Looking Back
A Message from the Associate Vice President

During the past 12 years, the LA-STEM Research Scholars Program has supported 249 students. To date, more than 30 students have completed post-baccalaureate degrees, including 5 doctorates, 15 master’s degrees, and 11 medical degrees. Within the next 5 years, we expect that 40 more STEM doctoral degrees will be granted to LA-STEM Alumni!

With an overall six-year STEM graduation rate of 89%, this diverse group of scholars has excelled beyond the classroom and is changing the image of STEM. The gender and race achievement gaps are essentially non-existent, as women and minority scholars perform comparably to majority participants, silencing the racial, gender, and class stereotypes which are prevalent in the STEM fields.

They have proven that women, minorities, and first generation college graduates can bring leadership and innovation to the engineering and technology fields.

These alumni are passionate about mentoring others and outreach. They represent a new kind of scientist and engineer, serving as ambassadors and change agents in their respective fields. Among this group are future professors, Nobel Prize winners, inventors, policy makers, entrepreneurs, and global innovators.

They have amassed many honors including:

- NSF Graduate Research Fellowships
- National Defense Science & Engineering Graduate Fellowship
- HHMI Gilliam Fellowship
- Fulbright Scholarship
- Gates Cambridge Scholarship (LSU’s 1st)
- Barry M. Goldwater Scholarships
- Morris K. Udall Scholarships (LSU’s 1st & 2nd)
- Harry S. Truman Scholarship
- University Medals
- Upper Division Honors
- Distinguished Communicator Honors
- LSU Tiger Twelve Distinctions

These scholars have conducted research across the globe, sharpened their skills, and increased their competitiveness for future job opportunities. We were honored to have some of them return to LSU for our recent LSU STEM Alumni Connect. OSI will continue to engage them in our holistic training model to develop students while helping to address the growing demand for diverse scientists and engineers.

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.
OSI recently led the hosting efforts for an event aimed at showcasing LSU STEM alumni to administrators, faculty, staff, and students.

The LSU STEM Alumni Connect was the first event of its kind, highlighting the research of OSI LSU alumni who are pursuing doctoral degrees and postdoctoral training.

With sponsorship from the College of Agriculture, College of Engineering, College of Science, LSU Alumni Association, Office of Academic Affairs, Office of the President & Chancellor, Office of Research & Economic Development, Office of Strategic Initiatives, and the School of the Coast & Environment, twenty-four participants convened at the LSU Lod Cook Alumni Center from February 12-13, 2015. One of the goals of the Connect was to promote diversification of the LSU faculty through recruitment in the near future. Our plan was to leverage the University's investment in this diverse talent pool of students who were supported by OSI undergraduate programs. Forty-six percent (46%) of the Alumni Connect participants were Black or Latino, and sixty-three percent (63%) were women.

The participants engaged in roundtable sessions with college deans, department chairs, and faculty. The more senior graduate students and postdocs gave oral research presentations, while first through third year students completed poster presentations.

The event provided several opportunities for networking at lunch, dinner, and a reception. The participants were given valuable advice from our outstanding faculty panel: Drs. W. David Constant, Anne Grove, Louis Haber, Crystal Johnson, Graca Vicente, and Sophie Warny. Moderated by Dr. Gloria Thomas, the panelists shared essential tips for navigating academia, including developing a research group and balancing research and academics.

One of the highlights was the Connect Dinner, where Provost Stuart Bell extended a warm welcome to the attendees. Vice Provost Dereck Rovaris moved us all with his keynote address titled “Three Initials, Three Letters, and Three Fingers,” inspiring us to represent ourselves, our family, and our community well (three initials). It was actually Dr. Rovaris’s idea to bring the students back to LSU for a showcase. In his speech, he challenged participants to obtain doctoral degrees, stating that we can do so much more with a PhD (three letters). Lastly, he demonstrated the power in the simplicity of three fingers, which have been used to sign the Declaration of Independence, to hold a test tube, and to write dissertations, among other things.

The LSU STEM Alumni Connect event was an absolute success. I was amazed at the level of detail and how it all came together perfectly. The event served as a reminder of why I decided to pursue a career in science. The opportunity to see old friends/classmates and network with previous faculty mentors was priceless. It is my hope that LSU continues this program because it not [only] promoted science innovation, but it inspired hope!

