

OFFICE OF STRATEGIC INITIATIVES

LA-STEM Research Scholars Program

A National Model for Science, Technology, Engineering & Mathematics (STEM) Undergraduate Education



Our Mission

Founded in 2003, supported by the National Science Foundation, Research Corporation, and the Louisiana Board of Regents, The Louisiana STEM (LA-STEM) Program was designed to increase student access and success in STEM undergraduate degree programs at Louisiana State University. Our goals are to:

- **Develop Leaders and Researchers**
- **Promote Diversity in STEM**
- **Support Student Achievement**

The STEM Need

President Obama has made supporting the advancement of STEM a national priority. The growing demand for high quality American scientists and engineers continues to rise. Less than 50 percent of STEM freshmen complete STEM degrees. A number of factors impact persistence in STEM:

**Undergraduate Academic Performance
Self-Image**

**Pre-College Background
Academic Advising**

**Social Integration
Financial Support**

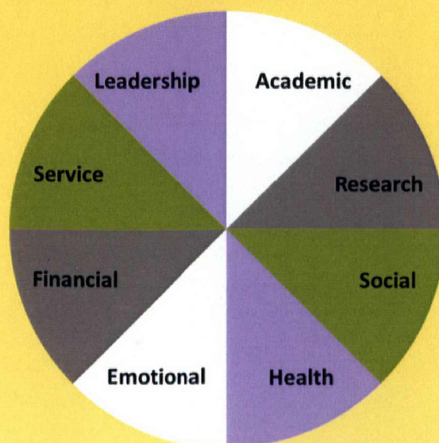
- * **Only 20% of African Americans** who enter STEM degree programs as Freshmen will actually **graduate with a STEM degree**.
- * **Underrepresented minorities** (African Americans, Latinos, Native Americans, and Pacific Islanders) comprise about 30% of the population, but **only 17.4% of STEM BS degrees and 7.2% of the STEM doctoral degrees**. This represents an under-utilization of American's human resources.

LA-STEM's Holistic Approach

It takes a village ... These words of wisdom very succinctly summarize the importance of community and mentoring in preparing our young people to become the leaders of tomorrow. This is essential to cultivating the potential of the next generation of scientists and engineers and is the hallmark of the LA-STEM Research Scholars Program.

LA-STEM offers multi-faceted training to our future STEM leaders and employs a *holistic development learning approach* to create high-quality students that will greatly contribute to the STEM community. Our program is designed to help build on the foundation that was laid by the family, high school teachers, counselors, and mentors of our participants.

We challenge students to achieve the highest level of their potential in areas of academics, community involvement, research, mentoring, and leadership. Scholars receive guidance with maintaining balance in eight key areas:



"I could not imagine my college experience without LA-STEM. Every aspect of my collegiate career—degree plan, research, campus involvement, and close friends—was influenced by the LA-STEM program."

Anna Normand,

2011 chemistry graduate
Primary Honors: University Medalist, 2012 NSF Graduate Research Fellow, 2010 National Morris K. & Stewart Udall Foundation Scholar, 2011-12 Phi Kappa Phi Fellow, LSU College of Science Outstanding Junior & Senior of the Year, Patrick F. Taylor Chemistry Scholar Award, and the ACS Undergraduate Analytical Chemistry Award.

Anna is pursuing a PhD in wetland science at the University of Florida.



THE VISIONARY

Vice Chancellor & Boyd Professor Isiah M. Warner

Small town country boy with a dream revolutionizes STEM education and obliterates the achievement gap through innovation, mentoring, education, and research initiatives.



"The future of science in America depends on increasing the number of students in science, technology, engineering, and mathematics (STEM), particularly those currently underrepresented in the sciences."

Dr. Warner grew up in the small town of Bunkie, LA (current population <5,000). He acquired an interest in science at the age of two years when he orally ingested kerosene to determine why this funny smelling liquid was able to produce light. After being hospitalized, Dr. Warner put his science experiments on hold until the age of twelve when he received his first chemistry set. From that moment on, he knew he wanted a career in science.

He credits working in the *cotton fields* as his initial mentoring experience, and later received life-changing guidance from various professors and leaders who inspired him to mentor thousands of students over a period of three decades. In 1964, Dr. Warner graduated valedictorian from Carver High School in Bunkie, Louisiana. He graduated cum laude from Southern University with a BS degree in chemistry in 1968. After working in Washington for five years, he attended graduate school at the University of Washington, receiving his PhD in Chemistry in June 1977.

