

# THE LINK

Summer 2004



Oklahoma Louis Stokes Alliance for Minority Participation in Science,  
Technology, Engineering, and Mathematics  
(OK-LSAMP STEM)  
*[A National Science Foundation Program]*

**Earl D. Mitchell, Jr., Ph.D.**  
**Program Director**

[Earl.Mitchell@biochem.okstate.edu](mailto:Earl.Mitchell@biochem.okstate.edu)

Zola J. Drain, Ph.D., Program Manager

[zdrain@biochem.okstate.edu](mailto:zdrain@biochem.okstate.edu)

Yousif Sherif, Ph.D., Program Data Manager

[yis@okstate.edu](mailto:yis@okstate.edu)

Rosemary Hayes, Program Evaluator

[rhayes@ou.edu](mailto:rhayes@ou.edu)

## PARTNER INSTITUTIONS/COORDINATORS

Cameron University

Dr. Ted Snider

[teds@cameron.edu](mailto:teds@cameron.edu)

East Central University

Dr. Carl Rutledge

[crutledge@mac.com](mailto:crutledge@mac.com)

Langston University

Dr. Rosemary Harkins

[rkarkins@lunet.edu](mailto:rkarkins@lunet.edu)

Northwestern Oklahoma State University

Timothy J. Maharry

[tjmaharry@nwsu.edu](mailto:tjmaharry@nwsu.edu)

Oklahoma State University (Lead Institution)

Valerie Shangreux

[shane@biochem.okstate.edu](mailto:shane@biochem.okstate.edu)

Southeastern Oklahoma State University

Dr. Tim Patton

[tpatton@sosu.edu](mailto:tpatton@sosu.edu)

Southwestern Oklahoma State University

Dr. Brian Campbell

[campbeb@swosu.edu](mailto:campbeb@swosu.edu)

University of Central Oklahoma

Dr. John M. Garic

[jgaric@ucok.edu](mailto:jgaric@ucok.edu)

University of Oklahoma

Dr. Teri Reed Rhoads

[Terrrhoads@ou.edu](mailto:Terrrhoads@ou.edu)

University of Tulsa

Dr. J.C. Diaz

[diaz@utulsa.edu](mailto:diaz@utulsa.edu)

## OK-LSAMP SUMMER '04 RESEARCH INTERNS

For the 9<sup>th</sup> consecutive summer term of its nearly 10-year existence, the Oklahoma Alliance for Minority Participation program can boast of an impressive number of students from underrepresented populations participating in summer research programs and internships. Participating scholars are as follows:

### Southeastern Oklahoma State University

Dominic Barrett, US Fish and Wildlife Service, Alaska

Wesley Jones, Quickset Corporation, Texas

Brian Chavez, US Army Corps of Engineers, Texas

Matthew McFerran, US Army Corps of Engineers, Texas

Anson Sutterfield, Oklahoma Department of Wildlife Conservation

James Morel, Utah State University

Dawn Morningstar, Kansas State University

Chrystal Dixon, Oklahoma State Parks

### Langston University

Quincy Anderson, Oklahoma State University, Biochemistry/Mol. Biol

Derek Blythe, National Aeronautic Space & Administration (NASA)

Argenia Doss, Oklahoma University Health Sciences Center

Elise Griffin, Langston University Nutritional Sciences

Steven Harris, University of California (Davis)

