.



A young visitor notes the difference between plastic debris that floats and plastic debris that sinks at the Louisiana Sea Grant table in the “Kids Area” at the 2012 New Orleans Jazz and Heritage Festival. For the second year in a row, LSG’s education department hosted an exhibit at the annual celebration of music and culture held at the Fair Grounds. With the help of LSG staff and volunteers, children and their adult chaperones learned about the prevalence of plastics in the ocean, played a game to guess how long it takes for different types of debris to break down in the marine environment, and recycled Mardi Gras beads and trash into works of art. *Photo by Darcy Wilkins*

Mishra’s study aims to pinpoint just how much the Louisiana seafood industry relies upon H2-B workers, and hopes to determine processing firms’ labor preferences, such as level of education, quality of references, and immigrant/domestic worker status.

Mishra’s first study was a rough estimate based on big numbers. “I looked at the number of visas granted to the state of Louisiana and looked at the history of these workers for the last four to five years,” he said. “Using this data, I roughly determined their impact on the state economy.”

“The survey I’m currently conducting will provide a more in-depth analysis of the data I acquired in the initial study,” Mishra explained. “I want to know if seafood processors hire domestic or foreign workers and why. What traits do they look for? Where do their workers come from?”

Some of Mishra’s initial correspondence with seafood processors revealed a heavy reliance upon foreign H-2B workers because local workers often prove to be unreliable. “People call me and tell their stories,” said Mishra. “Many employers’ hands are tied because local workers often fail to pass the health test, or they’ll receive a paycheck and disappear. Many processors tell me that their foreign workers have a great work ethic.”

He hopes the current study will provide the right information to seafood processors to help make the Louisiana seafood industry more competitive.

“My goal is to have an informed population,” said Mishra. “This study will help seafood processors know what kind of wages they need to pay in order to be competitive, whether they need to provide housing, etc. The Louisiana seafood industry plays a vital role in the state economy. Ultimately, we want to determine how we can make this industry more competitive.”



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## Twilley Named Louisiana Sea Grant Executive Director

Dr. Robert Twilley is the Louisiana Sea Grant College Program's new executive director. He begins his duties in mid-August.

Twilley comes to Sea Grant from the University of Louisiana at Lafayette, where he served as vice president for research during the past two years. He previously served as associate vice chancellor for research and economic development at Louisiana State University, where he also held the rank of professor in the Department of Oceanography and Coastal Sciences.

"It's an honor to lead such a distinguished program," said Twilley. "Louisiana Sea Grant has accomplished some extraordinary things, from responding to coastal stakeholder needs following devastating hurricanes and the recent oil spill in the Gulf to sponsoring innovative research and nurturing new scholars across the state. This truly is an exciting opportunity

for me to continue my passion to promote solutions to living along coastal Louisiana."

Twilley helped initiate a science program to support the Louisiana Coastal Area



Robert Twilley

Program (LCA) that served to authorize the Water Resource Development Authorization (WRDA) to fund comprehensive coastal restoration projects, and he assisted with the development of both the state's 2007 Master Plan for Coastal Protection and Restoration and the Louisiana Speaks planning document following Hurricane

Program (LCA) that served to authorize the Water Resource Development Authorization (WRDA) to fund comprehensive coastal restoration projects, and he assisted

Katrina. He also was instrumental in organizing the science and engineering board that oversaw the 2012 master plan update. While at LSU, Twilley was involved in developing interdisciplinary programs – such as the Coastal Sustainability Studio – that integrate physical and social sciences with engineering to solve the complex problems of rebuilding coastal Louisiana.

Twilley is Louisiana Sea Grant's third executive director during the program's 44-year history. He earned his bachelor's and master's degrees in biology from East Carolina University in Greenville, N.C., and his doctorate in plant ecology and systems ecology from the University of Florida. He completed his post-doc in coastal oceanography at the University of Maryland Center for Environmental Studies.

