Looking Ahead
A Message from the Vice Chancellor

Congratulations on an exemplary 2013-2014 academic year! We are halfway through this semester. Let’s push to make this academic year an even greater year than last year. As you are likely aware, Louisiana State University has continued to provide exceptional opportunities for students in all fields of endeavor. Last year was historic for our university since

- LSU exceeded the national average with a record 69.3% graduation rate.
- LSU graduated the largest class of African-American, Hispanic, and female students in LSU’s history.
- LSU was recognized as the national leader in conferring chemistry PhDs to women and underrepresented groups.

LSU’s investment in the development of our future STEM leaders has yielded tremendous rewards. OSI works closely with various LSU colleges and departments to make certain that their scholars achieve maximum potential. These scholars have received national recognition and have gained acceptances into top graduate programs. Several undergraduate OSI alumni have successfully completed graduate programs, while others are nearing completion. Within the next 5 years, more than 35 new STEM doctoral degrees will be granted to baccalaureate graduates who participated in OSI programs! Additionally, during this past academic year, students who participated in OSI programs were among the top scholars at LSU and various recognitions include:

- 1 Fulbright Fellow (the 1st for an OSI scholar)
- 2 NSF Graduate Research Fellows
- 1 Barry M. Goldwater Scholars
- 2 University Medalists
- 7 Upper Division Honors graduates
- 2 Distinguished Communicators
- 2 LSU Tiger Twelve Recipients

OSI affiliated scholars have conducted research across the globe, sharpened their research skills and increased their competitiveness for future job opportunities. Our office will continue to employ our holistic training model to assist across the LSU community in the development of all students, while helping to address the growing demand for scientists and engineers both in the workforce and higher education.

Partner with us!

Join us in supporting the LSU Flagship 2020 agenda aimed at transforming lives through our focus on learning, discovery, diversity, and engagement. For more information about how you can get involved, visit our website: http://osi.lsu.edu.
Class of 2014

OSI congratulates twenty-two 2014 graduates, who received BS degrees this past May and August! These students represent fifteen disciplines within the colleges of agriculture, engineering, and science. These graduates have given their best as participants in the HHMI Professors, LA-STEM Research Scholars, LS-LAMP, and S-STEM programs.

These scholars excelled in the classroom, the community, and in their research groups! They have maximized their undergraduate experiences in their commitment to academics, research endeavors, leadership roles, community outreach, and mentoring relationships, and have exhibited exceptional promise as future STEM leaders. Among the graduates:

- Two were honored as University Medalists for achieving perfect 4.0 cumulative grade point averages.
- Two Tiger Twelve Recipients, for demonstrating the principles of LSU’s Commitment to Community.
- One graduate was honored as an LSU Distinguished Communicator
- Seven graduated with college honors, a record number for OSI.

What’s next for these amazing scholars?

Many are off to begin graduate programs at schools including Purdue University, Florida State University, and the University of Illinois, Urbana-Champaign. Others are headed to medical school or are beginning their careers. We are extremely proud of this exceptional class!

The Howard Hughes Medical Institute Professors Program hosted its Summer Research Program for the new scholars, who joined the program in the spring. Seven (7) LSU and six (6) Baton Rouge Community College (BRCC) students engaged in ten weeks of exciting research in various departments across campus. Additionally, students also attended informative seminars on research ethics, preparing and presenting research posters, writing research papers, and a diverse range of scientific talks from faculty.