Desmond Harvey, University of North Carolina, Chapel Hill

Marquita Rowland, Oklahoma University Health Sciences Center

Jon Walker, Oklahoma University Health Sciences Center

Nicole Singleton, Langston University Goat Research Program

### East Central University

Kara Chapman and LeVica Chapman, REU in Physics, Florida State University

Marshall McCutchen, Robert S. Kerr Environmental Research Center, Ada, Oklahoma

Tiffany Howell, East Central Department of Biology

Levi Standeford, East Central Department of Physics

### University of Oklahoma

Tyler Hicks, IBM, Tucson, AZ

Shawn McCarroll, National Oceanic & Atmospheric Administration, Washington DC

Michael Hollinger, IBM, Austin, TX

Amy Adkison, ConocoPhillips, Anchorage, AL

Paul Richardson, ConocoPhillips, Bartlesville, OK

Quintin Hughes, Schlumberger, Houston, TX

Brad Porter, IBM, San Jose, CA

### Southwestern Oklahoma State University

Nana Ayesu, BRIN (Biomed Research Infrastructure Network), OUHSC

Elizabeth Saladin, Mayo Clinic Undergraduate Research Program

Grace Hassan, BRIN (Biomed Research Infrastructure Network), OUHSC

### Oklahoma State University

Steven Bond, Department of Botany, Dr. Michael Palmer

Marty Heppler, Department of Entomology, Dr. Jeanmarie Verchot-Lubiez

Keith Larsen, Electrical and Computer Engineering, Dr. Keith Teague

Kenina Seay, Department of Microbiology, Dr. Robert Miller

Umana Aniem, Electrical and Computer Engineering, Dr. Thomas Gedra

Paul Wright, Industrial Engineering/Management, Dr. Charlene Yauch

Anna Spicer, REU Program, University of Central FL (Orlando)

Christine Coe, Electrical Engineering, Dr. Alan Cheville

Matthew Hamm, Bama Company, Tulsa OK

Brek Wilkins, OSU Microbiology, Dr. Gilbert John

## 2003-2004 OK-LSAMP Scholars

During the fall and spring semesters of the 2003-2004 academic year, the OK-AMP program supported 192 Scholars. The distribution was as follows: Cameron University 19; East Central 18; Langston 28; Northwestern 6; Southeastern 14; Southwestern 5; University of Central Oklahoma 12; University of Tulsa 18; Oklahoma State University 44.; and 1 Affiliate Scholar at Oklahoma Christian University. Stipends ranged from \$500 to \$2,550 per semester.

### May 2004 Graduates

*East Central:* April Anderson, Computer Science; Marshall McCutchen, Physics; Justin Wilks, Chemistry

*Langston University:* Deidre Carroll, Joy Ekpo, Brian Freeman, Victor Harris, James Patterson, Lila Peal, Alvin Quinn, Robert Billingslea.

*University of Oklahoma:* Justin Morgan, Mechanical Engineering; Jarrod Calhoun, Mechanical Engineering; Mariana Dionisio, Chemical Engineering; Lindsay Cantwell Mechanical Engineering; Michael Hollinger, Computer Engineering; Laura Pillow, Management Information Systems

*Southeastern Oklahoma State University:* Jack Roberts, Justin Wilson, Michael Clark.

*Southwestern Oklahoma State University:* Andre Marshall, Biology.

*University of Central Oklahoma:* Riley Baptist, Fred Oraene.

*University of Tulsa:* Crystal Redden, Chemistry; John Hall, Biology; Michelle Stevenson, Physics; Eleazar Madrid, ME; Britney Grayson, Biology; Benjamin Orozco, Biology; Terry Tidwell, Computer Science; Matthew Morgan, CS; Melissa Lock, ME; Sarah Nelson, Geology.

*Oklahoma State:* Fred Beartrack, Tanesha Hooks, Tara Denay Huddleston, and Daniel Tomlinson.

### Conference Participation

- National Conference for Undergraduate Research (NCUR)
- University of TX LSAMP Annual Symposium
- Oklahoma Academy of Science
- Student Research Day at Texas Tech University
- 10<sup>th</sup> Annual Student Research Conference, West TX A & M, Canyon, TX
- Colorado State McNair Conference
- Annual Meeting of the Oklahoma Chapter of the American Fisheries Society
- Annual Meeting of the Southwestern Association of Naturalists
- National Science Teachers Association
- American Indian Science & Engineering Society (AISES) 2004 Conference (Albuquerque, NM)
- OU Honors College Undergraduate Research Day
- Research Day for Regional Universities (University of Central Oklahoma, Edmond, OK)
- National Meeting of the American Association of Physics Teachers (Miami, Florida)
- Regional meeting of the Society of Physics Students (Southern Nazarene University, Bethany, OK)
- Annual meeting of Beta Kappa Chi Scientific Honor Society/National Institute of Science/Brookhaven Semester Program (Houston, TX)
- Society of Neuroscience (New Orleans)
- Langston University School of Arts and Sciences Fifth Annual Research Symposium (Langston, OK)
- OK-LSAMP Annual Research Symposium, Oklahoma State University, Stillwater OK