## Laboarde Chair Named International Fellow by Wetland Scientists



Edward Maltby

Edward Maltby, emeritus professor of wetland science, water and ecosystem research; former director of the Institute for Sustainable Water, Integrated Management and Ecosystem Research at the University of Liverpool; and current John P. Laborde Endowed Chair for Sea Grant Research and Technology, has been selected as an International Fellow of the Society of Wetland Scientists (SWS). Maltby received the honor in June for his distinguished contributions to the field of wetland science

and for fostering the aims of the SWS locally and abroad.

Maltby has more than 40 years experience in scientific research and environmental project management. His research achievements include early studies of soil microbial and ecological changes resulting from drainage and land use alteration in Louisiana wetlands. Over the last two years he has played a key role in the UK National Ecosystem Assessment, which has helped move policy toward greater recognition of the importance of ecosystem services.

The Society of Wetland Scientists is an international organization of about 3,500 members dedicated to fostering sound wetland science, education and management.

## Louisiana Sea Grant Adds Three New Faces

Louisiana Sea Grant added three new employees this spring to help with expanding projects.

For more than 10 years, Anne Dugas worked as a grant writer and small business advisor. She now is helping Delcambre Direct evolve into the Louisiana Direct Development of Coastal Seafood Marketing Network – a web-based direct marketing tool for fishermen in the Cameron, Southshore, Lafourche/Terrebonne and Delcambre areas.

"She's working on the front line of this project," said Thomas Hymel, LSG and LSU AgCenter Marine Extension agent. "She's the go-to person for any interaction with fishermen and handles all the organization, records and details. She has a lot of experience in project management and jumped right in. I couldn't have asked for anyone better."

Dugas earned a bachelor's degree in marketing from the University of Louisiana at Lafayette and is a graduate of the School of Banking of the South in Baton Rouge.

Lauren Land is LSG's new sustainable coastal communities specialist. Land will work with coastal community policy makers, helping them make wiser land-use planning decisions while remaining focused



Anne Dugas

on local economic needs. She also will provide educational and outreach support to state programs concentrating on coastal resiliency.

Land was a Sea Grant Knauss Fellow in Washington D.C. in 2011, where she worked extensively on sustainable coastal development and hazard resilience issues. She earned a master's degree in oceanography from LSU in 2010.

Darcy Wilkins has been hired as a research associate on a new oral histories project. Wilkins is working with high school students and teachers



Darcy Wilkins

in coastal communities, documenting decades of local environmental and cultural changes. "This is a great way to capture the culture as it is right now as well as find out how things have changed since community elders were young," said Wilkins.

Wilkins has previous oral history, interview and transcription experience at LSG as well as at Cottage Films. She graduated from Hendrix College of Arkansas in Conway, Ark., with a bachelor's degree in anthropology in 2011.



Lauren Land

# COASTAL CLIPS

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## LSU EnvironMentor Honored Nationally

Scotlandville Magnet High School student Jeronda Scott has received the \$10,000 Emerging Scholars Award from the National EnvironMentors Program. Students who are graduating seniors and have participated in EnvironMentors for two years are eligible for the scholarship. After completing an application packet for the award, Scott was interviewed by a panel of judges who determined the recipient.

LSU is one of 12 universities with EnvironMentors chapters that help at-risk high school students prepare for college programs in environmental and related sciences. The LSU chapter is a cross-campus collaboration between the College of Education's GEAR UP program, the School of the Coast and Environment and Louisiana Sea Grant. GEAR UP is a federal program designed to increase the number of low-income students who are prepared to enter and succeed in college.

EnvironMentor students visit the LSU campus regularly to meet with their faculty

and graduate student mentors, learn to work in a laboratory and use a college library, conduct basic research, as well as visit museums and aquariums and participate in other fieldtrips. For more information on the LSU chapter, visit <http://www.sce.lsu.edu/environmentors>.



Jeronda Scott