2011

PERFORMANCE EFFECTIVENESS

REVIEW

Oklahoma
Louis Stokes Alliance for
Minority Participation

Submitted to
The National Science Foundation
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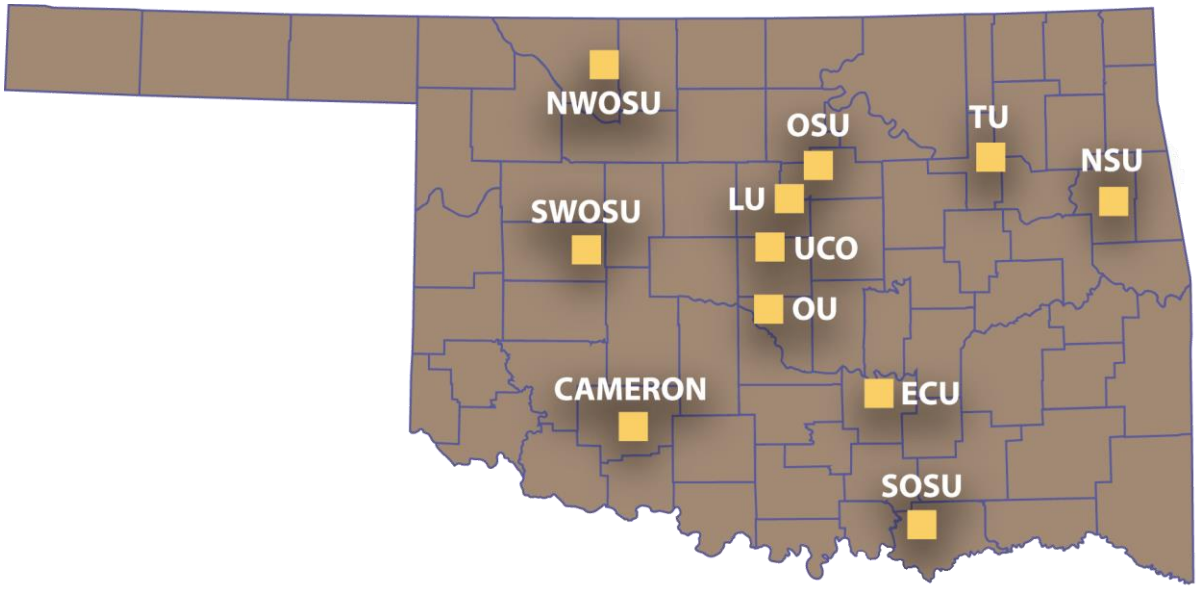

Oklahoma Alliance Institutions

2011

PERFORMANCE EFFECTIVENESS REVIEW

P.E.R.

Oklahoma

Louis Stokes Alliance for Minority Participation

in Science, Technology, Engineering, and Mathematics

(OK-LSAMP STEM)

Submitted by

Oklahoma State University
Lead Institution

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INTRODUCTION

The Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP) program concluded *Year Two* of the five year National Science Foundation (NSF) grant (HRD 09020027--2009-2014). This also concludes 17 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 2010-2011 the Oklahoma Alliance had 170 Scholars; 37 completed Bachelor of Science degrees and 15 were admitted to graduate schools. During the academic year, 50 percent participated in research activities and 58 percent of the scholars participated in summer research at national and international locations.

Dr. Mark E. Payton, Interim Dean of the Graduate College and Professor of Statistics, Oklahoma State University, completed his first year as the Principal Investigator/Program Director for both the OK-LSAMP and Bridge to the Doctorate programs. Immediately after being appointed as the PI, Dr. Payton travelled to each of the Alliance institutions to meet the campus leader (either the president or provost) and the campus coordinator. During these sessions, he discussed Alliance objectives and goals, as well as securing support for the program from the campus leader.

Two scholars from Oklahoma State University were selected to receive the Graduate Research Fellowship Program fellowship award. One will begin graduate studies in Arizona and one in Illinois.

The 16th Annual Research Symposium welcomed 181 attendees for a day of workshops, poster and oral presentations, ethics training, and guest speakers. Dr. Henry Neeman, Director of the Oklahoma Super Computing Center for Education and Research at the University of Oklahoma served as the keynote speaker.

