

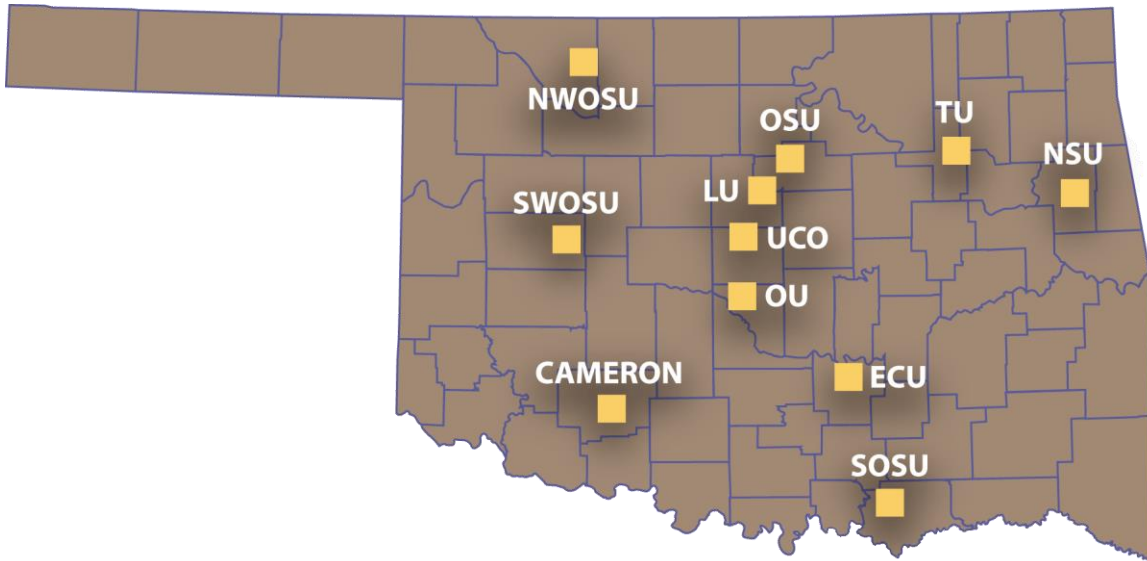
2013

PERFORMANCE EFFECTIVENESS REVIEW

Oklahoma
Louis Stokes Alliance for
Minority Participation
(OK-LSAMP)



Submitted to
The National Science Foundation
4201 Wilson Boulevard
Room 815
Arlington, VA 22230



Oklahoma Alliance Institutions

2013
PERFORMANCE EFFECTIVENESS REVIEW
P.E.R.

Oklahoma

Louis Stokes Alliance for Minority Participation
in Science, Technology, Engineering, and Mathematics
(OK-LSAMP STEM)

Submitted by

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INTRODUCTION

The Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP) program concluded *Year Four* of the five year National Science Foundation (NSF) grant (HRD 09020027--2009-2014). This also concludes 19 years of successful LSAMP activities in Oklahoma.

Oklahoma continues to meet the NSF goal to increase the number of minority and under-represented students majoring in science, technology, engineering, and mathematics at the 11 alliance institutions.

In 2012-2013, the Oklahoma Alliance had 213 Scholars; of those, 47 completed Bachelor of Science degrees and 16 of the graduates were admitted to graduate schools. During the academic year, 47% of the Alliance scholars participated in research activities, while 76.5% of the scholars who participated in research, did so during summer research experiences at national and international locations.

Dr. Jean Van Delinder, Associate Dean, OSU Graduate College, completed her second year as Principal Investigator/Program Director. During the spring Dr. Van Delinder travelled to each Alliance school, visiting with the President of the Institution, Campus Coordinators, faculty mentors and scholars. Dr. Brad Ludrick, Southeastern Oklahoma State University became a campus coordinator, replacing Dr. Tim Patton who had served as the campus coordinator for 13 years.

The 18th Annual Research Symposium welcomed approximately 200 attendees for a day of workshops, poster and oral presentations, ethics training, and guest speakers. Dr. B. J. Bench, Lead Chemist with Tyson Foods, in Fayetteville, Arkansas, and former OK-LSAMP Scholar from SEOSU, was the featured speaker.

The University of Oklahoma received funding for Cohort VI for the Bridge to the Doctorate (BD) program. Currently, they are accepting applications for the program. Oklahoma State University's Bridge to the Doctorate Cohort V Fellows continued to make satisfactory progress toward completing graduate degree requirements. Fellows from previous cohorts continue to make progress toward graduate degrees.

Oklahoma State University was awarded the first annual *Higher Education Excellence in Diversity* award. This award honors U.S. colleges and universities that demonstrate outstanding commitment to diversity and inclusion (Appendix A).

PROGRAM OBJECTIVES AND ACTIVITIES

The Oklahoma Alliance, consisting of 11 institutions of higher education (three comprehensive research institutions, one historically black college, and seven regional universities), proposed a five year continuation of Louis Stokes Alliance for Minority Participation activities. Based on 19 years of previous success, the Alliance will continue to support the NSF mission to recruit and retain under-represented students in the Science, Technology, Engineering, and Mathematics (STEM) disciplines. To accomplish these goals, the following program objectives were proposed and have been met to date.

Dr. Jean Van Delinder, Principal Investigator for the LSAMP program and Program Director for the Bridge to the Doctorate Cohorts, spent the spring semester visiting each Alliance campus. She met with the campus President, the Campus Coordinator, faculty mentors, support staff, and scholars. The on-site visits discussed topics including, but not limited to: concerns and issues of the current LSAMP program, activities, potential changes, and enrollment trends. The information will be used to improve program activities in Year 5 and to make adjustments in the submission of the Phase V proposal.

Program Component One

To recruit and retain a minimum of five percent increase yearly in the number of eligible students in STEM fields.

Site Visits

Dr. Jean Van Delinder, State Program Director; Kay Porter, Program Manager; and Fara Williams, Data Coordinator visited each Alliance institution in the State of Oklahoma. The one-day visits provided an opportunity to obtain an overall perspective of the LSAMP program on each campus. Additionally, the site visits allowed for one-on-one meetings with the institution president, campus coordinator, faculty mentors, and scholars. Programmatically, it was found that the campus coordinators were being successful in recruiting students into the LSAMP program and meeting NSF stated goals. University presidents indicated a need for additional resources to increase the success in meeting program objectives. Conversations with the scholars indicate that they are appreciative of OK-LSAMP support and have utilized program resources to foster their professional and academic success, while mentors on several regional campuses expressed the need for resources for lab/research supplies for scholar projects. The feedback from each of the site visits will be used in organizing for year 5 of the current LSAMP project and in preparation of a new proposal.

Scholar Demographics

The 11 Oklahoma Alliance institutions supported 213 LSAMP scholars in the 2012 – 2013 academic year. This total reflects a 11.5% increase from the previous year of 191 scholars. The objective was to increase the number of scholars by 5% each year of the project. Objective One has not only been met, it has exceeded the 5 percent increase in the original proposal. Year four had a total increase of 10% (Table 1).

Table 1. Comparison Numbers to meet Stated Goal

Institution	No. Scholars		No. Scholars Increase/Decrease
	2011-2012	2012-2013	
Cameron University	7	13	+6
East Central University	22	17	-5
Langston University	28	25	-3
Northeastern State University	12	10	-2
Northwestern Oklahoma State University	5	2	-3
Oklahoma State University	63	76	+13
Southeastern Oklahoma State University	16	21	+5
Southwestern State University	6	8	+2
University of Central Oklahoma	9	10	+1
University of Oklahoma	15	24	+9
University of Tulsa	8	7	-1
Totals	191	213	+22

Year four also showed more women than men became LSAMP Scholars in the Oklahoma Alliance. Female scholars increased by 52% compared to 47% of males (Table 2).

Table 2. Comparison of Scholars by Gender

Category	Year		Number	Percent
	2011-2012	2012-2013		
Male	91	102	12	47%
Female	100	111	11	52%
	191	213		

In addition, the 2012-2013 academic year there was just under a 25% increase in African American scholars as well as a significant increase in mixed races (Table 3).

Table 3. Comparison of Scholars by Ethnicity

Ethnicity	2011-2012	2012-2013
African American	57	71
Native American	75	61
Hispanic	32	30
Pacific Islander	1	3
Asian American	2	5
First Generation	20	19
More than One Race & Unknown	4	24
Total	191	213

On-Site and Community College Recruitment

The recruitment of scholars was evidenced on each of the 11 Alliance institution campuses. Campus Coordinators sought top under-represented students in the STEM fields. Coordinators used a variety of avenues in the recruitment process. Events such as High School Visitation Days, Freshman Orientation Events, and Parent-Student Campus Tour Days were utilized to identify potential scholars. Additional recruitment was conducted on-site at high school and community college events. Information tables were set up at science fairs, summer workshops for high school students, tribal events and powwows, and personal contact with students. OK-LSAMP opportunities were presented during sessions at the first Oklahoma Native American Research Symposium (ONARS), Cherokee Nation Counselor Enrichment Event, Cherokee Nation Foundation College Preparatory Institute (CCPI), and Oklahoma Native American Students in Higher Education (ONASHE) conference, and other events throughout the state.

Alliance schools are actively associated with community and tribal colleges in their region. Campus coordinators work closely with faculty at the community/tribal colleges to bring students to their campus to complete four year degree programs in the STEM fields. Table 4 shows the connections.

Table 4. Primary Community/Tribal College Connections

Alliance Institution	Community/Tribal College Connection	
Cameron University	Western Oklahoma State College Redlands Community College Amarillo Community College, Texas	Vernon Junior College, Texas Comanche Nation College Fort Sill AFB
East Central University	Murray State College Eastern Oklahoma College Seminole Community College Rose State College	Oklahoma City Community College Redlands Community College Center for Health Sciences – Early Entry: Chickasaw Nation
Langston University	Tulsa Community College Rose State College	
Northeastern State University	NSU – Broken Arrow Campus Tulsa Community College	Connors State College Northeastern Oklahoma College
Northwestern Oklahoma State University	Northern Oklahoma College Enid Campus; Tonkawa Campus; Stillwater Campus	Selmon Living Lab
Oklahoma State University	Northern Oklahoma College, Tulsa Community College	Pawnee Nation College Cheyenne-Arapaho College
Southeastern Oklahoma State University	Murray State College Eastern Oklahoma State College	Higher Education Center Native American Intertribal Grant
Southwestern Oklahoma State University	SWOSU – Sayre Campus Western Oklahoma State College	Redlands Community College Cheyenne-Arapaho College
University of Central Oklahoma	Oklahoma City Community College Redlands Community College	Northern Oklahoma College
University of Oklahoma	Oklahoma City Community College Rose State College	
University of Tulsa	Tulsa Community College	

Campus Coordinators on Alliance campuses continued to use every avenue available to recruit eligible scholars, from high school visitation days and freshman orientation programs to articles in local newspapers, on-campus flyers, faculty mentor inquiries, and invitation by Scholars and BD Fellows to present their research at specific research programs.

For the second year, the Grant Coordinator participated in the Cherokee Nation Foundation Counselor Enrichment Event entitled: Cherokee College Preparatory Institute (CCPI). The workshop is designed to make high school personnel who counsel Native American students in preparation for college more aware of opportunities available for the students. The workshop collaborated with 8 institutions of higher education. The institutions included: OSU, Harvard University, MIT, Dartmouth, Princeton, the University of Oklahoma, the University of Arkansas, and the University of Tulsa. In addition to better informing high school counselors and administrators, participants were given information and tips on preparing for college and successfully completing the application process which could be used in their local school and with their Native American students.

Alliance Supplementary Activities

Summer academies/camps, research and bridge programs continue to be a critical part of the Alliance experience and offer a unique time to “get the word out” regarding the OK-LSAMP program and the benefits of being a STEM major and an LSAMP Scholar. Several Alliance institutions held workshops for incoming freshmen and high school juniors and seniors. Each of these workshops offered opportunities for local presentations on the benefits of being a Scholar in the LSAMP program (Appendix B).

Oklahoma State University: As lead institution, OSU continued to participate in several on-campus summer workshops for minority high school students from across the state. OK-LSAMP has close working relationships with several programs. The programs include, but are not limited to:

Retention Initiative for Student Excellence (RISE) and RISE Jumpstart – Programs designed to aid minority students as they make a smooth transition into college life. This program may also lead into the Inclusion Leadership Program.

Inclusion Leadership Program (ILP) – A year-long program designed to pair minority college students from the OSU campus with students from high schools in the Tulsa school district. The program sponsored by the Williams Companies is designed to develop the skills and knowledge to become effective leaders in a more diversely inclusive society.

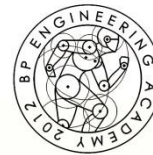
The Retired Educators for Youth Agricultural Programs (REYAP) – Designed to bring under-represented youth, ages 14-18, to the OSU campus for a week of activities promoting diversity awareness, advocacy, leadership, and education in the STEM disciplines.

ConocoPhillips Minority Engineering Program (MEP) Summer Bridge –

Designed for incoming freshmen engineering students to spend one month on campus, taking class and transitioning into the academic atmosphere prior to the beginning of their first semester. In addition, students have the opportunity to live on the MEP Leaving Learning Community floor in the dormitory housing.

The University of Oklahoma: Several residential and day camps for under-represented youth were organized and offered to under-represented high school youth throughout the summer. These camps included, but are not limited to:

BP Engineering Academy – A residential camp which encouraged young men who are entering their sophomore, junior, or senior grade level for the fall 2013 semester. The Academy is an opportunity for hands-on exploration in engineering, math and science



BP DEVAS Summer Camp (Discovering Engineering Via Adventure in Science) – Designed as a residential camp for young women, with a strong interest in engineering, mathematics, science, and/or technology, a curiosity of how things work, or want to help solve big problems of the world.



AT&T Summer Bridge Program – Designed for incoming freshmen students who have been accepted to the University of Oklahoma and who are planning to major in an engineering discipline. The camp has been designed to help students prepare for the first year of engineering and math coursework.

Engineering Summer Academy: All Systems Go!: Innovating Engineering Systems for the Future – The Systems Engineering Academy will introduce students to the relatively new engineering discipline of systems engineering. Participants will study health care systems, aircraft systems, and even collegiate sporting events. Students spend time in a working research laboratory on the OU campus. Hands-on activities include computer aided design, rapid prototyping, systems measurement and analysis, and systems modeling and simulation.

Chemistry Summer Academy: STEM to Store: The Chemistry of Medicine – The Academy is a hands-on lab experience to extract medical compounds from plants. Students will work in research labs alongside scientists addressing real world problems. During the program students will operate state-of-the-art laboratory equipment, take field trips, and produce a research poster for presentation.

Earth Cycles: A Whole-Earth Approach to the Geosciences
Each day, the classes will incorporate the many fields of STEM education including biology, chemistry, physics, environmental science, earth science, engineering, and design concepts. Through these classes and field excursions, students will be encouraged to incorporate problem solving, research, writing, and communication skills.



Meteorology Summer Academy: The Oklahoma Mesonet Presents - Meteorology: Atmosphere to Zulu – Students will learn about atmospheric interactions from fronts to thunderstorm development, how data are collected from instrumentation, how to analyze weather maps, and how to interpret forecast discussions. Students will be exposed to meteorology careers including: operational forecasters at NOAA’s Storm Prediction Center and the National Weather Service’s Norman Forecast office; field researchers who operate mobile radars; and local television broadcasters.

CSI: Forensic Science -- Students will have the opportunity to work on a mock crime scene and use engaging activities to solve the crime. Activities will include but are not limited to forensic art, fingerprint analysis, footwear impressions, collecting and preserving evidence, and identifying bloodstains. This camp will allow students to work with professionals in the field and get the full prospective of what being an investigator is really like.



Architecture Summer Academy: Design and the Built Environment: Collaborate, Create, Construct – Offers students an opportunity to explore the disciplines in the University of Oklahoma's College of Architecture. Through incorporating all five disciplines - Architecture, Interior Design, Construction Science, Landscape Architecture and Regional City Planning - the academy will introduce students to an interdisciplinary study.

Regional Alliance Universities: The regional universities within the Alliance and with support by the Oklahoma State Regents for Higher Education (OSHRE), sponsored summer academies for high school students interested in STEM programs. Over 17,000 public school students have participated in summer academies and 73% of the participants continue on to college in STEM degree programs.

Cameron University: (1) Science Detectives Summer Academy; (2) Nano Explorers: A High School Summer Science Academy.

East Central University: (1) Explorations in Computer Science and Robotics; (2) Coding Theory, Competitive Strategies, Risk Analysis and Other Mathematical Pursuits.

Langston University: (1) An Intensive Academy in Math, Science and Technology for Grades 10-12.

Northeastern Oklahoma A&M College: (1) Exceptional Direction United in Culture, Academics, Technology, and Excitement in Medical Education (E.D.U.C.A.T.E. M.E.).

Northeastern State University: (1) Get Green for Blue: Outdoor Investigations to Connect Water to You.

Northwestern Oklahoma State University: (1) Exploring the Benefits of Human-Animal Interaction.

Oklahoma State University Center for Health Sciences: (1) Mysteries of Biomedical Science; (2) Native Explorers.

Oklahoma State University Institute of Technology: (1) Emerging and Converging Technologies Academy.

Seminole State College: (1) Peek Into Engineering (PIE) Academy.

Southeastern Oklahoma State University: (1) Savage Storm Aviation Science Camp 2013.

Southwestern Oklahoma State University: (1) SSMA: Summer Science and Mathematics Academy.

University of Central Oklahoma: (1) Engineering Physics Exploration, Session I & Session II; (2) Discovering Chemistry in Human Health; (3) CSI: A High School Summer Forensics Academy.

University of Oklahoma Health Sciences Center: (1) Exploring Math & Science Academy (EMSA).

The University of Tulsa: (1) Technology Education and Collaborative (TEC); (2) Summer Engineering Academy.

Data Collection

The Data Coordinator continued to work closely with the Campus Coordinators and the scholars in the collection of data and maintenance of the Alliance database. Data collected on each of the scholars in Oklahoma was used to complete information requested by the National Science Foundation (NSF) and the program evaluator (Sandra Whalen, Director of the Center for Institutional Data Exchange and Analysis, Norman, Oklahoma). Data were collected continually throughout the year with updates to the program on an as-needed basis. The information collected includes, but is not limited to: degree program, presentations, awards, research projects, completion of degree, and acceptance into graduate school. The Alliance management team continued to send regular updates regarding opportunities from across the nation aiming to reach more students and increase the quality of academic opportunities. Scholars email addresses were entered into a **listserv** and used to keep them updated on opportunities such as: summer internships, research opportunities, and conferences. In addition, the **OK-LSAMP Facebook** page was used for more direct contact with scholars. The Facebook page also was used to congratulate scholars on achievements related to research proposals being accepted for national presentations to being admitted to graduate school, accepting internships, and any other “bragging” on the Scholars.

Program Component Two

To support scholars academically, personally, and professionally, ensuring they build the connections and skills needed to excel.

Focal points on graduate school preparation included participation in the Graduate Preparation component of the program, interaction with matriculating graduate students, the application process, and research experiences.

- Seventeen (17) 2012-2013 OK-LSAMP graduates were accepted to graduate schools throughout the nation. Examples include, but are not limited to:

Baylor University
Houston Community College – College for Health Sciences (Diagnostic Medical Sonography program)
Johns Hopkins University School of Medicine
University of Oklahoma Bridge to the Doctorate Program
Oklahoma State University
University of Colorado – Boulder
University of Central Oklahoma

- Graduate school preparation modules are listed on the OK-LSAMP website (www.ok-lsamp.okstate.edu) for all Alliance institution use.
- Scholars continue to take advantage of the on-line Graduate Record Examination (GRE) preparation course offered to the Alliance scholars through Oklahoma State University-OKC. The classes have been developed to provide learning activities to assist students in acquiring knowledge, practicing skills and completing steps necessary to gain admission to graduate school with successful completion. The classes focus on (1) what is the GRE, why it should be taken, how to prepare, (2) test-taking skills relevant to computer aided test format, (3) practice tests, (4) scoring, and (5) average score requirements for specific fields of study.
- Scholar meetings implemented throughout the Alliance offered a forum for educational speakers and workshops focused on graduate school preparation and career development.
- Support to state, regional, and national conferences to present research projects. During Phase IV scholars have participated in 660 documented presentations (Table 4). Examples include, but are not limited to:

American Indian Science and Engineering Society (AISES), Anchorage, AK
OK-LSAMP Annual Research Symposium, Stillwater, OK
Arizona State University, MGE@MSA/WAESO Conference, Phoenix, AZ
Association of Information Technology Professionals (AITP), St. Louis, MO

Emerging Research Leaders, Washington, DC
 Hispanic Engineering National Achievement Award Competition – Great Minds
 in STEM National Conference, Orlando, FL
 LINC/STEM Research Day Symposium, Langston, OK
 Lunar Space and Planetary Science Conference, The Woodlands, TX
 National Conference on Undergraduate Research (NCUR), Lacrosse, WI
 National Society of Black Engineers (NSBE), Indianapolis, IN
 Oklahoma Research Day, Edmond, OK
 Plant Based Vaccines, Antibodies & Biologics, Verona, Italy
 Sigma Xi Research Conference, Dallas, TX
 SITE, New Orleans, LA
 Society for the Advancement of Chicanos and Native Americans in Science
 (SACNAS), Seattle, WA
 Wilson Ornithology Meeting, Williamsburg, VA
 Women of Color STEM, Dallas, TX
 Oklahoma Academy of Science -- 101 Annual Technical Meeting, Edmond, OK

Table 5. Phase IV Scholar Presentations by Institution

Institution	State /			International	TOTALS
	Local	Regional	National		
Cameron University	2	9	3	0	14
East Central University	1	30	0	0	31
Langston University	1	101	26	0	128
Northeastern State University	6	30	2	2	40
Northwestern OSU	1	0	0	0	1
Oklahoma State University	35	119	49	3	206
Southeastern OSU	0	11	3	1	15
Southwestern OSU	6	32	12	1	51
University of Central Oklahoma	1	69	7	1	78
University of Oklahoma	34	20	10	2	66
University of Tulsa	2	22	5	1	30
TOTALS	89	443	117	11	660

Program Component Three

To introduce a new focus on enhancing scholar preparation for global success.

