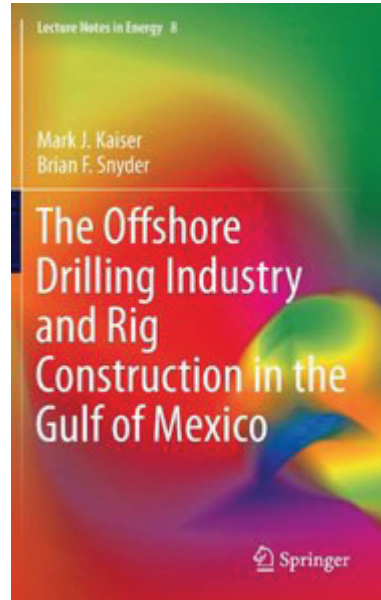




### Kaiser, Snyder Publish Offshore Drilling Text



Mark Kaiser and Brian Snyder have co-authored *The Offshore Drilling Industry and Rig Construction Market in the Gulf of Mexico* (London: Springer-Verlag, 2013), a comprehensive text examining the mobile offshore drilling units (MODUs) service and construction industry and the economic impacts of rig construction in the U.S.

MODUs, which include jackups, semisubmersibles and drillships, are supplied through newbuild construction and operate throughout the world in highly competitive regional markets. The book describes and categorizes the industrial organization and major players in the contract drilling and construction markets. It features an evaluation of day rates and tests hypotheses regarding day rate factors. Contractor decision-making models are developed, including a net-present value model of newbuilding investment, and market capitalization models are derived. The text also examines jackup construction shipyards and processes, and it provides estimates of labor, equipment, and material cost in U.S. construction.

### Energy Initiative Addressed at LSU ORED Retreat

On Friday, October 18, the LSU Office of Research & Economic Development (ORED) hosted a daylong retreat for more than 70 faculty and administrators with the goal of identifying key objectives for future growth in the priority research areas identified in the ORED strategic plan. Allan Pulsipher, along with James J. Spivey, director of the DOE Energy Frontier Research Center at LSU, and Randy Duran, executive director for the LSU Gordon A. Cain Center for Science, Technological, Engineering, and Mathematical Literacy (STEM), led the discussion on conventional and renewable energy. In their presentation, Pulsipher, Spivey, and Duran identified why energy must be a research priority for LSU: Louisiana and adjacent offshore under federal jurisdiction produce approximately 18% of the oil and 24% of the natural gas that fuels the U.S. economy. Long-term prospects for low-cost natural gas are driving the decisions of major corporations to locate in Louisiana, and the technologies require a trained workforce, both in plant operations and research.

Energy-related topics critical to economic development include the development of conventional energy sources, transport of petrochemical-based energy, nuclear, alternative energy generation (bio-based, solar, etc.), energy storage (load leveling via supercapacitor/hydroelectric/the automotive fleet), Li-ion and fuel cell in the transportation sector, energy conservation in the industrial sector, training and workforce development.

The researchers recommended the use of existing LSU capabilities in geosciences and engineering to focus on oil and gas research and development relevant to Louisiana, with national implications such as shale gas and shale oil. As Penn State uses the traditional strengths and outreach components of a land grant university to address business and environmental challenges created by development of the Marcellus shale oil and gas, LSU is well positioned to take advantage of our proximity to oil and gas resources and the conversion of these resources to higher value products.

According to ORED, the consensus statements generated by each collaborative session of the retreat are to be developed into set of "actionable items" in support of the goals defined by the Transition Advisory Team and their vision for OneLSU.

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## Iledare Announces Retirement

Wumi Iledare, professor of petroleum economics and policy research and the director of the Energy Information and Data Division, will retire January 3, 2014, after 21 years of service to the Center for Energy Studies. Iledare joined CES as an assistant professor in 1994. His areas of expertise include global exploration and production analysis, the geopolitics of oil and gas resources, energy economics and policy, and petroleum taxation and regulation.

Iledare's many honors include recognition by the Society for Petroleum Engineers in 2008 for his distinguished contribution to the field of petroleum engineering in the area of management and information in Africa. In 2011, he was awarded the Nigerian Association for Energy Economics, or NAAEE, Distinguished Fellowship Award in recognition of his "distinguished leadership and contributions to the development of the Energy Sector in Nigeria" and for his support of the NAAEE. He served as president of the U.S. Association for Energy Economics in 2008 and president of the International Association for Energy Economics in 2014.

