LSU College of Science

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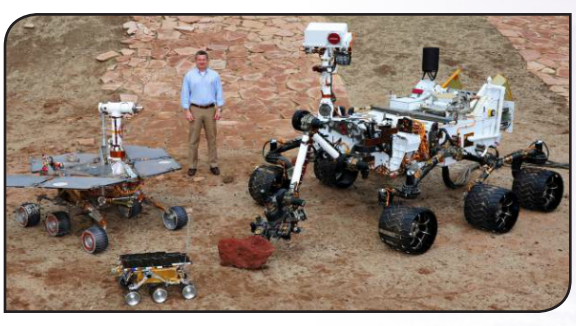
E-NEWS

NEWS/EVENTS



LSU Physics, Mechanical Engineering Graduate Involved in Rover Landing

It's a proud moment for Baton Rouge, whose native son Keith Comeaux is team chief for cruise and engineering operations and flight director for NASA's Curiousity rover. The rover was launched from Cape Canaveral in November 2011, and has successfully landed on Mars. Comeaux attended LSU on a full scholarship and graduated with degrees in mechanical engineering and physics. “LSU gave me a very good foundation,” he said.

About 200 pounds of scientific equipment have been loaded onto Curiousity, which at 2,000 pounds is five times bigger than previous rovers. “Taking a science lab with us is cheaper than bringing a Mars rock back to Earth,” Comeaux said. Curiosity’s lab will be able to check the mineralogy of rocks on Mars, whether they were formed by water or by volcanic activity or in other ways. “It can detect organic molecules,” Comeaux said. “This could be an important clue that life could have existed on Mars."

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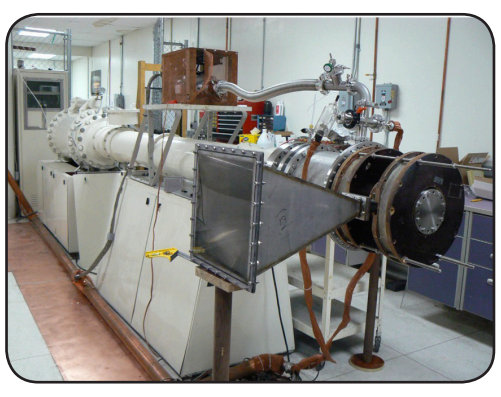
Robert Lipton Awarded MURI Grant for Transformational Electronics Research

LSU Mathematics Professor and Center for Computation and Technology (CCT) faculty **Robert Lipton** is the recipient and principal investigator for the LSU component of the recent Air Force Office of Scientific Research (AFOSR) Multidisciplinary University Research Initiative (MURI) on Transformational Electromagnetics. This $7.5 million grant is intended for the innovative use of metamaterials in confining, controlling and radiating intense microwave pulses. LSU is approved for $615,000 in funding for the first three years with an anticipated total of $1.025 million over five years.



This prestigious grant was awarded to a consortium of universities led by the University of New Mexico Electrical Engineering Department. The group also includes the MIT Plasma Science and Fusion Center, the University of California Irvine Mathematics Department and The Ohio State University Department of Electrical Engineering. The award will support the design of new generation microwave sources and particle accelerators using novel properties of metamaterials. Metamaterials are a new form of man made materials that have novel electromagnetic properties not found in nature.

Lipton’s research includes postdoc Anthony Polizzi and Mathematics Department graduate student Lokendra Singh Thakur. Together the LSU group will develop mathematical theory and numerical approaches for engineering new metamaterials for use in microwave sources and particle accelerators.

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Left: Dr. George Boudreaux, Chairmen of CoS Outreach Committee
Right: Dr. Terry Latiolais, Chairmen of CoS Executive Committee

College of Science Delivers Another Successful Week of Boot Camps

Dean’s Circle Members provide $25,000 to support boot camp participants

This summer, the College of Science welcomed more than 300 aspiring scientists to campus to prepare them for the rigorous life of an LSU science student. This year’s participants made up nearly a third of all incoming science majors.

The week-long boot camp began with an opening dinner sponsored by members of the Dean’s Circle (DC) and the new "DC Outreach Committee." A number of members, comprised of science alumni and friends, were on hand to interact with the students and offer gifts and some words of encouragement to help prepare the students for university life. The DC members also provided $25,000 in scholarships for boot camp participants, supporting 86 future scientists.

Throughout the week, participants listened to a variety of lectures, some given by current College of Science professors. These lectures consisted of educational content, as well as learning strategy discussions including lectures on academic scheduling and structure, healthy sleeping and eating habits, using credit wisely, and managing finances responsibly. Study time, research presentations, and lab tours were also incorporated into the week's agenda. The students were housed in dorms on campus, and were tested three times on the content presented in the lectures. Sheri Wischusen, one of the creators of the boot camps, said, “We want it to feel like finals week. Incoming students get a taste of college, and the boot camp is more for preparing purposes, not actual education.”

PHIOS participants enjoy refreshments during the closing ceremonies.

At the end of the week, the students attended an awards ceremony, also sponsored by DC members, where groups were recognized with “best group” honors and “most improved group.” Following the ceremony, a small banquet was held in the student union where participants and their families enjoyed refreshments, networked with College alumni and faculty, and listened to talks given by members of the DC Outreach Committee.

Abby Guerin, a CHEMIS boot camper, says, “It was a crammed week, but it was very helpful. My first college classes will be easier now, and I have met people who I know I can talk to in the future.”

Dean’s Circle members continue to play a pivotal role in the success of the boot camps. Students who participate in these programs are better prepared for the rigors of college work, have higher retention rates, and usually graduate within four years. If you are interested in giving to the College of Science pre-college boot camps or becoming a member of the Dean’s Circle, contact Eric Guerin at 225.578.7602 or email eguerin@lsu.edu.