Participants from each Alliance institution are encouraged to take an active part in activities that enhance and assess academic performance, arouse accountability consciousness, and provide other experiences that lend to graduate school and workforce preparation.

- The Annual Research Symposium once again offered a workshop specifically focusing on graduate education and applying for graduate school.
- The Annual Research Symposium addressed Scientific Integrity and Ethics with a workshop lead by two qualified ethics instructors.
- Scholars who were unable to attend the ethics training at the Annual Research Symposium were provided additional opportunities to attend ethics training on their local campus.
- East Central University offers an on-line workshop on Ethics which is required of all STEM degree candidates. Completion of the class is documented and certificates issued.
- Scholars at the University of Tulsa must complete an Ethics On-Line Workshop prior to receiving funds from the program.
- Scholars throughout the Alliance continue to be encouraged and supported in traveling to visit graduate schools.
- In order for Scholars to be better prepared for graduate programs, they were encouraged to enroll in graduate level course work during their senior year.
- GRE resource books continue to be provided to each Campus Coordinator in the Alliance. Scholars were encouraged to check out the book prior to enrolling in and completing the on-line GRE Preparation course offered through OSU-OKC's Ed-2-Go series.
- Scholars throughout the Alliance are encouraged to apply to three to five graduate schools.
- Scholar meetings are held and used as a means for Scholars to present their research to their peers, hear presentations on graduate school preparation, test taking strategies, study abroad opportunities, and summer internships in addition to a variety of other topics relevant to STEM programs.

Annual Research Symposium

The 18th Annual Research Symposium was held October 6, 2012, on the Oklahoma State University, Stillwater campus (Appendix C). The Symposium welcomed 180 attendees for a full day of workshops, 47 posters, 16 oral presentations, ethics training and guest speakers.

In addition to the Symposium, Scholars had the opportunity to attend the OSU Native American Student Association (NASA) Pow-Wow, the largest student sponsored pow wow in the state.

Table 6. Annual Research Symposium Attendees by Category

	Attendees	
	17 th Annual	18 th Annual
Undergraduate Students	108	112
Graduate Students	26	12
Faculty	32	26
Staff	17	17
K-12 Students	5	1
Special Guests	7	20
Total	195	180

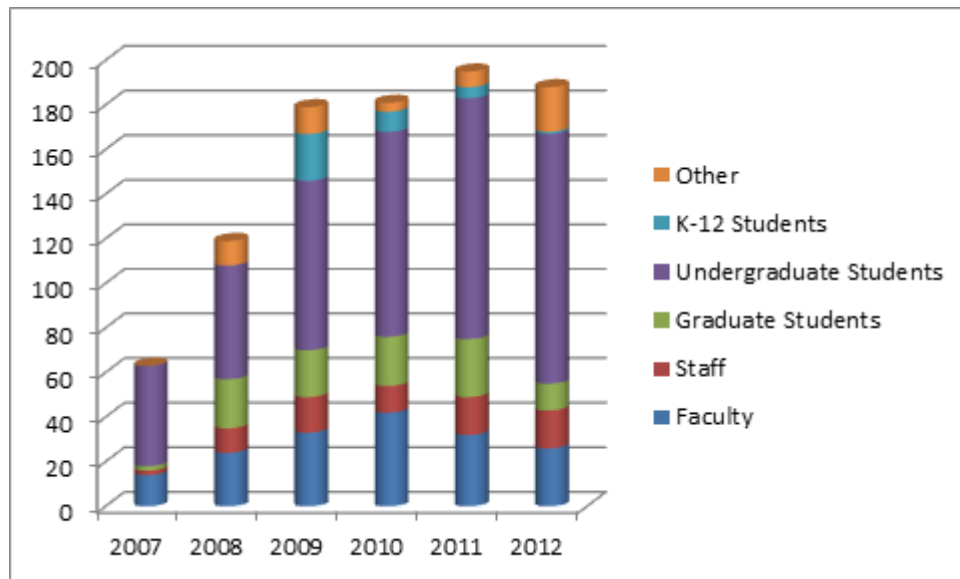


Figure 1. Participants Attending Annual Research Symposium

Ethics in Research Training

Each Scholar in the Oklahoma Alliance is required to attend an annual *Ethics in Research* training session. The training may be a seminar such as the one held during the Annual Research Symposium, Scholar meetings, a class, or as a workshop. Scholars attending the ethics session during the Annual Research Symposium are issued a *certificate of completion*. A few Alliance institutions offer a credit course on ethics in which scholars may enroll for credit to be applied to the undergraduate degree requirements. In addition, some scholars are required to meet ethics training requirements within their academic and/or research department(s). All ethics training completion dates are submitted to the Data Coordinator to be included in the database.

International Experiences

In 2012-2013, ten scholars participated in international experiences. To date, Oklahoma scholars have participated in international research experiences in over 27 different locations. The international research experience is important to all scholars and provides them with opportunities to research outside of their comfort zones. Scholars with international research experiences are better prepared for future career opportunities, develop a diverse perspective on experiences in different locations, as well as helping to build relationships that will enhance their future career goals. Additionally, former scholar, Lydia Meador, BD Fellow and GRFP recipient attending Arizona State University was accepted to present her research at the Plant-Based Vaccines, Antibodies, and Biologies (PBVAB) international conference in Verona, Italy, June 5-7, 2013 on the University of Verona campus.

Table 7. Internship Locations Outside the Continental United States

Student	Location
Jacob Bonsu	France
Jacob Bonsu	Germany
Jacob Bonsu	Austria
Ana Chicas-Moser	Turkey
LaShonda Carson	Costa Rica
Alex Hardison	Costa Rica
Ashley Lonetree	Costa Rica
Diana Lucero	Korea
Paul Martinez	Costa Rica
Jason Semien	Italy
Katheryn Stewart	Costa Rica
Lauren White	Spain

Monthly Scholar Meetings

Campus Coordinators are responsible for holding monthly scholar meetings on their respective campuses. The meetings are intended to provide support for the scholars while bringing in guest speakers. In addition to guest presenters, scholars were provided opportunities to present their own research to their peers, learn more regarding financial costs of attending school at both the undergraduate and graduate level, how to apply for summer internships, graduate school, and how to create application packets without recreating the wheel every time. The monthly meetings also provide opportunities for the scholars to develop personal friendships with other scholars outside of their field of study

Program Component Four

To institutionalize effective pathways to STEM graduate study and careers at all Alliance institutions.

The inter-institutional collaboration among the 11 Alliance institutions continues to serve as the catalyst for establishing comprehensive and coherent programming aimed at enhancing the academic preparedness of targeted undergraduate students for graduate studies.

In the July 2013 printing of *Diverse Issues in Higher Education* Oklahoma universities consistently rank in the top for awarding degrees to Native Americans. Seven Oklahoma universities in the OK-LSAMP Alliance rank in the top 30 institutions for Native Americans completing degree requirements. Northeastern State University continued to hold the top ranking with 287 graduates; Oklahoma State University moved up in rankings to third with 237 graduates; the University of Oklahoma ranked fourth with 221 graduates, Southeastern Oklahoma State University moved up from a ranking of tenth to sixth with 174 graduates; East Central University ranked eleventh with 116 graduates; and the University of Central Oklahoma ranked fourteenth with 110 graduates, and Cameron University ranked twenty-ninth with 42 graduates. This represents a total of 1,187 Native American students receiving BS degrees in Oklahoma.

Table 8. Ranking of Alliance Institutions for Native American Degrees Awarded in All Disciplines

Ranking	Institution	Number of Degrees Awarded 2012	Number of Degrees Awarded 2013
1	Northeastern State University	339	
4	University of Oklahoma	246	
5	Oklahoma State University	233	
10	Southeastern Oklahoma State University	165	
12	East Central University	144	
14	University of Central Oklahoma	120	
1	Northeastern State University		287
3	Oklahoma State University		237
4	University of Oklahoma		221
6	Southeastern Oklahoma State University		174
11	East Central University		116
14	University of Central Oklahoma		110
29	Cameron University		42

Source: Diverse Issues in Higher Education, 2013.

Forty-seven (47) Scholars completed Bachelor of Science degrees in the 2012-2013 academic year. Seventeen (17) of these Scholars (34%) have been admitted to advanced degree programs at universities across the United States. Over the past four years, OK-LSAMP has seen an average of more than 50 percent of graduating Scholar cohorts successfully entering graduate degree programs. Additionally, of the 2012-2013 graduates admitted to graduate school, 12 were males and 5 were females, compared to the 2011-2012 year of 10 males and 18 females.

Table 9. Number of Graduates by Institution and Number Attending Graduate School

Alliance Institutions	2011-2012 Graduates		2011-2012 To Grad School		2012-2013 Graduates		2012-2013 To Grad School	
	Male	Female	Male	Female	Male	Female	Male	Female
Cameron University	1	2	1	1	0	0	0	0
East Central University	0	2	0	0	5	2	1	0
Langston University	2	7	0	5	2	6	0	2
Northeastern State University	3	2	2	2	1	1	1	0
Northwestern OSU	0	0	0	0	0	1	0	1
Oklahoma State University	9	6	5	2	8	5	5	1
Southeastern OSU	3	1	0	0	2	1	0	0
Southwestern	1	2	1	2	1	1	0	0
University of Central OK	1	4	0	2	0	1	0	0
University of Oklahoma	1	4	0	4	7	3	5	1
University of Tulsa	1	0	1	0	0	0	0	0
TOTALS	22	30	10	18	26	21	12	5

- The Principal Investigator visited each Alliance campus. She discussed program goals and objectives, met with the president, campus coordinators and scholars. Additionally, admission to graduate school was discussed with the scholars.
- All Alliance institutions offer scholar programs including, but not limited to: (1) financial and academic support, (2) academic year research mentoring components and (3) a summer research internship program. Across the Alliance, these programs focus on retention, high academic achievement, and graduate school preparation.
- Tutoring is available for students experiencing difficulty with coursework. The OK-LSAMP program provides compensation to the tutor. Scholars were also referred to Student Success Centers to receive tutoring and study techniques as well as a peer mentors.
- Seven (7) scholars traveled to LaCrosse, Wisconsin, for the 2013 National Conference on Undergraduate Research (NCUR). Annually, this trip is funded in part by EPSCoR. Scholars were from: OSU, OU, and SWOSU.
- Four (4) scholars were accepted to present research at the national American Indian Science and Engineering Society (AISES) in Anchorage, AK.

- OSU Scholars participated in research projects sponsored by the Office of Scholar Development. Students are selected to participate as a Freshman Researcher, and may advance their research support further by applying for the NIBLACK Foundation (an \$8,000 scholarship) and/or the Wentz Research Project (\$2750 - \$4,500). The scholars are able to conduct their own research during the academic year (sometimes continued into the summer) and present the results at individual research venues.
- Scholars participated in the National Society of Black Engineering Conference, Indianapolis, IN.
- Scholars presented posters and oral presentations, in addition to taking first place honors, at the 2013 Emerging Researchers National Conference in Washington, D.C..
- Scholars participated in summer internship/research positions throughout the nation and the world.
- Inter-institutional collaboration – each summer, a number of scholars conduct internships at Alliance institutions. Each Alliance institution is funded to offer summer internship opportunities on their campus, but, because of inter-institutional collaboration, scholars may also conduct research on Alliance campuses.
- Bridge to the Doctorate Fellows from both OSU and OU participated in the Annual Research Symposium. This allowed scholars to ask individual questions regarding graduate school and receive feedback from someone with whom they could relate.
- Graduate school preparation modules and helpful handouts are located on the OK-LSAMP website for use by all Alliance Institutions.
- Alliance meetings with the program administration and Campus Coordinators are held. The meetings are a forum for ongoing communication on overall program operation and specific program implementations on each campus.
- A web page continues to be maintained by OSU as the lead institution. The page contains active links to the National Science Foundation and Alliance Institutions. Additional links include Alliance activities, forms, current and past newsletters, reports, and graduate school information. The web address: www.ok-lsamp.okstate.edu.
- Program newsletters and other program publications enhance communications between Alliance institutions, maintain the coherence of the program, and provide informational recruiting material for new scholars, mentors and program supporters.
- The data system developed for the Alliance with information on current and past alumni scholars and Bridge to the Doctorate Fellows continues to be upgraded and improved. Information includes, but is not limited to: major, presentations at workshops/conferences, internships, GPA, degrees awarded and graduate school applications.

Research / Internship Experiences

Scholars are encouraged to participate in academic year and summer internship programs locally, nationally, and internationally. The academic year research experiences provide opportunities for Scholars to work closely with faculty mentors on their campuses and to learn from some of the best researchers in their field. The summer internship program allows scholars to gain first-hand experiences in their chosen career fields, while learning new skills and acquiring skills that will help them transition from the academic environment into their future work environment. Internships also allow the scholars to apply what they have learned in the classroom to real-work situations.

Table 10. Academic Year Research Experiences and Internship Experiences

Institution	Research By Semester				
	Spring Semester 2012	Summer Internship 2012	Fall Semester 2012	Spring Semester 2013	Summer Internship 2013
Cameron University	6	7	1	2	5
East Central University	3	7	2	3	0
Langston University	3	23	3	2	3
Northeastern State Univ.	6	9	6	6	3
Northwestern OSU	0	0	0	1	0
Oklahoma State Univ.	46	61	36	31	38
Southeastern OSU	6	18	5	8	11
Southwestern OSU	6	8	5	5	3
Univ. of Central OK	5	9	9	9	6
University of OK	15	18	9	8	2
University of Tulsa	0	6	1	0	6
TOTALS	96	166	77	75	75

Internship Partnerships

One of the goals of the OK-LSAMP program is to have each Scholar complete applications to a minimum of three internship locations. The following represents a partial list of internship locations.

Antler Ranch, Walnut Springs, TX -- Founded in 1989, making them one of the pioneers in the deer breeding industry in Texas. Antler Ranch hosts a state of the art multimillion dollar deer breeding facility utilizing the best practices in deer breeding and fawn raising techniques.

BP Oil Company, Houston, TX – BP is one of the world's leading international oil and gas companies, providing its customers with fuel for transportation, energy for heat and light, retail services and petrochemicals products for everyday items (bp.com).

Burlington Northern Santa Fe (BNSF), Ft. Worth, TX – BNSF Railway is the product of nearly 400 different railroad lines that merged or were acquired over the course of 160 years (BNSF.com).

Chesapeake Energy, Oklahoma City, OK – The second largest producer of natural gas, a Top 15 producer of oil and natural gas liquids, and the most active driller of new wells in the United States (chk.com).

ConocoPhillips, Bartlesville, OK – The third-largest integrated energy company in the United States, the fourth largest refiner, and the sixth largest reserves holder of nongovernment controlled companies, known for worldwide technological expertise in reservoir management and exploration (www.conocophillips.com).

Devon Energy Corporation, Oklahoma City, OK – Devon is an independent oil and gas company that explores for and produces oil and natural gas worldwide.

Donald Danforth Plant Science Center, St. Louis, MO – A research center dedicated to improving the human condition through plant science. Research areas include: Biofuels, Biofortification, Disease Resistance, Drought Tolerance, Pesticide and Fertilizer Reduction, and Biosafety and Regulations..

Exxon Mobil, Houston, TX – Exxon Mobil has been a leader in the energy industry since its beginnings. Exxon is the world's largest publicly traded international oil and gas company, providing energy that helps underpin growing economies and improve living standards around the world (www.exxonmobil.com).

Genome Institute, St. Louis, MO – Washington University. Increasing diversity in genomics through training and related sciences and to provide mechanisms for them to pursue higher levels of education.

Haliburton Oil Company, Duncan, OK – One of the world's largest providers of products and services to the oil and gas industry. The company employs nearly 70,000 people in approximately 80 countries. In the 1930s, Halliburton established its first research laboratories where the company tested cement mixes. Today, Halliburton offers the world's broadest array of products, services and integrated solutions for oil and gas exploration, development and production (Haliburton.com).

Jet Learning Lab, Houston, TX – A learning center and an academic career management service, with the mission to provide high-level academic enrichment and career management to third grade through college undergraduate students that are motivated to learn mathematics and science topics (www.jetlearninglaboratory.com).

LMI Aerospace, Inc., Tulsa, OK – A three division company serving Aerostructures, Engineering Services, and Composites. The company designs, fabricates, and provides program management for large commercial, corporate and military aircraft.

National Instruments, Austin, TX – Engineering Leadership Program focuses on combining technical abilities with leadership development in Applications Engineering.

Niblack Research Project, Stillwater, OK – The project supports research of undergraduates on the Oklahoma State University, Stillwater campus. Recipients are sponsored by a member of the research faculty to oversee the progress of the research with day-to-day monitoring.

Oklahoma State University, Stillwater, OK – Biological Basis of Human and Animal Behavior. This NSF sponsored REU program is a research project for 12 scholars through the psychology department. Students will be trained in the application of the scientific method to develop hypotheses, design and conduct research studies involving either animal or human subjects.

Ohio State University, Columbus, OH – Center for Emergent Materials. Focusing on fundamentals and applied science of exotic and novel materials and next-generation electronics.

OU Health Science Center (HSC), Norman, OK – A comprehensive academic health center dedicated to the education of students in the professional graduate and undergraduate levels to become highly qualified health service practitioners, educators, and research scientists (www.ouhsc.edu).

Organization for Tropical Studies (OTS) Native American and Pacific Islander Research Experience (NAPIRE), Costa Rica – OTS is a non-profit consortium that has grown to include 63 universities and research institutions from the United States, Latin America and Australia. In the early 1960's, scientists from U.S. universities forged working relationships with colleagues at the Universidad de Costa Rica in the interest of strengthening education and research in tropical biology (www.ots.ac.cr).

Research Experiences for Undergraduates (REU) – REU programs are funded by the National Science Foundation and conducted on specific campuses in specific programs. Programs in which OK-LSAMP scholars participated include, but are not limited to: University of Arkansas, University of Minnesota, University of Oklahoma, Oklahoma State University, University of Arizona.

S&B Constructors and Engineers – Houston, TX – An employee owned, fully integrated engineering, procurement, and construction company serving a diverse set of industries.

Shell Oil Company, worldwide – A global group of energy and petrochemical companies located in more than 80 countries and territories (www.shell.com).

SouthWest Nanotechnologies, Norman, OK – Produces carbon nanotubes using the patented CoMoCAT® catalytic method in fluidized bed reactors, founded in 2001 to commercialize nanotube technology developed by Professor Daniel Resasco at the University of Oklahoma.

University of Arkansas, Fayetteville, AR – REU program in Native American Environmental Issues.

University of Arizona, Tucson, AZ – Minority Health Disparities Research Opportunities Program.

University of Buffalo, Buffalo, NY – CLIMB UP for Summer Research (iSEED). This internship is an opportunity to conduct research, to facilitate understanding of recent advances in biomedical sciences.

University of Hawaii, Hilo, HI – Pacific Internship Programs for Exploring Sciences (PIPES). This REU relates to environmental issues in Hawaii and the pacific region.

University of Maryland, College Park, MD – School of Public Health STAR Summer Research Program.

University of Oregon, Eugene, OR – REU program in Neuroscience.

University of Wisconsin, Milwaukee, WI – REU program in Bacteriology.

Williams Companies, Tulsa, OK – An energy infrastructure company focused on connecting North America's significant hydrocarbon resource plays to growing markets for natural gas, natural gas liquids (NGLs) and olefins. Williams' operations span from the deep water Gulf of Mexico to the Canadian oil sands (www.williams.com).

EVIDENCE OF INSTITUTIONALIZATION AND OUTREACH

Scholars are provided opportunities to gain knowledge, insight and experiences in their programs of study and research. These experiences help them to develop better ideas of which directions they may want to pursue and to provide opportunities to work together with their peers. Selected opportunities are below:

American Indian Science and Engineering Society (AISES)

The national AISES Conference began in 1978 convening pre-college students, college students, and mentors together to promote and provide educational services for American Indian and Alaska Native students. The conference supports the science, technology, engineering and mathematics disciplines by allowing attendees to present their research and attend workshops while emphasizing lifelong learning and educational achievement by utilizing cultural aspects

with STEM. Two scholars from Northeastern State University and two from Oklahoma State University attended the conference (Katherine Stewart – NSU; Paul Martinez – NSU; Lindsey Berger – OSU; Alex Hardison – OSU).

Indigenous Scholar Development

Scholars are involved in activities on Alliance campuses to strengthen the culture of learning and discovery between students and faculty in relation to indigenous cultures. On the Northeastern State University campus in Tahlequah, a predominantly Native American population, OK-LSAMP scholars were involved in the Indigenous Scholar Development Center. The Center's mission is to *“strengthen the capacity of NSU to provide a comprehensive, holistic approach to serving American Indian Students and their Communities through extensive programming, creative implementation of academic success strategies and supporting faculty and staff development, while creating a safe place for Indigenous peoples to gather, learn from and strengthen each other.”* Campus Coordinator Jody Buckholtz served as the faculty academic advisor with OK-LSAMP scholars Kaitlyn Hamilton, Jereme Berryhill, Lauren Lowe-Thompson, Brianna Broad, and Kelsey Dozier serving as mentors (Appendix D).

The Oklahoma Native American Students in Higher Education (ONASHE) program was implemented to support Native American students in higher education by hosting a yearly event to promote interaction among tribal leaders and students. The mission of *“ONASHE is to provide opportunities for students to continue to develop and strengthen their leadership skills by interacting with current tribal leaders, participate in workshops that are relevant to contemporary student and leadership issues and fellowship with students.”* The ONASHE conference is held on a different Alliance campus each year with Native American OK-LSAMP scholars and Native American students from the campus overseeing the conference logistics (Appendix D).

Alliance campuses also have Native American Student Associations and/or Native American Student Centers. These groups encourage Native American students to pursue careers in higher education, while focusing on protection and preservation of Native history and cultures.