He has taught chemistry at Texas A & M University and Emory University. In 1988 and 1989, he served as the Program Officer for Analytical and Surface Chemistry at the National Science Foundation (NSF). Dr. Warner joined the LSU faculty in August 1992 as a Phillip W. West Professor of Analytical Chemistry and served as chair of the chemistry department from July 1994 to 1997.

In 2000, Dr. Warner was appointed Boyd Professor, the highest professorial rank awarded by the LSU System and is given only to professors who have attained national or international distinction for outstanding teaching, research, or other creative achievement. This esteemed honor is of particular importance, as thirty-six years prior to his appointment, he was unable to attend Louisiana State University, which was segregated at the time. In April

2001, he was appointed as vice chancellor for the Office of Strategic Initiatives (OSI) with a purpose of supporting the high achievements of LSU students, faculty, and staff through education, mentoring, and research. In 2002, Dr. Warner became a Howard Hughes Medical Institute (HHMI) Professor, enabling him to develop and implement an innovative mentoring model for increasing success and persistence within undergraduate STEM education. This model has been implemented in a number of programs within OSI, and has been proven to be the most effective way of creating an environment in which all students, from diverse backgrounds, can thrive!

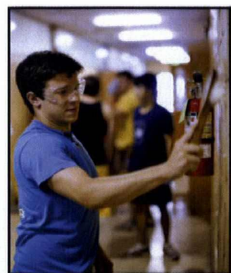
For one decade, the LA-STEM Program has served as an integral part of this effort, and is the premier STEM undergraduate research program at LSU.

Since 1975, Dr. Warner has more than 250 published or in-press articles in several prestigious journals. He has been issued five patents for his work and has another one pending. Since 1982, Dr. Warner has chaired over 30 doctoral theses and is currently supervising approximately 15 other PhD theses. He has received more than 40 honors and awards, including CASE Louisiana Teacher of the Year Award; LSU Distinguished Faculty Award; the American Association for the Advancement of Science Lifetime Mentor Award; the Eastern Analytical Symposium Award; a Fulbright Fellowship for research and teaching in Kenya; the ACS Division of Analytical Chemistry Award in Spectrochemical Analysis; and the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring from the President of the United States awarded through the National Science Foundation.

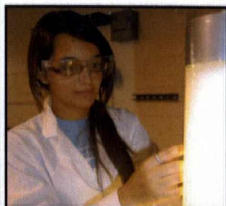
He is a true visionary, who has laid the foundation and created a masterful blueprint for success in STEM, employing proven tools and strategies that anyone can utilize to create their dream life. He makes the impossible attainable to those willing to put forth the effort. Dr. Isiah M. Warner is a man who pays it forward by empowering others to maximize their potential.

Excellence in Mentoring

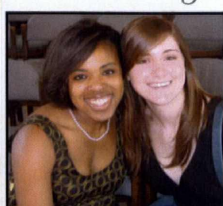
LA-STEM RESEARCH PROGRAM COMPONENTS



Education



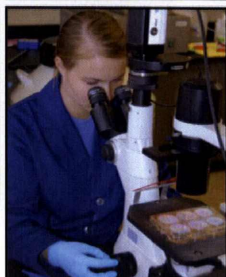
Mentoring



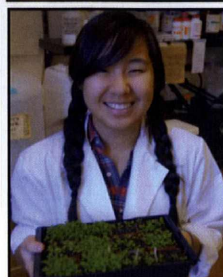
"I attribute most of my success as an undergraduate to being in LA-STEM. The program motivated me to work hard, [and maintain] an excellent GPA. The funding allowed me to have time to concentrate on my studies without having to worry about expenses, [and] the classes were indispensable."



Service



Research



Most importantly, the LA-STEM program imparted a confidence in me, starting from the very first semester, that has catapulted me to where I am today."