These seminars were hosted by the LSU Summer Undergraduate Research Program (SURP) and the HHMI Professors Program. For most of the students, this was their first research experience in which they truly enjoyed and will be continuing during the academic year. The summer concluded with a poster session, the Summer Undergraduate Research Forum, in the Pete Maravich Assembly Center. The students, field and mentors included:

- Jacob Braun, LSU, biological engineering, Dr. Todd Monroe
- Darria Carter, LSU, mechanical engineering, Dr. Inhmar Schoegl
- Christian Danielson, BRCC, civil engineering, Dr. Kidong Park
- Christopher Gallien, BRCC, civil engineering, Dr. Michele Barbato
- Macy Guthrie, BRCC, biological sciences, Dr. Karen Maruska
- Brooke Lawrence, LSU, biological sciences, Dr. Dominique Homberger
- Ryan LeBlanc, BRCC, biological sciences, Dr. Ryoichi Teruyama
- Amy LeBleu, LSU, physics, Dr. Geoffrey Clayton
- Hunter McDaniel, LSU, physics, Dr. Philip Sprunger
- David Nguyen, BRCC, mechanical engineering, Dr. Shengmin Guo
- Ashton Proctor, LSU, electrical engineering, Dr. Martin Feldman
- Michael Robertson, LSU, chemistry, Dr. Andrew Maverick
- Luan Tran, BRCC, chemical engineering, Dr. Kerry Dooley

For more information about the HHMI Professors Program, visit: www.lsu.edu/hhmi
LSU-Upward Bound (UB) wrapped up its six-week, non-residential Summer Program/Bridge Program in July and is now recruiting a few new faces from Tara High School for the Academic Year Component.

This summer, UB Summer Program participants were given the opportunity to explore college life while taking UB designed classes and workshops to build their skills and encourage persistence in education.

UB participants dined in “The 5” and participated in a variety of tailor made electives across campus for the duration of the summer. Eligible students concluded the summer with a road trip to Atlanta, GA, for an immersive educational and cultural learning experience which included tours of CNN Headquarters, Coca-Cola Museum, Rosa Parks Museum, Tuskegee University, Clark Atlanta University, and Georgia State University. LSU-UB Bridge Program students and parents were advised on summer classes, college survival, and financial assistance with the help from the LSU University College and Student Life and Enrollment. UB Bridge students were enrolled in six hours of college credit course for the summer.

The LSU-UB Bridge Program is a valuable experience for UB participants prior to beginning college in the fall semester as a first-time-freshman because it not only allows them to earn up to six hours in college credit but also affords them the opportunity to experience college life first-hand with the mentorship of the UB staff and surrounding LSU community support.

The summer came to a close for all LSU-UB students and staff with an Awards Celebration Banquet in recognition of student achievement and a year in review. This year’s banquet was particularly special as we joined Upward Bounds across the nation in celebrating the 50th Anniversary of Upward Bound.

After an eventful and successful summer, LSU-UB staff are finalizing the year’s academic schedule and ready to fill the seats of our recently graduated seniors. We are looking forward to all the new experiences the new academic year will bring!

To learn more about the LSU Upward Bound Program, visit: www.lsu.edu/upwardbound

“College Bound, Success Bound...I am Upward Bound!”

The S-STEM program is gaining speed having enrolled over 30 bright new students in the past year from various math and science disciplines. Students have been involved in various research projects, campus organizations, and internships working hard to further their knowledge in STEM.

S-STEM students are leaders across campus, revolutionaries, and promising scientists. They have presented their research among the best at scientific conferences, in the community, and amongst their peers.

The S-STEM program has seen tremendous growth in the spring gaining new students, ideas, interests, and activities. Namely we are proud of incorporating an S-STEM study group that allows students to mentor one another in various areas of STEM. Additionally, S-STEM students attended monthly seminars involving topics ranging from public speaking and presentation skills to stress management and study tips.

The S-STEM program had 2 graduates this past spring. Caleb Blackburn who is now pursuing his dental degree from LSU Dental School and Franshetta Hibbler, who will be pursuing her Master’s in Business Administration. We are so proud of them and wish them continued success in their academics and future careers.