National Conference on Undergraduate Research

The National Conference on Undergraduate Research (NCUR) is held annually to provide opportunities and *“is dedicated to promoting undergraduate research, scholarship, and creative activity in all fields of study”* (NCUR, 2013). In 2013, the Oklahoma LSAMP Alliance had seven scholars attend the conference in LaCrosse, WI. The scholars made both oral and poster presentations. Fara Williams, Data Coordinator, attended the conference, along with faculty from SWOSU (Appendix F). Scholars attending: Kristen Enyart – OSU; Joshua Hardisty – OU; Alex Hardison – OSU; Caleb Hubbard – SWOSU; Amanda Mathias – OSU; Abbey Ramariz – OSU; Ashley Rodriguez – SWOSU (Appendix E).

Oklahoma Research Day

The 2013 Oklahoma Research Day was held on the University of Central Oklahoma campus. The one-day conference provides students with opportunities to present their research and to interact with peers and others in their research fields. The Oklahoma Alliance had 27 participants in this prestigious event. Scholars included: Blair Baldrige – OSU; Megan Bowlin – LU; Wilmon Brown – OSU; Chris Butler – UCO; Shanel Byron – LU; Sharonda Carson – UCO; Tanya Chapman – ECU; Ana Chicas-Mosier – OSU; Joshua Crittenden – ECU; Lindsey Davis – LU; Tiffany Glover – LU; Alexander Hardison – OSU; Princess Hayes – LU; Caleb Hubbard – SWOSU; Geoffrey Kibble – OSU; Martell McKinney – LU; Mary Ann Phillips – SWOSU; Terry Phillips – LU; JeAnna Redd – UCO; Ashley Rodriguez – SWOSU; Jodici Ross – LU; Rajah Sing – LU; Chelsea Smith – UCO; Chelsea Spencer – UCO; Yoslin Vallejos – UCO; Jessica Webb – UCO; BriAunna Webster – UCO.

Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)

The annual SACNAS conference was held in Seattle, Washington. Scholars received travel scholarships to attend the conference and participated in activities; i.e., poster presentations, career fair, Native American Pow Wow, and the Hispanic Pachanga dance.

Oklahoma State University is currently partnering with SACNAS for Scholars in Science: Native American Path (SSNAP) project. The project goal is to recruit and retain 30 Native American participants to incorporate pre-conference activities focusing on conference preparation and post-conference activities and evaluation. At the SACNAS conference, project participants meet with other Native American elders and participated in a PowWow/Grand Entry into the event. Additional benefits include a travel scholarship to the conference. The SSNAP opportunity was directed by Dr. Gilbert John, a faculty mentor at OSU and Kay Porter, OK-LSAMP Program Manager (Appendix D).

Women of Color Conference

The Women of Color STEM Conference recognizes outstanding women in the STEM fields and provides excellent opportunities for professional development, networking, and recruiting. It is co-sponsored by CCG's Women of Color Magazine and the IBM Corporation. The 2012 conference was held in Dallas, Texas, November 4-6, 2012. Three Scholars received student achievement awards: Kody Jones, Outstanding Academic Award; Kayla Davis, Outstanding Research Award; and Jordan Knight, Outstanding Leadership Award. Forty-students and sponsors from Alliance schools attended the conference (Appendix F).

FACULTY PUBLICATIONS AND HIGHLIGHTS

Campus Coordinators and mentors are an integral part of the OK-LSAMP program. They not only hold faculty rank at their respective institutions, they also have a dedication to the education of America's under-represented youth and support the NSF goals and objectives related to the LSAMP program. Coordinators and mentors are continually striving to achieve success within their own career paths. Several highlights are below and Appendix G).

Faculty Mentor, Dr. Andrea Holgado, Southwestern Oklahoma State University received two awards for her mentoring of OK-LSAMP Scholars. She was one of 35 recognized at the First Oklahoma Mentor Day at the State Capitol. In addition, she received a mentoring award at the Institutional Network of Biomedical Research Excellence (INBRE) Symposium in Washington, D.C.

Jody Buckholtz – NSU

(1) Faculty advisor for the Indigenous Scholar Development Center; (2) Serving as the NSU College of Science and Health Professions Safety Officer.

Tim Hubin – SWOSU

Promoted to Full Professor, 2012.

Smith, R., Huskens, D., Daelemans, D., Mewis, R. E., Garcia, C. D., Cain, A. N., Carder Freeman, T. N., Pannecouque, C., De Clercq, E., Schols, D., **Hubin, T. J.**, Archibald, S. J. "CXCR4 chemokine receptor antagonists: nickel(II) complexes of configurationally restricted macrocycles" *Dalton Trans.*, 2012, *41*, 11369-11377.

Sharon Lewis – LU

Presentation accepted for the International Symposium on Asphalt Pavements in Brazil. Hossain, Z., Bhudhala, A., O'Rear, E. Zaman, M., O'Rear, E., Laguros, J., **Lewis, S.**, "Recycled Asphalt Pavement in New Asphalt Mixes: State of the Practice."

Hossain, Z., Bhudhala, A., O'Rear, E. Zaman, M., O'Rear, E., Laguros, J., & **Lewis, S.** (2012). "Recycled Asphalt Pavement in New Asphalt Mixes: State of the Practice." International Symposium on Asphalt Pavements Proceedings.

Simin Pulat – OU

Aydin, S.G, **Pulat, P.S.**, Shen, G., Kamath M., and Ingalls, R.G. (2012). “A Framework to Analyze Extreme Events with Case Studies.” *International Journal of Critical Infrastructures*, 8(4), 273-292,

Shen, G., Aydin, S.G., and **Pulat, P.S.** (2012). “A Retro-Analysis of I-40 Bridge Collapse on Freight Movement in the U.S. Highway Network Using GIS and Assignment Models.” *International Journal of Transportation Science and Technology*, 1(4), 379-397.

Wang, J., **Pulat, P.S.**, and Shen, G. (2012). "Data Mining for the Development of a Global Port-to-Port Freight Movement Database." *International Journal of Shipping and Transport Logistics*, Special Issue on *Container Security and Supply Chain Visibility*, 4(2), 137-157.

Carl Rutledge – ECU

Rutledge, Carl T. & Weems, B. (2013). *Experiments and Observations in Astronomy*, 7th Ed. Ada, OK: East Central University Physics Department. (This 108 page lab manual is used in the ECU astronomy course.)

Rutledge, Carl T. (July 30, 2012). “Teaching Moon Phases: A Multiple Method Approach”, poster presentation, American Association of Physics Teachers National Summer Meeting, University of Pennsylvania, Philadelphia, Pennsylvania.

Rutledge, Carl T. (October 3, 2012). “Using the Coronado Personal Solar Telescope for Astronomy Outreach”, poster presentation, Arkansas-Oklahoma-Kansas Section of the American Association of Physics Teachers’ Meeting at the Enid branch of Northwestern Oklahoma State University, October 3, 2012.

Williams, K. & **Rutledge, Carl T.** (November 3, 2012). “Career Paths of ECU Physics Graduates”, oral presentation at AR-OK-KS Section of the American Association of Physics Teachers’ Meeting at Northwestern OK State University, Enid, OK.

Jean Van Delinder - OSU

Van Delinder, J. & Tucker, S. (forthcoming 2013) “Graduate Education and Land-Grant Institutions” in *The Modern Land-Grant University*. Robert J. Sternberg, editor. Purdue University Press.

Van Delinder, J. & Sisson, B.A. (forthcoming 2013) “*Whoever heard of anything artistic coming out of college?*” The Role of the Arts in Land Grant Institutions”. In *The Modern Land-Grant University*. Robert J. Sternberg, editor. Purdue University Press.

Frank White

Ashworth, M D., Ross, J.W , Ritchey, J.W., Desilva, U., Stein, D.R., Geisert, R.D., **White, F.J.** (April 3, 2012). Effects of aberrant estrogen on the endometrial transcriptional profile in pigs. *Reprod Toxicol.* 34(1):8-15.

Lents C. A., White, F. J., Ciccioli , N.H., Floyd , L. N., Rubio , I., Keisler, D. H., Spicer, L. J. & Wettemann, R. P. (2013). Metabolic status, gonadotropin secretion, and ovarian function during acute nutrient restriction of beef heifers. *J. Anim Sci.:*Accepted.

White, F. J. (June 9, 2013). Presented a paper at the 9th International Conference on Pig Reproduction in Olsztyn, Poland.

Gregory Wilson

Oklahoma Research Day: Chair, Planning Committee, 8 March 2013.

Barthell, J.F., Chen, W.R., Endicott, B.K., Hughes, C.A., Radke, W. J., Simmons, C.K. & **Wilson, G. M.** (2013). Encouraging and sustaining a culture of student-centered research at a predominantly undergraduate institution. *CUR Quarterly*, (accepted, in press).

Simmons, C. K., Barthell, J. F., Chen, W.R., Endicott, B.E., Hughes, C., Radke, W.J., & **Wilson, G.M.** (2013). CURE-STEM: A model for encouraging and sustaining a culture of student-centered research. Oklahoma Research Day, University of Central Oklahoma, 8 March. (Poster)

Chen, W.R., Simmons, C.K., Barthell, J.F., Endicott, B.E., Hughes, C., Radke, W. J., & **Wilson, G. M.** (March 14-15, 2013). CURE-STEM: A model for encouraging and sustaining a culture of student-centered research. Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP), 2013 Grantees Meeting, Marriott Wardman Hotel, Washington, DC, (Poster)

Principal Investigator: U.S. Department of Education, Upward Bound Math and Science Grant, \$1,100,000 (10/1/12-9/30/17); funded.

Principal Investigator: U.S. Department of Education, Upward Bound Grant, \$1,530,350 (9/1/12-8/31/17); funded.

SCHOLAR AND BD FELLOW HIGHLIGHTS

Publications

Scholars and Bridge to the Doctorate Fellows, along with their mentors, submitted articles for publication in peer-reviewed journals. Listed below are the scholars and title of their publications. Selected examples of the articles are listed in Appendix H.

Austin, Z., Abramson, C. (2013-*in press*). Aversive conditioning in honey bees (*Apis mellifera anatolica*): A comparison of drones and workers. *The Journal of Experimental Biology*.

Barrett, D. & Leslie, Jr., D. M. (2012). Spatio-Temporal Variations in Age Structures of a Partially Re-established Population of Northern River Otters (*Lontra Canadensis*). *American Midland National Magazine*, Vol. 168, No. 2, pp. 302-314.

Bement, L.C., B.J. Carter, P., Jelley, K. Carlson, and **Fine, S.T.** (2012). Badger Hole: Towards Defining a Folsom Bison Hunting Complex along the Beaver River, Oklahoma. *Plains Anthropologist*, 57(221), pp. 53-62.

Fine, S.T., McGowen, S. L., Carter, B.J., Bement, L.C., Johnson, W.C., Simms, A.R. and Halfe, A. (2012). Parna (Silt) Dune Formation in the Panhandle of Oklahoma. American Quaternary Association 22th Biennial Meeting, June 21-24, Duluth, MN.

Fine, S.T. & Carter, B.J. (2012). Effect of Simulated Alluvial Burial on Soil Carbon. ASA CSSA SSSA International Annual Meeting, Oct. 16-19. Cincinnati, OH.

Gonzales, J. M. and Abdolvand, R. (2013). “High Quality Factor Resonant Microsensor Platform for Bio-Fluid Measurements.” *International Conference on Microtechnologies in Medicine and Biology*, pp. 118–119.

Mehdizadeh, E., Chapin, J., **Gonzales, J.,** Abdolvand, R., Purse, B. and Pourkamali, S. (2013). “Response Characterization of Piezoelectric Rotational Mode Disk Resonant Biomolecular Sensors.” *International Conference on Microtechnologies in Medicine and Biology*, pp. 256–257.

Palmieri, F. P., Wohl, C. J., **Morales, G.,** Williams, T., Hicks, R., Connell, J. W. (2012). “Laser Surface Preparation of Titanium Adherends: Green Processing for Improved Bond Durability,” *Electronic Proceedings: 57th International SAMPE Symposium and Exhibition*, Baltimore, MD, May 21-24, 2012.

McLoud, J.D. & Yang, M. (2012). The conserved function of Skp1 in meiosis. *Frontiers in Genetics*, Vol. 3, Article 179, p. 1.

Rajaputra, P., Nkepan, G., **Watley, R.,** You, Y. (January 15, 2013). Synthesis and *In Vitro* Biological Evaluation of Lipophilic Cation Conjugated Photosensitizers for Targeting Mitochondria. *Journal of Bioorganic and Medicinal Chemistry*, Vol. 21, No. 2, pp. 379-387.

Abramson, C., Cakmak, I., Duell, M., Bates-Albers, L., Zuniga, E., Pendegraft, L., Barnett, A., Cowo, C., **Warren, J.,** Albritton-Ford, A., Barthell, J., Hranitz, J., & Wells, H. (2013). Feature-positive and Feature-negative Learning in Honey Bees. *The Journal of Experimental Biology*, 216, 224-229.

Scholars

OK-LSAMP scholars are among the top students on Alliance campuses and throughout the nation. This year, Oklahoma had Scholars participate as Goldwater Scholars, UDALL Scholars, and BD Fellows and a former scholar was selected to participate in the Nobel Laureate Conference in Germany, and the Euroscience Forum in Italy.

Additionally, scholars are consistently honored through President and Dean's Honor Rolls, serving as officers and members of student organizations, and recipients of numerous scholarship awards. Additional news articles and related photos are found in Appendix I Listed below are select examples of Scholar highlights.

Stephanie Andrade – OU – (1) Attended the Hispanic Engineering National Achievement Award Competition – Great Minds in STEM National Conference, Orlando, FL; (2) serves as an officer in the Society of Hispanic Professional Engineers at OU; (3) participating in a fall 2013 semester co-op with NASA.

Zoe Austin – OSU – (1) Participated in the National Student Exchange program at California State University, Monterey Bay; (2) completed certification for scuba diving; (3) accepted for a summer 2013 REU at Oklahoma State University; (4) received the WENTZ research award; (5) continuing with faculty mentor on bee research, (6) had an article accepted for publication in the Journal of Experimental Biology.

Philip Baker – OU – (1) Attended the Hispanic Engineering National Achievement Award Competition – Great Minds in STEM National Conference, Orlando, FL; (2) MEP Mentor; (3) National Action Council for Minorities in Engineering Scholar Award; (4) African American Student Award.

Lindsey Berger – OSU – (1) Selected to participate in the National AISES conference, Anchorage, AK; (2) member of the Scholars in Science: Native American Path (SSNAP) program; (3) attended the 2012 SACNAS conference, Seattle, WA; (4) served as President of the OSU AISES Chapter; (5) served as a judge at the Cherokee Nation Science and Engineering Fair, Oklahoma.

Kristina Black – OU – (1) Awarded an REU experience at the University of Hawaii at Hilo for environmental issues; (2) received the Academic Excellence Award from the OU Honors College.

Tanner Blair – OU – (1) Presentation: similarities between the properties of fibroblasts and precancerous skin cells called Ker-CT-Ras; (2) Presented at the Sigma Xi Research Conference, Dallas, TX; (3) Presented at Oklahoma Research Day; (4) received the Wayne Steen Award; (5) received the ECE Directors Leadership Award; (6) received the ECE Distinguished Mentor Award; (7) Chair of IEEE; (8) DLC Webmaster; (9) mentor/tutor/member in MEP; (10) Sooner Engineering Education Scholar, coaching the NE High School Robotics Team; (11) outreach lead for the Electric Vehicle Grand Prix team, placing first; (12) undergraduate

research assistant in the lab of Dr. Commuri, developing a low-cost 3d imaging solution to assist in the early diagnosis of birth defects in infants.

Gabrielle Berrios – OU – (1) Research accepted at the 2012 Society of Women Engineers Conference, Houston, TX; (2) MEP Mentor.

Jacob Bonsu – OU – (1) Participated in international internships in France, AUSTRIA, AND Germany; (2) completed BS degree requirements.

Megan Bowlin – LU – (1) Research poster presentation at the 18th Annual POK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference.

Brianna Broad – NSU – (1) Presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 NSU Undergraduate Research Day; (3) 2013 STEP Program Peer Mentor, NSU; (4) math and science tutor for the Indigenous Scholar Development Center's speed mentoring even at NSU.

Gabbie Brown – OSU – (1) completed B.S. degree requirements in Engineering; (2) accepted a position as a Quality Assurance Engineer Associate with Lockheed Martin, Missiles and Fire Controls in Grand Prairie, TX.

Wilmon Brown III – OSU – (1) First place poster at the 24th Annual OSU Research Symposium in the Biological Sciences Division; (2) accepted to present at the 2013 National Conference on Undergraduate Research; (3) accepted to present at the 2013 Oklahoma Research Day Conference.

Sharonda Carson – UCO – (1) One of 12 accepted to be a part of the 2013 NAPIRE program in Costa Rica; (2) presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (3) presented a research poster at the 18th Annual Research Symposium, Stillwater, OK; (4) presented a research poster at the 2013 Oklahoma Research Day Conference.

Cord Carter – SE – (1) Received Honorable Mention for Outstanding Chapter at the National Chemistry Conference in New Orleans, LA; (2) received the first-ever "Green Chemistry Chapter Recognition Award", as an acknowledgement that the chapter participated in at least 3 new activities last year which promoted the adoption of environmentally-friendly chemistry practices.

Kayla Davis – OSU – (1) Presentation: *Num1p Interaction with SUMO*, 2012 Annual Biomedical Research Conference for Minority Students (ABRCMS), San Diego, California; (2) presented at the Wentz Scholar Research Day; (3) received Outstanding Research Award at the Women of Color STEM Conference, Dallas, TX.

Kelsey Dozier – NSU – (1) Served as a peer mentor in the STEP Program, NSU; (2) presented a research poster at the 18th Annual Ok-LSAMP Research Symposium; (3) presented a research poster at the 2013 NSU Undergraduate Research Day; (4) math and science tutor for the Indigenous Scholar Development Center's speed mentoring even at NSU.

Brittany Epley – SWOSU – (1) Presented a research poster at the 2013 American Chemical Society National Meeting in New Orleans, LA; (2) accepted into the medical technology program

Shelby Frazier – SE – Received the 2013 Southeastern University Outstanding Athlete Award for her participation as a cross-country athlete.

Peter George – OU – (1) Accepted to present research at the University of Oklahoma GiPS conference; (2) Member of Tomorrow's Engineers; (3) Dean and President's Honor Rolls.

Tiffany Glover – LU – (1) Oral presentation at the 18th Annual POK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference; (3) participated in a summer SUROP research experience at the University of Maryland.

Jennifer Green – CU – Accepted to participate in the University of Buffalo iSEED 2013 summer program.

Stephen Gonzalez – OU – (1) Attended the Hispanic Engineering National Achievement Award Competition – Great Minds in STEM National Conference, Orlando, FL; (2) MEP Outstanding Sophomore.

Christopher Gutierrez – O U – (1) Adjunct instructor, Rose State College, OKC, OK; (2) attended National AISES Conference, Anchorage, AK; (3) National Hispanic Scholar.

Geoff Kibble – OSU – (1) Selected to participate in the OSU's Space Cowboy's program at NASA's Johnson Space Center, Houston, TX; (2) participated in the Scholars in Science; Native American Path (SSNAP); (3) attended the national SACNAS meeting, Seattle, WA; (4) founding member, OSU SACNAS chapter.

Alex Hardison – OSU – (1) received second place for his research presentation at the Western Alliance to Expand Student Opportunities (WAESO) conference at Arizona State University; (2) accepted to present a research poster at the National AISES Conference, in Anchorage, AK; (3) presented a research poster at the 18th Annual OK-LSAMP Research Symposium.

Josh Hardisty – OU – (1) Presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 National Conference on Undergraduate Research; (3) participated in a summer REU at Florida State University; (4) accepted in the BD program at the University of Oklahoma.

Princess Hays – LU – (1) Oral presentation at the 18th Annual POK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference.

Caleb Hubbard – SWOSU -- (1) Selected to participate in a University of Oregon Neuroscience REU program; (2) presented research at the BBB South Central Regional Convention, Lake Texhoma, OK; (3) presented research at Oklahoma Research Day, Edmond, OK; (4)) presented at the National Conference on Undergraduate Research, LaCrosse, WI.

Danica Johnson – OSU – (1) Participated in the summer REU program at the University of Arizona in Minority Health Disparities Research Opportunities; (2) presented a poster at the 18th Annual OK-LSAMP Research Symposium.

Kody Jones – OSU – (1) Received the Outstanding Academic Award at the 2013 Women of Color STEM Conference; (2) signed a record contract; (3) second place poster at the 24th Annual OSU Research Symposium in the Physical Sciences and Technology Division.

Ashley Lonetree – OSU – One of 12 accepted to be a part of the 2013 NAPIRE program in Costa Rica.

Kayla Love – LU – (1) Placed first in the nation at the Emerging Researchers National Conference In Washington D.C.; (2) article published in the Central European Journal of Biology; (3) volunteer Women in Science STEM Conference, Oklahoma City, OK; (4) attended the Women of Color STEM Conference, Dallas, TX; (5) presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (6) accepted a Bridge to the Doctorate Fellowship at the University of Oklahoma.

Amanda Mathias – OSU – (1) participated in the ASAS Undergraduate Student Poster Competition for the 2013 ADSA-ASAS Joint Annual Meeting in Indianapolis, IN; (2) presented for a second year a research poster at the National Conference on Undergraduate Research in LaCrosse, WI; (3) participant in the Scholars in Science: Native American Path (SSNAP) program; (4) attend and presented at the National SACNAS conference in Seattle, WA.

Nicholas Martin – NSU – (1) Presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 NSU Undergraduate Research Day;

Martel McKinney – LU – (1) Oral presentation at the 18th Annual POK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference.

Marissa Merrifield – CU – (1) Presented her research at the North Texas Area Student Conference (NTASC) Midwestern State Conference for Computer Science, Wichita Falls, TX; (2) presented research at the Association for Educational Communications and Technology National Conference in Louisville, KY.