He holds B.Sc. degree with honors in petroleum engineering from the University of Ibadan, Nigeria, an M.S. in energy resources (technology and management) from the University of Pittsburgh, and a Ph.D. in mineral economics from the West Virginia University.

The Center expresses best wishes to Wumi.

### CES in the News\*

Work produced by CES continues to draw media attention. The list below includes some of the articles in which faculty were quoted this fall.

Energy sector intends to ride out gov't shutdown—*CityBusiness*, October 4, 2013 (subscription required)  
<http://neworleanscitybusiness.com/blog/2013/10/04/energy-sector-intends-to-ride-out-govt-shutdown/>

Legal climate might hinder oil boom—*Shreveport Times*, October 4, 2013 (link no longer available)

Avondale faces global competition for energy work—*CityBusiness*, Oct. 10, 2013 (subscription required)  
<http://neworleanscitybusiness.com/blog/2013/10/10/avondale-faces-global-competition-for-energy-work/>

LAGCOE celebrates Louisiana's oil and gas boom—*Shreveport Times*, October 20, 2013 (paid archive)  
[http://www.shreveporttimes.com/article/DG/20131019/NEWS01/310190043/LAGCOE-celebrates-Louisiana-s-booming-oil-gas-industry?nclick\\_check=1](http://www.shreveporttimes.com/article/DG/20131019/NEWS01/310190043/LAGCOE-celebrates-Louisiana-s-booming-oil-gas-industry?nclick_check=1)

Mosaic cancels \$1.1 billion plant—*The Advocate*, November 2, 2013  
<http://theadvocate.com/news/business/7433305-123/mosaic-cancels-11-billion-plant>

Rolling on the river: River corridor between N.O., BR is home for much of state's industrial boom—*The Advocate*, November 17, 2013  
<http://theadvocate.com/news/7346257-123/rolling-on-the-river>

\*CES in the News posts articles from media outlets in which CES researchers are quoted or featured. CES is not responsible for the full content of these articles.

## Faculty & Staff News

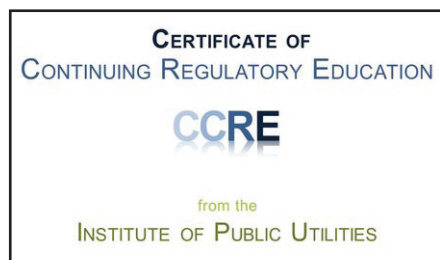
### Dismukes Contributes to Public Utilities Certification Program

David Dismukes, associate executive director for the LSU Center for Energy Studies, has worked with the Institute of Public Utilities (IPU) at Michigan State University to create the Certificate of Continuing Regulatory Education (CCRE). The certification program, designed for public-sector employees and personnel of nonprofit organizations who work in public utilities, teaches interdisciplinary principles and practices of economic regulation. Dismukes serves on the CCRE Advisory Committee, which will provide ongoing input to IPU regarding program design and opportunities for earning credits. The CCRE is endorsed by the National Association of Regulatory Utility Commissioners (NARUC).

“Public utility regulation is a demanding field,” Dismukes said. “Practitioners must have technical and analytical skills and keep up with current issues. The CCRE program provides professional development and networking opportunities that will build valuable regulatory expertise for public-sector regulatory professionals.”

The CCRE program includes IPU’s Annual Regulatory Studies, Advanced Regulatory Studies Program, Grid School, and the NARUC Utility Rate School. The program also provides research, teaching, and publishing opportunities for credit toward additional certificate levels.

For more on the CCRE and the Institute of Public Utilities, visit <http://ipu.msu.edu/CCRE/index.php>



### Wang Guest Lecturer at 2013 AIHce Conference

Wei-Hsung Wang, associate professor of the LSU Center for Energy Studies and director of the Radiation Safety Office, spoke at the 2013 American Industrial Hygiene Conference and Exhibition in Montreal in May. As the Dr. Herman Cember Memorial Lecturer, Wang gave a presentation on naturally occurring radioactive materials (NORM) for industrial hygienists. NORM is a significant concern for workers in the oil and gas industry, requiring monitoring and control measures to reduce unnecessary radiation exposure to the workers.