Brad Corso, 2008 physics graduate
Pursuing a PhD in physics at the University of California, Irvine

Proven System

LA-STEM Scholars are typically recruited as high school students and receive ongoing support throughout their undergraduate tenure. Eligibility requirements are a 3.5 cumulative (cum.) GPA, 24 ACT/1150 SAT and U. S. citizenship. A traditional high school (HS) cohort would experience:

Selection Weekend: 20-25 HS Students Selected	Scholars complete Summer Bridge Program	1st year: Intro. to college	OSI REU Program (summer after 1st year)	2nd year: Intro. to Research	REU or other summer research program	3rd year: Graduate School Application and GRE Preparation	REU or other summer research program (optional)	4th year: Graduate School Preparation	Graduate School (PhD in STEM)
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SUMMER BRIDGE PROGRAM	ACADEMIC YEAR	OSI REU PROGRAM
<p><i>Program provides extensive college transition support through academic preparation, exposure to campus resources, and introduction to research.</i></p> <ul style="list-style-type: none"> ◆ Eight week program ◆ Builds a diverse, supportive, close-knit, community of incoming students who receive peer mentoring from older participants, and staff mentors <p>Program benefits:</p> <ul style="list-style-type: none"> • Tuition and fees for up to six course hours • Housing and meal plan • \$100 book stipend 	<p><i>During the academic year, LA-STEM scholars engage in various community building activities and supplemental courses designed to facilitate greater undergraduate success in the STEM areas. Participants also:</i></p> <ul style="list-style-type: none"> ◆ Engage in research with an LSU faculty mentor & receive mentoring by faculty, staff, and peers ◆ Support volunteer efforts <p>Program benefits:</p> <ul style="list-style-type: none"> • Housing and meal plan • \$3,000 annual cash stipend • \$400 annual book stipend • Automatic admission into the LSU Honors College • Non-resident tuition assistance, as needed 	<p><i>Designed primarily for first-year students, the OSI REU Program gives novice researchers the resources needed to solidify their academic year undergraduate research, enhancing their competitiveness for subsequent research programs. The program includes:</i></p> <ul style="list-style-type: none"> ◆ Eight weeks of research ◆ Various workshops and seminars to strengthen their skills ◆ Poster presentation at the Summer Undergraduate Research Forum (SURF) <p>Program benefits:</p> <ul style="list-style-type: none"> • \$5,000 cash stipend

PROGRAM DEMOGRAPHICS: 2003-2012



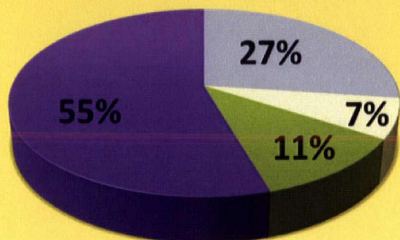
Having served 249 scholars from 2003 to the present, the LA-STEM Research Scholars Program continues to raise the bar in providing a supportive and empowering environment for students which promotes success through mentoring, education, and research.

<p>ETHNICITY & GENDER OF LA-STEM PARTICIPANTS SERVED: 2003-2012</p>	<p>GENDER OF ALL PARTICIPANTS SERVED:</p>
<p>LA-STEM POST BACC. OUTCOMES: 2003-2012</p>	
<p>GEOGRAPHICAL DATA: 2003-2013</p>	<p>90% of all scholars served are from Louisiana.</p> <p>Non-resident scholars represent 14 states including: Alabama, California, Florida, Kentucky, Mississippi, North Dakota, New York, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Wisconsin</p> <p>24% of all scholars served are from towns (population <10,000)</p>

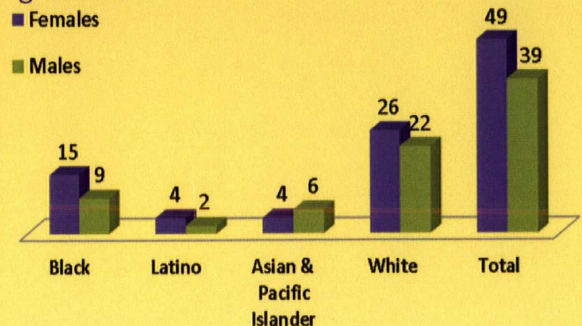
CURRENT PARTICIPANT DEMOGRAPHICS

- 88 total current participants
- 34% underrepresented participants (Black or Latino)
- 56% of participants are female
- 25% of current scholars are from towns
- 27% of current participants will be first-generation college graduates

■ Black ■ Latino ■ Asian & Pacific Islander ■ White



ETHNICITY OF CURRENT PARTICIPANTS



NUMBER OF CURRENT PARTICIPANTS BY ETHNICITY & GENDER

IMPECCABLE MEASURES OF SUCCESS

- **82 LA-STEM graduates**, with first cohort graduating in 2008
- **92% Overall STEM graduation rate**
 - *93% STEM Graduation rate for African American LA-STEM scholars
 - *48% female graduates in STEM
 - *32% underrepresented graduates in STEM