-Participant (Anonymous)

There wasn’t a dry eye in the room at the Networking Lunch, where two PhD graduates of the LA-STEM and LSU-HHMI Professors Programs shared their emotional stories and sentiments about their experiences at LSU and with OSI. Lunch concluded with moving testimonials from a number of the participants and closing remarks from Vice President Isiah Warner.

We anticipate the expansion of this event to include the entire LSU community as we continue to welcome our Tigers home.

Click here for Alumni Connect Participant Profiles. For more details about the Connect visit our website http://osi.lsu.edu.

If you missed the “Future Faculty” spotlight with Alumni Connect video featured on the LSU homepage, click here.
OSI Purple Series: Faculty Resources

Faculty support and collaboration as it relates to teaching, research, mentoring, and broader impacts

The Office of Strategic Initiatives (OSI) will assist in moving LSU up to a new level of excellence. OSI actively focuses on action steps that support the educational research and scholarly productivity of faculty and the quality and competitiveness of our graduate and undergraduate students.

Our vision is to become a nationally recognized innovator in developing successful educational models that integrate mentoring and research and that also support efforts to improve campus diversity, particularly in science, technology, engineering, and mathematics (STEM) disciplines.

While our services are primarily student-focused, our office also supports faculty with:

- grant proposals
- identifying outstanding undergraduate researchers
- developing broader impacts and research training/mentoring components
- nominating faculty for national, regional, and local awards
- training and best practices for mentoring undergraduate and graduate students
- publications
- presentations

In an effort to provide faculty support, our office will launch an OSI Purple Series as a resource to LSU faculty.

How can we help you?

Please take a moment and complete this brief survey by accessing the link below. Your feedback will help in the design of various workshops and activities, which will be structured based on faculty needs.

[CLICK TO COMPLETE SURVEY]

Or copy and paste this link: http://bit.ly/192bPhv

OSI FACTS

$34 Million

Since 2001, the Office of Strategic Initiatives has generated over $34,000,000 in grant money for Louisiana State University.

This funding has supported student programs from the high school to doctoral levels, aimed at increasing student success through education, research, and mentoring.

Bridge to the Doctorate Initiative

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

Spring 2015 NSF Louis Stokes Alliance for Minority Participation (LS-AMP) Bridge to the Doctorate Fellows shown with LSU Coordinator, Dr. Gloria Thomas (center) and Statewide Director, Dr. Diola Bagayoko (Southern University, right of center). Also pictured, Dr. Chyree Batton (far left) and Dr. Ashleigh Wright (far right).

[For more information visit www.lsu.edu/bd.]

OSI welcomes Dr. Shannon Watt, who joined our OSI staff this past November as the Program Manager for the NIH Bridges to the Baccalaureate Program.
Cranking Up Innovation

LSU-HHMI Professors Program Graduate Mark Gabriel invents the world’s first power-generating phone case

By Melissa Crawford

Wetland Skimmer, useful for oil spill clean-up. This machine is particularly beneficial because it effectively removes oil without further damaging the fragile wetlands.

Mark graduated from LSU in 2009 with his BS in biological engineering and worked in industry for a little while, but the entrepreneur inside of him fueled his innovation.

He then created Safe-Draw Passive Safety, which increases safety without diminishing quick access to a loaded pistol by increasing the effort needed to pull the trigger on the first shot. Mark took his idea to an open call for Shark Tank but did not make it past the first round. Yet once again, Mark pushed forward, and the ideas kept coming.

“Persistence towards achieving a goal means letting go of everything that will stop you.”

-Mark Gabriel

Mark is now the co-founder of his company, AMPWARE, which launched their first two products on St. Patrick’s Day, March 17th. His team has invented a practical and affordable solution to a common need: The CrankCase and CrankBox, which are poised to revolutionize portable power generation, employing a smoother, quieter, and sleeker twist to the technology found in crank generators.

Simply connect your CrankCase to your iPhone 5/5S or iPhone 6, pull out the crank handle, and enjoy the ability to create your own power with the efficient built-in crank generator. With approximately 5 minutes of cranking, your device can gain over 2 hours of standby time. This case can also be used to charge other USB devices.

If you’re an Android user like me, don’t be dismayed. Cases are being developed for other popular devices. In the meantime, the CrankBox is a great universal charger that works for all USB devices and fits conveniently in your pocket. The applications of the Crank products are very diverse, from portable Wi-Fi devices to wearable technology.

This LSU Tiger has made it easier for us all to keep our devices charged. He dreams of supplying the entire LSU football team and coaching staff with the Crank products to keep them connected at all times, especially in Tiger Stadium.