Wang explained that, when natural gas is brought to the surface, radioactive radon is often mixed in with it. After radioactive radon decays, a series of radioactive “daughters” are produced, and some of the decayed progenies are of particular concern with natural gas production and refining. These radioactive daughters tend to adhere to and accumulate on the inside surfaces of the flow lines, filters, and production equipment. In oil exploration and production, radioactive radium is brought out of the ground with oil. Radioactive radium is chemically bound with the scale found on the inside of a pipe or in surface equipment, e.g., separators, heater treaters, and tanks. These radioactive materials are of primary concern for internal exposure through inhalation and ingestion.



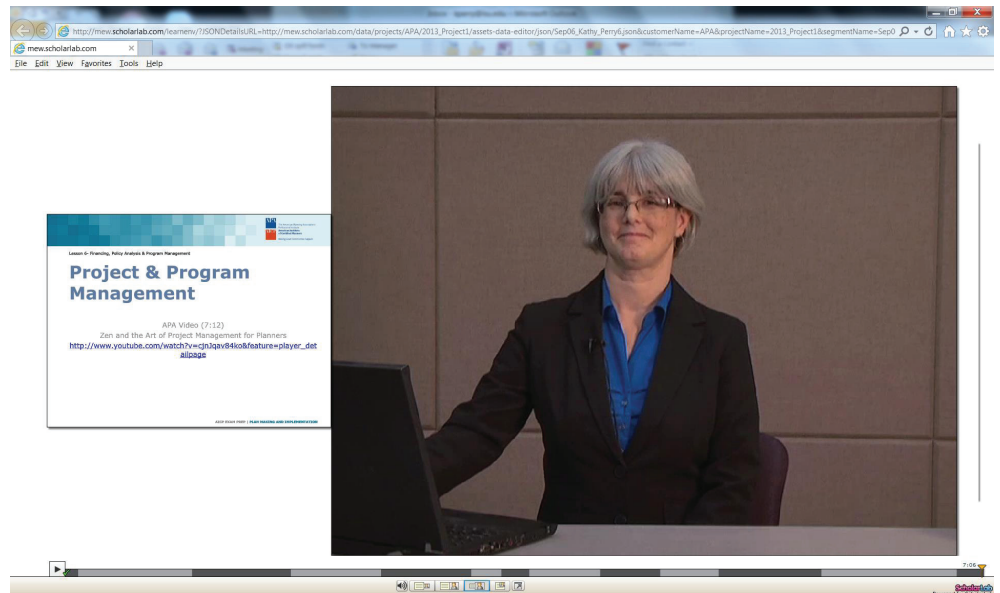
*continued*

The Dr. Herman Cember Memorial Lecture was initiated by the American Industrial Hygiene Association (AIHA) Ionizing Radiation Committee in 2011. Cember's distinguished scientific contributions to the field of radiological health and his renowned technical capabilities were highly recognized and sought out by national and international organizations such as the Health Physics Society, the American Academy of Health Physics, and the International Labour Organization, as well as the U.S. Environmental Protection Agency and the U.S. Nuclear Regulatory Commission.

Founded in 1939, the AIHA, with more than 10,000 members, is one of the largest international associations serving the needs of occupational and environmental health and safety professionals. Industrial hygienists are the guardians of workplace safety, applying science to identify, solve, and prevent health and safety concerns.

### Perry Prepares Planners

Earlier this year, Kathryn Perry, CES research associate, was part of a national working group to develop an American Institute of Certified Planners exam preparation product for the American Planning Association. The exam is the professional certification exam for urban planners. In August, an APA videographer recorded Perry at CES as she presented her section of the exam product, "Plan-Making and Implementation." The final product (AICP 3.0) will be made available online on the APA website (planning.org) in early 2014.