- **44%** graduated with a minimum **3.7 cumulative GPA**
- **84%** completed or are pursuing **post-baccalaureate programs**
- Over **40 publications** to date
- Over **12,000 hours** of community service collectively

- **33%** of the 82 graduates have **completed** post-baccalaureate degrees:
 - *52% completed PhD & MS in STEM
 - *26% completed MD
 - *22% completed non-STEM master's degrees



Dr. Tam Nguyen-Cao
2006 biological sciences graduate & 2006 HHMI Gilliam Fellow

Tam is a first-generation college graduate, whose funding was a primary source of income for her Vietnamese family. She completed her PhD in molecular pathology from Wake Forest University in 2011, and is currently a member of the science team at the Rare Genomics Institute.

*Data includes graduates through December 2012



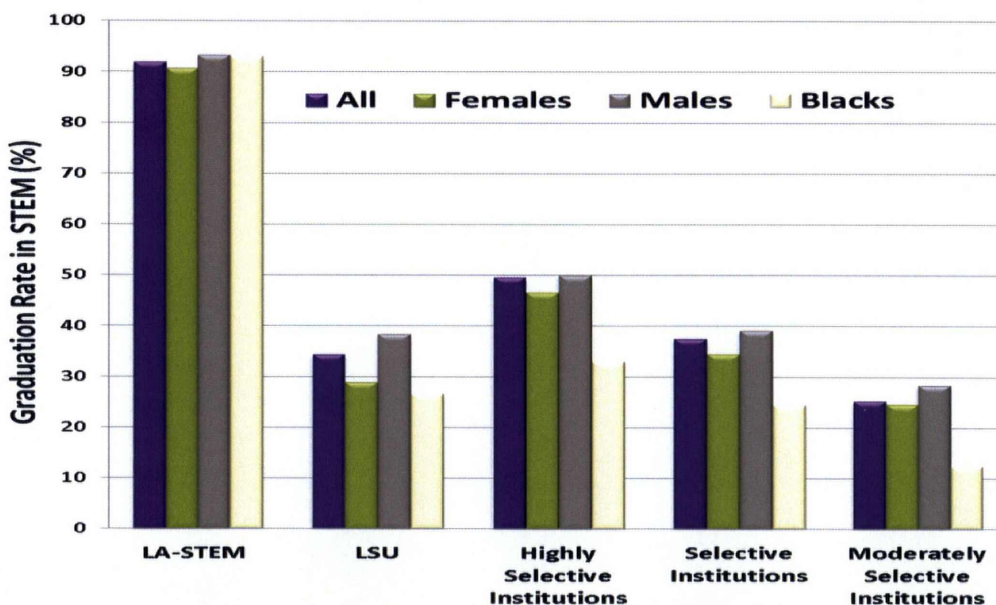
"I always knew that I wanted to go to graduate school, but I did not know what that entailed. LA-STEM focused me [and] gave me all the tools to prepare for school, get used to conducting research, and I soared because of it. This program surrounded me with people with similar goals and is the reason why I am a PhD student today. LA-STEM is a program that trains students to get to grad school, but along the way we were shown how to approach obstacles in school with vigor and determination."

Edwin Lee, II
2009 electrical engineering & computer engineering graduate
2009 LSU Tiger Twelve Honoree

Edwin is pursuing a PhD in electrical engineering at The Ohio State University.

ELIMINATION OF ACHIEVEMENT GAP

- Overall STEM graduation rate in LA-STEM is **three times the national average**.
- **93% of Black** LA-STEM scholars graduate with a STEM degree.



Pay it Forward

"LA-STEM helped me learn how to work and interact with people from various backgrounds and nationalities. I have been guided by several mentors, by way of LA-STEM, and this has inspired me to be a mentor for others. **My ultimate goal is to become a professor of industrial engineering** at a major research institution, and the LA-STEM program has truly been a guiding factor in helping define my career goals."

Brandon Pitts
2011 industrial engineering graduate, 2011 NSF Graduate Research Fellow

Brandon is a first-generation college student, and is pursuing a PhD in industrial engineering at the University of Michigan.