To learn more about the S-STEM Program, visit: www.lsu.edu/sstem
LA-STEM Research Scholars Program

Funded by the National Science Foundation & LA Board of Regents, supporting the preparation of high-achieving STEM undergraduates for PhDs

The LA-STEM Program celebrated its eleventh and final year of NSF and Board of Regents funding, having served over 249 scholars with 122 graduates to date. This project has been a tremendous success, serving as a premier national model for providing holistic development and training for STEM undergraduates. LA-STEM is a great equalizer and has given students from all walks of life the opportunity to enhance the high-quality LSU educational experience through immersion in a close-knit, diverse community of motivated scholars. LA-STEM is more than just a scholarship, it's a family. Life-long friendships have developed, unique research experiences have been realized, LSU leaders have blossomed, and lives have been transformed.

LA-STEM has supported students with both exceptional and mediocre pre-college preparation, yet the end result for each has been tremendous. With hard work, application of simple strategies, and utilization of available resources, LA-STEM scholars are truly the best of the best! Highlighted below are some of the outcomes for all LA-STEM scholars served:

- National Awards & Prestigious Fellowships
  - 7 Barry M. Goldwater Scholars
  - 1 Harry S. Truman Scholar
  - 2 Morris K. Udall Scholars
  - 1 National Defense Science & Engineering Graduate Fellow
  - 1 Fulbright Fellow
  - 1 HHMI Gilliam Fellow
  - 10 NSF Graduate Research Fellows
- Exceptional Research Opportunities
  - 18 HHMI EXROP Scholars
  - 10 HHMI International Researchers
- University Leaders
  - 6 Tiger Twelve Honorees
  - 9 LSU Distinguished Communicators
- Exceptional Scholars
  - 89% Overall STEM Graduation rate:
    - 86% STEM Graduation rate for African American Scholars served
  - 11 University Medalists (4.0 cum gpa)
  - 21 graduates with Upper Division Honors and/or thesis
  - 43% of LA-STEM graduates finished with a minimum 3.7 cum gpa:
    - 20 summa cum laude graduates
    - 13 magna cum laude graduates
    - 18 cum laude graduates

We are excited about the future of these outstanding leaders, who will revolutionize their STEM fields and serve as ambassadors for promoting diversity at the undergraduate and graduate levels. Your help is needed to support the continuation of the LA-STEM Program. Click here for more information about how you can partner with us to invest in the future of STEM.

For more information about the LA-STEM Program, visit: www.lsu.edu/lastem

NIH Bridges to the Baccalaureate Program

Funded by the National Institutes of Health, supporting Baton Rouge Community College students within biomedical sciences

The NIH Bridges to the Baccalaureate Program is the newest addition to OSI. This collaborative effort between the LSU College of Science and Baton Rouge Community College was designed to provide support for community college students at the associate’s and bachelor’s levels. Students receive tutoring and mentoring at BRCC and LSU. Additionally, they have the opportunity to participate in a summer research program at LSU as BRCC students, which allows them to gain research experience and aids in their smooth transition to LSU following graduation from BRCC.

Five students participated in the 2014 Bridges to the Baccalaureate Summer Research Program. These students include:

- Tristan Doyle, Morphological Analysis of the Sphenous Nerve in the Dog, Dr. Margaret A. McNulty, LSU School of Veterinary Medicine - Department of Comparative Sciences
- Eric Pavlovich, Structure Activity Relationships of Biotin Carboxyl Carrier Protein of E. coli Acetyl-CoA Carboxylase, Dr. Grover Waldrop LSU Department of Biological Sciences
- Ariel Pereira, Evaluation of BioWash and Three Novel Ketones in Gastrointestinal Nematodes, Dr. James Miller, School of Veterinary Medicine - Department of Pathobiological Sciences
- Meghan Perrone, Mapping Vertical Distributions of Copepods and Other Particles with ZOOVIS: an Underwater Microscope, Dr. Mark C. Benfield, LSU School of Coast and Environment - Oceanography & Coastal Science
- Meagan Moore, Hide and Squeak: Multiple Cryptic Species within Maxomys musschenbroekii from the Indonesian island, Sulawesi, Jake A. Esselstyn, LSU Biological Sciences

For more information about the NIH Bridges Program, visit: www.lsu.edu/nihbridges
LS-LAMP Program

Funded by the National Science Foundation, promoting undergraduate research within minority STEM groups

We are so proud of what our students are doing. LAMP scholars have been participating in research, presenting discoveries, and learning important skills in seminars. They have been exposed to guest speakers in academia, industry, and more. Many have received various awards, summer research opportunities, and grad school acceptances. Keep reading to find out more!

