LSU Office of Strategic Initiatives:
A National Model for Impacting Student Success
in STEM

ISIAH M. WARNER, VICE PRESIDENT
GUOQIANG LI, ASSOCIATE VICE PRESIDENT
OSI PILLARS FOR SUCCESS

- OSI AT-A-GLANCE
  - Established in 2001
  - Awarded >$42.5M in grant funding
  - Served many students from the K-12 to graduate levels
  - Managed eight student support programs

VISION
To create, leverage, and centralize STEM education and mentoring programs at LSU.

MISSION
To increase student academic performance through the creation and implementation of programs that enhance the overall diversity of LSU’s student body.

MENTORING
- Enthusiastic Counseling & Advising
- Student (individualized) Mentoring (by staff/faculty)
- Peer Mentoring
- Community Services/Outreach
- Mentor Training
- Faculty Mentoring

EDUCATION
- Centralization of Campus Resources
- Cohort-based Student Success Courses
- Development Workshops
- Academic Enrichment
- Peer Tutoring

RESEARCH
- Undergraduate Research (Academic year)
- Summer Research Experiences
- Early Exposure to Research
- STEM Demonstrations
- Responsible Conduct of Research Training
OSI’S HISTORICAL ROOTS

▶ LSU RANKED #1 IN PERCENTAGE OF PHDs AWARDED TO WOMEN AND UNDERREPRESENTED MINORITIES

FRESH FACES Neda St. Lise Lsad and Reilanda Johnson are third-year organic chemistry Ph.D. students at LSU.

PERSPECTIVE WHAT IS LOUISIANA STATE DOING RIGHT?

LSU, largest producer of African American chemistry Ph.D.s, boasts a model graduate education program.

SEMINAR IN CHEMISTRY

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THE low participation of minorities in graduate chemistry programs has been discussed extensively in general, but typically in a vacuum. However, recent developments at Louisiana State University (LSU) are breaking new ground. Indeed, the last decade of the 20th century was a period of unparalleled growth and development for minority education in the LSU Department of Chemistry. During the 1992-1993 academic year, LSU's African-American students earned six doctorates in chemistry at LSU. In 2006-2007, seven African-American students earned Ph.D.s.

The progress over the past 30 years is all the more remarkable given the historical events in which the LSU program evolved. The program did not develop in a vacuum. National and local developments have contributed to the current profile. However, none of the current disci- close or are surrounded by the Louisiana landscape.

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A MAJOR CONSEQUENCE of the Brown decision was the growth of historically black colleges and universities (HBCUs).

HBCUs have long been a repository of educating African American undergraduates in the face of prevailing and modest educational resources from the state. The vast majority of African American students enrolled in minority institutions at the center of Louisiana.

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OSI PROGRAMS

- Multi-faceted Training Models:
  - Recruitment of motivated students
  - Cohort-based
  - Holistic mentoring
  - Early exposure into research
  - Strong academic support system
  - Community service and outreach
  - Counseling/Advising at critical junctures
STEM GRADUATION RATES: U.S. COLLEGES & UNIVERSITIES VS. LSU
OSI OUTCOMES

[Bar chart showing outcomes across different categories such as LA-STEM, S-STEM, HHMI, LS-LAMP, Highly Selective Institutions, LSU, Selective Institutions, and Moderately Selective Institutions, differentiated by All, Women, Men, and Black categories.]
OSI OUTCOMES: DOCTORAL PROGRAM

- 2-Year NSF funded fellowship for underrepresented minorities in STEM doctoral programs
- 108 Students Served
- 18 Graduates (16% in academic positions)
- 5 NSF Graduate Research Fellowship Recipients
OSI OUTCOMES: UNDERGRADUATE PROGRAMS

**OSI Select Postgraduate Placement**
- American Museum of Natural History
- Columbia University
- Cornell University
- Duke University
- Georgia Institute of Technology
- Harvard University
- Massachusetts Institute of Technology
- Mount Sinai School of Medicine
- Purdue University
- Rice University
- Rochester University
- Stanford University
- Texas A & M University
- The Ohio State University
- Tulane University

**OSI Select Postgraduate Placement**
- University of Alabama
- University of Cambridge
- University of California, Davis & Irvine
- University of Florida at Gainesville
- University of Illinois, Urbana-Champaign
- University of Iowa
- University of Michigan, Ann Arbor
- University of North Carolina at Chapel Hill
- University of Tennessee, Knoxville
- University of Texas/M.D. Anderson Cancer Center
- University of Washington
- University of Wisconsin-Madison
- Vanderbilt University
- Wake Forest University
- Washington University

**OSI Number of Postgraduate Degrees**

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<th>DEGREE TYPE</th>
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THE OSI DISTINCTION

What Makes OSI Unique?

