



A Message from the DEAN

Dear Friends,

I hope that you will enjoy our final College of Science E-news for 2012. Once again Dawn Jenkins has done a wonderful job of bringing you examples of success stories of our students, faculty, and alumni.

As many of you are aware, I have accepted a position at the University of Nevada, Reno and will begin my appointment there on Feb. 1, 2013 as Executive Vice President and Provost. It is a wonderful opportunity for me and I am looking forward to the professional challenge. I have thoroughly enjoyed my 23 years at LSU, and especially the last nine years as dean (time flies!). I will be leaving with wonderful memories of outstanding colleagues, amazing students, and inspirational alumni.

I'm especially pleased that my colleague, Dr. Guillermo Ferreyra, has agreed to serve as interim dean. Guillermo is a professor in the Department of Mathematics, and he previously served five years as dean of the LSU College of Arts & Sciences. I assure you that the College is in very good hands. A national search for the next dean of the College is underway, and I am confident that the search will attract an outstanding pool of candidates. The best is yet to come for the College.

Susan and I wish you and yours a wonderful holiday season and a prosperous new year. We will always feel a deep bond with you as members of the LSU family.

Geaux Tigers!

Kevin C.

NEWS/EVENTS



L to R: Department of Physics Chairman Mike Cherry, Commencement Speaker Major General Jasper Welch, and College of Science Dean Kevin Carman

College of Science Confers 172 Degrees During Fall Ceremony

The College of Science celebrated the achievements of more than 170 graduates during its fall 2012 diploma ceremony Friday, December 14, in the Student Recreation Complex. The guest speaker for the event was distinguished alumnus Major General Jasper Welch, US Airforce (retired).

Welch, a brilliant military strategist who has served as an advisor to numerous presidents, is a 1952 magna cum laude graduate of LSU with a BS in physics. The speaker encouraged the graduates to save time and energy for public service in their pursuit of their science careers.

"As of today, you are certified and anointed scientists and as a scientist you possess what I would call a precious gift, a demonstrated command of a certain set of remarkable abilities," said Welch. "These abilities enable you to be useful, helpful, and a leader." [More](#)



LSU Mathematician Named Boyd Professor

Professor of Mathematics James Oxley was unanimously awarded the rank of Boyd Professor by the LSU Board of Supervisors on December 7. The Boyd Professorship, named in honor of brothers David F. and Thomas D. Boyd, presidents of LSU in its formative years, is the highest professorial rank awarded by the LSU and is given only to professors who have attained national or international distinction for outstanding teaching, research, or other creative achievement.

Oxley, an international expert on an intricate mathematical theory used by electrical engineers to help computer networks run better, is the LSU System's 70th Boyd Professor, 45th from the LSU main campus, and the fourth in mathematics.

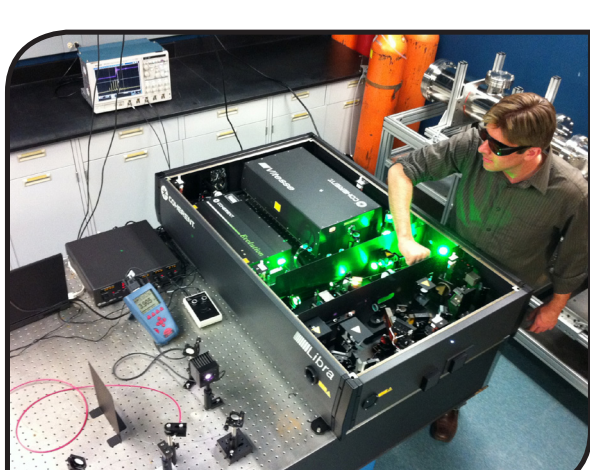
Oxley has been a member of the LSU math faculty for more than 30 years. His career has been marked by outstanding research and teaching particularly in the field of matroid theory. This complex area of mathematics merges geometry, graph theory and algebra, and points the way to solving everyday problems such as speeding up the Internet, monitoring product quality, implementing GPS technology, and constructing online web services for auctions and selling advertisements. [More](#)



LSU Wins International Birding Competition

The LSU Tigrisomas took first place in the first world birding contest held November 29 in Madre de Dios and Cusco, Peru. The competition consisted of six days and five nights of non-stop Amazon and Andes birding following a route that began at Tambopata, continued through the high Andes over the South Interocceanic Highway and finished at the biodiverse cloud forests of Machu Pichu. LSU bested five teams including the Ararajuba from Brazil, the Forest-Falcons from Great Britain, the e-Birders from the U.S., the Zululanders from South Africa, and the Tramuntana from Spain.

