



IN THIS ISSUE

Dean’s Message	1
Kudos	2
Marquee Publications	3
Patents	3
New Grant Funding	3
Student News	5
Development News	5
Alumni News	6
Calendar of Events	6

The College of Basic Sciences e-Newsletter is distributed to all faculty and staff in the College and to campus administrators, alumni, and friends of the college.

If you know someone who should be receiving or would like to receive the e-Newsletter and is not, please send their contact information and e-mail address using the link below. Articles and ideas for the e-Newsletter should be sent to [bascdan@lsu.edu](mailto:bascdan@lsu.edu). Please include hyperlinks when possible.

Thanks to all who provide the items for this newsletter.

NOTES FROM 336 HATCHER

Dear Friends and Colleagues,

It has been quite some time since our last newsletter, which means that there is much to catch up on. I think that the biggest news of the fall was the transition of the Department of Mathematics into the College of Basic Sciences, which became official on October 1. I am personally delighted that this outstanding program is now part of our family of scholars and I am confident that the merger will result in many fruitful collaborations and synergisms. The \$5M NSF grant for science and math teacher education (Jim Madden, Math PI; Gary Byerly, BASC and Geology, Co-PI) is a good example, and we will soon be able to formally announce an even larger MATH/BASC STEM education grant from the Department of Energy.

The Choppin Annex project is still moving along. Our latest word is that bids will be opened in February, 2010, and construction will begin in March. This will be a 5-story building devoted primarily (3 floors) to Chemistry and secondarily (2 floors) to Materials Science & Engineering.

We haven’t received any substantial new on budget projections since Governor Jindal informed us that we need to prepare for a \$26M budget reduction for next year. Several people have asked me about the prospect of mid-year cuts; I haven’t heard any rumors but the recent announcement of a mid-year budget shortfall is certainly something that we’ll monitor closely. As for next budget year, the Chancellor is working with the legislature in hopes of establishing a \$500/semester fee that would essentially offset the \$26M cut, though approval of the fee is by no means certain. At Provost Merget’s request, I have been working through the fall with other deans, faculty, and administrators on a “Multi-Year Budget Task Force”; our charge is to propose a framework for addressing future budget challenges while maintaining the integrity of the university. Looming large within the budget concerns is the fate of CAMD. As Interim Director of CAMD, Rich Kurtz has been working diligently to identify possible funding sources that could provide financial stability. Many options are being considered and actively pursued, and we remain committed to finding a way to keep this vital asset.

In spite of budget concerns, we are proceeding with a few strategic and critical faculty hires for next year. These include 3 computational biologists (in Biological Sciences) and an organic chemist and a biophysical chemist (in Chemistry). We also have an ongoing search for to fill 4 open endowed chairs in Geology & Geophysics; we expect that it will take a couple of years to fill all of these positions, but are hopeful that at least one will filled by fall 2010.

I’d also like to mention that we have been working with Zachary High School to get gifted and highly motivated high-school students involved with research at LSU. This fall we placed students in the laboratories of John Battista, Evanna Gleason, and Prosanta Chakraborty; I am grateful to them for taking on this mentoring role. If this program is successful, we hope to expand it into the

future; please let me know if you might be interested in working with an outstanding young scholar.

Finally, I'm pleased to note that the College is on pace for a record year in extramural funding. Through November Basic Sciences has generated \$25.4M in grants. Both Chemistry and Geology & Geophysics have already surpassed their total funding from the 2008-09 fiscal year. Even after subtracting the \$4.6M generated by Math (!!), we are \$3M ahead of any previous November total. Well done!

Here's wishing all the best to you and yours for a wonderful holiday season.

Regards, Kevin C.

## KUDOS

Associate Vice Chancellor for Research and Economic Development **Doris Carver** (Computer Science) will become Interim Vice Chancellor as of January 1, 2010. She will fill the vacancy created by Vice Chancellor **Brooks Keel** (Biological Sciences) who will begin his appointment as President of Georgia Southern University on January 1.

**Susanne Brenner** (Mathematics) recently returned from a month as Overseas Visiting Professor at the State Key Laboratory of Scientific and Engineering Computing (LSEC) at the Chinese Academy of Sciences in Beijing, China.

**Dean Kevin Carman, Ward Plummer, and Rongying Jin, and Jiandi Zhang** (Physics & Astronomy) recently negotiated an agreement creating a unique [dual-doctorate program](#) between LSU's Department of Physics & Astronomy and the Institute of Physics at Beijing's Chinese Academy of Sciences.