Guillermo Morales – OU – (1) Research accepted for presentation at the 2012 HENAAC: Great Minds Conference, New Orleans, LA.

Juan Orozco – UCO – Presented a research poster at the 18th Annual OK-LSAMP Research Symposium.

Mary Ann Phillips – SWOSU – (1) Presented a research poster entitled: *Global Grid Impact on Regional Universities in Oklahoma* in New Orleans, LA at the 2013 Society for Information Technology and Teacher Education National Conference; (2) selected to participate in the University of Oklahoma GIS summer program; (3) selected to participate in a 2013 REU at Clemson University,.

Terry Phillips – LU – (1) Oral presentation at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference.

Shynette Porter – OU – (1) Attended the National NSBE Conference, in Indianapolis, IN.

Allison Potts – OSU – (1) Participated in the ASAS Undergraduate Student Poster Competition for the 2013 ADSA-ASAS Joint Annual Meeting in Indianapolis, IN; (2) attended the 2012 SACNAS national conference, Seattle, WA; (3) inaugural member of the OSU SACNAS Chapter; (4) Scholars in Science: Native American Path (SSNAP) participant.

Abbey Ramirez – OSU – (1) Received First Place at the Oklahoma Orinthological Conference, Oklahoma City, OK for her undergraduate research poster; (2) presented at the National Conference on Undergraduate Research, LaCrosse, WI.

Ashley Rodriquez – SWOSU -- (1) Awarded the Nancy McClain Honorary Scholarship from the American Association of University Women; (2) selected to present a the 101st Annual Technical Meeting at the Oklahoma Academy of Science, Edmond, OK; (3) presented at the National Conference on Undergraduate Research, LaCrosse, WI.

Jodeci Ross – LU – (1) Oral presentation at the 18th Annual POK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference.

Rajah Singh – LU – (1) Oral presentation at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference; (3) participating in a summer internship with the City College of New York in the CENSES Research for Undergraduate program.

Chelsea Smith – UCO – (1) Presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference; (3) Co-presented two additional research posters at the 2013 Oklahoma Research Day Conference.

Chelsea Spencer – UCO – (1) Presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (2) presented a research poster at the 2013 Oklahoma Research Day Conference.

Ralph Saunders – CU – Presented a research poster at the AITP Conference in St. Louis, Missouri.

Jason Semien – OSU – (1) Attended the NSBE Conference in Indianapolis, IN; (2) received the National Scholarship from Exxon-Mobile Oil at the Golden Torch Awards ceremony; (3) participated in a Study Abroad experience to Italy.

Blake Scott – ECU – Accepted into the Ph.D. program in Cellular and Molecular Medicine at the Johns Hopkins University School of Medicine.

Katherine Stewart – NSU – (1) Accepted to present an oral presentation at the AISES Region IV Conference; (2) presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (3) 2013 summer mentor for the NAPIRE program in Costa Rica.

Ondrea Thomas – OSU – Accepted to the Howard Hughes Medical Institute. She will be a SEA Laboratory Assistant.

Erin Thornton – OU – (1) Received first place in the OU Brainstorming Essay Contest; (2) received the Outstanding Freshman Award; (3) MEP Scholar; Henderson Scholar; and McNair Scholar.

Ka'Shay Warran – OSU – (1) Featured student in the OSU Spears School of Business MSIS Student Highlight publication, (2) served as photographer for the LSAMP Annual Research Symposium.

Jessica Webb – UCO – (1) Presented a research poster at the 18th Annual OK-LSAMP Research Symposium; (2) Presented a research poster at the 2013 Oklahoma Research Day Conference.

BrieAunna Webster – UCO – Presented a research poster at the 2013 Oklahoma Research Day Conference.

Yoslin Vallejos – UCO – Presented a research poster at the 2013 Oklahoma Research Day Conference.

BD Fellows

The Oklahoma Bridge to the Doctorate program has completed two cohorts of the program. Cohort III was awarded to Oklahoma State University in August 2008, for two years of NSF funding. Cohort IV, University of Oklahoma, was awarded in April 2009, to begin August 2009. Cohort V, Oklahoma State University, was awarded in October 2011 with fellow support beginning January 2012. Cohort VI was awarded to the University of Oklahoma; Cohort VII was awarded to Oklahoma State University. Both cohorts will begin funding participants in Fall 2013. Appendix J highlights Fellows from the University of Oklahoma and Oklahoma State University.

Cohort I and II

Cohorts I and II Bridge to the Doctorate Fellows at both OSU and OU have been successful in completing a total of 15 Master of Science degrees and 7 Doctor of Philosophy degrees. Additionally, four fellows expect to complete Doctor of Philosophy degrees in the near future. Four fellows either transferred to another institution or left the program. Dr. Brek Wilkins, was successful in developing and refining software that will predict the onset of a heart

attack within minutes. His discovery has resulted in a \$3.5 million dollar grant from Tandy Corporation. Cara Cowan, serves as a Cherokee Nation Tribal Councilwoman. Her position allows her to travel to promote LSAMP and encourage Native American students to attend college.

Cohort III

Cohort III, awarded to Oklahoma State University, recruited 12 Fellows for entry into graduate programs. Eight began in the Fall 2008 term and four began in the Spring 2009 term. One additional Fellow was added in May, 2011 to fulfill grant funds left by Fellows who completed MS degrees and left the program. To date, one Fellow left the program without completing a graduate degree; ten (10) received MS degrees, and five continue to work toward completion of the Ph.D. degree.

Cohort III Fellow Highlights

Tomica Blocker – (1) Guest speaker at the 13th Annual Research Day Symposium, Langston University, (2) Panel Presenter, Women in Science Conference, Oklahoma EPSCoR, Oklahoma City, OK; (3) Guest speaker, OSU LSAMP meeting, Stillwater, OK; and (4) Admitted to the University of Kansas Medical School for fall 2013.

Scott Fine – (1) Continuing with Ph.D. degree requirements, with expected graduation Fall 2013; (2) two publications in referred journals; (3) two abstracts submitted for publication and conference presentation.

Jonathan Gonzales – (1) Continuing with Ph.D. degree requirements; (2) two abstracts/posters accepted for presentation at the Conference on Microtechnologies in Medicine and Biology (MMB), San Diego, California, April 9-13, 2013; (3) Teaching Assistant for ECEN 3314 (Electronic Devices), OSU undergraduate engineering program; (4) wrote 3 proposals (PI for one and co-PI for two); (5) filed an invention disclosure which turned into a provisional patent entitled: "System and Method of Ultrasonic interrogation of Blood by Microelectromechanical Piezoelectric Resonators."

Cody Pinkerman – (1) Continuing with Ph.D. degree requirements; (2) passed his qualifying exams; (3) presented at the 51st American Institute of Aeronautics and Astronauts (AIAA) meeting in Dallas, Texas; (4) co-author on article on research.

Zach Carpenter – (1) Continuing to work toward Ph.D. completion; (2) employed as a Research Engineer at OSU-Tulsa in the Helmerich Advanced Technology Research Center.

Cohort IV

The University of Oklahoma was awarded a Bridge to the Doctorate (Cohort IV) program to begin in the Fall 2009 semester. Below are selected highlights.

Brittanie Atkinson – (1) completed Master of Science degree; (2) Education Coordinator, Integrated Network College (LINC) for STEM, Langston University.

Zachary Dunn – (1) Selected to participate in the National Society for the Advancement of Chicanos and Native Americans (SACNAS) conference in Seattle, WA; (2) continuing with graduate requirements.

Mario Franklin – (1) Continuing with Master of Science degree program; (2) accepted employment as an Industrial Engineer with Tinker Air Force Base, OK.

Juan Herrera – (1) Completed the Master of Science degree; (2) accepted employment in Clearwater, Florida with Honeywell Aerospace Center as an Electrical Hardware Design Engineer.

Lorne Jordan – (1) Continuing with Ph.D. graduate degree requirements.

Jason Kimmel – (1) Continuing with Ph.D. degree requirements.

L. Meghan Liles – (1) Continued with Ph.D. graduate degree requirements.

Shawna Ong – (1) Completed the Master of Science degree; (2) accepted employment as an Engineer with Raytheon in McKinney, Texas.

Ryan Watley – (1) Continuing with Ph.D. graduate degree requirements.

Cohort V Fellow Highlights

Cohort V was awarded through the National Science Foundation as grant number HRD-1139824 for a two year period. Five Fellows were selected to begin graduate studies Spring 2012, began Summer 2012, and four began in the Fall 2012 semester.

RaiAnna Paula Arscott – Continuing with Ph.D. program requirements.

Nicole Bryant – (1) Continuing with Ph.D. program requirements, (2) Presented research at the International Arabidopsis Conference in Sydney, Australia.

Eric Butson – (1) Participated in the Scholars in Science: Native American Path (SSNAP) program sponsored by the Society for the Advancement of Chicanos and Native

American Students in Science; (2) Attended the National SACNAS Conference in Seattle, Washington; (3) continuing with Ph.D. program requirements.

Jamere King – (1) Attended the National Society of Black Engineers (NSBE) convention, Indianapolis, IN; (2) attended the Women of Color Conference, Dallas, Texas; (3) continuing with M.S. program requirements.

Darron “DJ” Lamkin – (1) Attended the National Society of Black Engineers (NSBE) convention; (2) continued to work in his own non-profit organization for minority students entitled *Class Matters*; (3) attended the Women of Color Conference, Dallas, Texas; (4) volunteer with the Women in Science Conference, Oklahoma EPSCoR, Oklahoma City, Oklahoma; (5) continuing with Ph.D. program requirements.

Josh McLoud – (1) Continuing with Ph.D. program requirements; (2) received funding from the **Graduate Research Fellowship Program**.

Molly Parkhurst – (1) Completed the Master of Science degree in Botany; (2) continuing with Ph.D. program requirements.

Marissa Rice – (1) Recipient of the **Graduate Research Fellowship Program** award; (2) served as a Niblack mentor to an undergraduate research scholar; (3) served as a mentor during National Lab Day for high school students; (4) transferring to Cornell University in the Fall, 2013 semester to complete Ph.D. program requirements; (5) presenting a poster at the 50th Animal Behavior Society conference, Boulder, CO; (6) accepted to present a poster at the Society for Neuroscience, San Diego, CA (published abstract); (7) mentor to two undergraduate REU students who will also present research posters at the Society for Neuroscience, San Diego.

Joseph Ross – Continuing with M.S. program requirements.

David Supeck – (1) Accepted for a NIH summer internship; (2) participated in the Scholars in Science: Native American Path (SSNAP) program sponsored by the Society for the Advancement of Chicanos and Native American Students in Science; (3) Attended the National SACNAS conference in Seattle, Washington; (4) campaigned for a National SACNAS student office; (5) continuing with Ph.D. program requirements.

Ana Tehrani – Continuing with M.S. program requirements.

Charles “CJ” Williams, Jr. – (1) Attended the Women of Color STEM Conference, Dallas, Texas; (2) attended the National Society of Black Engineers (NSBE), Indianapolis, IN; (3) continuing with M.S. program requirements.

Cohort VII and VIII

The University of Oklahoma received funding for Cohort VII Bridge to the Doctorate. Currently applications are being accepted for fall 2013 enrollment. Oklahoma State University received funding for Cohort VIII for 12 BD Fellows to be in the fall, 2013 semester.

STAFF TRAINING AND DEVELOPMENT

OK-LSAMP support staff is an integral part of the program. Project staff continually seek professional opportunities. Highlights include, but are not limited to:

Susy Calonkey, Bridge to the Doctorate and OK-LSAMP Program Staff Coordinator, the University of Oklahoma: (1) member, American Society of Engineering Education (ASEE); (2) served as recruiter and outreach coordinator for the College of Engineering; (3) Dean's Leadership Council Staff Advisor; (4) coordinated Dean's Leadership Council Retreat; (5) E-1 First Year Engineering Student Club, staff adviser; (6), attended the NSF HRD Joint Annual Meeting in Washington, D.C., June, 2012; (7) Engineering Leadership Roundtable Staff Advisor; (8) Delegate to World Creativity Forum; (9) Member, Women's Philanthropy Network, University of Oklahoma; (10) Board Member, Norman Community Foundation; (11) Advisory Board Member, ASTEC Charter School.

Kay Porter, Program Manager, Oklahoma State University: (1) Co-Director for Scholars in Science: Native American Path (SSNAP); (2) Judge, National Society for the Advancement of Chicanos and Native American in Science (SACNAS); (3) State Coordinator for Women of Color STEM Conference; (4) served on the Planning Committee for the Women in Science Conference, Oklahoma City, OK for junior and high school girls; (5) member, Oklahoma State University Native American Faculty and Staff Association; (6) Council Member, OSU Alumni Council and Alumni Leadership Council, representing the American Indian Alumni Association; (7) served on the Minority Engineering Program (MEP) summer selection committee; (8) advisory council member, NSF project Red Light/Green Light; (9) advisory panel member, Center for Research on STEM Teaching and Learning (CRSTL) *NextGen*: STEM Career Outreach; (10) Board member, Native American Studies Center; (11) attended the NSF HRD Joint Annual Meeting in Washington, D.C.; (12) presentation accepted for Women of Color Conference, Dallas, Texas; (13) Participant: NAPIRE Mentor Workshop, Costa Rica; (14) board member, Tulsa Technology Center Pre-Engineering Program; (15) judge for the 2013 FCCLA state competition, Stillwater, Oklahoma; (16) attended Oklahoma Research Day, Edmond, Oklahoma.

Fara Williams, Grant Coordinator, Oklahoma State University: (1) Presenter: Women of Color STEM Conference, Dallas, Texas; (2) volunteer during the Women in Science Conference, Oklahoma City, Oklahoma; (3) presenter/volunteer counselor for Cherokee College Preparatory Institute (CCPI), 1st annual college week-long, college readiness activity sponsored by the

Cherokee Nation Foundation for Cherokee Nation junior and senior high school students, June 2012; (4) attended the NSF HRD Joint Annual Meeting in Washington, D.C., June 2012; (5) facilitator, Oklahoma Project WILD and Growing Up WILD, Pre K-12 outdoor curriculum; (6) judge for the 2013 FCCLA state competition, Stillwater, Oklahoma; (7) judge for the 2013 Cherokee Nation Science and Engineering Fair; (8) received computer program professional development; (9) attended the National Conference on Undergraduate Research, LaCrosse, Wisconsin; (10) attended Oklahoma Research Day, Edmond, Oklahoma; (11) participated as mentor for the Scholars in Science: Native American Path (SSNAP) program sponsored by the Society for the Advancement of Chicanos and Native Americans in Science.

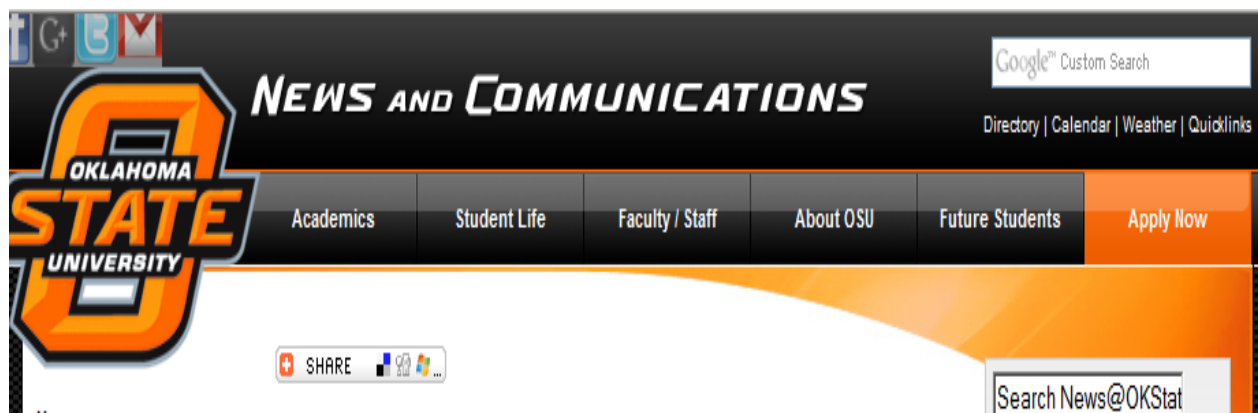
EVALUATION PROCEDURES

Dr. Rosemary Hayes, Director for the Center for Institutional Data Exchange and Analysis, located on the University of Oklahoma campus, Norman, Oklahoma, left her position as the OK-LSAMP outside evaluator for the Oklahoma Louis Stokes Alliance for Minority Participation program. Dr. Sandra Whalen, assistant director assumed the role of evaluator for the program. Dr. Whalen had assisted Dr. Hayes for several years. A report is located in Appendix K.

APPENDIXES

APPENDIX A

DIVERSITY AWARD



OSU receives Inaugural Higher Education Diversity award

Tuesday, 13 November 2012 20:43

Oklahoma State University has received the first annual Higher Education Excellence in Diversity award, which honors U.S. colleges and universities that demonstrate outstanding commitment to diversity and inclusion. OSU will be featured along with 47 other recipients in INSIGHT Into Diversity magazine's December 2012 issue.

"We are honored to be recognized for our commitment to diversity and pleased to be among those who are leading the way in creating diverse and inclusive campuses," said OSU President Burns Hargis.

INSIGHT Into Diversity magazine selected OSU based on the institution's exemplary diversity and inclusion initiatives that involve several aspects of diversity, including gender, race, ethnicity, veterans, people with disabilities, and members of the LGBT community. Specifically, OSU's Inclusion Leadership Program and Retention Initiative for Student Excellence (R.I.S.E) both have averaged more than 90 percent retention rates and 70 percent four-year graduation rates. Other diversity programs include the OSU Office of Multicultural Affairs and the Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP).

In addition to the programs specific to OSU, the university's Office of Institutional Diversity also works to increase inclusion across the state by serving as a member of the Oklahoma Minority Supplier Development Council (OKLAMSDC).

"As a land-grant institution it is important we expand our diversity efforts," said OSU's Associate Vice President for Diversity Jason Kirksey. "Working to expand supplier diversity across the state is an integral part of our commitment to improving the quality of life for all citizens of Oklahoma."

Lenore Pearlstein, publisher of INSIGHT Into Diversity magazine, said, "We hope the HEED award serves as a reminder that diversity and inclusion must remain priorities in the 21st century higher education landscape. Every college and university should recognize the importance of diversity and inclusion as being part of their everyday life on campus. Our students of today are the employees of tomorrow and the future of our country. As students begin to enter the workforce and a global society, they must first be surrounded by and supported by faculty and staff that understand the differences among cultures and their needs."

For more information about the HEED award, visit INSIGHT Into Diversity magazine's website at www.insightintodiversity.com. For more information: visit www.diversity.okstate.edu.

APPENDIX B

SUMMER ACADEMIES

PROGRAM OUTLINE

Dates:

- July 4—July 29

Benefits:

- 3 credit hours paid (in-state)
- Room and Board
- Books and Supplies



Programs:

- Academic Success
- Cultural Awareness
- Career Interests
- Health & Wellness
- Social Awareness

DIVERSITY ACADEMIC SUPPORT



422 Scott Hall
Stillwater, OK 74078

Phone: 405-744-2920

Fax: 405-744-4202

Email: diversityacadsupport@okstate.edu
or monica.dudley@okstate.edu

DIVERSITY ACADEMIC SUPPORT

R.I.S.E.

JUMP START

PROGRAM

"All our dreams can come true - if we have the courage to pursue them."

Walt Disney

Office of Institutional Diversity

MISSION

RISE Jumpstart will provide resources, opportunities, and programs that promote academic, social, and emotional growth.



VISION

RISE Jumpstart will provide students with opportunities to get an early start on a successful collegiate career, enhance their cultural knowledge, and create a more diverse and inclusive college campus.



PROGRAM

RISE Jumpstart is a four-week summer residential experience designed to afford incoming first year students to Oklahoma State University opportunities to achieve a smooth transition to college life. The focus and intent for the Jumpstart Program is to provide an environment conducive and supportive for student learning and personal growth.

RISE Jumpstart places importance on academic activities and student preparation as well as life skills seminars. We will provide students with educational based activities and classes to assist in their preparations as they begin their post-secondary careers.

Life skills seminars emphasizing social, emotional, physical health and wellness along with career resource activities will be intertwined throughout into the programs' schedule. We place a special emphasis on study habits, time management, and financial literacy to highlight and demonstrate the importance of effective and efficient college practices.

RISE Jumpstart will assist incoming first year students as they adapt academically, socially, and emotionally while transitioning from high school to college.

Oklahoma State University does not discriminate on the basis of race, color, national origin, sex, disability, ethnicity, religion, sexual orientation, veterans' status, or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Title IX Coordinator 408 Whitehurst Stillwater, Oklahoma 74078 405-744-5371

ACTIVITIES

- Interactive study groups
- Tutoring
- Social Outings
- Cultural Programs and Events
- Team Building Events
- Seminars, workshops, and other activities that afford individuals opportunities to broaden their perspectives regarding differences and notions of inclusion.



BENEFITS

- All inclusive financial package
 - Paid tuition (in-state)
 - Books
 - Room & Board
 - Meal Plan
- Acclimation to college life
- Jumpstart on college career
- 3 hours completed toward college degree
- Networking

College of Engineering, Architecture, and Technology
Student Services

Student Services | Career Services | AEC Tutoring | Programs | Organizations | **Apply Now**

CEAT SCHOLARSHIPS 2012

MULTICULTURAL ENGINEERING

MEP Homepage
 About MEP
 Photo Galleries
 ConocoPhillips Summer Bridge Program
 Living/Learning Community
 Student Organizations

Upcoming Events



MEP Multicultural Engineering Program
 OKLAHOMA STATE UNIVERSITY

MEP News:

2012 ConocoPhillips Summer Bridge Program
 Applications are now available for the 2012 ConocoPhillips Summer Bridge Program (CSBP). The ConocoPhillips Summer Bridge Program is a 3-week residential program for incoming freshmen in the College of Engineering, Architecture, and Technology (CEAT).