LA-STEM RESEARCH SCHOLARS HIGHLIGHTS

University & National Recognition

LA-STEM Scholars are remarkable students, researchers, and leaders who have garnered numerous honors including:

- Barry M. Goldwater Scholars (6)
- Harry S. Truman Scholar
- Morris K. Udall Scholars (2)
- Howard Hughes Medical Institute (HHMI) Gilliam Fellow
- National Defense Science & Engineering Graduate Fellow
- NSF Graduate Research Fellows (8)
- College Honors Thesis (14)
- University Medalists with a 4.0 cum. GPA (7)
- Summa Cum Laude with 3.895-4.0 cum. GPA (13)
- Magna Cum Laude with 3.795-3.89 cum. GPA (9)
- Cum Laude with 3.695-3.79 cum. GPA (14)
- LSU Tiger Twelve Honorees: *top 12 seniors leaders* (5)
- LSU Distinguished Communicators (9)

Premier Fellowships

Kathleen Brannen, 2011 geology & biological science graduate

2011 NSF Graduate Research Fellow, 2010 & 2011 Outstanding Undergraduate Research Award,

Kathleen is pursuing her PhD in geology at the University of Tennessee, Knoxville.



Sarah DeLeo, 2009 biological engineering graduate
2009 NSF Graduate Research Fellow & HHMI EXROP Scholar, Upper Division Honors (thesis)

Sarah is pursuing her PhD in biomedical engineering at Columbia University.



Hannah Manuel, 2012 mathematics graduate, University Medalist, 2012 National Defense Science, Engineering Graduate Research (NDSEG) Fellow

Hannah is pursuing her PhD in algorithms, combinatorics, and optimization at the Georgia Institute of Technology



Lauren Oliver, 2012 biological sciences graduate
2012 NSF Graduate Research Fellow, Upper Division Honors (thesis)

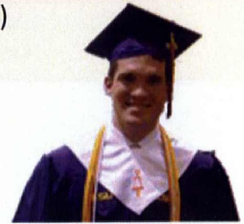
Lauren is pursuing her PhD in comparative biology at the American Museum of Natural History



"LA-STEM has played a huge part in every milestone of my college career. I came to LSU because of LA-STEM, and now I'm leaving LSU with a breadth of knowledge and experience that I was only able to gain from being in the program."

Taylor Morris, 2011 mechanical engineering graduate
Primary honors include 2011 LSU Distinguished Communicator and 2011 NSF Graduate Research Fellow. Taylor is pursuing a PhD in mechanical engineering at the Massachusetts Institute of Technology. He aspires to use his artistic abilities and engineering training to improve science education through designing innovative educational supplements.

"There is no organization at LSU (nor any other institution in the United States for that matter) that can match LA-STEM in its ability to transform a school ranked 75th-100th for its STEM fields to an institution that can output top-notch, internationally competitive fellows. Thus, not only does LA-STEM create another micro-MIT/Harvard in the South, but it does so with an extremely unique and diverse group of nationally underrepresented students. It cultivates leadership, diversity, and a distinct level of professionalism that is highly sought out worldwide, and it does so efficiently."



Tel Rouse, 2012 biological engineering graduate, magna cum laude, 2012 NSF Graduate Research Fellow

Tel is pursuing a PhD in chemical engineering at the Georgia Institute of Technology

Prestigious National Honors



Carl Sabottke, senior, chemistry (chemical physics concentration)
2012 Barry M. Goldwater Scholar

Carl will graduate in May 2013 and will pursue a PhD in neuroscience and conduct research in theoretical neuroscience as a

research professor. His ultimate desire is to use theoretical and computational models to improve clinical treatments for neurological and psychological disorders, particularly for obsessive-compulsive disorder.

Mytrang Do, 2012 biochemistry graduate
2011 Barry M. Goldwater Scholar, University Medalist, & 2012 Outstanding Biochemistry Senior, Upper Division Honors (thesis)

Mytrang is currently pursuing her MD/PhD at Cornell University. She aspires to focus her career on researching the molecular mechanisms that viruses utilize to persist in human hosts. She is interested in studying HIV resistance and latency in an effort to develop novel treatments that can eradicate all forms of HIV viruses.



UNIQUE INTERNATIONAL EXPERIENCES

LA-STEM Scholars have participated in research and study abroad programs, where they have gained valuable skills within both the classroom and research laboratories. These international experiences have taken our scholars all over the world to:

<i>Antarctica</i>	<i>France</i>	<i>Italy</i>	<i>Slovenia</i>
<i>Australia</i>	<i>Germany</i>	<i>Japan</i>	<i>Spain</i>
<i>Belgium</i>	<i>Hungary</i>	<i>Korea</i>	<i>United Kingdom</i>
<i>China</i>	<i>Ireland</i>	<i>New Zealand</i>	



Kathleen Brannen (featured previously) spent a semester conducting research in Antarctica during her sophomore year.