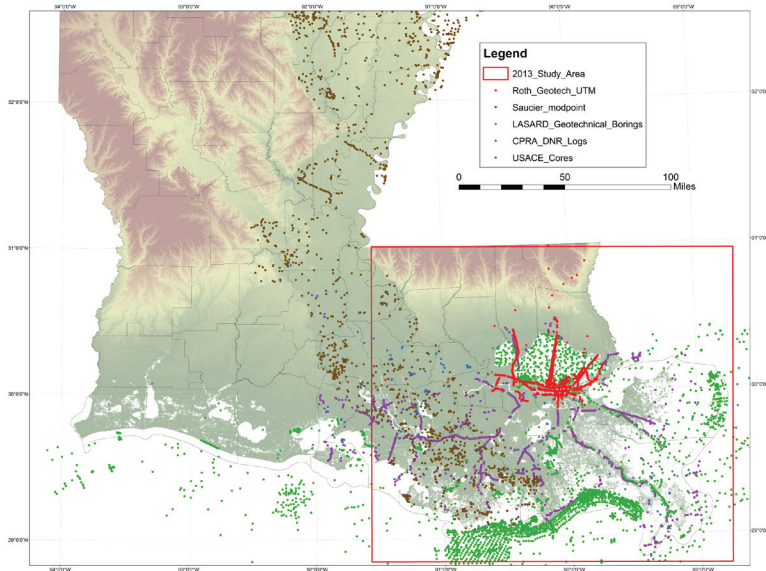
## Louisiana Geological Survey Update

### LGS Completes Contribution to National Geothermal Data System

In June, LGS completed its deliverables for a three-year U.S. Department of Energy-funded project to identify, catalog, and create geothermal databases and maps for inclusion in the National Geothermal Data System (NGDS). The deliverables include well temperature data from more than 91,000 wells and 8 relevant georeferenced geothermal related geologic maps. With participation from all the 50 state surveys in the country represented by the Association of American State Geologists (AASG) and managed by the Arizona State Geological Survey, this project will result in the creation of a very large database designed to facilitate the potential development of geothermal and geopressured-geothermal research in the United States by helping to mitigate much of the upfront risks associated with this resource development.

### TWIG Project to Prepare Maps of Holocene Sediments

A two-year (2013-2015) project titled "Research and GIS Development of the Base of the Holocene in the Louisiana Coastal Plain and Adjacent Continental Shelf," involves the preparation of a detailed structural map of the unconformity that forms the base of Holocene sediments within the Louisiana Coastal Zone. LGS is teaming with The Water Institute of the Gulf (TWIG) for the project, with the funds coming from the Louisiana Coastal Protection and Restoration Authority (CPRA) through TWIG. During the first year, mapping will cover the Mississippi River Delta region. For the second year, the remainder of the coastal zone and the Louisiana Chenier Plain will be mapped. This unconformity is an important and critical geologic feature because the overlying thickness of typically under-consolidated Holocene sediments is a major factor governing local subsidence rates and depth to solid sediments for the foundation of major structures.



### LGS Cartographers honored with another map design award

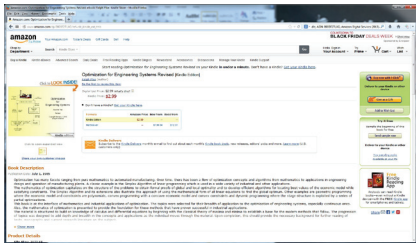
The *Geologic Map of the West-Central Barberton Greenstone Belt, South Africa* was the winner of the **Best Special Purpose Map** category of the 2013 Avenza Map Awards. The map, designed and produced in the LGS Cartographic Section by John Snead, Robert Paulsell, and Hampton Peele, was published in 2012 by the Geological Society of America.

It was the culmination of more than 30 years of research and field investigations by Don Lowe (Max Steineke Professor of Geology at Stanford University), Gary Byerly (Fenton Alumni Professor of Geology and Dean of the LSU Graduate School), and Christoph Heubeck (Professor of Geology at Freie Universität Berlin) with funding from the National Science Foundation.

The 2013 Avenza Map Awards recognizes professional and student mapmakers from around the world who use Avenza map design products in the creation of their maps. The various category awards recognize achievement in the art and science of cartography and promote the advancements and innovation made in mapping. It is featured on the Avenza Map Awards Gallery at [www.Avenza.com](http://www.Avenza.com).