**Brent Christner** (Biological Sciences) served on the Antarctic Organisms and Ecosystems review panel within the NSF Office of Polar Programs.

**Rebecca Effler and Allysa Hake** (Biological Sciences) were recognized for service learning efforts in helping to reduce the impact of [environmentally detrimental plant species at Bluebonnet Swamp](#).

**Colleen Fava** (CxC) et al., created a model for communication projects in the sciences titled "[Professional Communication Projects: Training Science Students to Communicate.](#)"

**Joe Giaime** (Physics & Astronomy) was named a Fellow of the American Physical Society.

A figure by **Bijaya Karki** and Dr. Bhattarai published in volume 27 of the *Journal of Molecular Graphics and Modelling* has won the [2009 Graphics Prize for the best piece of artwork](#).

**Tevfik Kosar** (Computer Science) was named to the *Baton Rouge Business Report's* [Top Forty Under 40](#).

**Saundra McGuire** (Chemistry) has been chosen as a member of the National Science Foundation's Committee of Visitors for its Division of Chemistry.

**John Pojman** (Chemistry) was named to the Suborbital Applications Researchers Group (SARG) by the [Commercial Spaceflight Federation](#) for his expertise in microgravity chemistry. In addition, he was highlighted in *C&E News* for his [collection of pocket protectors](#).

The journal *Classical and Quantum Gravity* highlights a community paper called "[Testing Gravitational-Wave Searches with Numerical Relativity Waveforms: Results from the First Numerical Injection Analysis \(NINJA\) Project.](#)" with authors from many institutions, including several current and former members of LSU's Department of Physics & Astronomy.

**Jorge Pullin** (Physics & Astronomy/CCT Interim Co-Director) has been invited by the International Society on General Relativity and Gravitation to run for president of the organization.

**Beverly Rodriguez** (Physics & Astronomy) received a 2009 LSU Foundation Outstanding Staff Service Award.

**Kresimir Rupnik** (Chemistry) was an invited speaker at the 2009 Workshop in Magneto-Optics, in October at the National High Magnetic Field Laboratory in Tallahassee, Florida.

**George Stanley** (Chemistry) appeared in the August 14<sup>th</sup> online edition of "[The Sceptical Chymist.](#)"

**Thomas Sterling** (Computer Science/CCT) was named one of the five Inaugural Fellows for the International Supercomputing Conference (ISC).

**Brygg Ullmer** (Computer Science/CCT) has been invited to serve as Associate Chair for Papers/Notes at CHI (ACM Conference on Human Factors in Computing Systems) 2010. Ullmer was also presented the [ACM UIST "Lasting Impact" Award](#) for research he first presented in a paper in 1997.

**Xiaolang Wan** (Mathematics) joined the Core Computational Science Focus Area at the Center for Computation and Technology.

Chancellor Emeritus **Jim Wharton** (Chemistry) is serving on the [Louisiana Postsecondary Education Review Commission](#) charged with reforming the state's higher education structure.

**Zakiya Wilson** (Chemistry) received a 2009 LSU Foundation Outstanding Staff Service Award.

The LSU Chapter of the Association for Women in Mathematics (AWM) was awarded \$1,500 by the national association to host a Sonia Kovalevsky High School Mathematics Day on the LSU campus in February 2010.

Thirty-four faculty members from the **College of Basic Sciences** were named [2009 Rainmakers](#). Congratulations to all of them!

The Basic Sciences Communications Across the Curriculum Studio (CxC) under the direction of **Colleen Fava** was awarded the Certificate of Excellence from the Conference on College Composition and Communication (CCCC). The award includes approximately \$15,000 to purchase portable technology for use by undergraduate science students.

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## MARQUEE PUBLICATIONS

Y.M. Xiong, **P.W. Adams**, and G. Catelani, "Measurement of Conduction Electron Polarization Via the Pairing Resonance," *Phys. Rev. Lett.* 103, 067009 (2009).

G. Catelani, Y.M. Xiong, X.S. Wu, and **P.W. Adams**, "The Pairing Resonance as a Normal-State Spin Probe in Ultra-Thin Superconducting Al Films," *Phys. Rev B* 80, 054512 (2009).

Timothy Paine, **Kyle Harms**, Stefan Schnitzer and Walter Carson, "Weak competition among tropical tree seedlings: implication for species coexistence," *Biotropica* 40(4): 432-440.