Click one of the links below to learn more about becoming a Dean’s Circle member and the Pre-college Boot Camps.

> *College of Science Dean’s Circle*
> *College of Science Pre-college Boot Camps*

LSU Undergrads SURF Through the Summer

The 19th annual Summer Undergraduate Research Forum (SURF) took place on July 27. The forum provides a venue in which students can highlight the research they have conducted throughout the summer. Research teams and LSU colleagues joined the fun as more than 130 students presented their research posters.

SURF participants represent programs including:

- Center for Computation & Technology Research Experiences for Undergraduate (CCT REU)
- HHMI Professor's Program
- Initiative for Maximizing Student Diversity Program (ISMD)
- LSU-Howard Hughes Medical Institute (HHMI) Program
- Louisiana Alliance for Simulation-Guided Materials Applications (LA-SiGMA)
- Louisiana Biomedical Research Network (LBRN)
- Louisiana Science, Technology, Engineering, and Mathematics Research Scholars Program (LA-STEM)
- Robert Noyce Scholarship Program (Geaux Tech NOYCE)
- Office of Strategic Initiatives Research Experiences for Undergraduate (OSI REU)
- Physics and Astronomy Research Experiences for Undergraduate (P&A REU)
- Supervised Undergraduate Research Experience (SURE)
- Individual student researchers in various laboratories across LSU

This year's SURF highlighted three former LSU students who have found success and made careers of their research: Alyson Moll, Sarah Caudill and Raphyel O. Rosby.

Watch ESPNU's Visit to LSU Museum of Natural Science

Last spring, ESPNU produced a short video featuring LSU's Museum of Natural Science. The video is part of a series called "SEC: Stories of Sucess."

Click HERE to Watch it Now!

NEW FUNDING

Brent Christner (PI), Carolyn Weber (Idaho State),David Schmale III (Virginia Tech), Boris Vinatzer (Virginia Tech),David Sands (Montana State), and Cindy Morris (Montana State),"Research on Airborne Ice Nucleation Species (RAINS)," LSU, NSF, 2012-2016, $2 million.

Kevin R. Carman (PI), Isiah Warner, Su-Seng Pang, Zakiya Wilson,JoDale Ales (BRCC), Laura Younger (BRCC), and Dennis Taylor(BRCC), "Bridges to the Baccalaureate Program from Baton Rouge Community College to Louisiana State University," LSU, NIH, 2012-2017, $1,333, 500.

Irving A. Mendelssohn (PI), Qianxin Lin, Kevin Carman, Aixin Hou, "Accelerating recovery after the Deepwater Horizon Oil Spill: Response of the plant-microbial-benthic ecosystem to mitigation strategies promoting wetland remediation and resilience," LSU, Gulf of Mexico Alliance, 2012-2014, $1,669,037.

KUDOS

Isiah Warner, professor of analytical and environmental chemistry, has won the American Chemical Society (ACS) Award in analytical chemistry sponsored by the Battelle Memorial Institute.

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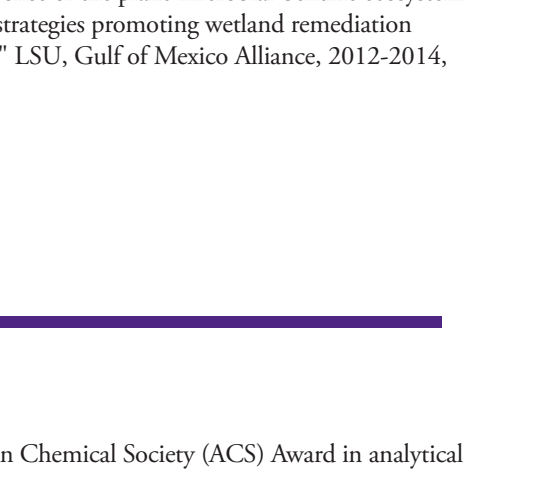
ALUMNI & DEVELOPMENT HIGHLIGHTS

LSU Physicist Made Mark Early

Often, scientists do not get observatories and mountains named after them until they are dead. However, this exceptional man has had a mountain in Antarctica named after him, as well as the observatory atop LSU's Nicholson Hall. His work in measuring the brightness of stars have been compared to standards as basic as 16 ounces equal a pound. At age 72, Arlo Landolt still manages to keep his office hours in LSU's physics department.

Landolt grew up in Illinois, and physics interested him even in high school. In college, he majored in math and physics. Landolt dropped out of graduate school at Indiana University to go to Antarctica, to winter over, as part of the International Geophysical Year in 1957. He got to LSU in September 1962. The year in Antarctica recording data on Aurora Australis, the Southern Lights, and the airglow undoubtedly helped his career, Landolt said. Airglow results when energetic particles from the sun ionize atoms in the earth’s outer atmosphere.“Though I’m not sure how it matured us,” he said. “I’ll tell you that.”

Sometimes, it takes a physicist to describe the work of a fellow physicist. Here’s Robert F. O’Connell, LSU Boyd Professor, on the work of Landolt.



“Astronomers, for the most part, measure the brightness and spectra (colors) of stars and other celestial objects. These measurements are used to obtain, in particular, distances to stars and their ages. However, as with all measurements, one needs standards (as, for example, standard weights). The characteristics of most stars are such that they cannot be used as standards. However, there is a subset of stars which can be used as standards and are referred to as Spectrometric Standard Stars. Arlo Landolt’s research has been devoted to the study of such stars.”

Landolt measures the brightness, the intensity, of these stars at different wavelengths. His method of determining the brightness of a star, as well as other heavenly bodies, is used by astronomers worldwide and on the Hubble telescope.

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