So, what’s next for Mark?

He plans to further the expansion of his AMPWARE business to include cases for more devices and in a wider variety of colors. Mark will also continue exploring innovations that address environmental issues, and he is pursuing his master’s degree in Advanced Engineering Materials.

A product of the New Orleans public school system, LSU, and the LSU-HHMI Professor’s Program, this engineering entrepreneur’s story is proof that success is possible for anyone with the right tenacity, work ethic, and mindset.

For more details, and to take advantage of the early-bird pricing for the CrankCase and CrankBox (saving over 50%), visit http://getampware.com. These products were recently launched via Indiegogo.com on March 17, 2015.


All other inquiries can be directed to mark@getampware.com.
Upward Bound Program

**Department of Education Classic Trio Program servicing Tara High School**

LSU Upward Bound had a busy fall. At the SWASAP Student Leadership Conference in Hawkins, TX, September 26-28, 2014, LSU-UB was well represented in attendance and awards. This year’s essay competition winners include Kayla Mackey and Alisha Parker, both winning second place awards of $300.00 and iPad minis, as well as Taylor Behrnies and Antonio Jackson taking home the top high school level awards and grand prizes of $450.00 and HP Laptop Essentials Bundles.

LSU-UB students met American icon, noted civil rights leader, and U.S. Congressman John Lewis as well as co-author Andrew Ayden during a book signing and presentation of their summer reading material *March: Book One*. The LSU University College hosted a grand event titled “MARCH with Congressman John Lewis” on October 21, 2014. Ayden and Lewis took the time to visit with LSU-UB students and sign copies of the graphic novel prior to the evening’s presentation.

Spring of 2015 will be even more exciting for LSU Upward Bound. Students will have the opportunity to participate in hands-on physics activities to gain increased understanding of how they relate to human anatomy. They will also engage in community service and experience unique educational and cultural enrichment.

To learn more about the LSU Upward Bound Program, visit [www.lsu.edu/upwardbound](http://www.lsu.edu/upwardbound).

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**LA-STEM Research Scholars Program**

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

LA-STEM Research Scholar Zachary Fitzpatrick became the first student in LSU’s history to win the prestigious Gates Cambridge Scholarship. This award will fund his Master of Philosophy degree in clinical science, where he will specialize in rare diseases at the University of Cambridge in England.

The Gates Cambridge Scholarship is highly competitive, awarding only 40 full postgraduate scholarships to U.S. undergraduates to study at Cambridge.

Zachary has studied gene therapy techniques for treating rare diseases at the Pennington Biomedical Research Center, The Children’s Hospital of Philadelphia, the Pasteur Institute of Lille, France, and Harvard Medical School.

He also worked as an undergraduate researcher at the Massachusetts General Hospital for Children, where he explored the use of non-pathogenic viruses as gene therapy delivery mechanisms.

For the full story about Zachary and his Cambridge Scholarship, [click here](http://www.lsu.edu/lastem).

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.](http://www.lsu.edu/lastem)

For more information about the LA-STEM Program, visit [www.lsu.edu/lastem](http://www.lsu.edu/lastem).
The NIH Bridges to the Baccalaureate (Bridges) program is a partnership between the LSU College of Science, Baton Rouge Community College (BRCC), and OSI to increase the number of BRCC students transferring to LSU and completing bachelor’s degrees in the biomedical and behavioral sciences. Bridges fosters student success in many ways, including peer tutoring and individual mentoring.

In addition to supporting undergraduates individually, Bridges also supports math and science faculty at BRCC and LSU as they pave the way for students to transfer to LSU by implementing innovative teaching methods and ensuring that courses are consistent across institutions.

In February 2015, 25 LSU and BRCC faculty members from biology, chemistry, physics, and math participated in a joint meeting on the subject of student retention. Dr. Edward S. Shihadeh (Professor and Chair of Sociology at LSU) gave a compelling presentation on how institutions like LSU and BRCC can leverage the power of data to increase retention, both overall and for individual students. Following the presentation, participants discussed ways to apply the strategies developed by Dr. Shihadeh and his graduate student colleague Anthony Reed to increase the retention of STEM students while at BRCC and after their transfer to LSU.

Selection for the Summer 2015 Bridges Scholars program is underway. BRCC students in this program will gain biomedical or behavioral sciences research experience under the mentorship of an LSU faculty member. We are excited to see what the Scholars will accomplish and look forward to them joining four of their Bridges predecessors here at LSU!