Monthly Seminars & Guest Speakers

Each month LSU LAMP students attend seminars in which talks are given by faculty and industry guest speakers on topics such as graduate school, research, and study skills.

January's seminar topic included “How to Craft the Perfect Resume and CV”. Dr. Ashleigh Wright, manager of HHMI Professor's Program instructed students on what elements to include and how to make their resumes and CVs stand out. Additionally, students practiced resume and CV critiquing skills.

February's seminar topic included “Public Speaking and Interview Skills for Scientists”. LAMP students learned the relationship between communication and science and how to apply this to their research and presentation skills. Students performed mock interviews and interviewed one another. Additionally, LAMP students orally presented their research topics to the audience and varied their presentation technique to align with the target audience. These seminars have been both insightful and instrumental in allowing LAMP students to hone their soft and speaking skills.

They also enjoyed talks from Halliburton representatives on how to prepare for a career in STEM. This included firsthand perspectives from current Halliburton employees and “A Day in the Life” Panel with a networking reception preceding. Topics included day to day operations, technical skills needed for the workforce, and how to prepare for an interview.

Featured Awards & Accomplishments

LAMP student Markita Lewis presented at LSU's 1st annual LSU Discover Research Day on her poster entitled “Dietary intake of younger and older female adolescents in Louisiana and their adherence to national dietary recommendations”. Additionally, Markita graduated with honors from the honors college and also as a University Medalist. She has been awarded acceptance into the University of Georgia’s Food and Nutrition Master’s program where she is attending this fall.

Featured Research

LAMP & LA-STEM student Kristian Black was selected for participation in the Howard Hughes Medical Institute's (HHMI) Exceptional Research Opportunities Program (EXROP) for the summer of 2014. This program pairs students with HHMI scientists for full-time research. In addition to his summer research, Kristian also attended two annual EXROP meetings at HHMI headquarters in Chevy Chase, Maryland.

Visit www.lsu.edu/lamp for more information.

“My summer research experience as an EXROP scholar at the University of Michigan was beyond describable. My own academic and professional drive was enhanced through my interaction with some of the most intelligent, poised students and faculty in the country.”

Bridge to the Doctorate Initiative

Funded by the National Science Foundation providing two-years support for LSU STEM doctoral students

The BD Initiative welcomed six new fellows this semester. These scholars will receive $30,000 for two years to support their doctoral studies. BD fellows also benefit from individualized mentoring and coaching, participation in professional conferences and meetings, international travel and research opportunities, as well as enriched academic services and support. For more information visit www.lsu.edu/bd.

1st Year BD Fellows

Milcah Jackson
BS, University of Mississippi
Pursuing PhD in chemistry

Kelsey Lopez
BS, University of Florida
Pursuing PhD in chemistry

Amanda Mathias
BS, Oklahoma State University
Pursuing PhD in animal science

Zachary Rodriguez
BS, Clarkson University
Pursuing PhD in biological science

Kwadernica Rhea
BS, Spelman College
Pursuing PhD in food science

Stephanie Vaughan
BS, Xavier University
Pursuing PhD in chemistry

2nd Year BD Fellows:

Vallmer Jordan
BS, Morehouse College
Pursuing PhD in biological science

Jerome Weston
BS, Louisiana State University
Pursuing PhD in mathematics

Want to be in our next newsletter?
Have news to share?
Let your program manager know or email:
Melissa Crawford: mcraw15@lsu.edu
Alligator Mentoring

OSI Research Mentor Dr. Ryoichi Teruyama couples alligator brain mapping with exceptional mentoring

By Melissa Crawford

In my visit to Dr. Ryoichi Teruyama’s Lab, I was immediately drawn to the tie-dyed lab coats hanging in the corner. I later learned that these were created by each member of the group during an informal gathering. Dr. Teruyama greeted me with a warm smile and a twinkle in his eyes. His passion for research and desire for mentoring students were evident. During the past four years, he has supported three OSI students at the undergraduate and graduate levels. After sitting down with him and HHMI Professors Program participant Ryan LeBlanc, I left with a great appreciation for his work and dedication to students.