**Adrienne Lopez**, LSU Scope-On-A-Rope Program Coordinator, collaborated with Real Curriculum, Inc., to produce a series of educational curriculum guides. [SOAR Into Inquiry](#) is geared for elementary teachers (grades K-5) looking to incorporate this video microscope into their science curriculum in a meaningful way.

**Sophie Warny**, Askin, R., Hannah, M., Mohr, B., Raine, I., Harwood, D.M., Florindo, F., and the SMS Science

Team (2009), "Palynomorphs recovered from sediment core reveal a remarkably warm Antarctica during the Mid Miocene," (cover article) *Geology*, 37(10): 955-958; doi: 10.1130/G30139A.1.

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## PATENTS

**Barry Dellinger** and **Slawomir Lomnicki** (Chemistry), "Nanolayer Catalysts Useful in Promoting Oxidation, and their Manufacture and Use," Patent No. 7,549,427, June 23, 2009.

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## NEW GRANT FUNDING NOTICES

### BIOLOGICAL SCIENCES

**Prosanta Chakrabarty (MNS)**, "REVSYS: Reconstructing Heroini (Teleostei:Cichlidae) - Of Heroes, Convicts, Angels and Red Devils," NSF, August 1, 2009 to August 1, 2012, \$519,944.

**William Doerrler**, "Roles of *E. coli* DedA proteins in lipid synthesis and cell division," NSF, April 15, 2009 to April 15, 2012, \$650,375.

**Kenneth Brown** and **Wesley Micheal Daniel**, "Diversity and abundance of freshwater mussels (Unionoida) in the Atchafalaya Basin," Louisiana Department of Wildlife & Fisheries, June 2009 to June 2010, \$1,000.

**Robb Thomas Brumfield** and **Andres Mauricio**, "A large-scale, multilocus, coalescent-based analysis of ecological zonation and population differentiation in Andean birds," NSF, June 2009 to May 2010, \$15,000.

**Bryan Carsten** with Co-PI **Margaret Koopman**, "Evolution of Louisiana Pitcher Plants (*Sarracenia alata*) and their commensal bacteria," Louisiana Board of Regents, June 2009 to June 2011, \$102,200.

**Bing-Hao Luo**, "Screening of integrin alpha(IIb) beta(3) inhibitors by SHG," Louisiana Board of Regents, June 2009 to June 2012, \$141,732.

**John Larkin** with Co-PI's **Brent Christner**, **Annette Engel**, **Fernando Galvez**, **Craig Hart**, **Gary King**, and **Kurt Svoboda**, "Acquisition of a Variable Pressure Scanning Electron Microscope with Cryostage and EDX for Cell, Developmental and Microbiology Research and Education," BOR, June 2009 to June 2010, \$145,000.

**Vince LiCata**, “Properties of Denatured States of Thermophilic versus Mesophilic Proteins,” NSF, September 1, 2009 to August 31, 2012, \$590,426

**Vincent LiCata** with Co-PI’s **Allison Richard** and **Megan Macnaughtan** (Chemistry), “Equipment for Polypeptide Synthesis and Analysis,” BOR, June 2009 to June 2010, \$140,708.

**Marcia Newcomer, Victor Suller, Henry Bellamy, James Spivey, and Les Butler** (Chemistry), “MRI: Acquisition of a Multipole Wiggler for the LSU Synchrotron for Protein Crystallography, Tomography, X-ray Absorption, Radiology, and Microfabrication,” NSF, \$1,260,000.

**William Platt** and **Becky Jolene Carmichael**, “The flaming fern: how *lygodium japonicum* influences fire temperature in a restored longleaf pine savanna,” Louisiana Department of Wildlife & Fisheries, June 2009 to June 2010, \$1,000.

**William Platt** and **Demetra Kandalepas**, “Warfare in the Swamp: Investigating endophytic fungi’s role in protecting swamp tree hosts from invasive caterpillar defoliation,” Louisiana Department of Wildlife & Fisheries, June 2009 to June 2010, \$1,000.

**William Platt** and **Luisa Yalma Vargas-Rodriguez**, “The range edge hypothesis: a test of genetic structure with disjunct and relict sugar maple populations,” Louisiana Department of Wildlife & Fisheries, June 2009 to June 2010, \$1,000.