Through funding support from the LSU Howard Hughes Medical Institute (HHMI) Professors Program, the HHMI Exceptional Research Opportunities Program (EXROP) Program, and the HHMI International Research Program, LA-STEM Scholars have gained substantial research experiences. To date, LA-STEM has aided in the development of **17 HHMI EXROP Scholars** and **5 HHMI Professors Program & International Researchers**.



“The LA-STEM program has provided me with everything a student needs for success—here at LSU and beyond. Over the last four years I have been molded with care by experienced mentors whose faith in my abilities have driven me past my own capacity. I have developed into a scholar, a leader, and most importantly, into a researcher with the intellectual merit and focus on broader impacts to influence the world beyond the realm of science.”

Tiffany Lemon, senior, biochemistry

2013 College Honors Graduate, 2013 LSU Distinguished Communicator, 2012 Barry M. Goldwater Honorable Mention, 2011 HHMI EXROP Scholar, & HHMI International Researcher at Institut Pasteur de Lille

Tiffany will be a first-generation college graduate from Opelousas, LA, where over 50 percent live below the poverty level. She will pursue a PhD in biomedical sciences with an emphasis on infectious disease and public health.

PREMIER RESEARCH EXPERIENCES

“The LA-STEM Program has provided me crucial training, lasting friendships, and connections in the research community, and has had a tremendous impact on my education, career goals, and personal growth. I have had opportunities to better myself and serve my fellow man.

I’ve travelled the world, shaken hands with some of the world’s leading researchers, and helped other students enter the world of research. With [their] guidance I was able to secure research before I began my freshman year.

I’ve made lifelong friendships and that diverse community has been there to support me throughout my undergraduate career. It has opened a countless number of doors for me into the research community, preparing me for a career as a leader in the biomedical engineering field.”

—**Corey Landry**

Junior, biological engineering

LA-STEM Scholars conduct research throughout the academic year in preparation for engaging Research Experiences for Undergraduate (REU) Programs. Participants have researched at many prestigious universities and institutes including:

American Museum of Natural History	Massachusetts Institute of Technology
California Institute of Technology	Merck Research Laboratories
Columbia University	NASA’s Langley Research Center
Cornell University	National Institute of Standards & Technology
Duke University	Penn State University
Georgia Institute of Technology	Rice University
Harvard University	The Ohio State University
Hawaiian Islands Humpback Whale National Marine Sanctuary	University of Alaska, Fairbanks
Johns Hopkins University School of Medicine	University of California: Berkeley, Davis, & Irvine
Kitt Peak National Observatory	University of Florida, Gainesville
	University of Maryland, Baltimore County
	University of North Carolina, Chapel Hill
	University of Notre Dame
	University of Pennsylvania
	University of Southern California
	University of Washington
	University of Wisconsin, Madison
	Wake Forest University
	Yale University



Corey Landry, 2013 Barry M. Goldwater Winner, 2012 Barry M. Goldwater Honorable Mention, . Corey was selected to conduct research through the HHMI International Program at imec in Leuven, Belgium for seven months.

LA-STEM PROGRAM SUSTAINABILITY



"More than anything, this experience has prepared me for the real world."

—Melanie Carroll
Junior, Physics



"I could not [imagine] my college experience without LA-STEM. When my peers and I heard that next fall may be the final semester of the program, there was silence and [sadness]. Many of the LA-STEM Scholars cannot afford LSU without the program. **LSU would be losing outstanding students if LA-STEM could not continue.** If the program does not continue, it would be a struggle for my family to afford everything the LA-STEM Scholarship covers. Not having LA-STEM would make college a struggle. Right now I can concentrate on learning and preparing for graduate school. Without LA-STEM, I would have money to worry about too. LA-STEM does more than give me a scholarship; [it gives me] support and guidance. **The other LA-STEM Scholars and I have been given such an amazing opportunity.** This program is the best part of my college experience, so not having LA-STEM would be an incredible loss for me."

—Brianna Bourgeois, sophomore, biological engineering

"If the LA-STEM Program ceased to continue in the fall of 2013, I would not be able to attend LSU. This would mean I would have to stop working in my research lab and leave all the hard work I have accomplished behind. Financially, I would be struggling to even attend college much less graduate school. I feel like we have worked so hard and gained so much knowledge and experience through LA-STEM, and we still have so much more to gain. So to see LA-STEM cease to continue will be devastating to us and our futures."