The charismatic duo patiently explained that their overall work focuses on the physiological adaptation of the hypothalamic neuroendocrine cells to different physiological states. His comparative vertebrate neuroanatomy work examines the brains of birds, mammals (rats), and alligators.

Ryan’s research included sectioning alligator brains at specific coordinates, photographing brain sections, and drawing illustrations. These images will be used to generate a stereotaxic atlas of an alligator’s brain in three-dimension. I was very impressed by the confidence and fluency exhibited by Ryan, a BRCC student who began conducting research this past summer. His exceptional experience sparked him to change his major from chemistry to biology. He commented that Dr. Teruyama’s patience, understanding and ability to explain the science in easily comprehensible ways were most impactful.

“Dr. Teruyama doesn’t just say, ‘do this stain’. He tells you what things are so that you can gain a better understanding.”

~Ryan LeBlanc

The Teruyama group is on track to becoming the first to map an alligator’s brain, a project that was primarily designed to provide undergraduates with the opportunity to do high level research on an attractive species that is native to Louisiana. The neuroanatomy study of the alligator brain may provide critical information about the evolution and adaptation of vertebrate animals. Dr. Teruyama explained that most of the projects in his lab require techniques that demand intensive and lengthy training, typically unsuitable for undergraduate research. The alligator research provides students like Ryan with the ability to work on independent projects.

LA-STEM Scholar, Katie Huang, has been working in Dr. Teruyama’s group for over three years. She has identified gonadotropin-releasing hormone (GnRH) synthesizing neurons in the alligator hypothalamus. GnRH plays a fundamental role in reproductive behavior and physiology in all animals. Katie will be presenting their alligator study at the Society for Neuroscience International Meeting in Washington D.C. this November. More than 30,000 researchers are expected to attend. Katie also shared her sentiments about her experiences stating:

“Dr. Teruyama takes undergraduate research seriously. He gives students his undivided attention and exceptional guidance, though he has a demanding schedule and deadlines of his own.”

This is a great testament to Dr. Teruyama’s passion for inspiring scholars to embrace research.

While there I chatted with one of our former LA-STEM Scholars, Natalie Mills, who is completing her PhD on the regulations of the Epithelial Sodium ion Channels (ENaCs) in the brain, which they believe play a major role in the regulation of blood pressure. Results from this project will provide insight concerning the inhibition of central ENaCs to potentially treat cardiovascular disease.

Research mentors like Dr. Teruyama are essential to the success of scholars supported by programs within the Office of Strategic Initiatives. We appreciate his valuable contributions to both the LSU and scientific communities, and recognize his exemplary display of great balance within the classroom and laboratory. While Dr. Teruyama’s research is quite revolutionary, it is his ability to think outside of the box to broaden his ability to foster discovery and student development that is most impressive. For more information about the Teruyama Group visit:

http://www.biology.lsu.edu/FacultyandStaff/Faculty/item40807.html.
I3 Program

Funded by the National Science Foundation to support an institutional effort to integrate ongoing LSU programs

Undergraduate Research Conference

The Office of Strategic will host its sixth annual Undergraduate Research Conference on October 31, 2014. Dr. Winston Anderson, HHMI Professor from Howard University, will serve as the keynote speaker. Students from across the state of Louisiana, Florida, Mississippi, South Carolina, Tennessee, and Texas will compete through poster and oral presentations in four categories:

- Engineering & Technology
- Math & Physical Sciences
- Life Sciences
- Social Sciences

This year’s “explore” theme will feature The Science of Zombies. Join us as we spotlight undergraduate research in a welcoming LSU environment.