2012-2013 MEP Living/Learning Community
 Applications are now available for the 2012-2013 MEP Living/Learning Community (MEP LLC). The purpose of the MEP LLC is to enhance the first-year experience of students in the Multicultural Engineering Program. Click [here](#) for more information and [here](#) for the 2012-2013 Application.



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K-12 Students
 K-12 Teachers
 College Students
 Faculty Development

Latest News

Women in Science Conference-- Student/Teacher Registration Now Closed
Tuesday, May 10, 2012

OU and OSU Students Take Top Prizes in Cellulosic Biofuels Research Competition
Wednesday, April 11, 2012

Students Selected for Research Experience for Undergrads (REU) Summer Program
Tuesday, April 03, 2012

Upcoming Events

SBIR/STTR Workshop
Tuesday, August 28, 2012 - 8:00am - Wednesday, August 29, 2012 - 4:00pm

Oklahoma Supercomputing Symposium 2012
Tuesday, October 2, 2012 - 5:30pm - Wednesday, October 3, 2012 - 5:00pm

2012 Sun Grant Initiative National Conference
Tuesday, October 2, 2012 - 6:30pm - Friday, October 5, 2012 - 1:00pm



Retired Educators for Youth Agricultural Program (REYAP)

Retired Educators for Youth Agricultural Program (REYAP) provides African American high school students and other culturally diverse youth with opportunities in the field of agriculture. The program, which aims to address the goals of increased leadership, scholarship, citizenship and economic development, is held on the Oklahoma State University campus in Stillwater each summer.

Participants gain an appreciation for agricultural sciences and technology, while also increasing their understanding of the diversity of agriculture; they leave the program with an awareness that agriculture encompasses more than the task of farming.



Students participate in hands-on, interactive scientific experiences in the food and nutritional sciences; entomology; biosystems and agricultural engineering; and plant pathology career fields. Participants also participate in oral and poster presentations to gain public speaking experience, while highlighting the research they learned about in the program.

Contact Rita Combs, REYAP executive director, at 918.619.3111 for more information.

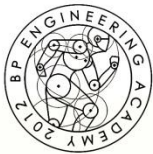
Available Programs:

- Bioenergy Summer Technology Academies
- Booth Educational Robotics Teams
- OK Museum Network Mobile Science Vehicle
- Retired Educators for Youth Agricultural Program (REYAP)
- Starbase Oklahoma
- Women in Science Conferences

OU College of Engineering Summer Programs

BP DEVAS

Did you Know....While women constitute 51% of the American population and 46% of our labor force, only 9% of today's practicing engineers are women!

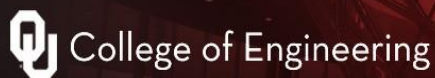


BP Engineering Academy

Less than 10% of US engineers are from critically under-represented minority groups but they represent more than 25% of the US population. Engineers invent, design, and develop all of the products you see every day. We want to show you what engineers do and help YOU see engineering as a possibility in YOUR future!

AT&T SUMMER BRIDGE PROGRAM

Sometimes engineering coursework can be a challenge. We want YOU to be prepared academically for your first semester of calculus at OU and have designed this program to meet those needs. The program also includes all housing, meals, seminars, team building exercises, and much more. We have also included a course entitled; "Experiencing College Life as an Engineer" (OU acclimation course) specifically tailored to meet the needs of future engineers.



OU JOB SEARCH CONTACT US

865 Asp Ave, Felgar Hall 112 Norman, OK 73019-1052

Updated 2/3/2012 by Williams Student Services Center: coe advising@ou.edu

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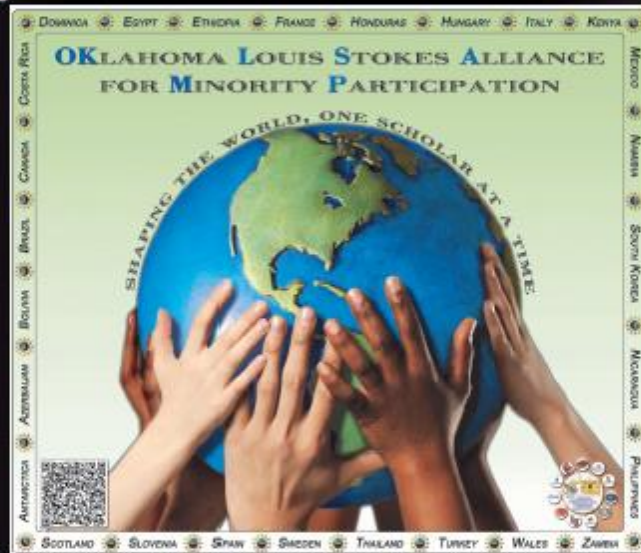
Mission Statement

APPENDIX C

18th ANNUAL RESEARCH SYMPOSIUM

STILLWATER, OK

18th Annual Research Symposium



SATURDAY, OCTOBER 6, 2012
OKLAHOMA STATE UNIVERSITY
STILLWATER, OKLAHOMA

OK-LSAMP 18th Annual Research Symposium Agenda

08:00 AM - 09:30 AM	Video Loop	2011 Summer Research Experiences	Room 106
08:30 AM - 11:00 AM	Registration	ALL POSTERS MUST BE IN PLACE BY 10 AM	1st Floor Atrium
	Refreshments	Provided by Bama and DairyMax	
09:30 AM - 09:50 AM	Welcome	Kay Porter, OK-LSAMP Manager	Room 106
	Introductions	Jean Van Delinder, PhD, OK-LSAMP PI Jason F. Kirksey, PhD, AVP for Institutional Diversity Sheryl Tucker, PhD, Dean, Graduate College	
09:50 AM - 10:50 AM	Keynote Address	BJ Bench, Ph.D., Former OK-LSAMP Scholar Lead Chemist, Tyson Foods, Inc.	Room 106
10:50 AM - 10:55 AM	Announcements	Fara Williams, OK-LSAMP Coordinator	Room 106
10:55 AM - 11:05 AM		BREAK	
11:05 AM - 11:45 AM	Oral Presentations	<i>For Specific Times, See "Presentations at a Glance"</i> Biological Sciences Physics, Engineering, and Computer Sciences Biological Sciences	Room 108 Room 207 Room 216/218
11:45 AM - 12:15 PM	Conferences 101		Room 106
12:15 PM - 12:20 PM		BREAK	
12:10 PM - 01:10 PM	Networking Lunch	OK-LSAMP Scholars, Mentors, and Visitors	1st Floor Atrium
12:10 PM - 01:10 PM	Alliance Meeting Lunch	OK-LSAMP Administration, Campus Coordinators, and Invited Guests	4th Floor Atrium
01:10 PM - 01:15 PM		BREAK	
01:15 PM - 02:00 PM	Research Ethics		Room 106
02:05 PM - 03:05 PM	Oral Presentations	<i>For Specific Times See "Presentations at a Glance"</i> Biological Sciences Physics, Engineering, and Computer Sciences Biological Sciences	Room 108 Room 207 Room 216/218
02:05 PM - 03:05 PM	Presentation Tips		Room 106
03:05 PM - 03:10 PM		BREAK	
03:10 PM - 04:10 PM	Poster Presentations	PRESENTERS MUST BE NEXT TO THEIR POSTERS AT THIS TIME.	1st Floor Atrium
03:10 PM - 04:10 PM	Recruitment Tables	Please explore graduate school and summer internship opportunities.	1st Floor Atrium
04:10 PM - 04:15 PM	Closing Remarks	Fara Williams, OK-LSAMP Grant Coordinator	1st Floor Atrium

**PLEASE VISIT ATRIUM DISPLAYS AT ANY TIME
THROUGHOUT THE DAY.**

*Note: Symposium volunteers are designated on their name badges. They will gladly assist if you need information or directions.

APPENDIX D

INDIGENOUS SCHOLAR ACTIVITIES

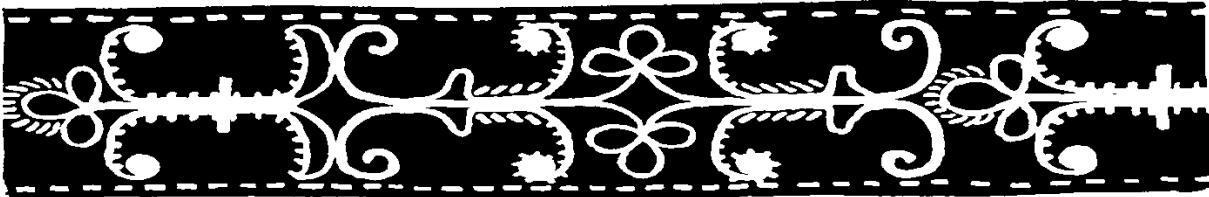
Indigenous Scholar Development Center



NORTHEASTERN STATE UNIVERSITY

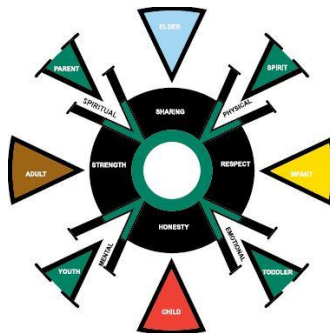
INDIGENOUS SCHOLAR DEVELOPMENT CENTER

Osiyo ~ Hensci ~ Halito ~ Chokma ~ Bezon ~ Maruawe ~ Bozho ~ Aya ~
Aaniin ~ Nawah ~ He' ~ Aho ~ Ho ~ Nawah ~ Hawe' ~ Kweh ~ Sahn gah ley ~
Hadinyaa ~ Sgëno ~ Howe ~ Greetings!



Indigenous Scholar Development Center The Indigenous Scholar Development Center (ISDC) offers a friendly environment with direct student services, counseling, and advisement to support overall student academic performance and participation in the NSU campus community. With a mission to increase retention and graduation rates of American Indian students, ISDC offers programs involving scholars, tribal communities, faculty, staff, and mentors to enhance the educational and professional opportunities of NSU students and graduates. The Center is easily accessible at the John Vaughn Library, second floor. Everyone is welcome!

The ISDC Mission Mark, a visual representation of our mission, includes a circle to communicate the holistic, interrelated, and lifelong learning of an Indigenous Scholar. An inner sphere represents the student engaged in physical, emotional, intellectual, and spiritual development within concentric local, national, and global communities. Phases within these growth processes strengthen our ability to thrive in higher education settings. Our goal is to create a **safe place for Indigenous peoples to gather, learn from and strengthen each other.**





New OSU program supports minority science students

Tuesday, 09 July 2013 14:13



A new program at Oklahoma State University is giving minority students a boost in the science professions. Called The Science Scholars: the Native American Path, the program guides American Indian students at OSU in pursuing degrees in science, technology, and engineering and mathematical fields. From left are OSU associate professor of microbiology and molecular genetics Gilbert John who oversees the program with Josh McCloud, botany graduate student, Weleetka, Okla.; Amanda Mathias, animal science senior, Inola, Okla.; Amber Anderson, biochemistry and molecular biology senior, Warr Acres, Okla.; and Alex Hardison, biological science, Owasso, Texas. Photo courtesy of SACNAS.org and Tyler Siems Photography.

A new program at Oklahoma State University is giving minority students a boost in the science professions. Funded by the Society for the Advancement of Chicanos and Native Americans in Science, the

Stillwater student chapter is one of 40 in the U.S. and the only college chapter in the state.

Called the Science Scholars: The Native American Path, the program guides American Indian students at OSU in pursuing degrees in science, technology, and engineering and mathematical fields.

Gilbert John, OSU associate professor of microbiology and molecular genetics, oversees the program, known as SSNAP for short. One of its main goals is to provide OSU students with good mentors.

"We want to give our minority students an opportunity to excel," John says. "SSNAP provides opportunities for our students to participate in training sessions focused on academic success and professional development."

In fall 2012, the society provided OSU \$40,000 and is committed to funding the program for two more years, John says. The federal program is awarded funds through the National Institutes of Health.

The funds allow students to travel to the SACNAS national conference. This year's conference is in October in San Antonio, and more than 3,000 professional scientists of predominately Hispanic/Chicano and Native American origin are expected to attend. John is pleased the conference is within driving distance as it allows him to take all 22 students in the OSU program to San Antonio.

"Last year, we met in Seattle. This year, I am excited about this conference being so close. We hope to make a major impact," John says. By impact, John means competitions that include peer-reviewed poster presentations. Students are eligible for cash awards up to \$500, however, the conference offers more than cash awards.

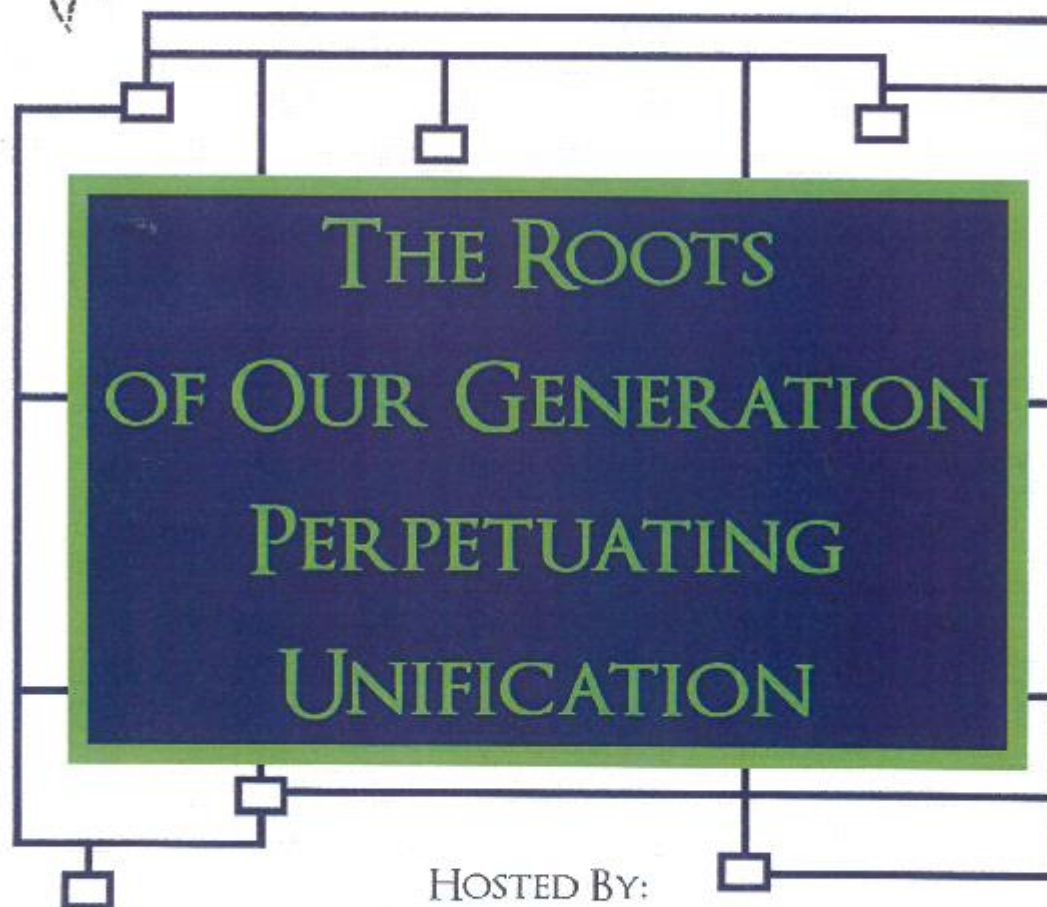
"Our students meet with top-notch minority scientists who are dedicated to helping them," he says. "It is a low-key environment where Hispanic and Native American students can feel comfortable." Once a kid growing up on a Navajo reservation in the Four Corners region of New Mexico, John understands the impact of a good mentor. At Colorado State University, "a professor took me under his wings and from there gave me an open highway to go as far as I could. He was a terrific individual," he says.

To learn more, visit <https://sacnas.org/year-round-programs/community/native/osu-ssnap>.



NASHE 2013

OKLAHOMA NATIVE AMERICAN
STUDENTS IN HIGHER EDUCATION



SOUTHEASTERN OKLAHOMA STATE UNIVERSITY

DURANT, OKLAHOMA FEBRUARY 22 & 23, 2013

APPENDIX E

NATIONAL CONFERENCE ON UNDERGRADUATE
RESEARCH (NCUR), LACROSSE, WI



Oklahoma Scholars Participating in 2013 NCUR Conference
LaCrosse, Wisconsin



Scholars from OSU, OU, and SWOSU

APPENDIX F

WOMEN OF COLOR STEM CONFERENCE

WAVES OF CHANGE
OCEANS OF OPPORTUNITY

CONFERENCE GUIDE

October 11-13, 2012 | Hilton Anatole | Dallas, TX



A Multicultural Event

CO-HOSTED BY
General Dynamics Corporation
Prairie View A&M University
Cancer Communications Group's Women of Color magazine

www.womanoicolor.net

Students receive honors at Women of Color Science, Technology, Engineering and Mathematics Conference

Thursday, 11 October 2012 19:45



Three Oklahoma State University, (L-R) Jordan Knight, Kayla Davis and Kody Jones, students have been selected to receive honors at the 2012 Women of Color Science, Technology, Engineering and Mathematics Conference hosted by Career Communications Group Magazine.

Three Oklahoma State University students have been selected to receive honors at the 2012 Women of Color Science, Technology, Engineering and Mathematics Conference hosted by Career Communications Group Magazine. Students receiving awards this year include Kayla Davis, Kody Jones and Jordan Knight. The awards recognize students with creative verse, an exemplary academic record, university and community involvement and a proven desire to help others succeed. Students should also show leadership qualities, role model potential and desire to impact peers.


Kayla Davis, junior from Stillwater, Okla., pursuing a degree in biochemistry and molecular biology, was awarded a Research Award. Davis has previously been selected as a Wentz Research Scholars, a Niblack Research Scholar and a Freshman Research Scholar. She is currently serving as the Biochemistry Club President and the Amnesty International Club Vice President.

Kody Jones, a junior from Mustang, Okla., studying Mechanical Engineering, was selected to receive an Academic Award. Jones is a Ruben Trance Scholar, Oklahoma Academic Scholar and American Indian Graduate Center.

Jordan Knight, a senior from Kansas City, Mo., studying Mechanical Engineering, was awarded a Student Leadership Award. Knight is a member of the Honor Society of Phi Kappa Phi and the Tau Beta Pi Engineering Honor Society. He currently serves as president of OSU chapter of National Society of Black Engineers.

The students will be honored and receive their awards at the Women of Color STEM Conference on Oct. 12, in Dallas.

Kay Porter and Fara Williams presented a breakout session at the Women of Color STEM 2012 Conference

FRIDAY, OCTOBER 12, 2012		TIME & LOCATION	EVENT
		8:15 pm - 9:30 pm	Conference A
			<p>SEMINAR Pursuing Higher Degrees: Applying for and Being Accepted to Graduate School</p> <p>In this session the graduate school application process and tips on how to complete a successful application will be discussed. Topics to be covered include: why pursue graduate degrees, writing a personal statement, asking for letters of recommendation, and answering the application queries. Additionally, attendees will learn about tips for selecting recommendation writers, searching for the right graduate program and advisors, possible sources of funding, keeping organized and meeting application deadlines.</p> <p>By the end of the seminar, attendees will:</p> <ol style="list-style-type: none"> Have a better understanding of the graduate school application process Be able to write a better personal statement Be able to select recommendation writers that will provide excellent letters Have concrete tools to aid them in the graduate school application process Be aware of resources available for further assistance <p>Presenters: Kay Porter, Program Manager, Oklahoma State University Fara Williams, Grant Coordinator, Oklahoma State University</p>
		8:30 pm - 10:00 pm	Conference BCD
			 <p>SEMINAR Woman to Woman: Up Close & Personal</p> <p>During this interactive roundtable session, the audience will experience an open and candid discussion with executives, which results in creating better awareness and understanding of the workplace realities women of color encounter. Participants will learn successful tips and modes for overcoming unique challenges. This roundtable discussion will provide a unique forum to share and celebrate successes, network opportunities and a woman-to-woman support system.</p>
		9:30 pm - 12:00 am	Conference Ballroom
			Networking Reception

APPENDIX G

CAMPUS COORDINATOR/MENTOR HIGHLIGHTS

Oklahoma Mentor Day Honorees Include Two from SWOSU

February 6, 2013



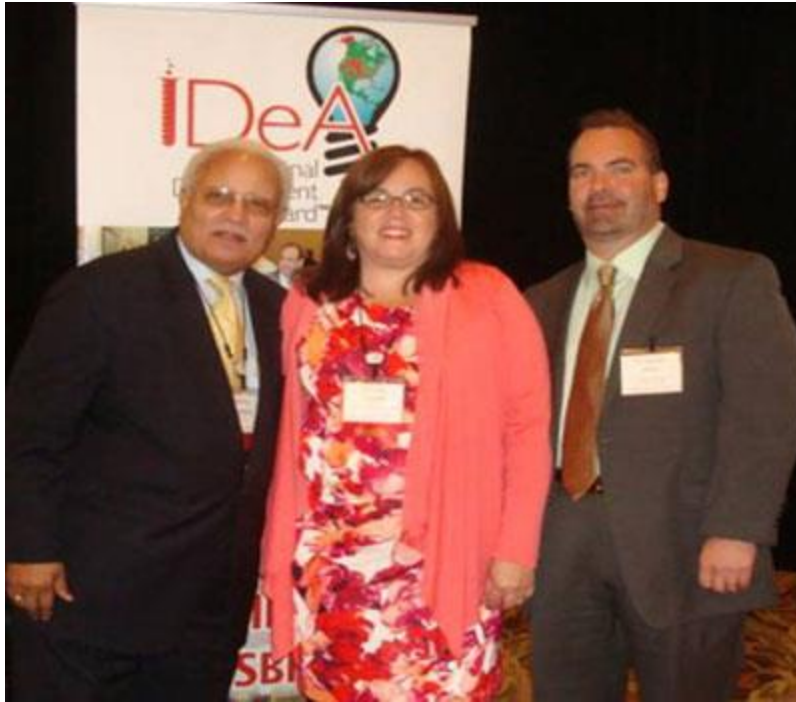
Southwestern Oklahoma State University Associate Professor Dr. Andrea Holgado (front row second from left) was one of 35 recently honored during the first Oklahoma Mentor Day at the State Capitol in Oklahoma City. Holgado was recognized for her mentoring experiences with SWOSU students. Sharing in the celebration were (front from left): Ashley Rodriguez, Claudia Nkeih, Debbie Flaming and LaKeshia Seals. Back from left—Dr. Jody Maness, Jamin Brown, Monte Stone II, Caleb Hubbard, Timothy Stein, Tyler McLemore and SWOSU President Randy Beutler.