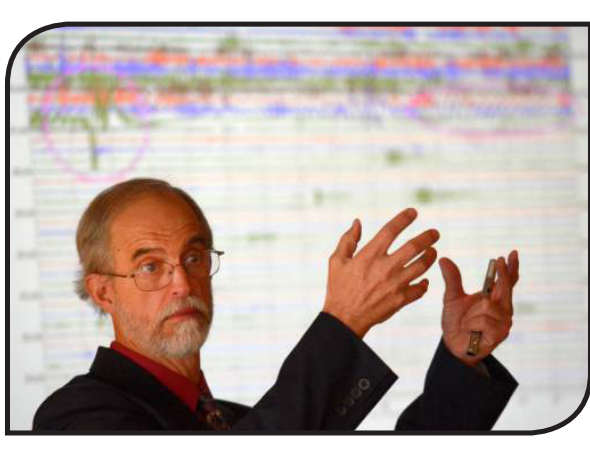
The LSU Tigrisomas team included Museum of Natural Science Ph.D. candidates Glenn Seeholzer, Michael Harvey, Paul van Elis, and Ryan Terrill. [More](#)



Chemistry Professor Develops Fastest Laser System in Gulf South

Louis Haber, assistant professor of chemistry at LSU, has recently established the fastest and most powerful pulsed laser system in the Gulf south. He will use this state-of-the-art system to study chemical reactions that occur on the surface of nanoparticles.

"Having a fast laser is analogous to having a camera with a very fast shutter speed that allows these chemical and physical dynamics to be captured and studied on this ultrafast time scale," said Haber. "If the laser pulse is not shorter than the process you are studying, you can't hope to see it and you'll just get averaged and blurred out results that lack the interesting and important information." [More](#)



From *The Advocate*, 12.16.12

LSU Geologist Outlines Factors Leading to Bayou Corne Sinkhole

Jeffrey Nunn, Ernest and Alice Neal Professor of Geology and Geophysics and Pereboom Professor of Science, discussed the factors leading to the Bayou Corne sinkhole Friday, December 14, during a luncheon talk at Mike Anderson's restaurant in Baton Rouge.

Nunn, who has been speaking with a group of scientists working closely on the sinkhole, used 3-D seismic imagery of the salt dome from 2007 to make his case.

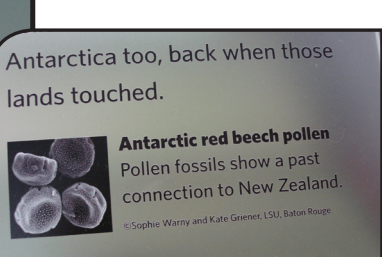
"What this indicates is that the bottom part of this abandoned cavern completely dissolved away the salt and the cavern was in direct contact with whatever formation is in the area," Nunn said. [More](#)

KUDOS

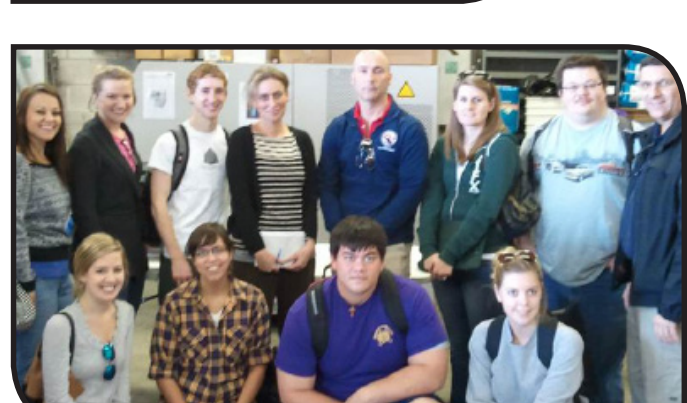
Parampreet Singh, assistant professor of physics & astronomy, has been invited to join the editorial board of the journal *Classical and Quantum Gravity*, published by The Institute of Physics.



A photo of Antarctic reed beech pollen taken by **Sophie Warny**, assistant professor of palynology, and **Kate Griener**, Ph.D. student in geology & geophysics, is featured in the new Earthquake exhibit at the California Academy of Sciences museum. Warny will also be featured in the *Palynological Society Newsletter*, along with her LSU GEOL 4012 class. One of the classes, focused on the use of palynology in forensics, included a lecture by forensics expert and retired New York Police Department officer Ed Wallace. Wallace was flown in courtesy of the Stephenson National Center for Security Research and Training to share his expertise on following protocol when collecting pollen and other trace evidence at crime scenes.

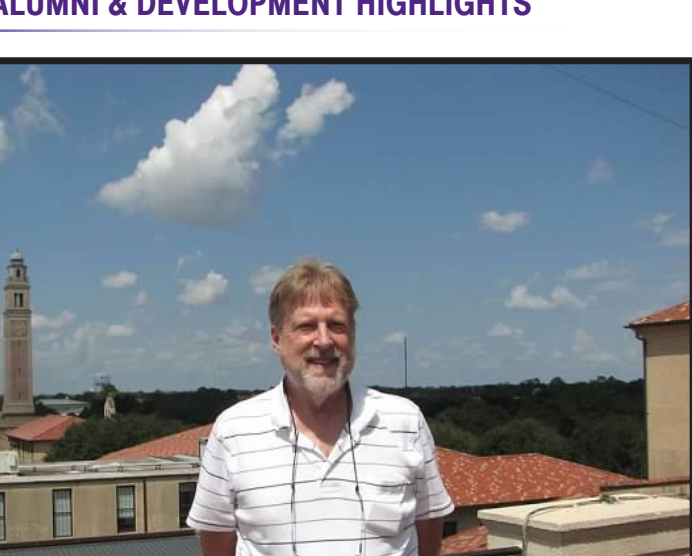


Antarctica too, back when those lands touched.
Antarctic red beech pollen
Pollen fossils show a past connection to New Zealand.
- Sophie Warny and Kate Griener, USA Earthquake