Visit www.i3.lsu.edu/urc for more information.

ACT Prep Academy

In collaboration with the 100 Black Men of Baton Rouge, the OSI I3 Program accepted 110 tenth through twelfth graders into the ACT Prep Academy. This program kicked off with a mock pretest, an orientation and parents’ workshop.

It’s Not Just About the Test

Many standardized testing programs provide valuable strategies for navigating the testing process. The ACT Prep Academy employs a holistic approach to providing students with the fundamental strategies for the college application process. The parent workshop featured a welcome from Kenneth Miles, Assistant Vice Chancellor for Academic Affairs and Executive Director, and guest speaker Craig Gehring, CEO of ACT Mastery. Tiffany Magee of Lone Star College (Texas) discussed “The Big Picture and TOPS”, providing valuable financial aid and admissions information. Panelists Domingo Carrasquel (BRCC), Will Smith (LSU), and Saturn Douglas (Southern University) presented and engaged parents in a Q & A discussion. Dr. Gloria Thomas and John Smith provided closing remarks.

The ACT Prep Academy consists of 8 weeks of classes covering English/Reading, Math, and Science. Students will complete a post-test at the conclusion of the program and are scheduled to take the actual ACT test on October 25, 2014.

Vice Chancellor Warner Receives Three Honors

Vice Chancellor Isiah M. Warner received several awards this semester. In August at the ACS National Conference in San Francisco, CA, he was honored by the American Chemical Society with the Henry Hill Award.

This September, he was given the Dr. Kofi Lomotey Trailblazer Award at the African American Male Summit held at LSU. He was also honored with Lifetime Achievement Award by the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers at the national conference in New Orleans.

These honors are reflective of Professor Warner’s significant contributions to the scientific community and his exemplary support for promoting student success through his mentoring efforts.

Faculty Nominations

OSI assists with nominating faculty for national, regional, and local awards. If you are interested in being nominated, please contact: osi@lsu.edu or 225-578-7230
LSU Office of Strategic Initiatives Programs

With funding from six agencies and corporations for over twelve years, OSI has supported students through seven programs at all educational levels. The NSF-funded Innovation through Institutional Integration (I³) Program is an institutional effort designed to integrate numerous on-going LSU programs. Highlighted are the OSI programs with an emphasis on the levels of students served. For more information about OSI visit http://osi.lsu.edu.

Invest in STEM

LSU OSI fundraising efforts seek to sustain projects, such as the LA-STEM and HHMI Professors programs to provide comprehensive student support. For more information about opportunities to support OSI, visit our website at: http://osi.lsu.edu or contact:

Jade Ethridge, Manager, Business & Development (225) 578-4004 jade@lsu.edu

Office of Strategic Initiatives
Louisiana State University
213 Hatcher Hall
Baton Rouge, LA 70803
Phone: 225-578-7230
Fax: 225-578-7231
Email: osi@lsu.edu
Website: http://osi.lsu.edu
Twitter: @LSUOSI

Upcoming Events

October 2014
29| HHMI, LS-LAMP, & S-STEM Seminar: 220 Coates Hall (5:00-6:30 pm)
25| Upward Bound Field Trip: NASA Stennis Space Center
31| 2014 Undergraduate Research Conference
  8:00 am—4:30 pm
  LSU Cotillion Ballroom

November 2014
12| HHMI, LS-LAMP, & S-STEM Seminar: 220 Coates Hall (5:00-6:30 pm)
15| Upward Bound Saturday Session #2: Allen Hall (8:30 am—1:00 pm)
19| HHMI, LS-LAMP, & S-STEM Seminar: 220 Coates Hall (5:00-6:30 pm)
22| Upward Bound Saturday Session #3: Allen Hall (8:30 am—1:00 pm)

December 2014
1| HHMI, LS-LAMP, & S-STEM Seminar: 214 Coates Hall (5:00-6:30 pm)
6| Upward Bound Saturday Session #4: Allen Hall (8:30 am—1:00 pm)