Oklahoma State University Bridge to the Doctorate Fellows worked toward completion of their third year of graduate studies. Four completed Master of Science degrees, with two remaining to work toward Ph.D. requirements and two taking employment in their respective fields of study. Fellows at the University of Oklahoma Bridge to the Doctorate program continued to make progress and all 12 positions were filled.

Overall, the OK-LSAMP program has met the goals established in the initial proposal to the National Science Foundation. During Phase IV, OK-LSAMP held high standards for scholars, thus producing quality graduates in the STEM disciplines. Scholars maintained high grade point averages, participated in research with faculty

mentors, and received internship opportunities. All this and more aided in graduation with the qualifications that open the potential for receiving advanced degrees.

PERSONNEL CHANGES

For the first time in several years, there were no personnel changes at any of the Alliance institutions. All campus coordinators remained and lead institution staff also stayed the same.

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 16 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.

Program Component One

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

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 a session at the Oklahoma Native American Students in Higher Education (ONASHE) conference, February, 2011 (Appendix A).

The 11 Oklahoma Alliance institutions supported 170 LSAMP scholars in the 2010 – 2011 academic year. This total reflects a 11 percent increase from the previous year of 153 scholars. The objective was to increase the number of scholars by 5 percent each year of the project. Objective One has not only been met, it has exceeded the 5 percent increase in the original proposal (Table 1).

Table 1

Comparison Numbers to Meet Stated Goal

Institution	No. Scholars 2009-2010	No. Scholars 2010-2011	No. Scholars Increase/Decrease
Cameron University	6	4	-2
East Central University	14	20	6
Langston University	27	24	-3
Northeastern State University	7	11	4
Northwestern Oklahoma State University	5	3	-2
Oklahoma State University	42	51	9
Southeastern Oklahoma State University	13	15	2
Southwestern State University	4	6	2
University of Central Oklahoma	11	11	0
University of Oklahoma	16	19	3
University of Tulsa	8	6	-2
Totals	153	170	

Table 2

Comparison of Scholars by Gender

	YEAR		PERCENT
Category	2009-2010	2010-2011	
Male	72	81	47.2
Female	81	89	52.4
	153	170	100.0

Table 3

Number of Scholars by Ethnicity

Ethnicity	2009-2010	2010-2011
African American	64	65
Native American	46	57
Hispanic	19	21
Pacific Islander	3	0
Asian American	3	3
White—First Generation	9	14
More than One Race & Unknown	9	10
Total	153	170

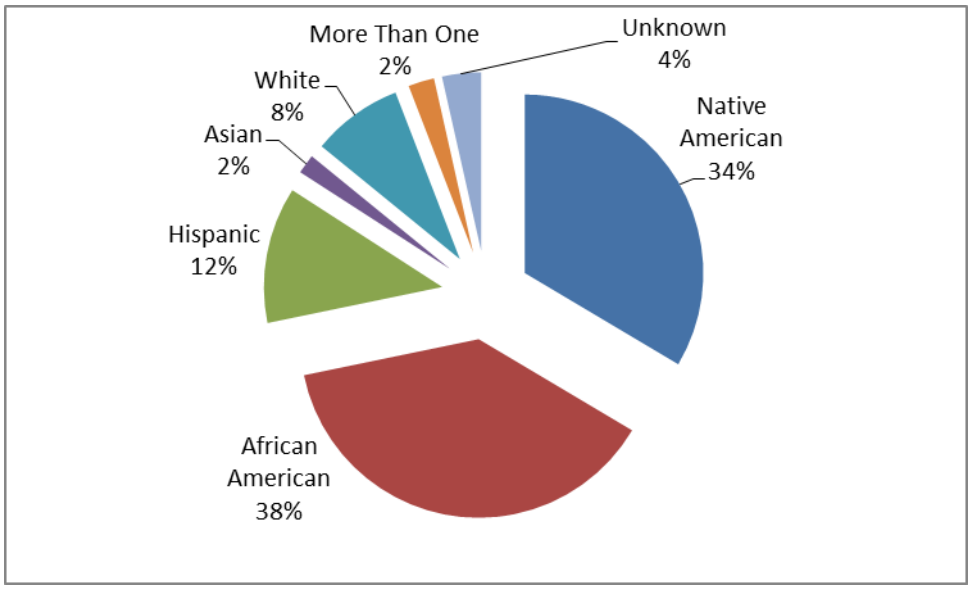


Figure 1. 2010-2011 Ethnicity Breakdown

Campus Coordinators on Alliance campuses recruited students based on degree emphasis, grade point averages, and desire to complete an undergraduate degree and seek admission into graduate school programs. The recruitment of scholars began during high school visitation days and freshman orientation programs. Additional recruitment was by school and local newspaper articles and invites by Scholars to present their research at specific research programs.