Thirty-five outstanding youth mentors from throughout Oklahoma—including Southwestern Oklahoma State University Associate Professor Dr. Andrea Holgado and SWOSU student Quynh Phi of Oklahoma City (Southeast)—were recently honored during the first Oklahoma Mentor Day at the State Capitol in Oklahoma City.

The awards were presented by the Oklahoma Foundation for Excellence and its David and Molly Boren Mentoring Initiative. The goal of the day was to recognize outstanding mentors from all types of youth mentoring organizations around the state.

SWOSU's Dr. Andrea Holgado Honored with National Award

July 16, 2012



SWOSU Assistant Professor Dr. Andrea Holgado (center) of Weatherford received national recognition winning the Sidney A. McNairy, Jr. Mentoring Award at the recent Institutional Network of Biomedical Research Excellence (INBRE) Symposium in Washington, D. C. Congratulating Holgado are (left) Dr. Sydney McNairy, NIH National Institute of General Medical Sciences, and (right) Oklahoma INBRE Program Director Darrin Akins.

SWOSU Assistant Professor Dr. Andrea Holgado of Weatherford has received national recognition winning the Sidney A. McNairy, Jr. Mentoring Award.

Holgado, a faculty member in the Department of Biological Sciences, was selected for the award by the Institutional Network of Biomedical Research Excellence (INBRE) program for her accomplishments in mentoring students, research productivity and recognition by the community of scientists via research publications, presentations and community service.

Scientists and students from 23 states and Puerto Rico participated in the selection of Holgado for the prestigious award. She recently received the award at the Washington D.C. Biennial INBRE Symposium.

APPENDIX H

SCHOLAR AND BD FELLOW
PUBLICATIONS



The conserved function of Skp1 in meiosis

Josh D. McCloud and Ming Yang*

Department of Botany, Oklahoma State University, Stillwater, OK, USA
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Xiaogang Wu, Indiana University-Purdue University Indianapolis, USA

Reviewed by:

Xiaogang Wu, Indiana University-Purdue University Indianapolis, USA

Sudipto Saha, Case Western Reserve University, USA

Mingyi Wang, The Samuel Roberts Noble Foundation, USA

Fan Zhang, Mount Sinai School of Medicine, USA

A commentary on

SCF ensures meiotic chromosome segregation through a resolution of meiotic recombination intermediates

by Okamoto, S.-Y., Sato, M., Toda, T., and Yamamoto, M. (2012). *PLoS One* 7, e30622. doi: 10.1371/journal.pone.0030622

Many components of regulatory networks governing basic cellular functions are highly homologous in diverse species. An important question is how such conservation of individual components is translated into the conservation at the level of regulatory networks. An intriguing case regarding this question is concerned with the function of the Skp1 protein in meiosis. Skp1 is a conserved subunit of the Skp1-Cullin-F-box-protein (SCF) E3 ubiquitin ligase (Tyers and Jorgensen, 2000; Willems et al., 2004). For nearly 13 years, a distinct meiotic phenotype was described only in a null mutant of Skp1 in *Arabidopsis thaliana*, namely *arabidopsis-skp1-like1-1* (*ask1-1*) (Yang et al., 1999; Yang and Ma, 2001; Wang et al., 2004; Wang and Yang, 2006). It raises the question of whether such a phenotype indicates a plant-specific function of Skp1 (or the corresponding SCF) in meiosis. However, a strikingly similar meiotic phenotype was recently reported by Okamoto et al. (2012) in *skp1* mutants of fission yeast (*Schizosaccharomyces pombe*). These phenotypic similarities suggest the presence of a conserved network involving an SCF that regulates the progression of recombination in meiosis.

The first similarity is that the numbers of spores produced by a meiocyte range from two to more than four spores in *ask1-1* (Yang et al., 1999) and the yeast *skp1* mutants. In many meiotic mutants, the meiotic products

produced by a meiocyte are either more or fewer than the normal four spores. The wide range of meiotic product number per meiocyte places *ask1-1* and the yeast *skp1* mutants in a rare group. The second similarity is indicated by the morphology and behavior of chromosomes during meiosis I. Chromosomes entangle, non-disjoin, are stretched by the anaphase spindle, and as a result, are unevenly distributed to meiotic products in both *ask1-1* (Yang et al., 1999; Wang et al., 2004) and the yeast *skp1* mutants. Chromosomes are asynaptic in prophase I in *ask1-1* (Wang et al., 2004). Fission yeast normally undergoes homologous chromosome pairing instead of synapsis in prophase I. It is unknown whether the homologous chromosome pairing in the yeast *skp1* mutants is also affected, but it may be so based on the overall similarities in chromosome behavior between *ask1-1* and the yeast *skp1* mutants. Spindle behavior is intimately linked to chromosome behavior. It is unsurprising that the spindle seems similarly affected by chromosome entanglement in *ask1-1* and the yeast *skp1* mutants. Although the experimental approaches somewhat differ in the investigations of the two organisms – study of still images in *Arabidopsis* and study of time-lapsed videos in yeast, similar conclusions can be made on the impact of entangled chromosomes on the spindle morphology. The *Arabidopsis* work found anaphase spindles that were either shorter than metaphase spindles or longer than typical anaphase spindles in *ask1-1* (Yang and Ma, 2001). The yeast work revealed bending, collapsing, reforming, and re-elongation of spindles. It can be said that spindles are deformed in a similar fashion when they struggle to separate entangled chromosomes in the *skp1* mutants of both organisms. Lastly, the underlying cause of the chromosome entanglement may be

attributed to the presence of unresolved recombination intermediates in *ask1-1* and the yeast *skp1* mutants. In *ask1-1*, electron-dense materials abnormally accumulate on chromosomes in prophase I (Wang et al., 2004), the dynamics of a cohesin on meiotic chromosomes is altered (Zhao et al., 2006), and recombination is promoted in plants heterozygous for *ask1-1* (Wang and Yang, 2006). In comparison, several proteins involved in recombination are retained longer than usual on meiotic chromosomes in the yeast *skp1* mutants. Thus, evidence from both *Arabidopsis* and yeast suggests that Skp1 is involved in promoting the resolution of recombination intermediates in meiosis. Perhaps a moderate reduction in the ASK1 function in *Arabidopsis* plants heterozygous for *ask1-1* enhances the formation of recombination intermediates not to a toxic level so that recombination frequency is increased.

The Skp1 protein is not expected to be directly involved in the recombination process, and yet the phenotypes of its *Arabidopsis* and yeast mutants closely resemble each other. It is also noted that the yeast work was carried out without the knowledge of the *Arabidopsis* work (The *Arabidopsis* work was not cited by the yeast paper). The converging evidence from both *Arabidopsis* and yeast suggests the existence of a conserved network in the regulation of recombination progression in meiosis. An F-box protein with a DNA helicase domain is suggested by Okamoto et al. (2012) to be the one linking Skp1 to the recombination process in yeast. The *Arabidopsis* genome does not contain a homolog of the yeast F-box-associated DNA helicase (based on BLAST search using the yeast protein sequence as query) although it has many proteins containing either an F-box or a DNA helicase domain.

SCOTT FINE – OSU BD FELLOW, COHORT 3

Badger Hole: Towards Defining a Folsom Bison Hunting Complex along the Beaver River, C
Bement, Leland C.; Carter, Brian J.; Jelley, Pollyanna; Carlson, Kristen; Fine, Scott
Plains Anthropologist; Feb 2012; 57, 221; ProQuest Research Library
pg. 53

Badger Hole: Towards Defining a Folsom Bison Hunting Complex along the Beaver River, Oklahoma

**Leland C. Bement, Brian J. Carter, Pollyanna Jelley, Kristen Carlson,
and Scott Fine**

Badger Hole, 34HP194, is a Folsom-age arrowhead kill along the north side of the Beaver River floodplain in northwestern Oklahoma. Badger Hole joins the Cooper and Jake Bluff sites to define one of the highest density Folsom site concentrations in this area of the southern Plains. Together these sites suggest the possible existence of a bison hunting complex that is structured on bison migration, arroyo occurrence, and seasonally specific intercept patterns. A preliminary definition of the Beaver River bison hunting complex is provided based on recent results of limited excavation at the recently discovered Badger Hole site.

Keywords: southern Plains, Paleoindian, Folsom, bison hunting

Mammoths and other large mammals in North America became extinct by the end of the Clovis era (Guthrie 2006; Martin 2005). Changes in the environment and shifts in plant and animal distributions affected not only megafauna, but the human groups who hunted them (Bement et al. 2007; Bryant and Holloway 1985). On the Plains of North America Clovis is followed by the Folsom adaptation (Stanford 1999). Sites bridging the gap between Clovis the mammoth hunters and Folsom the bison hunters are rare. The discovery of the Jake Bluff site in northwestern Oklahoma provides a window into the changes to Clovis technology and hunting organization during this transitional period. Key to this transition is the development of bison hunting techniques during Clovis times that become the hallmark of the following Folsom era. Ac-

companying the changes in plant and animal communities are changes to the landscape. Along the major river valleys on the borders of the High Plains, gullies and arroyos formed (Holliday 1995). The flashy discharge following isolated, intense rain events carved steep-walled arroyos that scalloped valley margins. The steep headward terraces or knickpoint provided a barrier to large animal egress.

An investigation of arroyo formation along a 0.5 km segment of a 3.0 km reach of the Beaver River (North Canadian River) in Harper County, Oklahoma, identified six paleo-arroyos cut into sandstone bedrock (Bement and Brosowski 1999). Radiocarbon dating of deposits obtained from cores indicates the arroyos were flushed of deposits by 11,300 B.P. and were refilled by shortly after 10,000 B.P. Each of these paleo-arroyos was at least 10 m

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Plains Anthropologist, Vol. 57, No. 221, pp. 53-62, 2012

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Feature-positive and feature-negative learning in honey bees

Charles I. Abramson, Ibrahim Cakmak, Meghan E. Duell, Leah M. Bates-Albers, Enoc M. Zuniga, Loma Pendegraft, Amanda Barnett, Carmen L. Cowo, **Joshua J. Warren**, Aaron C. Albritton-Ford, John F. Barthell, John M. Hranitz and Harrington Wells

SUMMARY

Honey bees (*Apis mellifera anatolica*) were subjected to sequential trials where they were given the choice between a feature-positive and a feature-negative feeding plate. The ‘feature’ being manipulated is the presence of a single blue circle among three circles marking the location of a small sucrose [reward](#). That is, a ‘feature-negative’ target had three white circles, while a ‘feature-positive’ target had two white circles and one blue one. Two experiments were performed. In both experiments, each bee was tested under two different reward scenarios (treatments). In the first experiment, during the feature-positive treatment bees received 4 μl of 2 mol l^{-1} sucrose when choosing the feature-positive plate, but received 4 μl of saturated NaCl solution (saltwater) when choosing the feature-negative plate. During the feature-negative treatment, bees were [rewarded](#) when visiting the feature-negative plate, while visitation to the feature-positive plate only offered bees the saltwater. The second experiment was a repeat of the first except that pure water was offered instead of saltwater in the non-rewarding feeding plate. As an experimental control, a set of bees was offered sequential trials where both the feature-positive and feature-negative plates offered the sucrose reward. Bee feeding plate choice differed between the feature-positive and feature-negative treatments in both experiments. Bees favored the feeding plate type with the sucrose reward in each treatment, and never consumed the saltwater or pure water when encountered in either treatment. Further, behavior of bees during both the feature-positive and feature-negative treatments differed from that of control bees. However, neither feature-positive nor feature-negative [learning](#) reached high levels of success. Further, a feature-positive effect was seen when pure water was offered; bees learned to solve the feature-positive problem more rapidly. When we tested bees using simply the choice of blue *versus* white targets, where one color held the sucrose reward and the other the saltwater, a bee's fidelity to the color offering the sucrose reward quickly reached very high levels.

Journal of BIOORGANIC AND MEDICINAL CHEMISTRY

Synthesis and In Vitro Biological Evaluation of Lipophilic Cation Conjugated Photosensitizers for Targeting Mitochondria

Pallavi Rajaputra, Gregory Nkepang, **Ryan Watley**, Youngjae You,*

Keywords: mitochondria targeting conjugates; delocalized cationic dye; photodynamic therapy; anticancer therapy

Mitochondria-specific photosensitizers were designed by taking advantage of the preferential localization of delocalized lipophilic cations (DLCs) in mitochondria. Three DLC-porphyrin conjugates: CMP-Rh (a core modified porphyrin-rhodamine B cation), CMP-tPP (a core modified porphyrin-mono-triphenyl phosphonium cation), CMP-(tPP)₂ (a core modified porphyrin-di-tPP cation) were prepared. The conjugates were synthesized by conjugating a monohydroxy core modified porphyrin (CMP-OH) to rhodamine B (Rh B), or either one or two tPPs, respectively, via a saturated hydrocarbon linker. Their ability for delivering photosensitizers to mitochondria was evaluated using dual staining fluorescence microscopy. In addition, to evaluate the efficiency of the conjugates as photosensitizers, their photophysical properties and *in vitro* biological activities were studied in comparison to those of CMP-OH. Fluorescence imaging study suggested that CMP-Rh specifically localized in mitochondria. On the other hand, CMP-tPP and CMP-(tPP)₂ showed less significant mitochondrial localization. All conjugates were capable of generating singlet oxygen at rates comparable to CMP-OH. Interestingly, all cationic conjugates showed dramatic increase in cellular uptake and phototoxicity compared to CMP-OH. This improved photodynamic activity might be primarily due to an enhanced cellular uptake. Our study suggests that Rh B cationic group is better at least for CMP than tPP as a mitochondrial targeting vector.

DOMINIC A. BARRETT – OSU BD FELLOW, COHORT 1

Source: The American Midland Naturalist, 168(2):302-314. 2012.

Published By: University of Notre Dame

URL: <http://www.bioone.org/doi/full/10.1674/0003-0031-168.2.302>

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The American Midland Naturalist Journal

Spatio-Temporal Variations in Age Structures of a Partially Re-established Population of Northern River Otters (*Lontra canadensis*)

DOMINIC A. BARRETT

Oklahoma Cooperative Fish and Wildlife Research Unit, Department of Natural Resource Ecology and Management, Oklahoma State University, Stillwater 74078

DAVID M. LESLIE, JR.

U.S. Geological Survey, Oklahoma Cooperative Fish and Wildlife Research Unit, Department of Natural Resource Ecology and Management, Oklahoma State University, Stillwater 74078

ABSTRACT.—Examination of age structures and sex ratios is useful in the management of northern river otters (*Lontra canadensis*) and other furbearers. Reintroductions and subsequent recolonizations of river otters have been well documented, but changes in demographics between expanding and established populations have not been observed. As a result of reintroduction efforts, immigration from Arkansas and northeastern Texas, and other efforts, river otters have become partially reestablished throughout eastern and central Oklahoma. Our objective was to examine age structures of river otters in Oklahoma and identify trends that relate to space (watersheds, county) and time (USDA Animal and Plant Health Inspection Service county trapping records). We predicted that river otters in western areas of the state were younger than river otters occurring farther east. From 2005–2007, we obtained salvaged river otter carcasses from federal and state agencies, and we live-captured other river otters using leg hold traps. Seventy-two river otters were sampled. Overall, sex ratios were skewed toward females (1F:0.8M), but they did not differ among spatiotemporal scales examined. Teeth were removed from salvaged and live-captured river otters (n = 63) for aging. One-year old river otters represented the largest age class (30.2%). Proportion of juveniles (<1 y old) in Oklahoma (19.0%) was less than other states. Mean age of river otters decreased from east-to-west in the Arkansas River and its tributaries. Mean age of river otters differed between the Canadian River Watershed (0.8 y) and the Arkansas River Watershed (2.9 y) and the Canadian River Watershed and the Red River Watershed (2.4 y). Proportion of juveniles did not differ among spatiotemporal scales examined. Similar to age structure variations in other mammalian carnivores, colonizing or growing western populations of river otters in Oklahoma contained younger ages than more established eastern populations.

APPENDIX I

SCHOLAR AND BD FELLOW

HIGHLIGHTS



OSU in Tulsa researchers complete first project on Tandy Community Supercomputer

Researchers from Oklahoma State University in Tulsa were the first to utilize the new Tandy Community Supercomputer in Tulsa, crunching data in minutes rather than hours or days.

Dr. Brek Wilkins, a post-doctoral research associate at OSU Center for Health Sciences, used the supercomputer on July 3 to refine a software technology he has developed as a result of his dissertation research to predict the onset of heart attacks.

The supercomputer is able to conduct calculations at a rate more than 100 times faster than a desktop computer. For Wilkins, that meant computations that normally take 20-30 minutes were finished in less than a minute. Wilkins was also able to complete calculations from 24-hr EKG data that were impossible on his desktop computer in about five minutes with the Tandy supercomputer.

"The supercomputer will help in initial stages of our research projects where large amounts of data storage and processing are needed. But what's most exciting is the ability to use the Tandy supercomputer to help us refine OSU-CHS research at more advanced stages and turn it into commercial technologies that individuals can use," said Wilkins, whose laboratory is housed at the OSU-Tulsa Helmerich Research Center. "For example, we'll be able to refine our research that highlights the link between sleep apnea and diseases such as hypertension, heart disease and stroke to a point where it can be included in the at-home sleep apnea monitor we are developing."

OSU-Tulsa and OSU Center for Health Sciences President Howard Barnett praised the researchers for taking a lead role in utilizing the supercomputer for research activities that will have a lasting impact on the state's economy.

"The researchers at OSU Center for Health Sciences and OSU-Tulsa are leading the way on innovative projects that have the potential to impact all of us in everyday applications," said Barnett. "We are committed to applied research that will have direct impact in Oklahoma and to be able to utilize the supercomputer to speed up the timelines on our scientific endeavors."



Colorado Cherokee Circle
Presents
Scholarship Workshop
Focus on Tribal Citizens starting 4th Grade

Major Topics Covered:

- Choices 4th Grade thru Graduate School
- FAFSA
- Where to Find Opportunities
- How to Apply for Scholarships
- Beginning Resume
- Interviewing Skills
- Recommendation Letters & References
- Social Media Best Practices
- Nerds are cool! MAKE \$\$\$!

Speaker



Cara Cowan Watts
Cherokee Nation Councilwoman

To receive daily scholarship opportunities by email, email Cara your name, city and State at cara@caracowan.com and asked to be added to the OPCAISE's listserve.



Saturday, November 3, 2013
9am to Noon



Avenue Theater Group (ATG)
417 E 17th Avenue in Downtown
Denver, CO 80203
<http://avenuetheater.com/>

For more information, email: info@atg.org or visit
<http://www.coloradacherokee.org>



CORD CARTER and JAMES SHARP, Southeastern Oklahoma State University Scholars, accepted Chapter Awards at the National American Chemistry Conference in New Orleans, LA.

SACNAS Science Scholar Earns Internship at NIH

Congratulations to David Supeck on his admittance to the [Intramural AIDS Research Fellowship \(IARF\)](#) at the National Institute of Health (NIH)! David is currently a graduate student at Oklahoma State University and a [SSNAP Scholar](#). SACNAS staff Annabel Ortiz caught up with David to talk about what he is looking forward to at the NIH.

Q: What motivated you [to apply](#) to the NIH Summer Research Fellowship? During the 2012 SACNAS National Conference, I learned of the opportunity to conduct summer research at the NIH after speaking with Dr. David Wilson and attending an NIH workshop. [Dr. Wilson is the Director of American Indian Affairs & Policy at SACNAS.] I became very interested because the NIH is devoted to biomedical research and encompasses my interest in immunology. After the conference, I visited the NIH intramural website and emailed the Director of the NIH Office of Intramural Training and Education for further information. I thought that going to the NIH for the summer would be a great environment to explore science research and gain a deeper understanding of scientific work from leading scientists.



David at 2012 SACNAS



CONNOR FERGUSON – OSU former Scholar and recent M.S. Agronomy graduate from the University of Nebraska in Plant and Soil Science will be attending Lincoln University near Christchurch, New Zealand for his Ph.D. studies in Agriculture and Production Science with an emphasis in pesticide spray drift reduction.

OSU’s ‘Space Cowboys’ complete flight aboard NASA’s reduced gravity aircraft

(June 7, 2013 Stillwater, OK) – Nine Oklahoma State University aerospace engineering students ventured to the NASA Johnson Space Center in Houston, Texas, this week to conduct experiments as part of the Reduced Gravity Education Flight Program. The student performed the experiments aboard a microgravity aircraft that produces periods of weightlessness for up to 25 seconds at a time by executing a series of approximately 30 roller coaster-like parabolas over the Gulf of Mexico. During the free falls, the students gathered data in the unique environment that mimics space. The OSU team’s opportunity to participate is the result of the hard work and commitment of the team



Geoff Kibble, Brian Delano, Alyssa Avery, Jake Hathaway, Zach Barbeau, Reyhann Eusufzai, Calvin Brown, Thomas Verschelden & Shea Fehrenbach.

that includes team leader Zach Barbeau, veteran Space Cowboys Alyssa Avery, Calvin Brown, Shea Fehrenbach and Thomas Verschelden, new members Brian Delano, Geoff Kibble, Jake Hathaway and Reyhan Eusufzai, and faculty advisor Jamey Jacob. The team was selected based on scientific merit and educational outreach potential from more than 30 proposals. The team completed NASA research on artificial gravity generation for long-duration space flight, a concept they developed over several years. The flights by the Space Cowboy team also included outreach experiments involving students from Stillwater Junior High School and Gordon Cooper Pre-engineering Academy.

