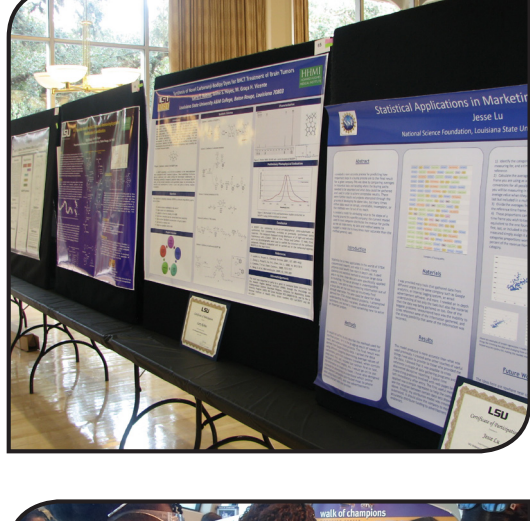


NEWS/EVENTS



Excite, EXplore, EXperiment

Office of Strategic Initiatives Sponsors 2012 Undergraduate Research Conference

Nearly 70 students presented their research during this year's Undergraduate Research Conference. Graham Walker, HHMI Professor and American Cancer Society Professor, from the Massachusetts Institute of Technology, was the keynote speaker for the event. Walker's speech encouraged students to find inspiration in their current education. The students listened intently as Walker shared his own experiences of inspiration. Having become fascinated by DNA in a freshman biology course, he was inspired to go on to the University of Illinois for graduate school to work on nucleic acid synthesis and biochemistry. He then moved to UC Berkeley for his postdoctoral research after becoming interested in genetics. Other conference speakers included K. Scott Ferguson, manager of business intelligence for The Shaw Group Inc., and Cyndi Freeman, director of Graduate Student Recruitment at Ohio State University.



Kids of All Ages Enjoy a Saturday Filled with Science

More than 1,600 children and parents packed the outer ring of the Pete Maravich Assembly Center for Super Science Saturday on October 27. From 10 a.m. to 2:30 p.m. kids and their families moved from station to station participating in hand-on activities that taught some of the basics of science.

Activities included making brass pennies, shrinking balloons in liquid nitrogen, and learning about the minerals present in items we use everyday.

The activities were led by representatives from industry, the chemistry department, science student organizations, and the local chapter of the American Chemical Society. [More](#)



Physics & Astronomy Hosts Saturday Science Lecture Series

The LSU Department of Physics & Astronomy is hosting a series of Saturday Science lectures which began Saturday, October 20 with *We Are All Stardust: The Origin of Elements in the Cauldrons of the Cosmos* by Physics & Astronomy Professor Catherine Deibel. Other scheduled lectures are:

- November 24, 10 a.m. to 11:15 a.m.** Department of Geology & Geophysics
Einstein's Legacy: Black Holes and Gravitational Waves by Peter Diener, LSU CCT and Department of Physics & Astronomy
- February 16, 10 a.m. to 11:15 a.m.** *Nano Theater: Research Experiments with Scanning Probe Microscopy* by Jane Garo, LSU Department of Chemistry
- March 16, 10 a.m. to 11:15 a.m.** *Beyond Google, Searching for Music, DNAs and Emails* by Rahul Shah, LSU Department of Computer Science
- April 20, 10 a.m. to 11:15 a.m.** *Gulf SERPENT: Partnering with Industry to Explore Life in the Deep Sea* by Mark Benfield, LSU Department of Oceanography and Coastal Sciences

Einstein's Legacy: Black Holes and Gravitational Waves by Peter Diener, LSU CCT and Department of Physics & Astronomy

December 15, 10 a.m. to 11:15 a.m.
The Mississippi River and Its Importance to our Working Coast: Past, Present and Future by Clinton Wilson, LSU Department of Civil and Environmental Engineering

January 19, 10 a.m. to 11:15 a.m.
Development of Asian Monsoon and Its Impact on the Rise of the Himalaya and the Early Human Civilizations by Peter Clift, LSU

The lectures will be held in Nicholson Hall, Room 130. For more information, call 225.578.2261



NOW OPEN!