Sophie Warny's GEOL 4012 class (first row, l to r): Melissa Auburn, Tara Jonell, Eric Orphys and Corey Shircliff; (second row, l to r): Marie Thomas, Kate Griener, Madison Kymes, Sophie Warny, Jason Krause, Jill Bambricks, David Pipkin, and Edward Wallace.

ALUMNI & DEVELOPMENT HIGHLIGHTS



LSU Alum Leaves Remarkable Legacy

LSU alumnus Frank Richard "Rick" Steldt recently visited campus after more than 30 years since completing a doctorate in physics. During his trip, Steldt enjoyed going back to many familiar places including his former graduate student office and laboratories in Nicholson Hall. One of the highlights of his trip was to share with Dean Kevin Carman that he is leaving a trust to the LSU Foundation valued at more than \$1 million dollars for the benefit of the Department of Physics & Astronomy.

A retired physics professor at Indiana University, Steldt fully credits LSU for his successful career as an educator. Upon his retirement, he received an annuity, and has since established a trust to be used to help graduate students like himself. "When I first started at LSU, I did not have any financial aid. I'd like to have a fund in part to service incoming graduate students who don't have any kind of assistance themselves," Steldt said.

Steldt was born in Indianapolis where he lived for the first 15 years of his life. Following his freshman year of high school, his father took a job in St. Paul, MN. After high school, he went to the University of Minnesota where he majored in physics and mathematics. When asked why he chose LSU for his graduate studies, he explained, "When I was finished, I was so tired of the bitter cold winters. I mean Indiana is cold, but Minnesota is unbelievably cold." While researching graduate schools in the South, he heard many great things about the physics department at LSU. "I was very happy," Steldt remarked. "The graduate school was very hard and demanding, which is what you'd expect. But it was an excellent educational experience, and I gained a great deal of knowledge that I used in my career."

One of Steldt's favorite LSU memories was when he made an accidental discovery while using a research technique called positron annihilation. In one particular sample he had prepared, Steldt

discovered the formation of positronium had occurred which had never been observed in this material. Seeing a surprisingly unusual pattern in the graph from this sample, Steldt rushed to his major professor, Paul G. Varlashkin, who explained how positronium did form in that sample. Positronium is a hydrogen atom that has a positron in the nucleus rather than a proton. "So it's a positron and an electron. That little critter was so interesting, and finding it was an accident. I mean the research just happened and there it was in the sample! I can still remember making those samples." It was an odd situation for Steldt; his sample produced positronium, an atom made up of matter and antimatter. When they annihilate, the masses are gone and pure energy is formed.

It was not just physics that made Steldt's experience favorable. "I remember the number of times we would trek over to the union to get a late night snack while studying," Steldt added. "And every once in a while I would actually take time off and go to a football game, which I will never forget."

In December 1971, Steldt received his Ph.D. in physics, with an electrical engineering minor. He then became a research associate and taught a semester of sophomore physics to undergraduate students in Nicholson Hall. At that time, academic positions were scarce, but because of his teaching experience at LSU, he was more marketable. When a position opened up at Indiana University, Steldt was hired. "I became the one person that had all these things," Steldt explained. That was his career. Everything that happened as a result of that job shaped my life, and the one reason why I got that job was because what I did at LSU was unique."

Steldt took the job at the Big Ten University in the field of physics, doing what he loved in an area where he could pursue his interests. During his time at IU he became interested in astronomy, particularly in solar eclipses. Steldt began traveling around the world photographing them. He would host "star parties" on the campus lawn, which later grew into introductory astronomy classes that routinely filled up just after registration started. He also became interested in lasers and holography and these interests led to the building of the IU Kokomo Observatory/Lecture Hall which also contained a laser laboratory. This building is still used today by students in astronomy, physics and physical science courses.

Now, Steldt spends his days traveling the world with his family, still attempting to capture solar eclipses. His current goal is to join the Traveler's Century Club, a group of people who have each traveled to over 100 countries. Steldt's recent trip to Tibet, Mainland China and Macau have put him at 98 countries. He plans to travel to Chile over Christmas and then on to Easter Island for his 100th country.

Though he is retired, Steldt still keeps up with the field of physics. "Physics is the world around us, it's how things work. You can't have anything more important than how things work in the world in which you live," he said. Steldt has always felt indebted to LSU. He is leaving a great legacy to the physics department, and in return he gets to leave a legacy, something he has wanted to do for a long time.

The LSU College of Science wishes you and your loved ones peace, health and happiness in the coming New Year

Happy Holidays