“We are excited that our program provides once-in-a-lifetime opportunities for aspiring scientists and engineers to study and understand their craft. The students gain useful skills by participating in the program through collaborative planning and teamwork,” said Frank Prochaska, RGEFP manager.

The Space Cowboy team arrived at Ellington Field, where astronauts do their T-38 training, on May 31, accompanied by Tulsa Channel 2 anchor Russ McCaskey, who flew with the team in zero gravity. Following their flight and return to OSU, the team will evaluate findings, draw conclusions and provide the results to NASA for further evaluation. Outcomes from the OSU experiment will help future astronauts and NASA in future long-

duration space missions such as those to Mars and deep space. Results of the experiment and photos of the team will be available on their Facebook page at www.facebook.com/ZerogeePete

The team received financial support from the Oklahoma Space Grant Consortium and Ray and Linda Booker.

For more information about the Reduced Gravity Education Flight Program, visit <http://reducedgravity.jsc.nasa.gov> or contact Ciandra Jackson, NASA Johnson Space Center Public Affairs, at 281-483-2924 or ciandra.t.jackson@nasa.gov.

2012-2013

STARS

CELEBRATING THOSE WHO MAKE A DIFFERENCE



DARRON LAMKIN
NORTHEAST

as he became a pro-life Northeast volunteer. In two years at the school, Lamkin logged 1,300 volunteer hours.

He serves as a mentor for students in the school's engineering program.

"I just want to inspire them and let them know they can go to college," he said.

Lamkin has another goal in mind, too. He wants to increase the number of graduates in the engineering field. But first, those students must finish high school.

"I hear those kids using engineering terms, and it's so encouraging," he said. "I see so much potential for this school, for these students." ■

A lot of people have the view that high school is really too late to help kids. I think it's never too late to make a difference.

—Darron Lamkin, Valuable Volunteer | Northeast Academy for Health Sciences & Engineering

For a short time, Darron Lamkin stopped showing up at Northeast Academy for Health Sciences and Engineering. He had nothing in abundance about college, about steady jobs and about life. He just wasn't sure it was making a difference.

Then, he found his way back. "The kids are just extremely honest," Lamkin said. "One kid said he wanted me to come back because I treated him like an adult."

Lamkin vowed not to be someone who let the students down.

"A lot of people have the view that high school is really too late to help kids," he said. "I think it's never too late to make a difference."

Lamkin finished his master's degree in industrial engineering and management last year and then began work on his doctorate even

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STUDENT SPOTLIGHT

Joseph Brown is majoring in chemical engineering with a minor in petroleum engineering. The Oklahoma City sophomore credits Oklahoma State University's Inclusion Leadership Program as a "heavy influence on my decision to attend OSU." The program matches high school students with mentors who share their OSU experiences. A visit to the Williams Cos., arranged through ILP, stimulated Brown's interest in alternative fuels and helped him map out his goals — an undergraduate education at OSU, graduate

work at Georgia Institute of Technology and a future of working to develop fuels that are cost-effective and environmentally friendly.

While a freshman, Brown also worked with the Retention Initiative for Student Excellence program and says the skills he gained with RISE and ILP "have allowed me to become a leader on campus." He's treasurer of the OSU chapter of the National Society of Black Engineers and president of the Xi Mu chapter of Phi Beta Sigma Fraternity Inc. Brown has been named an Oklahoma Louis Stokes Alliance for Minority Participation Scholar, a President's Distinguished Scholar, an American Chemical Society Scholar, a Black Alumni Scholar and the Multicultural Engineering Freshman of the Year. He is also involved with the African-American Student Association and the American Institute of Chemical Engineers.

"As a minority student at a predominantly white university, it is easy to think that the odds are stacked against us and success is impossible, so I am thankful to Institutional Diversity for shattering that mindset," Brown says.

Management Information Systems

Bachelor of Science in Business Administration Undergraduate Program

Ka'Shay Warren

December 2013 graduate

INTERNSHIP SPOTLIGHT



Management Information Systems, Information Assurance Option International Business with a concentration in Spanish USAA IT Intern, Bank Project Delivery Web Developer

Briefly describe your role and responsibilities as an intern. I am a web development intern for USAA in San Antonio, Texas. USAA is a company with a mission to be the provider of choice for military and military families. My time is spent coding pages sent to me from various designers for use on dot com and other internal sites. I have a mentor and manager assigned specifically to me so that I am able to get daily feedback on my performance. These hands-on experiences ensure that I am constantly learning and am in an environment where being inquisitive is expected and appreciated. I enjoy getting to see the visual implications of the code I create. There is something rewarding about seeing what you have created in production.

What did your internship teach you about this career field? I have learned that there is ALWAYS something to learn in the IT field. The field is constantly growing so if you want to grow with the field you must make a conscious effort to learn as much as possible, whenever possible. Since beginning this internship, I can certainly say that there have been aspects of both my majors evident in my day to day activities. I have a newfound respect for each person who influences and helps in the production of websites and apps because it is truly a team effort.

Because of how engaged I was during my first two weeks, I was chosen to be a part of a final party planning group for my intern class. It has been a very challenging, yet interesting, endeavor because it requires taking extra time from other assignments. The greatest thing about this situation is that it is more of an actual representation of what a "group project" is like in the business world. You are dodging schedules, meeting overhead guidelines, budgeting, and learning to communicate with others from various backgrounds.

What impacted your selection of this major? To be quite honest, having a major that is going to produce a vast majority of jobs is the number one reason. Over the course of my internship, I have learned that there are expected to be over a million computer-related jobs by the year 2020. The number two reason would be having a great mentor who saw talent in me that I had yet to see in myself: research, patience, teachable mindset, and good communication skills, which are all very crucial in the role I am currently in.

What about your academic program or training proved valuable in facilitating your career development or attainment of professional opportunities? Career Services in the Spears School of Business, Student Support Services, working a part-time job and volunteering as a mentor through various organizations were the most influential things that impacted my performance leading up to and during the internship. I went to countless resume doctors, discussed interview questions and etiquette, learned how to communicate with all types of people, learned how to multitask, and perfected putting the greater good of others or the company over my own. The classes I feel best prepared me for this job were the PHP programming class because it taught me basic HTML code, and the basic 3000 level management and marketing classes because those are all things that should be considered when developing websites and apps.

Please highlight any extracurricular activities that are a meaningful part of your collegiate experience and what they taught you. I have volunteered ever since I graduated high school and even continued to volunteer while in San Antonio on my internship. There is a lot to be said about what you learn when you give your personal time to assist someone in bettering their life. I currently mentor incoming freshmen through LASSO and that is definitely the highlight of my school week. In helping others I have learned a lot about myself and have grown in ways that few could fathom.

Is there anything else you could share with students considering this area of study that will encourage success or allow them to maximize their collegiate career? I suggest networking with as many people as possible, joining organizations inside and outside of your college, volunteering, and lastly, either joining/creating a study group or using the tutoring center. You want your resume and GPA to show that you do a lot of things, and do them with passion. Also, studying abroad was very influential for me in my college career.

THE FIFTH INTERNATIONAL CONFERENCE ON:

PLANT-BASED VACCINES, ANTIBODIES & BIOLOGICS

4-7 June 2013, University of Verona, Italy

FINAL ORAL PROGRAMME & POSTER PROGRAMME PBVA 2013

FINAL CONFERENCE PROGRAMME · THURSDAY 6TH JUNE

SESSION 5: ANTIBODIES I

Moderator: Jim W. Larrick (*Panorama Research, Moorpark Vale, California, USA*)

09.00-09.30

'Pharma-Planta – The European project to introduce plant-derived monoclonal antibodies to the clinic'

Pekka Fischer (*BWH Aachen, Aachen, Germany*)

09.30-09.50

'Development of a Nicotiana-derived version of Synegis (anti-RSV)'

Larry Zeitlin, Ognjen Bohorov, Natasha Bohorova, Charles Goodman, Andrew Hiett, Do Kim, Michael Parry, Jesus Velasco, Kevin J. Whaley, Dale L. Barnada, James E. Crowe, Jr, Pedro A. Padra, Brian E. Gilbert (*MAPP Biopharmaceuticals, San Diego, California, USA*)

09.50-10.05

'Development of a passive immunization cocktail for HIV using plant-based antibodies'

Wing Fai Cheung, Erin Gilbert, John Truel, Jessica Rousseau, Linda Verduik, Fang Liu, Zacherie Lefebvre, Hailing Wang, Michael Marit, Michael D. McLean, David Miller, Kelly MacDonald and J. Christopher Hall (*PactForm Corporation/University of Guelph, Guelph, Ontario, Canada*)

10.05-10.20

'Functional analysis of plant-derived MAb therapeutics for West Nile Virus with multiple specificities'

Ciang 'Shawn' Chen, Huifang Lai, Matthew Dent, Junyun He, Xiaohong Zhou, Kabir Loungar, Jaka Stabnicki, Jonathan Hurtado, Reshita Kumar and Christopher Brock (*Arizona State University, Tempe, Arizona, USA*)

12.30-12.55

'PRX-102, modified alpha-galactosidase enzyme for treating Fabry disease- Product development'

Yuseph Shaatili (*ProLabs Biotherapeutics, Garmet, Israel*)

12.55-13.15

'Testing an HIV vaccine using live Vaccinia virus and plant-produced Gag and gag41 virus-like particles'

Linda R. Meador, Sarah A. Bressans, Jacquelyn Kilbourne, Karen L. Dender, Karen Kibler, Bertram L. Jacobs and Isairi S. Mor (*Arizona State University, Tempe, Arizona, USA*)

13.15-13.35

'Safety and efficacy of plant-produced Griffithsin for antiviral indications'

Deirdre Euse (*Novocrop Biotechnologies, Owensboro, Kentucky, USA*) and Kenneth E. Palmer (*Novocrop Biotechnologies/University of Louisville School of Medicine, Owensboro, Kentucky, USA*)

13.35-14.30

Lunch Break & Posters

SESSION 7: MANUFACTURING & PRODUCTION SYSTEMS DEVELOPMENTS

Moderator: Edward P. Rybicki (*University of Cape Town, Cape Town, South Africa*)

14.30-14.50

'Plant virus-based systems in autoimmune diseases: From screening to treatment'

Linda Accardi, M. Merli, R. Zampieri, E. Trazza, E. Giocchino and M. Pezzetti (*University of Verona, Verona, Italy*)



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Southeastern Hands Out All-Sports Honors

5/1/2013 7:05:00 PM



DURANT, Okla. – Wednesday evening Southeastern handed out its end of the year honors including its overall Athletes of the Year awards as well as the team Most Valuable Player honors and the Scholar-Athlete recognition.

The Savage Storm has 22 student-athletes earn All-Great American Conference honors with the baseball selections still outstanding.

SE also racked up four GAC specialty awards with [Megan Kunkel](#) taking Freshman of the Year honors during volleyball season, while softball took home three honors as [Ron Faubion](#) was named Coach of the Year, [Jacee Bennett](#) was named Pitcher of the Year and [Mindy McElroy](#) was named Newcomer of the Year.

Southeastern programs awarded 151 letters to athletes for the 2012-13 competition seasons.

Southeastern also handed out its Scholar-Athlete Honors for both men and women.

The Scholar-Athlete on the women's side was [Shelby Fraser](#) of the cross country program

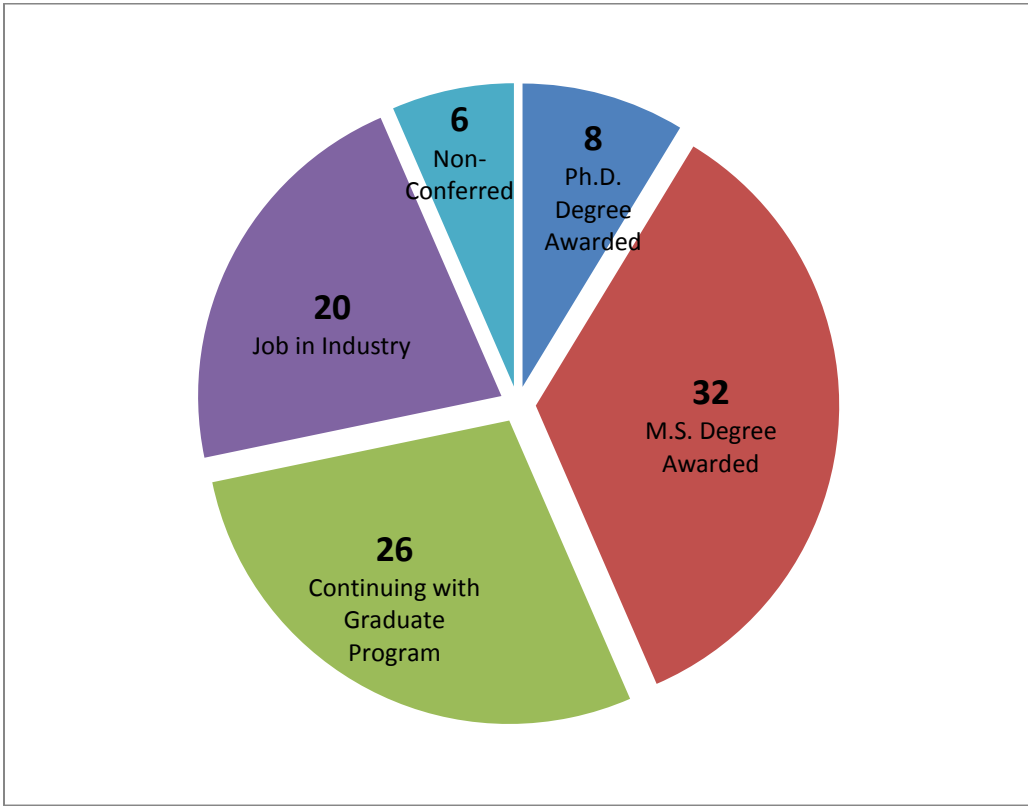
APPENDIX J

BRIDGE TO THE DOCTORATE

FELLOWS

Cohort	Last name	First name	Ethnicity	Discipline	Began M.S. Program	Continuing with program	Completed M.S. Degree	Alternate Plans	Began Ph.D. Program	Completed Ph.D.	Employment	Company	Location
5	Arscott	RaiAnna	African American	Chemistry		X			August 1, 2011				
5	Bryant	Nicole	Native American	Botany	08/01/10	X			August 1, 2012				
5	Burson	Eric	Native American	Chemistry	08/01/12	X			June 1, 2012				
5	King	Jamere	African American	Engineering	08/01/10	X	MS - May 2012	GRFP					
5	Lamkin	DJ	African American	Engineering	06/01/12	X							
5	McCloud	Josh	Native American	Botany	08/01/10	X	MS - June 2013	transferred to Cornell Univ.	August 1, 2011		Ph.D. @ Cornell		
5	Parkhurst	Molly	First Gen-White	Botany	08/01/10	X							
5	Rice	Marissa	African American	Zoology	08/01/12	X							
5	Ross	Joseph	Native American	Physics	08/01/11	X							
5	Supeck	David	Native American	Biochemistry	08/01/12	X							
5	Tehrani	Ana	Hispanic	Statistics	08/01/12	X							
5	Williams	CJ	African American	Engineering	08/01/12	X							
4	Aguyo	Chris	Hispanic	Aerospace Engineering	08/01/10			Left Program	NO DEGREE	NO DEGREE	Flight School Education Coordinator	US Air Force Langston University	Langston OK
4	Atkinson	Brittanie	African American	Biochemistry-Gpibs	08/01/09		MS - August 2012	Job in Industry					
4	Dunn	Zack	Native American	Electrical Engineering	09/01/11	X							
4	Franklin	Mario	African American	Industrial Engineering	08/01/10	X			September 1, 2012		Industrial Engineer Electrical Honeywell Aerospace Design Engineer	Tinker AFB Aerospace Center	Midwest City OK
4	Herrera	Juan	Hispanic	Electrical Engineering	01/01/10		MS - December 2012				Associate Geologist	Chesapeake Oil	OKC OK
4	Jordan	Lorne	African American	Biochemistry	08/01/09	X		Job in Industry					
4	Jordan	Ryan	Native American	Geology	08/01/10		MS - May 2012						
4	Kimmel	Jason	Cauc-First Gen	Electrical Engineering	06/01/11	X			August 1, 2010				
4	Liles	Meghan	Native American	Biochemistry-Gpibs	08/01/09	X		Job in Industry					
4	Mace	Chris	Native American	Geology	08/01/09		MS - August 2011				Geophysicists	Exxon Oil	OKC OK
4	Mcandrews	Chrystle	Native American	Botany Microbiology	08/01/09			Non-STEM degree program	NSU Med Tech Program		Medical Technician	St. Francis Hospital Raytheon	Tulsa OK
4	Ong	Shawna	Pacific Islander	Electrical Engineering	08/01/10		MS - May 2012	Job in Industry			Engineer		McKinney TX
4	Watley	Ryan	African American	Chemistry	08/01/09	X			August 1, 2009				
3	Benjamin	Marcus	African American	Chemistry	08/01/08		MS - May 2012	Job in Industry			Teacher	Pine Bluff Schools	Pine Bluff AR
3	Blocker	Tomica	African American	Zoology	01/01/09	X		GRFP Award		Ph.D. July 2013	KU Medical School Research Engineer	working on MD HATRC	Kansas City KS
3	Carpenter	Zachary	Native American	Electrical & Computer Engineering	08/01/08	X	MS - May 2010	Job in Industry	August 1, 2010				Tulsa OK
3	Fine	Scott	Native American	Plant & Soil Science	08/01/08	X			August 1, 2010		Manufacturing Engineer	Forum Energy Technologies	OKC OK
3	Gonzales	Erik	Hispanic	Physics	01/01/09		MS - December 2011	Job in Industry					
3	Gonzales	Jonathan	Hispanic	Electrical & Computer Engineering	01/01/08	X	MS - December 2010		January 1, 2010				
3	Hough	Matthew	Native American	Plant & Soil Science	08/02/08		MS - May 2011	Job in Industry			Biologist	Nebraska Ducks Unlimited	State of Nebraska NE

3	Hughes	Shawna	African American	Food Sciences	01/01/09			MS - December 2011	Job in Industry			Quality Systems Supervisor	Kraft Foods	Columbia	SC
3	Ngo	Minh	Asian/First Gen	Forensics	08/04/08			MS - December 2010	Job in Industry			MS Technician	Aegis Sciences Corp.	Nashville	TN
3	Osei	Richard	African American	Computer Science	08/05/08		X		Left program					NO DEGREE	
3	Parkhurst	Molly	First Gen-White	Botany	05/01/11										
3	Pinkerman	Cody	Native American	Aerospace & Mechanical Engineering	08/06/08		X	MS - July 2010		August 1, 2010					
3	Yarholar	Doug	Native American	Civil Engineering	05/01/09			MS - May 2010	Job in Industry			Civil Engineer	OK Dept. of Transportation	OKC	OK
2	De la Cruz	Felix	Hispanic	Mechanical Engineering	12/01/07			MS - May, 2009	Job in Industry			Industry SPIRE Post Doc Fellow	no info	no info	
2	Harris	Steven	African American	Chemistry	07/01/06		X	MS - May, 2008		Summer 2006 Fall-2010 in Higher Education Began PhD Summer 2011			University of North Carolina	ChappelHill	NC
2	Harvey	Desmond	African American	Industrial Engineering	12/01/06		X	MS - May, 2011				MEP Coord	OSU	Stillwater	OK
2	Henderson	Jacob	Native American	Electrical Engineering	01/01/06		X	MS - May, 2009				Instructor, OU	OU	Norman	OK
2	Hughes	Quintin	African American	Industrial Engineering	01/01/06			MS - May, 2009		Summer 2009 PhD in Engineering Education		CEO/Executive Director	No Ceilings	OKC	OK
2	James	Kevin	African American	Electrical Engineering	01/01/06		X	MS - December, 2009		2009-Began PhD Engineering Education					
2	McCarroll	Shawn	Native American	Computer Science	07/01/06			MS - May, 2009	Job in Industry			Program Mission Director	US Government	Washington	D.C.
2	McCutchen	Marshall	Native American	Physics	01/01/06			MS - May, 2008	Left Program					NO DEGREE	
2	Osianya	Israel	African American	Chemical Engineering	07/01/06			MS - May, 2008	Job in Industry			Engineer	Chevron	Shreveport	LA
2	Rowland	Marquita	African American	Biology	01/01/06			MS - May, 2008	Left Program			Teacher	Lawton Schools	Lawton	OK
2	Vazquez	William	Hispanic	Mathematics	01/01/06			MS - May, 2008	Job in Industry					NO DEGREE	
2	Wallace	T'Aire	African American	Microbiology	01/01/06			MS - May, 2008	Left Program					NO DEGREE	
1	Barrett	Dominic	Native American	Natural Resource Ecology	01/01/05			MS - May, 2008	Job in Industry			Game Warden	Arizona Fish & Wildlife	State of Arizona	AZ
1	Cowan	Brett	Native American	Civil Engineering						August 1, 2004		Civil Engineer	Grand River Dam Authority	Tulsa	OK
1	Cowan-	Cara	Native American	Biosystems Engineering and Environmental Sciences											
1	Watts	Marty	Native American	Sciences	01/01/05		X	MS-May/2002	Job in Industry			Tribal Rep	Cherokee Nation	Tahlequah	OK
1	Heppler	Marty	Native American	Entomology	01/01/05			MS - July, 2007	Job in Industry			Technician	Mansato Corp	St. Louis	MO
1	Manjarrez	Jacob	Hispanic	Biochemistry	01/01/04			MS - July 2009				Post-doc	OU-CHS	OKC	OK
1	Patton	Thomas	Native American	Mechanical Engineering	08/01/04							Engineer		Dallas	TX
1	Peal	Lila	African American	Biochemistry						August 1, 2004		Asst Prof	Langston University	Langston	OK
1	Rush	Loretta	Native American	Plant Pathology	08/01/04				Left Program			Instructor	Seminole Junior College	Seminole	OK
1	Sherman	Adrienne	African American	Environmental Science	08/01/05			MS-May, 2009	Job in Industry			Environmental Controller	OK Dept of Envr Control	State of Oklahoma	OK
1	Singleton	Nicole	African American	Toxicology-Veterinary Biomedical Sciences	08/01/04			MS-May 2008	Job in Industry				no info	no info	
1	Wilkins	Brek	Native American	Biomedical Sciences									no info	no info	
1	Wright	Cristee	African American	Microbiology	08/01/04			MS - July, 2007		January 1, 2005		Post-doc	OSU-Center of Health Sciences	Tulsa	OK
										OU-Pharmacy School		Pharmacist	CVS	Shreveport	LA



Updated June 2013

Ph.D. Degree Awarded:	8
M.S. Degree Awarded:	32
Continuing with Graduate Program:	26
Job in Industry:	20
Left Without Completing Any Degree:	6

OKLAHOMA STATE UNIVERSITY – COHORT V

OKLAHOMA LSAMP BRIDGE TO THE DOCTORATE 2011 COHORT V

OK-LSAMP - OKLAHOMA STATE UNIVERSITY
430 SCOTT HALL, STILLWATER, OK 74078
OKAMP@OKSTATE.EDU / 405-744-6710
WWW.OK-LSAMP.OKSTATE.EDU



ERIC BUTSON
Northeastern State University, 2012
BS, Chemistry
BD Emphasis: Chemistry
Career Goals: To conduct research at a national lab and eventually teach college chemistry to motivate students to go into chemistry.