Read highlights and watch video from the Chemistry and Materials Building Ribbon Cutting Ceremony held October 11

[More](#)



l to r: Dean Kevin Carman, Keith Comeaux, Physics & Astronomy Chair Mike Cherry

LSU Alumnus Keith Comeaux Recounts Mars Rover Landing Experience at 2012 Dean's Circle Dinner

Baton Rouge native and NASA Mars Rover Flight Director Keith Comeaux was the guest speaker at the sixth annual College of Science Dean's Circle Dinner, Friday, October 12. Comeaux's talk opened with a video entitled, *Where Were You When Curiosity Landed on Mars?* which detailed the excitement surrounding the historic Mars rover landing. This year's dinner was well attended and provided time for the Dean's Circle (DC) members to interact with students, faculty and staff.

The Dean's Circle is a loyal group of alumni and friends who make an annual gift of \$1,000 or more to the Science Development Fund. The College holds a dinner each fall to honor the members and to commemorate the achievements made possible through their giving. Since its start in 2007, DC membership has more than doubled. [CLICK HERE](#) to learn more about the Dean's Circle and membership. [More](#)



LSU Graduate Rate Increases to an All-Time High

LSU's six-year graduation rate has increased to 66.7 percent, the highest in the university's history, according to the LSU Office of Budget and Planning.

This year's graduation rate surpasses the average of its peers in the latest available Southern Regional Education Board, or SREB report. Should LSU maintain that position when the SREB report is issued that calculates the same cohort reflected in LSU's new mark, it will be the first time in LSU history that its graduation rate is higher than the average of its SREB peers. [More](#)

NEW FUNDING



LSU Physics Professor Receives NSF CAREER Award

LSU Assistant Professor of Physics & Astronomy Daniel Sheehy has received a five-year NSF Faculty Early Career Development (CAREER) award to support theoretical research and education in new states of matter in cold-atom systems.

The NSF CAREER award is one of the foundation's most prestigious grants awarded to promising junior faculty who effectively integrate research and education within the context of the mission of their organization. Sheehy will receive more than \$400,000 to examine how atoms organize themselves at very low temperature when they are trapped in beams of laser light. It is unclear how some states of matter that may occur in gases of cold atoms can be realized by electrons in crystals, but their discovery would provide some insight into electronic states in materials. Sheehy and his research group will explore whether a superconducting state, which are quantum mechanical states that can transport electricity without dissipation, can be observed in trapped gases of cold atoms.

"A large amount of energy is lost in route from the power plant to our homes," said Sheehy. "The NSF CAREER Award will help me to grow my research group and support research activities that could ultimately lead to the development of a superconductor cable that can transmit energy more efficiently." [More](#)



Chemistry Professor Secures NIH Grant for Single Cell Analysis Research

Grant was one of 15 high risk, high impact projects funded nationally

Kermit Murray, LSU professor of chemistry, was awarded \$350,844 to develop new methods, or significantly improve existing methods, for single cell analysis. The goal of Murray's project, entitled, Nanoscale Laser Ablation Capture Mass Spectrometry for Single Cell Proteomics, is to create nanometer scale sampling for mass spectrometry using near-field optics and laser ablation.

"An ensemble of cells does not give us a detailed look at cells," said Murray. "You may have 100 cells and only a few of them will be in a particular disease state. The use of mass spectrometry will give us a high-resolution view of cells at a sub-cellular level."

Single cell analysis emerged as an important field of research after new technologies with improved sensitivity made it possible to measure cell-to-cell differences in living organisms and correlate the variation with changes in biological function and disease practices. [More](#)



LSU 'Phyleaux' Lab Tracks Transmission of HIV with Evolution

Phylogenies, or the historical relationships among organisms, form the backbone of many biological advancements, including the ability to identify the source of a pathogen used to commit a crime. Over the last decade, cases of persons intentionally transmitting HIV have made national headlines. An important piece of these cases has been the admission of phylogenetic analysis, a type of evolutionary analysis that has helped determine the source of transmission in criminal cases in Louisiana, Texas and Washington.

Jeremy Brown, assistant professor of biological sciences and head of LSU's Computational Phylogenetics, Phylogeography, and Molecular Evolution Lab, or Phyleaux Lab, has been awarded a grant from the National Institute of Justice (NIJ) titled, Extending the Microbial Forensic Toolkit Through Whole-Genome Sequencing and Statistical Phylogenomics. In collaboration with Mike Metzker at Baylor College of Medicine, Brown's Phyleaux team proposes to expand the existing scientific work on HIV forensic studies and develop a "pathogen toolkit" for source identification using whole genome sequences. [More](#)

BIOLOGY

Barry Aronhime, "Elephant ear removal in BREC's Bluebonnet Swamp," Keep Louisiana Beautiful Inc. (KLB Inc.) - Health Community Grants, 12 months, \$36,741.