**William Platt** and **Tracy Lynn Hmielowski**, “Resprouting response of Southeastern Hardwoods to Season, Ignition, and frequency of prescribed fire treatments,” Louisiana Department of Wildlife & Fisheries, June 2009 to June 2010, \$1,000.

Heather McKillop with Co-PI’s David Chicoine, Patrick Hesp and Robert Tague (Arts & Sciences), **Rebecca Saunders**, and **Robbie Mann** (Museum of Natural Science), “Digital Imaging and Visualization in Archaeology,” Louisiana Board of Regents, June 2009 to June 2010, \$118,000.

## CHEMISTRY

**Barry Dellinger, et al.**, (see link) [“Health Impacts of Toxic Combustion By-Products,”](#) NIEHS, August 15, 2009 to July 31, 2011, \$3,600,000.

**Jayne Garno**, “Molecular-Level Investigations of the

Conductive Properties of Designed Test Platforms of Porphyrins and Pthalocyanines using Current-Sensing AFM,” NSF, August 2009 to August 2012, \$312,762.

**Graça Vincente** and **Isiah Warner**, “MBRS IMSD Program at Louisiana State University,” NIH, June 2009 to May 2010, \$970,542.

**Graça Vincente**, “Syntheses and properties of near-IR BODIPY-based fluorophores,” NSF, June 2009 to May 2013, \$490,000.

**Kermit Murray**, “Infrared Laser Desorption Mass Spectrometry,” NSF, May 2009 to April 2012, \$442,000.

**Donghui Zhang**, “Carbon nanotubes and rigid rod polymers: Conformation, solution behavior and solid state properties,” Oak Ridge Associated Universities, May 2009 to May 2010, \$5,000.

**George Stanley**, “Graduate Summer Grant in Chemistry,” Eastman Chemical Co., May 2009 to August 2010, \$6,600.

Amitava Roy (CAMD) and Co-PI **Paul Russo**, “Hard X-Rays for Materials Science at CAMD,” BOR, June 2009 to June 2011, \$267,246.

**Zakiya Wilson**, “GAANN Fellowships in Chemistry,” US Department of Education, August 2009 to July 2012, \$514,512.

## COMPUTER SCIENCE

**Gabrielle Allen, Erik Schnetter** (Physics & Astronomy), Adam Buirrows, and Christian Ott (CCT), “PetaCactus: Unraveling the Supernova—Gamma-Ray Burst Mystery,” NSF, September 1, 2009 to August 31, 2014, \$1,400,000.

**Tevfik Kosar**, “Data-aware Distributed Computing for Enabling Large-scale Collaborative Science,” NSF CAREER Award, five-year term, \$400,000.

**Tevfik Kosar**, “Development of Stork Data Scheduler for Mitigating the Data Bottleneck in Petascale Distributed Computing Systems,” NSF STCI, September 1, 2009 to August 31, 2012, \$495,514.

**Seung-Jong Park**, “Integrating a CRON (Cyberinfrastructure of Reconfigurable Optical Network) Testbed into ProtoGENI,” NSF, 2008 to 2011, \$266,688.

**Jian Zhang**, “Holistic Machine Learning for Malicious Software Analysis and Identification,” Louisiana Board of Regents, June 2009 to June 2011, \$88,936.

**Jian Zhang and Rajgopal Kannan**, “TC: Medium: Collaborative Research: Multi-Perspective Bayesian Learning for Automated Diagnosis of Advanced Malware,” NSF CyberTrust, September 15, 2009 to August 31, 2012, \$152,462.

Shuangqing Wei (ECE) and Co-PI **Rajgopal Kannan**, “Cognitive Radio and MAC Layer Enhancements for Wireless Communication Networks,” Louisiana Board of Regents, June 2009 to June 2011, \$169,000. They received additional funding for \$31,000 from Bascom Hunter.

Lynne Baggett and Co-PI’s Mary Kornhauser and Fredrick Parker (Art and Design) and **Brygg Ullmer**, “Internal Operations/External Communications,” Louisiana Board of Regents, June 2009 to June 2010, \$40,000.

## GEOLOGY & GEOPHYSICS

Guoping Zhang and Co-PI’s Qin Jim Chen and Chunshen Cai (CEE), Robert Gambrell and Nan Walker (Oceanography/Coastal Sciences); Alixin Hou (Env. Sciences) and **Ray Ferrell**, “Acquisition of a suite of field testing equipment for integrated enhancement of research and education on coastal sediment studies,” Louisiana Board of Regents, June 2009 to June 2010, \$148,325.