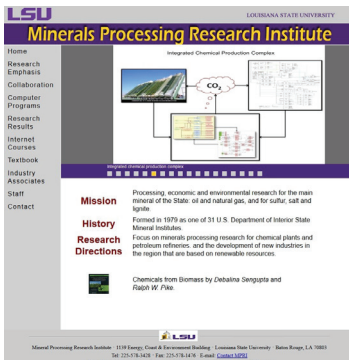
Earlier this year, the Barberton map was also recognized by the Cartography and Geographic Information Society's 40<sup>th</sup> Annual Map Design Competition as **Best Reference Map of 2012**. The map has now been honored with the most respected map design awards from the mapping professional society and the mapping industry.

**This is the  
8th map  
design award  
won by LGS  
cartographers  
since 2000.**



### Book Available on Kindle

The revised and expanded book, *Optimization for Engineering Systems*, by Ralph Pike, is now available on Kindle, ASIN: B00BF2TLXO, Amazon Digital Services (2013). The original hardcover was published in 1986.



### Website Updated

The division's website, [www.mpri.lsu.edu](http://www.mpri.lsu.edu), has been revised and extended, with new research results, including journal articles, conference proceedings, technical reports, theses, dissertations and computer programs. The website has updated continuing professional development self-study courses for professional engineers' PDH requirements.

## Minerals Processing Research Division Update

### Monograph Ready for Publication

The Minerals Processing Research Division, directed by Ralph Pike and co-directed by Carl Knopf, has extensively revised and prepared for publication a monograph on economic decision analysis for process engineers. The revision includes an evaluation of the latest process simulation (flowsheeting) programs that interact with elaborate capital cost estimating programs, such as Aspen Plus Process Simulator, Aspen Process Economic Analyzer, Aspen Capital Cost Estimator and Aspen In-Plant Cost Estimator. Online chemical engineering plant cost indices are included, along with the best methods for depreciation based on corporate income tax rates for 2012 in the *U. S. Master Tax Guide*, among other additions.

### Postdoc Sengupta Continues Collaboration

MPRD is continuing its collaborative research with Debalina Sengupta on new chemical and refinery processes that use renewable resources as feedstocks. Sengupta is a postdoctoral fellow at the EPA Risk Management Research Division at the Environmental Research Center in Cincinnati. As part of this research collaboration, Pike and Sengupta co-chaired the three following technical sessions at the American Institute of Chemical Engineers' annual meeting in San Francisco, November 3 -8, 2013.

- Sustainable Fuels: Advances in Innovative Processes
- Sustainable Chemicals: Advances in Innovative Processes
- Sustainable Fuels from Renewable Resources