For more information about the NIH Bridges Program, visit www.lsu.edu/bridges.
LAMP & S-STEM Updates

Since our last update, members of S-STEM and LAMP have attended their first two seminars of the spring semester. A member of student financial services spoke to students about how to create and maintain a proper budget. Additionally, she covered topics on funding for graduate school and how to receive personal financial counseling through student financial services.

Students participated in an activity in which they had to allocate their funds appropriately for a given week. There was also a question and answer segment at the end of the seminar in which students were able to ask pertinent financial questions. Additionally, as prizes, students received a flash drive containing meal plan and budget templates.

February’s seminar covered time management and maintaining a proper study schedule. Hayley Wren from the Center for Academic Success spoke to the students and engaged them in time management exercises. This month, students participated in a field trip to New Orleans, LA, where they toured research labs at the USDA and the LSU Health Sciences Center.

Future workshops will include science communication, a graduate school panel, and mock interviews.

Each S-STEM student has proposed individual development plans (IDPs) which outlines his or her goal(s) for the semester, due dates, and assignments that will aid him/her in achieving those goals. Seniors will focus on their graduate school portfolio as the program manager aids and advises them in the graduate school application process.

LAMP students are now required to meet every semester with the program manager. Previous requirements did not impose this feature, but we find that these meetings are crucial in the mentoring process, especially for those students who do not receive it elsewhere.

Last semester, students traveled to the Louis Stokes Midwest Center for Excellence Conference (LSMCE) in Schaumberg, IL from October 23-26th. LAMP students Nouriath Ningbinnin, Frances Arinze, and McKenzie Brown attended the conference. They were able to take part in seminars, a poster conference, panels, and mock interviews.

The students also explored Chicago visiting the Bean, Magnificent Mile, and various new and exciting dining venues. Additionally, they networked with other faculty, staff, and students attending the conference.

Students’ remarks after the conference:

“It gave me a great opportunity to network and interview successfully for grad school.”
–Nouriath Ningbinnin

“I learned so much. My “a-ha” moment was when I got to learn more about how to get involved with research in my field.”
–McKenzie Brown

Awards & Accomplishments

LAMP student accomplishments include but are not limited to, grad school acceptances across the country, top tier awards at various conferences, and internships with Boeing, SC Johnson, the Dept. of Defense, NASA, and a host of awards and personal achievements.

S-STEM and LAMP student Trenton Ford has been awarded a summer internship with Boeing in Oklahoma City. He also won a senate position for the College of Engineering and is gearing up for application to the nation’s top graduate schools. The S-STEM program also had two students return from study abroad in Ireland: Sarah Simmons and Dante’ Johnson.

Visit www.lsu.edu/lamp for more information. To learn more about the S-STEM Program, visit www.lsu.edu/sstem.

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
He holds the record for having mentored the largest number of OSI Scholars—nine to date. He has also been given the “cool mentor” award by his budding protégés (HINT: he's wearing the shades in the above photo).

“Dr. Hayes is truly an exceptional person. He is professional but extremely approachable; one can tell he honestly cares for his students and drives them to succeed.”

-Mollie Smoak, LA-STEM Scholar

Dr. Hayes is unafraid to take calculated risks, a strong testament to his successful nanotech business and acquisition of $16.7 million in grant and equity funding for company development. He boldly allows undergraduates to work independently, providing them with the resources, encouragement, and training necessary to thrive. There is no revolving door in his lab.

"I came into Dr. Hayes’s lab as a first-generation student with no background in research or science. In the summer of my first year, Dr. Hayes convinced me to present my research at an international research conference. Since then, I have published five original research articles, conducted summer research at Mayo Clinic, and have been recently selected to participate in an REU program at MIT this summer. Dr. Hayes believed in me with no prior experience, and I will always remember that.”

-Zackari Murphy, LA-STEM Scholar

He knows the secret to producing high-quality researchers, who have garnered top honors and scholarships. Since 2007, three of his students have been awarded the prestigious NSF Graduate Research Fellowship, one was named a Barry M. Goldwater Scholar, three were LSU Tiger Twelve recipient, and one was voted Homecoming King.

The OSI Scholars have consistently raved about their experiences in the Hayes group. Two of his current students, Katie Hogan and Mollie Smoak, both Goldwater nominees awaiting the final selection, commented that Dr. Hayes’s guidance and encouragement were instrumental in their success.