Alliance Extra Activities

Summer research and bridge programs are 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 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.

OSU, as lead institution, 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 (Appendix B). They include, but are not limited to:

Retention Initiative for Student Excellence (RISE) and RISE Jumpstart -- a program designed to aid minority students as they make a smooth transition into college life.

***Inclusion Leadership Program (ILP*)** -- a year-long program designed to pair minority college students and students from high schools in Tulsa and Oklahoma City to develop the skills and knowledge to become effective leaders in a more diversely inclusive society.

ConocoPhillips Minority Engineering Program Summer Bridge --- designed for incoming freshmen Engineering majors to spend one month of campus, taking class and transitioning into the academic atmosphere.

Other programs sponsored by the Oklahoma State Regents for Higher Education were designed to promote awareness of science and engineering through the ***Fired Up About Engineering*** **Camp** and ***Smart Cars*****.** Both programs were designed to promote engineering awareness to 20 under-represented high school students.

The Retired Educators for Youth Agricultural Programs (REYAP) program was 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.

The University of Oklahoma also offered several residential and day camps for under-represented youth (Appendix C). These camps included, but are not limited to:

BP Engineering Academy -- A residential camp which encouraged young men who have completed their 9th grade year and/or be in the graduating class of 2012 to 2013 and demonstrate an interest in mathematics and/or science to participate.

BP DEVAS Summer Camp (Discovering Engineering Via Adventure in Science). Designed as a residential camp for **y**oung 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 and who will be entering the 10th, 11th, or 12th grade in fall 2011.

Engineering GLAMS (Girls Learning and Applying Math and Science) -- Designed as a day camp for girls entering their 7th or 8th grade year in fall 2011.

Shell Passport to Engineering -- A four-day residential camp for selected middle school students from Northeast Academy in Oklahoma City.

AT&T Summer Bridge Program -- Designed for incoming freshmen students to help with the transition from high school to the university atmosphere and to increase their math competency. One additional camp was created by a BD Fellow from the University of Oklahoma for the National Society of Black Engineers entitled, *Summer Engineering Experience for Kids (SEEK)* held in Washington, D.C.—20 sixth grade students were taught engineering concepts.

Throughout the academic year the Oklahoma Alliance was involved with TRiO Programs (**Talent Search and Upward Bound, and Student Support Services**) throughout the state. TRiO programs involve high school and freshman under-represented students. During the summer months, OK-LSAMP staff made presentations to the TRiO students and assisted in program activities.

Shared-Database and Listserv

Campus Coordinators continued to work closely with the Grant Coordinator in the collection of Scholar and BD Fellow data. The Grant Coordinator, housed at the lead institution site (Oklahoma State University), maintained the alliance database. Information collected on each of the scholars in Oklahoma was used to complete information requested by the National Science Foundation (NSF) and the program evaluator (Rosemary Hayes, 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. Information was collected from the Campus Coordinators as well as by email to individual scholars. A listserv was established to have direct contact with scholars for certain information. The information includes, but is not limited to: degree program, presentations, research projects, completion of degree, and acceptance into graduate school. The Alliance management team will continue to send regular updates regarding opportunities from across the nation aiming to reach more students and increase the quality of academic opportunities. This database/listserv were shared among alliance institutions as students changed schools, thus allowing the scholars to move freely from one institution to another and to remain as OK-LSAMP scholars in good standing.

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.

- 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, contents and format, (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.