### MPRD Predictive Models Aid Coastal Restoration

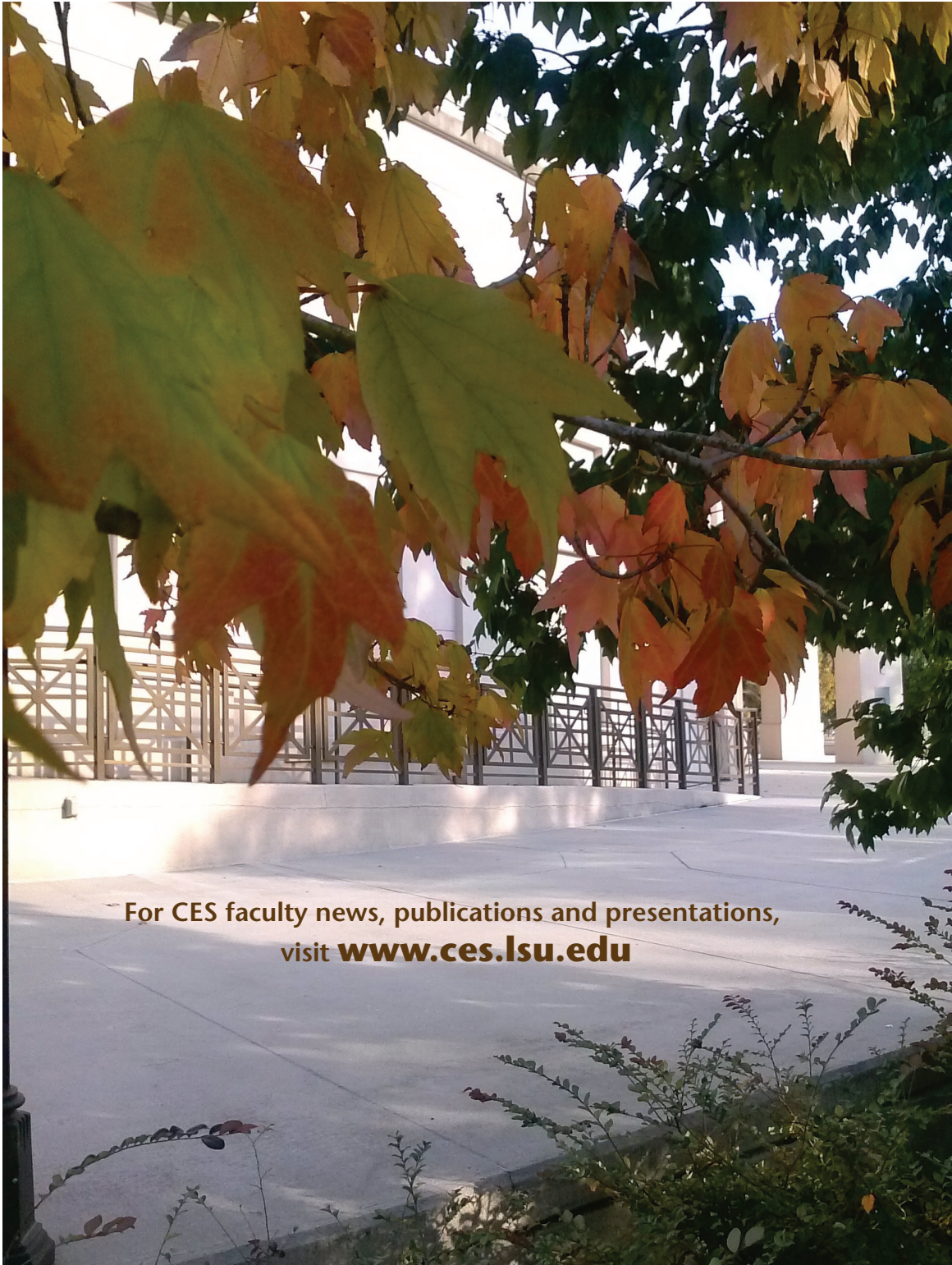
The Louisiana Coastal Protection and Restoration Authority's 2017 *Coastal Master Plan: Model Improvement Plan* describes several numerical models to be used for estimating the effect of projects on the ecosystem of the Barataria and Ponchartrain basins. Previous research conducted by the division on predictive models for the Barataria Bay Basin is being evaluated to assist in the numerical modeling of fish and shellfish dynamics for coastal restoration project planning for Barataria Bay and adjacent coastal marsh. Research results are available from solutions of the transport equations that predict velocity profiles, and temperature and salinity profiles along with distributions of different species of nitrogen, detritus, phytoplankton, and other organisms contributing to primary production.

### Dissertation Outgrowth of Cogen Work

To help improve the operability and efficiency of large energy generating systems, MPRD personnel have instrumented and are collecting data from the 20MW cogeneration system at LSU. Work to date has culminated in a Ph.D. thesis (May 2013) by Mohammed Shafi Syed titled "A new diagnostics tool for water injected gas turbines – emissions monitoring and modeling." F. Carl Knopf served as dissertation advisor and Ralph Pike served as committee member. Articles detailing this work are in review.

### Student Researchers Join MPRD Staff

Chancellor's Student Aides Brianna Robinson, environmental engineering major, and William Fernandez, biological engineering major, have joined the division and are assisting in research on mineral processing.



For CES faculty news, publications and presentations,  
visit [www.ces.lsu.edu](http://www.ces.lsu.edu)

Visit [www.ces.lsu.edu](http://www.ces.lsu.edu) to read about the latest news and events at the CES.

*The **Center for Energy Studies** conducts, encourages, and facilitates research and analysis to address energy-related problems or issues affecting Louisiana's economy, environment, and citizenry. Whether conducted by its staff or by others it supports, the Center's goal is to provide a balanced, objective, and timely treatment of issues with potentially important consequences for Louisiana.*

The CES Newsletter is published by the Center for Energy Studies at Louisiana State University.

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Design by Lisa Pond, Louisiana Geological Survey.

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