## MATHEMATICS

**James Madden, Gary Byerly** (Geology & Geophysics and Associate Dean), Herman Brister (EBRP School Board) and Edward Cancienne (Iberville Parish School System), “Louisiana Math and Science Teacher Institute,” NSF, August 15, 2009 to July 31, 2014, \$4,999,814.

## PHYSICS & ASTRONOMY

**Ward Plummer**, “Enhanced electron-phonon coupling at metal surfaces,” University of Tennessee, March 2009 to August 2009, \$32,987.

**Jonathan Dowling**, “Quantum Technologies for Space Applications,” Louisiana Board of Regents, June 2009 to August 2009, \$6,000.

**Jeffrey Clayton**, “Polarimetric QFPC2 imaging of the dust torus around the Born-Again Star V605 Aquilae,” Space Telescope Science Institute, May 2009 to April 2011, \$23,355.

**Ilya Vekhter**, “ICAM Senior Fellowship Award,” UC-Davis, July 2009 to June 2010, \$13,000.

## *Correction from the previous issue....*

**Ward Plummer** and Co-PI **Jiandi Zhang** (Physics & Astronomy), “Emerging Functionality in Transition-Metal Compounds Driven by Spatial Confinement,” DOE, September 15, 2009 to September 14, 2012, \$1,140,000.

## STUDENT NEWS

**Gustavo Bravo**, Biological Sciences graduate student, won a best student presentation award at the annual meeting of the American Ornithologists’ Union at the University of Pennsylvania.

**Delong Meng**, a 2009 graduate of Baton Rouge High School who just entered MIT, won a Silver Medal and was a member of the USA Team finishing sixth at the 2009 International Mathematical Olympiad, held this year in Bremen, Germany. He was coached by one of the department faculty, Professor **Hongyu He**.

**Hector Urbina**, Biological Sciences graduate student, won one of the equal two student poster prizes at the annual Mycological Society of America meeting at Snowbird, Utah.

## DEVELOPMENT HIGHLIGHTS

**Mary Lou Applewhite**: \$35,000 to benefit the College Development Fund.

**Clarence and Ann Cazalot**: \$10,000 to the College Development Fund.

**Ron and Mary Neal**: \$11,200 to support the Earnest and Alice Neal Professorship in Geology & Geophysics and the Mary Neal Professorship in the Department of Biological Sciences.

**James Painter**: \$12,000 to the Geology Field Camp Support Fund.

**The Brookhill Foundation**: \$51,000 to the High Performing Mathematics Program Support Fund.

**Chevron**: \$40,000 to support Applied Depositional Geosystems (ADG), the Student Field Trip Support Fund in Geology & Geophysics, and the Chevron Computer Science Scholarships.

**Entergy**: \$50,000 to the health physics program in the Department of Physics & Astronomy.

**ExxonMobil**: \$11,000 to the Geology & Geophysics and Computer Science Development Funds.

**Halliburton:** \$35,000 to support the Halliburton Field Camp Scholars Fund and the Geology Freshman Field Camp Program Support Fund.

**Marathon Oil Company:** \$31,000 to support the Marathon Oil Company Geophysics Scholarship Fund, the Marathon Oil Company Geology Scholarship Fund, and the Geology Development Fund.

### CALENDAR OF EVENTS

December 18    BASC Diploma Ceremony  
                    9:00 AM UREC  
                    (University Recreation Complex)  
January 18     Martin Luther King Holiday  
January 19     Classes Begin for Spring semester

The revised 2009-10 Academic Calendar. You can find the revised [calendar here](#).

**Keep the good news coming to us!**

[bascdcan@lsu.edu](mailto:bascdcan@lsu.edu)

### ALUMNI NEWS

**Ashley Henderson** (BS, CSC, 2005) is a software engineer for MorphoTrak in Tacoma, Washington.

### NEWSLINKS

The hyperlinks below direct your Internet browser to the web pages for the college's departments and the museum. News highlights also appear on the college's [Home Page](#):

[Biological Sciences](#)

[Chemistry](#)

[Computer Science](#)

[Geology & Geophysics](#)

[Mathematics](#)

[Physics & Astronomy](#)

[Museum of Natural Sciences](#)

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**HAPPY HOLIDAYS TO EVERYONE FROM  
THE COLLEGE OF BASIC SCIENCES!**

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