- Fifteen 2010-2011 OK-LSAMP graduates were accepted to graduate schools throughout the nation. Examples include:

  - Graduate Research Fellowship
    - University of Illinois
    - Arizona State University
    - Duke University
  - University of Nebraska
  - University of Oklahoma
  - Drexel University – BD Program

- Support to state and national conferences to present research projects. Examples include:

  National Conference on Undergraduate Research (NCUR), Ithaca, NY
  Oklahoma Research Day, Tahlequah, OK
  Oklahoma Research Day at the Capitol (invite only), Oklahoma City, OK
  16th Annual Research Symposium, Stillwater, OK

International Conference on Arabidopsis Research (ICAR), University of Wisconsin-Madison
American Society of Mechanical Engineers, Chicago, IL
National Society of Black Engineers, New Orleans, LA
Annual Technical Conference and Exhibition, Florence Tuscany, Italy
SACNAS, Anaheim, CA

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 offered workshops focusing specifically on Graduate Education.
- The Annual Research Symposium addressed Scientific Integrity and Ethics with workshops lead by a qualified ethics instructor.
- Scholars were provided opportunities to attend lectures on Ethics during monthly scholar's meetings.
- The University of Tulsa course, *ES 4001: Research Ethics,* continues to be available for scholars. The course is taught by Dr. J. C. Diaz, OK-LSAMP Campus Coordinator for TU.
- Scholars throughout the Alliance continue to be encouraged and supported in traveling to visit graduate schools.
- Scholars were continually advised to enroll in graduate level course work during their senior year. This allowed the scholars to begin accumulating graduate credits before beginning a graduate program of study.
- Scholars throughout the Alliance continue to take advantage of the on-line GRE Preparation course offered through OSU-OKC's Ed-2-Go series. This self-paced course has proven to be beneficial to the scholars. Copies of the resource book used for the course were supplied to each of the Alliance campuses. This allowed the Scholars to use the book without any additional expenses to them.

- Scholars throughout the Alliance are encouraged to apply to a minimum of five graduate schools.

- Campus Coordinators are provided resources (GRE Handbook/CD Study Guides) and encouraged to provide scholars with graduate school preparation.

- Scholar meetings are held at a minimum of once per month. Various topics are presented to the scholars such as graduate school preparation, test taking strategies, and opportunities for summer internships, along with ideas for suggestions on completing applications. Scholar meetings were also used as a means for Scholars to present their research to their peers. This provided a "non-intimidating" environment for presentations.

Annual Research Symposium

The 16th Annual Research Symposium was held September 25, 2010, on the Oklahoma State University, Stillwater campus (Appendix D). The Symposium welcomed 181 attendees for a full day of workshops, poster and oral presentations, ethics training and guest speakers. This number indicated a 21.0 percent increase from the 2009 Symposium in the number of scholars attending and presenting research. Additionally, the number of faculty attending the symposium increased by 27.2 percent.

The program keynote speaker, Dr. Henry Neeman, University of Oklahoma, Supercomputing Center for Education and Research, spoke on "Supercomputing in Plain English."

Table.4

Annual Research Symposium Attendees by Category

	Attendees	
	15th Annual	16th Annual
Undergraduate Students	76	92
Graduate Students	21	22
Faculty	33	42
Staff	16	12
Parents	12	10
Special Guests	21	3
Total	179	181

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 taken at the Annual Research Symposium, Scholar meetings, a class, or as a workshop provided by one of Oklahoma's Campus Coordinators trained to offer such workshops. Scholars are issued a *certificate of completion* at the end of the training and the information is submitted to the Grant Coordinator for inclusion in the database.

International Experiences

Scholars were offered research experiences in a variety of locations. The international research internships help to prepare them for their future career by adding experiences that can help build relations with foreign clients, and add diverse perspectives and experiences to the research skills they acquire during their academic career.

Ten scholars and three BD Fellows participated in international research experiences in ten different international locations. Scholars and Fellows who participated in international experiences during 2010-2011 included:

Courtney Garcia – SWOSU: marine chemistry in Cadiz, Spain for eight weeks.

Elaine Harder – CU: Animal reproduction at one of the world's largest breeding companies in Brazil.

Quintin Hughes – OU BD: Thailand, Engineers in Practice program.

Ryan Jordan – OU BD; Tanzania, Africa to conduct research on modern shell bed deposits in Kigoma Bay.

Jason Kimmell – OU BD: Italy engineering research and mentoring students in local schools.

Diana Lucero – OU: REU in Smart Structures at the University of Connecticut (UC) and the Korea Advanced Institute of Science and Technology. The Program is 10 weeks long with four two weeks at the University of Connecticut, and six weeks in Korea

Megan Salisbury – OU: Study abroad in Aberdeen, Scotland. She studied environmental science.

Katharine Stewart – NSU: Spent 8 weeks in Costa Rica conducting research in the Rain Forest with the Native American and Pacific Islander Research Experience (NAPIRE) program sponsored by the Organization of Tropical Studies.