Gregg Pettis, "Mutational Analysis of Streptomyces Genes with Potential Roles in Plant Pathogenicity," Department of Agriculture-USDA, 12 months, \$39,638.

CHEMISTRY

Kresimir Rupnik (collaborative investigator), "Development of Ultrafast Spectroscopy System for Chemistry, Materials Science and Biophysics Research and Education in the 25-T Split-Coil Helix," National Science Foundation, 2012-2017, \$1.3 million.

KUDOS

Frederick Sheldon, director of the LSU Museum of Natural Science, is a Co-PI on an NSF grant awarded to University of Montana scientist Tom Martin to study breeding physiology and distribution of birds on Mt. Kinabalu in Borneo. Sheldon will be providing phylogenetic and population genetic data on the birds to determine the history of their community composition and local dispersal patterns. [More](#)

Sam Bentley, associate professor of geology & geophysics and Harrison Chair in Sedimentary Geology, participated in an National Public Radio interview, along with other coastal experts, to discuss the implications of Fleegeer's recent *Nature* paper on wetland degradation by anthropogenic nitrogen flux. Bentley's interview focused on the impact this event would have on the Mississippi Delta restoration efforts. [More](#)

MARQUIS PUBLICATIONS



Research Team Shows Negative Impact of Nutrients on Coastal Ecosystems

LSU's John Fleegeer, professor emeritus in the Department of Biological Sciences, is part of a multi-disciplinary national research group that recently discovered the impact of nutrient enrichment on salt marsh ecosystems is marsh loss and that such loss is seen much faster than previously thought. Globally between a quarter and half of the area of the world's tidal marshes has already been lost, and although multiple factors – sea-level rise, development, loss of sediment supply – are known to contribute to marsh loss, in some locations the causes have remained unexplained. [More](#)

Steven Hand, Ron and Mary Neal Professor of Biological Sciences, and his research group has published "Embryogenesis Abundant Proteins Protect Human Hepatoma Cells during Acute Desiccation" in the *Proceedings from the National Academy of Science*.

Gary King, professor of biological sciences, is an author of *Bacterial Biogeochemistry: Ecophysiology of Mineral Recycling*.

Karen Maruska, assistant professor of biological sciences, has received quite a bit of media attention for her PLoS ONE paper showing cichlids uses acoustic communication as part of its multimodal reproductive repertoire.

- "Serenading Cichlids" in *Natural History Magazine*
<http://www.naturalhistorymag.com/samplings/022304/serenading-cichlids>
- "African Cichlid's Noisy Courtship Ritual" in *Science Daily*
<http://www.sciencedaily.com/releases/2012/06/120613153339.htm>

ALUMNI



GeauxTeach Grad Models Next-Generation Math Teaching Tools

Heather Bass, an LSU GeauxTeach graduate in mathematics, has garnered the attention of the Bill & Melinda Gates Foundation for incorporating the latest in mathematics teaching tools and assessment measures in her Port Allen High School classroom.

Bass is part of the Mathematics Design Collaborative (MDC), a project funded by the Bill & Melinda Gates Foundation, which groups curriculum designers, professional development specialists, and school districts across the nation in an effort to develop high-quality instructional tools and professional support services for math teachers. [More](#)

STAR SCHOLARS



Graduate Students Attend 2012 NOBChE Meeting

Approximately 15 graduate students traveled to Washington, DC to attend the annual meeting of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBChE), September 25-28. The students were accompanied by Isiah Warner, LSU System Boyd Professor and vice chancellor for strategic initiatives; and Zakiya Wilson, assistant director of graduate studies, and executive assistant and director for STEM Education in the Office of Strategic Initiatives. During the meeting Warner was recognized as a past recipient of the Percy Julian award, NOBChE's highest honor. [More](#)

ALUMNI & DEVELOPMENT HIGHLIGHTS

Reconnect with friends and visit with faculty and staff on November 9th, as we celebrate

LSU Homecoming 2012

at the College of Science Alumni Tailgate Party. The event will be held on campus in the Atrium of Howe-Russell, from 5:30 p.m. to 7 p.m.

All LSU science alumni and their families are invited to feast on traditional style jambalaya along with other tailgate favorites.

To attend the Alumni Tailgate Party, please RSVP by November 5th at sciencelumni@lsu.edu.



To submit news items for the upcoming College of Science E-News, email djenkins1@lsu.edu

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