- Comprehensive Holistic Development Model Rooted in Mentoring, Education, & Research
  - Cultivators of Close-Knit Learning Communities
  - Created a Unique & Rigorous Selection Process
  - Developed & Successfully Implemented an Eight-Week Summer Bridge Program
  - Established an Undergraduate Research Conference to provide presentation experience to students at LSU and surrounding institutions
  - Support Students through Individual Development Plans
THE OSI DISTINCTION

- What Makes OSI Unique?
- Excellent Track Record for Developing Competitive STEM Students from All Backgrounds
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OSI STUDENT HONORS & AWARDS

NATIONAL HONORS

- Barry M. Goldwater Scholars (8)
- Gates Cambridge Scholar [1st in LSU’s history]
- Harry S. Truman Scholar
- Morris K. Udall Scholars (2) [1st & 2nd in LSU’s history]
- HHMI Gilliam Fellow
- National Defense Science & Engineering Graduate Fellow
- NSF Graduate Research Fellows (25)
- Fulbright Fellows (2)

LSU HONORS

- University Medalists (15)
- LSU Tiger Twelve Honorees (7)
- Upper Division Honors and/or Honors Theses (32)
- LSU Distinguished Communicators (18)
- Summa Cum Laude BS Graduates (37)
- Magna Cum Laude BS Graduates (22)
- Cum Laude BS Graduates (25)
THE OSI DISTINCTION

What Makes OSI Unique?
- Supportive Nominators of Faculty and Students for Honors
- Expertise with Grant Proposal Writing

OSI Projects:
- 10 Active Awards: $9.2M
- 3 Pending Awards: $9.9M
- 33 Expired Awards: $33.3M
- OSI supports others with the grant proposal process
Recent OSI-Related Honors, Awards, & Notable Publications

- 2018 Inspiring Programs in STEM Award from INSIGHT Into Diversity Magazine

- Organizational Presidential Award or Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) for 2014
  Accepted by Dr. Zakiya Wilson-Kennedy in 2018

- Featured in "Broadening Participation in STEM: Effective Methods, Practices, and Programs" (2019)
  Diversity in Higher Education Volume 22

In support of the University’s Strategic Plan, OSI will continue its efforts of developing students through:

- LS-LAMP, Bridge to the Doctorate, Upward Bound, & SMART Polymer Initiatives
- Broad dissemination of best practices (publications and new initiatives)
- Grant Proposal Writing to garner new programs
- Implementation of OSI’s newly funded Louis Stokes Center for the Promotion of Academic Careers through Motivational Opportunities to Develop Emerging Leaders in STEM (LS-PAC MODELS or LS-PAC)
OSI'S FUTURE

▶ LS-PAC Vision
▶ To create a successful nationwide model with well-tested strategies for increasing underrepresented minority (URM) student preparation for academic careers.
OSI’S FUTURE

LS-PAC Goals

▪ Increase the quality and quantity of URM STEM students pursuing doctoral degrees
▪ Increase the retention to graduation rate of URM STEM PhD students
▪ Develop a national model for increasing the number of URM STEM PhD recipients
▪ Develop a model for increasing the placement of minority PhD holders into the professoriate

LS-PAC Objectives

▪ To facilitate systemic mentoring through a multimedia application
▪ Provide academic support structures through workshops.
▪ Promote, guide and support the transition of PhD degree holders into the STEM research workforce.
▪ To achieve self-sustainability through expansion and institutionalization of the systemic mentoring and activities within LS-AMP alliance.
▪ To study social and networking strengths in successful students.
ACKNOWLEDGMENTS