— Autumn Acree, sophomore, chemistry

"If LA-STEM ended, the impact would be very drastic to me. Apart from the financial help that LA-STEM provides for me, I would lose the structure that defined my undergraduate career. Every day of the year, I have to make decisions that will ultimately determine the success of my future. And LA-STEM plays a major factor in every one of those decisions. Without it, I feel like my future success will decrease from what it could be with the continued support of LA-STEM ."

— Shane Lindemann, junior, civil engineering



"[If the program ended] I will lose the majority of my funding that allows be to attend my university. My parents do not have the resources to pick up the slack. I NEED the LA-STEM Program!!"

— Dante' Johnson, junior, biochemistry

Support the Scholars

LA-STEM REMARKS: SCHOLARS & FACULTY



"I would not be at LSU without LA-STEM, and if its impact ended there, it would easily still be the **largest influence on my undergraduate education** besides myself. Without the stipends, paid research experience, and exemptions LA-STEM scholars are granted, I would never have been able to afford LSU after the recent passing of my father. **LA-STEM provided me with not only a pecuniary support network**, but also an **emotional one**, and the **tight-knit group** that the program allows to foster between the scholars became my support group for what was one of the hardest periods in my life. Without the active support of the LA-STEM staff and my fellow scholars **I could not have made it through my toughest semester, even if I had found a way to pay for it."**

-Bruno Beltran, sophomore, mathematics & computer science
2013 Barry M. Goldwater Winner & 2013 HHMI EXROP Scholar

"I chose to go to LSU despite receiving a full tuition scholarship to a top tier school because of the support the LA-STEM program provided. I can confidently say that it was the right decision. The LA-STEM program's support has been critical to my success as an engineering student. I am certain that being a LA-STEM scholar has drastically altered my future for the better.

The knowledge I have gained in undergraduate research vastly outstrips the knowledge I have gained in classes as a full-time engineering student--and it came without actively studying or even realizing that I was learning. Research has been critical to my academic success, contextualizing otherwise abstract topics learned in classes. **My experiences with undergraduate would not have happened without the impetus and encouragement that LA-STEM provided me."**

- Kameron Kilchrist, senior, biological engineering
2013 NSF Graduate Research Fellow, 2013 LSU Tiger Twelve Honoree
Kameron will pursue his PhD in biomedical engineering at Vanderbilt University



"Before LA-STEM, I never thought of graduate school as a viable option just because in general there is no point in the majority of student's careers when someone sits down with you to explain all the options you have past undergrad. In LA-STEM I felt I had the tools I needed to go out, get a higher-education degree to allow myself to do whatever kind of work I wanted in the future.

I think the thing that has surprised me the most is that **the influence on going to graduate school has not only affected me, but those around me.** Using the tools I learned about in LA-STEM, I was able to share them with my boyfriend, who decided to apply to graduate school in Mechanical Engineering at the same time I applied to graduate school in Statistics. He is now working on his PhD in Mechanical Engineering at University of Houston."

-Dr. Stephanie Hicks, 2007 mathematics graduate, magna cum laude
Stephanie completed her PhD in Statistics from Rice University in 2013. She will be completing a post doctoral fellowship at the Harvard School of Public Health. She aspires to secure a tenure-track faculty position.

"Since 2007 I have had six LA-STEM undergraduate students carrying out original scientific research in my group in the areas of quantum sciences and technologies. The **LA-STEM program has provided** these students with **critical undergraduate research opportunities** and the mentoring and training they need to get into a graduate PhD program. At LSU we have traditionally had difficulties getting our undergraduate students into competitive graduate programs upon graduation and **LA-STEM has quantitatively and vastly improved the chances for these students to excel** and get a jumpstart on their careers. LA-STEM, by encouraging the students to get involved in research at an early stage in their undergraduate career, **has enabled my students to have graduate career choices they would have not otherwise had.** The support that LA-STEM provides gives the students this opportunity. Also the mentoring that the research adviser provides is invaluable as is the training and preparation for graduate school that the LA-STEM program gives to the students. **I have found the LA-STEM program to be the most important factor in my own undergraduate students post baccalaureate success."**

-Professor Jonathan Dowling,
Co-Director of the Hearne Institute for Theoretical Physics & Professor and Hearne Chair of Theoretical Physics
Professor Dowling has mentored six LA-STEM Scholars, who are all enrolled in PhD programs

LA-STEM REMARKS: PARENTS

“Carl has been given many unique opportunities at LSU and through the LA-STEM Program. It has given him guidance in exploring his many different interests in the sciences. I cannot thank you and your staff enough for help you have given him.