JEAN VAN DELINDER, PH.D.
Oklahoma State University
Principal Investigator
Oklahoma Louis Stokes Alliance for
Minority Participation



JAMERE KING
Southwestern Oklahoma State University, 2012
BS, Computer Engineering Technology
BD Emphasis: Computer Engineering
Career Goals: To become a Chief Information Security Officer & Chief Information Officer.



JOSH MCLLOUD
Oklahoma State University, 2012
BS, Biological Sciences
BD Emphasis: Botany & Microbiology
Career Goals: To become a professor in order to continue conducting research as well as encourage and mentor minority students.



DAVID SUPECK
Southwestern Oklahoma State University, 2008
BS, Chemistry & Physics
BD Emphasis: Immunology & Biochemistry
Career Goals: To have a career in industry and become a research professor.



MOLLY PARKHURST
Oklahoma State University, 2010
BS, Botany; MS, Botany
BD Emphasis: Plant Science
Career Goals: To become a research scientist with a federal agency such as the USDA, FDA, or EPA with a focus on genetically modified organisms.



CHARLES "CJ" WILLIAMS JR.
Oklahoma State University, 2012
BS, Computer Engineering
BD Emphasis: Industrial Engineering Management
Career Goals: To pursue a project management position with a Fortune 500 company.



RAIANNA ARSCOTT
Texas Southern University, 2011
BS, Chemistry
BD Emphasis: Chemistry
Career Goals: To help people by unraveling causes and exacting cures for cancer, pulmonary, neurological, and autoimmune diseases.



ANA TEHRANI
University of Central Oklahoma, 2012
BS, Mathematics & Statistics
BD Emphasis: Statistics
Career Goals: To become an ethical researcher and to keep current with new material and technology.



JOSEPH ROSS
East Central University, 2009
BS, Medical Physics
BD Emphasis: Medical Physics
Career Goals: To participate in clinical service by performing treatment planning for patients according to the treatment regimen prescribed by the Radiation Oncologist.

Oklahoma State University is a multi-campus public land grant educational system, founded in 1890, that is dedicated to improving the lives of people in Oklahoma, the nation, and the world through integrated, high-quality teaching, research, and outreach. The instructional mission includes undergraduate, graduate, technical, extension, and continuing education informed by scholarship and research. The research, scholarship, and creative activities promote human and economic development through the expansion of knowledge and its application. OSU can boast: (1) being named as one of the "Best Value" colleges by the Princeton Review; (2) a Truman Honor Institution; (3) College of Engineering renowned in the fields of architecture and mechanical engineering; (4) the Center for Health Sciences educates osteopathic physicians, research scientists, and other health care professionals with an emphasis on serving rural and under-served Oklahomans; (5) the Forensic Sciences program is one of only eight in the nation accredited by the Forensic Science Education Program Accreditation Commission; (6) the Biomedical Sciences program offers advanced degrees in anatomy, biochemistry, cell biology, microbiology, pathology, pharmacology, and physiology; (7) dedicated to educating students to be life-long learners and ethically prepared to serve and lead in an increasingly complex global society; (8) a leader in research, the Wentz Foundation program offers a unique undergraduate research scholarship that allows students to develop their own projects in university labs; (9) has state-of-the-art research facilities and equipment, along with talented faculty, and (10) awards more degrees to Native Americans than any other institution in the nation.



DARRON "DJ" LAMKIN
Oklahoma State University, 2010
BS, Mechanical Engineering Technology; MS, Industrial Engineering
BD Emphasis: Industrial Engineering
Career Goals: To become a Manufacturing Engineer and to encourage minority students to seek engineering degrees and careers.






NICOLE BRYANT
Oklahoma State University, 2011
BS, Botany
BD Emphasis: Botany
Career Goals: To become a Plant Pathology & Genetics professor.







MARISSA RICE
Virginia Tech, 2011
BS, Biological Sciences
BD Emphasis: Zoology
Career Goals: To make significant contributions to the fields of ecology, evolution, and behavior and to be a distinguished professor in her field.

UNIVERSITY OF OKLAHOMA

The National Science Foundation Directorate for Education and Human Resources (EHR) through the Division of Human Resources Development (HRD) sponsors the Bridge to the Doctorate program as a competitive supplemental activity to the undergraduate Louis Stokes Alliances for Minority Participation Program. The Bridge to the Doctorate program is designed to broaden participation through the attraction of underrepresented minority students in science, technology, engineering and mathematics (STEM) disciplines. In addition, this activity seeks to remove minority students' hesitancy about entering graduate school and the fear of creating additional financial indebtedness associated with initial graduate education. In 2009, the University of Oklahoma welcomed its second cohort of Bridge to Doctorate Fellows.

	<p>ZACHARY DUNN</p> <p>COHORT 4</p> <p>BS Institution: University of Oklahoma-Norman Major: Electrical and Computer Engineering Continuing with Ph.D. course work.</p>
	<p>MARIO FRANKLIN</p> <p>COHORT 4</p> <p>BS Institution: University of Oklahoma-Norman Major: Industrial Engineering Continuing with Ph.D. course work</p>
	<p>DESMOND HARVEY</p> <p>COHORT 2</p> <p>BS Institution: Langston University-Langston, OK Major: Adult and Higher Education at OSU Received Master of Science 2008 Continuing with Ph.D. course work</p>

	<p style="text-align: center;">JACOB HENDERSON</p> <p style="text-align: center;">COHORT 2</p> <p>BS Institution: The University of Oklahoma-Norman Major: Computer and Electrical Engineering Received Master of Science degree in 2011 Continuing with Ph.D. course work</p>
	<p style="text-align: center;">KEVIN JAMES</p> <p style="text-align: center;">COHORT 2</p> <p>BS Institution: Southern University A&M College- Baton Rouge, LA Major: Electrical and Computer Engineering Received Master of Science degree in 2009 Continuing with Ph.D. course work</p>
	<p style="text-align: center;">LORNE D. JORDAN</p> <p style="text-align: center;">COHORT 4</p> <p>BS Institution: Bowling Green St. University-B.G., Ohio Major: Chemistry and Biochemistry Continuing with Ph.D. course work</p>
	<p style="text-align: center;">JASON KIMMEL</p> <p style="text-align: center;">COHORT 4</p> <p>BS Institution: Oklahoma University- Norman Major: Mechanical Engineering Continuing with Ph.D. course work</p>



MEGHAN LILES

COHORT 4

BS Institution: Oklahoma State University-Stillwater
Major: Biochemistry and Molecular Biology
Ph.D. admission – May 2012
Continuing with Ph.D. course work



RYAN WATLEY

COHORT 4

BS Institution: University of Arkansas – Pine Bluff
Major: Chemistry
Ph.D. admission -- May 2012
Continuing with Ph.D. course work

APPENDIX K

EVALUATION REPORT



The University of Oklahoma
CENTER FOR INSTITUTIONAL DATA EXCHANGE AND ANALYSIS (C-IDEA)
Consortium for Student Retention Data Exchange (CSRDE)

August 31, 2012

Jean Van Delinder
PI, OK-LSAMP
Associate Dean, Graduate College
Oklahoma State University
412 Murray Hall
Stillwater, OK 74078

Dear Dr. Van Delinder,

Congratulations on a successful year in the Oklahoma Louis Stokes Alliance for Minority Participation program. The OK-LSAMP program has had a consistent history of success in developing minority graduates in the STEM field, and in recent years, for increasing the number of its STEM graduates who continue on to graduate school.

For this current five-year project the Alliance has accepted a bold challenge:

- *To increase by 25% the number of underrepresented minority (URM) students graduating in STEM fields over the life of this project (i.e. Recruit and retain a minimum of 5% increase yearly in the number of eligible students). Moreover, the overall goal is that these students would be quality students who are also eligible for acceptance into graduate school.*

The Oklahoma Alliance is currently exceeding this goal. During this evaluation period, summer 2011 through May 2012, the OK-LSAMP program graduated 10% more students with STEM degrees than the previous academic year. In addition, 43% of the students were admitted into graduate school. This reflects a 23% increase over the previous year in the actual number of seniors who were admitted to graduate school, thus the Oklahoma Alliance is succeeding in adding more scholars to the total number of STEM graduate students nationally.

We also know that 22% of the OK-LSAMP graduates chose to enter the industrial workforce rather than attend graduate school; more than half of these students had a GPA of at least 3.0 and had taken the GRE. They were clearly excellent students who were capable of pursuing a graduate degree. We can only speculate about the reasons that they chose to forego a graduate education at this time, but the state of the economy may have played a role in their decisions. In several cases we do know that the students had participated in a summer internship opportunity through the OK-LSAMP program and were such outstanding students that the employers offered them a position with the company upon graduation. It should be noted that part of their benefits package included graduate school education, so the evaluator believes that the Alliance has succeeded with these students as well, even though they did not attend graduate school immediately after graduation and they are not included in those percentages.

It is also noteworthy that 75% of all the OK-LSAMP graduates had a GPA of 3.0 or better. In addition, the percentage of graduates taking the GRE increased from 26% during the 2010-2011 academic year to 33% during this evaluation period. More of the students are looking toward a future graduate degree, and the OK-LSAMP program is successfully preparing them for this academic goal. The support that the OK-LSAMP institutions provide to the scholars is evident by the large number of students who participate in activities that encourage success and graduation in a STEM field. Sixty-one percent of the OK-LSAMP juniors and seniors participated in research activities during the evaluation period. Even more students participated in at least one summer internship during their time in the program. Out of 109 seniors, 79% participated in at least one summer internship, and 41% participated in two or more during their undergraduate studies. It is also interesting to note that 78% of the 51 graduates participated in at least one summer internship. In addition, 67% of the juniors had already accepted at least one summer internship before their senior year. These internships provided excellent experiences for the scholars, and included organizations and higher education institutions such as NASA, Haliburton, Boeing, Lockheed Martin, Exxon Mobile, BP, USDA, Chesapeake Energy, Johns Hopkins University, and Georgia Institute of Technology, as well as several international internships.

Juniors and seniors involved in the OK-LSAMP program with rare exception graduate in a STEM field. The success found in the OK-LSAMP program does not represent the experience of most URM STEM majors throughout the country. The most recently available data from the CSRDE Survey on the Retention and Graduation Rates of Underrepresented Minority Stem Majors show that approximately 26% of URM students that begin in STEM fields graduate in STEM fields. However, nearly every student who enters the OK-LSAMP program graduates in a STEM field. This is a major accomplishment.

Kay Porter and Fara Williams have done a superb job at devising methods to track activity. In addition, your team has consistently communicated with the other partners about opportunities and events that would be beneficial to the students. They are always willing to try new approaches to improve the Alliance processes.

Finally, there is one recommendation that I would like to offer for your consideration.

- **Aim to increase the numbers of seniors taking the GRE from 33% to 40% and making application to graduate schools from 57% to 60%.** As noted above, the percentage of graduates who took the GRE increased from 26% last year to 33% during the current evaluation period. In addition, the percentage of graduates who applied to at least one graduate school increased from 54% during the 2010-2011 academic year to 57% during the current evaluation period. I recognize that some graduate programs may not require the GRE. However, I do think that it is worth considering the possibility that more students will have more advanced degree options available to them if they take the GRE and submit graduate school applications.

Thank you for the opportunity to serve the Alliance. Let me know if you have any questions.

Warm regards,



Sandra Whalen
NSF Program Evaluator

APPENDIX L

SCHOLARS BY INSTITUTION

Institution of Bachelors	First Name	Last Name
Cameron University	Gregory	Cook
Cameron University	David	Dickinson
Cameron University	Jadith	Ziegler
Cameron University	Elizabeth	Krause
Cameron University	Jennifer	Green
Cameron University	Jennifer	Gonce
Cameron University	John	Whitlow
Cameron University	Melissa	Merrieffield
Cameron University	Molly	Lord
Cameron University	Bryan	Pierce
Cameron University	Roosevelt	Matthews
Cameron University	Jamaal	Richardson
Cameron University	Ralph	Saunders
East Central University	Timothy	Wolfe
East Central University	Tanya	Chapman
East Central University	Joshua	Crittenden
East Central University	Hilary	Sanchez
East Central University	Brianna	Davis
East Central University	Blake	Scott
East Central University	Kelsey	Dalmont
East Central University	Antonio	MacDonald
East Central University	Casey	Williamson
East Central University	Jared	Giem
East Central University	Justin	Erwin
East Central University	Karen	Myers
East Central University	Lessa	Estrada
East Central University	Sharon	Whorton
East Central University	Laura	Asaro
East Central University	John	Dale
East Central University	Chase	Tillar
Langston University	Kymberli	Whayne
Langston University	De'Angelo	Stephens
Langston University	Terry	Phillips
Langston University	Dana	Freeman
Langston University	Kayla	Love
Langston University	Princess	Hays
Langston University	Quanisha	Vickers
Langston University	Danielle	Wilson

Langston University	Katerias	Hill
Langston University	Martel	McKinney
Langston University	Candice	Pawnee
Langston University	Megan	Bowlin
Langston University	Tiffany	Glover
Langston University	Shanel	Byron
Langston University	Jodeci	Ross
Langston University	Jazmenn	Smith
Langston University	Rajah	Singh
Langston University	Staci	Gleen
Langston University	Denzel	Pugh
Langston University	Britani	Vann
Langston University	Eugene	DeLoach
Langston University	Lindsay	Davis
Langston University	Evann	Comeaux
Langston University	Tiease	Rand
Langston University	Jordan	Moore
Northeastern State University	Eric	Butson
Northeastern State University	Nicholas	Martin
Northeastern State University	Anthony	McKenzie
Northeastern State University	Katherine	Stewart
Northeastern State University	Kaitlyn	Hamilton
Northeastern State University	Brianna	Broad
Northeastern State University	Kelsey	Dozier
Northeastern State University	Lauren	Lowe-Thompson
Northeastern State University	Jereme	Berryhill
Northeastern State University	Paul	Martinez
Northwestern OSU	Kaitlin	McAllister
Northwestern OSU	Angelo	Majike
Oklahoma State University	Ondreia	Thomas
Oklahoma State University	Jordan	Knight
Oklahoma State University	Shawn	Witt
Oklahoma State University	Lauren	White
Oklahoma State University	Jeremy	Hall
Oklahoma State University	Saad	Gondal
Oklahoma State University	Gabrielle	Brown
Oklahoma State University	Jessica	Evans
Oklahoma State University	Charles "CJ"	Williams

Oklahoma State University	Ahtia	Edwards
Oklahoma State University	Darren	Figuerido
Oklahoma State University	Ka'Shay	Warren
Oklahoma State University	Wilmon	Brown, III
Oklahoma State University	Valentin	Sanchez
Oklahoma State University	Joshua	Warren
Oklahoma State University	Darryl	Wells
Oklahoma State University	Elliott	Haastруп
Oklahoma State University	Maria	Dang
Oklahoma State University	Blair	Baldrige
Oklahoma State University	Daniel	Dixon
Oklahoma State University	DeYawna	Jackson
Oklahoma State University	Tyler	Autry
Oklahoma State University	Andrea	Talley
Oklahoma State University	LaTasha	Woodard
Oklahoma State University	Allison	Potts
Oklahoma State University	Rachel	Morgan
Oklahoma State University	Devon	McLeod
Oklahoma State University	Abbey	Ramirez
Oklahoma State University	Ashley	Lonetree
Oklahoma State University	Isaac	Smith
Oklahoma State University	Danica	Johnson
Oklahoma State University	Milecia	Matthews
Oklahoma State University	Jason	Semien
Oklahoma State University	Alexander	Hardison
Oklahoma State University	Keely	Redhage
Oklahoma State University	Monica	Ruiz
Oklahoma State University	Ashley	Collier
Oklahoma State University	Amanda	Mathias
Oklahoma State University	Zoe	Austin
Oklahoma State University	Amber	Douglas
Oklahoma State University	Kayla	Davis
Oklahoma State University	Kristen	Enyart
Oklahoma State University	Brice	Fiddler
Oklahoma State University	Kody	Jones
Oklahoma State University	Zachary	Etier
Oklahoma State University	Eduardo	Flores
Oklahoma State University	Timothy	Higgins II
Oklahoma State University	Lindsey	Berger
Oklahoma State University	Michelle	Lopez
Oklahoma State University	Mishal	Gondal

Oklahoma State University	Munyardzi "Munya"	Nyamanzi
Oklahoma State University	Matthew	Takyi-Micah
Oklahoma State University	Stephen	James
Oklahoma State University	Troy	King Jr.
Oklahoma State University	Holly	Bramer
Oklahoma State University	Joseph	Brown
Oklahoma State University	Geoffrey	Kibble
Oklahoma State University	Ana	Chicas-Mosier
Oklahoma State University	Amanda	Scofield
Oklahoma State University	Cherril	Orange
Oklahoma State University	William	Lightner
Oklahoma State University	Cameron	Patterson
Oklahoma State University	Isiah	Hill
Oklahoma State University	Leslie	Farias
Oklahoma State University	Katherine "Katie"	Schwartz
Oklahoma State University	Roberto	Garcia
Oklahoma State University	Claudia	Osorio
Oklahoma State University	Foster	Brimacombe
Oklahoma State University	Gretchan	Moore
Oklahoma State University	Trenton	Brown
Oklahoma State University	Mykle	Chavez
Oklahoma State University	Adrian	Saenz
Oklahoma State University	Jaron	Redmond
Oklahoma State University	Grant	Williams
Oklahoma State University	Susan	Pham
Oklahoma State University	Nataly	Daggy
Southeastern OSU	Chelsea	Nwankwo
Southeastern OSU	Shaun	Brown
Southeastern OSU	Bailey	Wallace
Southeastern OSU	Ashley	Lemons
Southeastern OSU	Allie	McKinzie
Southeastern OSU	Stephen	Garner
Southeastern OSU	Abe	Blackburn
Southeastern OSU	Joseph	Diaz
Southeastern OSU	Christopher	Tubbs
Southeastern OSU	Roberto	Guadian-Ibarra
Southeastern OSU	Kent	Davidson
Southeastern OSU	Kandace	Monroe
Southeastern OSU	Markie	Meadows
Southeastern OSU	Shelby	Fraser

Southeastern OSU	Cord	Carter
Southeastern OSU	Jaclyn	Evans
Southeastern OSU	Amanda	Gomes
Southeastern OSU	Tyler	Shannon
Southeastern OSU	Ricky	Lemons
Southeastern OSU	Megan	McBride
Southeastern OSU	Duncan	Kovash
Southwestern OSU	Ashley	Rodriguez
Southwestern OSU	Zachary	Daniel
Southwestern OSU	Tanner	Wheeler
Southwestern OSU	Brittany	Epley
Southwestern OSU	Caleb	Hubbard
Southwestern OSU	Mary	Phillips
Southwestern OSU	Ashley	Walker
Southwestern OSU	Alfa	Abame
Univ. of Central Oklahoma	Samantha	Peno
Univ. of Central Oklahoma	William	Snow
Univ. of Central Oklahoma	Sharonda	Carson
Univ. of Central Oklahoma	BrieAunna	Webster
Univ. of Central Oklahoma	Juan	Orozco
Univ. of Central Oklahoma	Chelsea	Spencer
Univ. of Central Oklahoma	Jessica	Webb
Univ. of Central Oklahoma	Chelsea	Smith
Univ. of Central Oklahoma	Mark	Hill
Univ. of Central Oklahoma	Yoslin	Vallejos
University of Oklahoma	Tyeshia	Waters
University of Oklahoma	Emmanuel	Livingston, III
University of Oklahoma	Jacob	Bonsu
University of Oklahoma	Cortes	Williams
University of Oklahoma	Victoria	Oden
University of Oklahoma	Alex	Moreno
University of Oklahoma	Ryan	Edwards
University of Oklahoma	Guillermo	Morales
University of Oklahoma	Joshua	Hardisty
University of Oklahoma	Shynette	Porter
University of Oklahoma	Derek	Garcia
University of Oklahoma	Kelsey	Raus
University of Oklahoma	Erin	Thornton

University of Oklahoma
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University of Oklahoma
University of Oklahoma

Sergio
Tanner
Katherine
Stephanie
Lan
Gabriela
Quang
Tyler
Alexander
Maurice
Peter

Zegarra Cabello
Blair
Ngo
Andrade
Le
Berrios
Nguyen
Ashley
Guerra
Dukes
George

University of Tulsa
University of Tulsa
University of Tulsa
University of Tulsa
University of Tulsa
University of Tulsa
University of Tulsa

Jose
Thomas
Maria
Annette
Shannon
Trokon
Katherine

Corcega
Linscott
Castaneda
Ibarra
Suddath
Johnson
Riojas