## TU LS-OKAMP Scholars Inducted into Science and Engineering Honor Societies

*Native American, African American, Hispanic, and Asian American Chapters of Science and Engineering Societies* at the University of Tulsa were established to recognize and to foster academic achievements among Native American, African American, Hispanic, and Asian American students. The societies also seek to promote research, leadership, and service to their communities.

OK-LSAMP students inducted into the respective societies on April 22, 2004 were:

*Native American:* John Hall, Biology; Matthew Morgan, Computer Science; Sarah Nelson, Geology; Crystal Redden, Chemistry/Mathematics.

*African American:* Michelle Stevenson, Physics

*Asian American:* Melissa Lok, Mechanical Engineering

*Hispanic:* Britney Grayson, Biology; Eleazar Madrid, Mechanical Engineering; Benjamin Orozco, Biology

### OK-LSAMP Students Among TOP 20 at Cameron

For many students at Cameron University (Lawton), making either the Top 20 or Top 10 lists is one of the highest honors they can attain during their college career. The Top 20 is comprised of outstanding Cameron juniors and seniors, while the Top 10 is made up of outstanding college students over the age of 25.

OK-LSAMP scholars included in the Spring '04 Top 20 were *Aurelio Roig and Tiffani Veal*.

Honorees in both categories were selected by a committee of faculty, staff, and students based on the nominees' grade point average, campus activities, leadership and honors. Grades account for 40 percent of the total score, while activities make up 60 percent.

### Awards and Scholarships

*Kara and Levica Chapman* (ECU, Physics majors), each received a *National Society of Physics Students Scholarship* in the amount of \$1000. Only 18 scholarships were awarded nationwide.

*Justin Wilkes* (ECU) won *Overall First Place* in the state at Fall '03 Research Day.

*Anson Sutterfield* (SEOSU) was co-presenter on the *Best Undergraduate Poster* at the 92<sup>nd</sup> Annual Meeting of the Oklahoma Academy of Science (Bahm, Jesse, *Anson Sutterfield*, and Dr. Tim Patton – SEOSU OK-LSAMP Coordinator)

*Dawn Morningstar* (SEOSU) won the award for *Best Undergraduate Oral Presentation* at the 92<sup>nd</sup> Annual Meeting of the Oklahoma Academy of Science.

*Frederick L. Brown* (UCO) received the Community Service Award from the College of Math & Science on Physics Day

*Jordan Morgan* (OU), Outstanding Sophomore, Delta Upsilon Fraternity

*Mariana Dionisio* (OU), Award of Excellence, CEMS Department  
*Shawn McCarroll* (OU), A.T. Anderson Scholarship from the American Indian Science and Engineering Society (AISES); elected *Headman* of OU's Native American Brotherhood

*Eli Monetatchi* (OU), American Indian Honor Roll

*Thomas Clark* (OU), Alpha Lambda Delta College Honor Society

*Paul Jaramillo* (OU), College of Engineering Dean's Honor Roll  
*Michael Hollinger* (OU), Outstanding Senior Computer Engineering major; Co-Chair, Institute of Electrical and Electronics Engineering Tech Society; President, Eta Kappa Nu Electrical/Computer Engineering Honor Society  
*Paul Richardson*, ConocoPhillips Scholar  
*Lindsay Duncan*, OU Dean's Honor Roll; OU Honor Scholar; Alpha Lambda Delta Honor Society

EPSCoR Funds Travel to NCUR '04

Oklahoma EPSCoR (Experimental Program to Stimulate Cooperative Research) sponsored the participation of 5 OK-LSAMP students and 2 program staff members in the 2004 NCUR (National Conference for Undergraduate Research) meeting held at Indiana University-Purdue. Attendees were Elizabeth Saladin and Steven Bond (SWOSU) and Jon Walker, Argenia Doss, Steven Harris (LU). Elizabeth Saladin and Jon Walker made presentations.