A former history major, Dr. Hayes views undergraduates in his team as critical contributors to research, and he values their feedback. The majority of his students have earned authorship on peer-reviewed manuscripts. Spoken like a true mentor, when asked about his experiences with the LA-STEM Scholars, Dr. Hayes considered them the most talented, dedicated, and thoughtful students he’s worked alongside, commenting, “I can’t say enough good things! I’m pretty sure I probably learn more from them, day-to-day, than they do from me!”

"He is a true picture of a mentor, seeking first to engage you in research as much as possible and then allowing you to start making your own judgments, fostering that spirit of innovation and creativity.”

-Katie Hogan, LA-STEM Scholar

For more information about the Hayes Group visit http://Hayeslab.lsu.edu.
ACT Prep Academy

The 100 Black Men of Baton Rouge and the LSU Office of Strategic Initiatives have concluded the spring 2015 ACT Prep Academy. Forty-six (46) high school students participated in an intense eight-week curriculum on the campuses of BRCC and LSU to strengthen content knowledge in English, Reading, Math and Science as well as develop test-taking skills to be successful on the ACT.

The academy began on January 10, 2015 with the pre-assessment and Parents’ Workshop. Mr. William Smith, Ms. Bianca Growe, Ms. Danielle Blanchard, and Dr. Timothy Johnson served on a panel to discuss the admissions processes at LSU, Southern University, Our Lady of the Lake College, and Baton Rouge Community College, respectively. Ms. Erica Moss from LSU’s financial aid office provided valuable information on TOPS requirements and FAFSA dates and deadlines. Mr. Dustin Oubre, Educational Partnerships Manager of Mastery Prep, discussed the importance of the ACT test and additional resources available to students.

While final results are still being analyzed, students who actively participate in our program have improved an average of 2 points between the mock pre- and post-assessments.

Information about our fall 2015 ACT Prep Academy will be posted on our website online (http://osi.lsu.edu) by June 30, 2015.

The LSU-HHMI Professors Program acknowledges and congratulates Christian Danielson (electrical engineering) and Luan Tran (chemical engineering) on their award for the BRCC Pathway Scholarship from the LSU College of Engineering. Christian is conducting research with Dr. Kidong Park, and Luan Tran is an undergraduate research mentor with Dr. Kerry Dooley. The BRCC Pathway Scholarship is sponsored by the National Science Foundation S-STEM Program and awarded to BRCC transfer students who earn an associate of science degree in engineering, achieve a minimum GPA of 2.75 and demonstrate financial need. Each award provides up to $7,500 per academic year.

For more information about the HHMI Professors Program, visit www.lsu.edu/hhmi.

Executive Director Dr. Gloria Thomas was recently elected as the 2016 Chair for the Professional Relations Division of the American Chemical Society.
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. Highlighted are the OSI programs with an emphasis on the levels of students served. For more information about OSI visit http://osi.lsu.edu.

Upcoming Events

March 2015
21| Upward Bound Saturday Session #8: Allen Hall (8:30 am—1:00 pm)
24| NIH Bridges & HHMI Professors Research Scholars Orientation (1-2 pm at BRCC)
25| HHMI, LS-LAMP, & S-STEM Seminar: 220 Coates Hall (5:00—6:30 pm)
28| Upward Bound Saturday Session #9: Allen Hall (8:30 am—1:00 pm)

April 2015
7| NIH Bridges & HHMI Professors Research Scholars Orientation (1-2 pm at BRCC)
14| NIH Bridges & HHMI Professors Research Scholars Orientation (1-2 pm at BRCC)
18| Upward Bound Saturday Session #10: Allen Hall (8:30 am—1:00 pm)
21| NIH Bridges & HHMI Professors Research Scholars Orientation (1-2 pm at BRCC)
22| HHMI, LS-LAMP, & S-STEM Seminar: 220 Coates Hall (5:00—6:30 pm)
23| OSI Graduation Reception (Details TBA)
25| Upward Bound Saturday Session #11: Allen Hall (8:30 am—1:00 pm)
28| NIH Bridges & HHMI Professors Research Scholars Orientation (1-2 pm at BRCC)

May 2015
2| Upward Bound Saturday Session #12: Allen Hall (8:30 am—1:00 pm)
5| NIH Bridges & HHMI Professors Research Scholars Orientation (1-2 pm at BRCC)
20| Upward Bound Bridge Orientation—Graduating Seniors Only
21| Upward Bound Summer Program Orientation—All Non-Graduating Students

Invest in STEM

LSU OSI development 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:

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