As a high school math teacher, I encourage my students to research and apply for the LA-STEM Program.



I feel it is one of the most important programs at LSU. My husband, who is a Chemical Engineer, also feels that the **many unique opportunities** at LSU and **through** the **LA-STEM** Program are **very important and critical in developing the next generation of scientists and researchers** to meet the broad ranges of challenges facing society that can only be solved by the future talent that is nurtured and developed by programs like LA-STEM. I know that Carl has gotten the education and experience needed to be successful in his pursuit of a doctorate degree in computational neuroscience at The University of Maryland.”

-Cathy Sabottke, mother of 2012 Barry M. Goldwater Scholar, Carl Sabottke

“**Tiffany has found her passion for research through the LA-STEM program**, and it has helped mold her into the wonderful young woman she is today.

The awesome seminars she attended while in the LA-STEM program and the **different cultures** she was able to experience during those times has given her **new confidence in her abilities**. She is able to explain her work and has developed a boldness about her research while rubbing shoulders with the best. The LA-STEM program **opened doors for my daughter that ordinarily would not have been available**. When I think about all the experiences that came out of this one program, I'm at a loss for words. Who would have imagined my daughter's experience abroad, being part of a research team in France! I think if I could attach her resume for the last four years, that would say it better. It just saddens me to think that other students will not have the opportunity to experience this wonderful program.”



– Janice Lemon, mother of 2013 College Honors Graduate & 2012 HHMI International Researcher, Tiffany Lemon

“Both of our daughters have had the good fortune of being LA-STEM scholars. **Both my husband and I are scientists who went through undergraduate and graduate schools** (I did both of my degrees at LSU) **without the advantages our daughters have had in LA-STEM**. We were never in positions to apply to top notch graduate schools or receive outstanding grants because of the lack of opportunities and mentoring. We were both mentored along the way but it was informal and after **we had both struggled (like most students) in the introductory science courses**. I teach general chemistry and I see it every day: students leave science in the introductory courses not only because of poor preparation and study skills but also because they are not in a cohort of students who are being mentored and supported. Undergraduate study in the STEM fields is hard and it requires a level of work that students need to see in practice around them in order to succeed. I know the retention numbers speak for this need in the LA-STEM program. Finally, I truly believe that the requirement of research from the freshman year on in LA-STEM sparked the passion in both of our girls that we see and hear in their voices when they talk about the work they are doing. I am grateful for this gift as I know that even with two parents in the sciences, **this passion would not have been generated without the LA-STEM program** and the mentor professors that both of the girls have had the good fortune to have.”

– Dr. Melinda Oliver, mother of 2012 NSF Graduate Research Fellow, Lauren Oliver and sophomore Erin Oliver

Support the Scholars

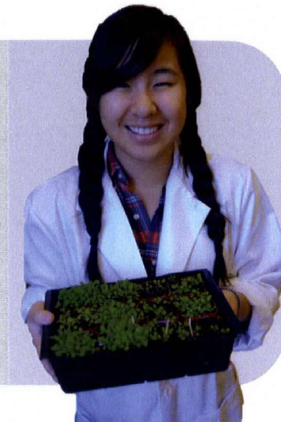
PARTNERSHIPS

Through the Office of Strategic Initiatives, the LA-STEM Research Scholars Program has formed a network that is dedicated to assisting students in achieving the highest levels of their potential in the areas of academic growth, professional awareness, research prowess, and social development. The network includes the nationally recognized *LSU Center for Academic Success*, *LSU Honors College*, and *dedicated faculty*, who are willing to invest in the future of these bright students to ensure their success in all of these areas. The undergraduate research experience and multi-directional mentoring create a unique atmosphere that allows our students to begin to dream broadly and plan effectively in moving along various paths toward their goals.

Office of Strategic Initiatives (OSI) Programs

In addition to the LA-STEM Research Scholars Program, the LSU OSI also manages several other premier programs:

- *Howard Hughes Medical Institute (HHMI) Professors Program*
- *Innovation through Institutional Integration (I3) Program*
- *Initiative for Maximizing Student Diversity (IMSD) Program*
- *Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP)*
- *S-STEM Scholars Program*
- *Upward Bound*
- *Bridges to the Baccalaureate*
- *Bridge to the Doctorate Program*



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