Facts About the LSAMP Program

- National undergraduate program that began in 1990;
- Aims to increase significantly the quantity and quality of students from underrepresented populations earning a degree in science, technology, engineering and mathematics (STEM) disciplines;
- Multiple institutions work in partnership toward common goal;
- 31 alliances, inclusive of approximately 400 campuses, are currently funded by the National Science Foundation;
- The largest partnerships are the All Nations-LSAMP comprised of 52 partners in 12 states and the Western Alliance to Expand Student Opportunities (WAESO-LSAMP) with 41 partners;
- The Oklahoma LSAMP program, comprised of 10 partner institutions with Oklahoma State University as the Lead Institution, began in 1994;
- Type of institutions include Research I Majority Schools, Historically Black Colleges and Universities (HCBUs), Hispanic Serving Institutions (HIS's), Tribal Colleges (TCs), and Community Colleges (CC);
- In 2003, more than 25,000 baccalaureate degrees were awarded to underrepresented minority students in STEM disciplines.

Keys to OKLAHOMA LSAMP Success

- Alliance structure with a Lead Institution, 9 Partner Institutions, and other institutions as Affiliates;
- Full time administrative staff at Lead Institution;
- Participation and supplemental financial support from the Oklahoma State Regents;
- Varied outreach and recruitment strategies;
- Organized programs: Summer Bridge, Fall and Spring semester Scholars Program, Summer Research Internship Program;
- Frequent student meetings: Monthly Scholars meetings (large group); weekly Cadre meetings (small group); one-on-one;
- Academic support;
- Mentoring;
- Career counseling;
- Faculty/Staff presentations;

- Annual Research Symposium;
- Participation in external professional meetings;
- Collaboration and exchange of ideas among Alliance partners;
- Collaboration with institutional programs and external agencies;
- Financial support.

OK-LSAMP Graduates

1993-1994 ...214 (Baseline graduation number)

Phase I (1994-1999)

1994-1995	246
1995-1996	258
1996-1997	384
1997-1998	410
1998-1999	439

Phase II (1999-2004)

1999-2000	439
2000-2001	510
2001-2002	571
2002-2003	593

Ph. D's Earned

Jennifer Mann (ECU) – Mathematics, University of AR '02  
 Suzanne Tunnel Estes (ECU) – Biology, University of Oregon '02  
 Edward Daniel (OSU) – Elec. Enginr, Oklahoma State '03

Ph.D's in Progress

Laticia Fitzgerald (LU) – Biochemistry, Meharry Med. College  
 Daniel Wilson (UT) – Computer Science, Carnegie Melon  
 Billy Gaston (LU) – Computer Science, Oklahoma State  
 Byron Quinn (LU) – Biochemistry/Molecular Biology, Oklahoma State  
 Barry Trotter (LU) – Chemistry, Johns Hopkins

Annual Research Symposium Scheduled

The tenth annual OK-LSAMP Research Symposium will be held on Saturday, September 25, 2004, 9:00 AM until 3:00 PM, at Oklahoma State University's Noble Research Center. All summer research interns will make oral and poster presentations.

The Symposium also encompasses a Graduate School Preparation Seminar as well as the first fall semester Alliance meeting. The public is invited to attend.

### OK-LSAMP RECEIVES PHASE III FUNDING

The National Science Foundation has funded the Oklahoma AMP program for the 3<sup>rd</sup> consecutive 5-year phase beginning November 2004 and ending October 2009. In Phases I (1994-1999) and II (1999-2004), the program focused on increasing the graduation rate of students from underrepresented populations in STEM disciplines, and encouragement to pursue graduate-level education. Phase III, with fewer students, will focus entirely on the *Graduation Preparation Component* that includes a stronger research emphasis and entrance into doctoral programs.

Specific programs and activities include:

- Weekly meetings in the beginning of each semester to report progress
- Enhanced stipends for students that present and co-author research papers
- Faculty mentoring workshops
- Special teaching workshops for students
- One required seminar on *Scientific/Research Integrity*
- Mandatory participation in the annual OK-LSAMP Research Symposium
- Presentation of papers at regional and/or national meetings
- Completion of the GRE Prep course

OK-LSAMP will develop a series of modules to assist all participants and other students in their preparation for graduate school. Scholars will be required to begin the modules upon successful completion of a minimum of 60 credit hours and continue until all modules are completed. The modules will cover a variety of topics including but not limited to: *Things To Do Before You Get to Graduate School; Graduate Exam Preparation; Choosing the Right Graduate School and Advisor; How to Thrive in Graduate School; Issues for Minority Students; and Financial Assistance.*

According to Mitchell, OK-LSAMP Program Director, *the 593 graduates that the program has produced creates a critical mass of potential graduate students, with more than 60% having maintained better than a 3.0 GPA.*

### NATIONAL SCIENCE FOUNDATION (NSF) INSTITUTES 'BRIDGE TO DOCTORATE' PROGRAM

The Oklahoma LSAMP program is one of 16 participants in NSF's newly instituted *'Bridge to the Doctorate'* (BD) supplementary initiative at Phase III LSAMP Alliance institutions, with Oklahoma State University as the BD site. The program, launched in fall 2003, provides competitive support during the initial 2-years of graduate study for LSAMP baccalaureate degree recipients, thus broadening attraction and participation of students from underrepresented populations in science, technology, engineering and mathematics (STEM) disciplines. *LSAMP programs and BD sites (in parentheses) are as follows:*

LSAMP Program  
Alabama  
California

BD Site  
UAB-Huntsville  
UC-Irvine

CA State Sacramento Found.  
Florida-Georgia  
Illinois  
Mississippi  
New Mexico  
New York  
North Carolina  
Oklahoma  
Philadelphia  
Puerto Rico  
Texas  
Univ. of TX System  
WA-Baltimore-Hampton Rds  
Western Alliance to Expand  
*Student Opportunities (WAESO)*

CSU-Los Angeles  
Univ. of S. FL  
So. IL-Carbondale  
Jackson State University  
NM State University  
CUNY  
UNC-Charlotte  
OK State University  
NJ Institute of Technology  
University of PR  
Texas A&M University  
UT-Pan American  
Howard University  
Arizona State Univ.

Requirements for acceptance into the BD program are: *B.S. in STEM discipline; minimum 3.0 GPA; undergraduate participation in LSAMP program; US citizenship; admission to Graduate College and STEM graduate department; and commitment to pursue the Ph.D. in a STEM field.*

Oklahoma State University, as well as other BD programs, *provides full graduate tuition and fees, a stipend of \$30,000/year, mentoring program, conference travel, seminars and workshops, graduate and professional student association membership, academic enrichment, and excellent post graduate education training.*

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OK-LSAMP Summer '04 Research Intern



Marty Hepler, OSU senior, has worked in the lab of Dr. Jeanmarie Verchot-Lubicz, Associate Professor, Entomology and Plant Pathology, for 2 years. Publications of which Marty is a part are as follows: Howard, A.R., Hepler, M., Payton, M.E., Ding, B., Verchot-Lubicz, J. (2004). *The Potato virus X TGBp1 is the primary viral factor that can move from cell to cell and induce plasmodesmata gating in several plant species.* Virology, in press; and Krishnamurthy, K., Mitra, R., Hepler, M., Payton, M.E., and Verchot-Lubicz, J. (2003). *The Potato virus X TGBp3 protein associates with the endoplasmic reticulum for virus cell-to-cell movement.* Virology, 309, 135-151. According to Dr. Verchot-Lubicz, *'when Marty joined my laboratory, she had very little direction and confidence and has since gained the maturity to participate in research projects along side graduate students and post docs. She is often the first person in the lab and has a fantastic work ethic.'*