Kelsey Raus – OU: Traveled to Bolivia, spent 6 weeks during the summer participating in the Sooners Without Borders program.

Kelsey Raus – OU: also conducted research in Italy on a Study Abroad program.

Tyeshia Waters – OU: presented her research at the Annual Technical Conference and Exhibition in Florence Tuscany, Italy.

Joshua Warren – OSU: Traveled to Turkey on a REU experience, conducting research on honey bees as part of a multi-national team of scientists from the U.S., Turkey, Greece, and Bulgaria.

Lauren White – OSU: Kenya and the Philippines. She conducted rural education outreach research during the Spring 2011 semester and returned in May, 2011 for a full year of international research.

Table 5

International Locations Scholars Traveled

Student	International Location
Elaine Harder	Brazil
Courtney Garcia	Spain
Quintin Hughes	Thailand
Ryan Jordan	Africa
Jason Kimmel	Italy
Diana Lucero	Korea
Kelsey Raus	Italy
Kelsey Raus	Bolivia
Megan Salisbury	Scotland
Katharine Stewart	Costa Rica
Tyeshia Waters	Italy
Joahua Warren	Turkey
Lauren White	Kenya

Monthly Scholar Meetings

Monthly scholar meetings are held on each campus under the direction of the Campus Coordinator. The monthly meetings are intended to provide support for the scholars, while bringing in guest speakers. Presentations were made on current research

projects and a variety of other topics, not limited to: financial affairs, time management, and how to apply for summer internships. The monthly meetings allow scholars to become better acquainted with each other and to gain information about other majors, research projects, and activities.

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 a recent report, *Diverse Issues in Higher Education*, reported Oklahoma schools rank in the top for awarding degrees to Native Americans. Three Oklahoma universities in the OK-LSAMP Alliance rank in the top three institutions for Native Americans completing degree requirements. Oklahoma State University is ranked first with 355 graduates, Northeastern State University with 335 graduates, and the University of Oklahoma is ranked third with 241 graduates. Additionally, the Oklahoma Alliance has three other schools ranked in the top 12 for graduates. This represents 9.6 percent of all graduates in Oklahoma as being Native American.

Table 6

Ranking of Alliance Institutions for Native American Degrees Awarded

Ranking	Institution	Number of Degrees Awarded
1	Oklahoma State University	355
2	Northeastern State University	335
3	University of Oklahoma	241
6	Southeastern Oklahoma State University	170
10	East Central University	143
12	University of Central Oklahoma	127

Thirty-seven scholars received Bachelor of Science degrees in the 2010-2011 academic year. Fifteen scholars were admitted to graduate programs throughout the United States. This indicates 40.5 percent of OK-LSAMP scholars are continuing their education by entering graduate programs (Table 8).

Table 7

Number of Graduates by Institution Entering into Graduate Programs

	Number of Graduates	Admitted to Graduate Programs
Cameron University	3	2
East Central University	4	1
Langston University	0	0
Northeastern State University	4	1
Northwestern Oklahoma State University	1	0
Oklahoma State University	11	6
Southeastern Oklahoma State University	2	1
Southwestern Oklahoma State University	1	0
University of Central Oklahoma	3	1
University of Oklahoma	7	3
University of Tulsa	1	0
TOTALS	37	15

- 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.

- Eleven scholars traveled to Ithaca, New York, for the 2011 National Conference on Undergraduate Research (NCUR).

- OSU Scholars participated in the Wentz Research Project --- a part of the Wentz Foundation awards program. The 4 scholars were awarded $4,500 each to conduct research with a faculty mentor and plan and prepare for graduate school (Appendix E).

- Scholars participated in the National Society of Black Engineering Conference, Kansas City, Missouri. One former Scholar received the Leadership Excellence Award and will serve as Regional NSBE Parliamentarian. One scholar received the Board of Corporate Affiliates Scholarship.

- Scholars participated in summer internship/research positions throughout the nation and world.

- The Oklahoma Alliance presented a poster at the National Science Foundation Joint Annual Meeting in Washington, D.C., June 5-10, 2011 (Appendix F).

- 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.

- Graduate school preparation information workshops for OK-LSAMP scholars are available to the Alliance through the Oklahoma State University Graduate College and the University of Oklahoma Graduate College.

- 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.

- The Principal Investigator visited each Alliance campus to discuss the program with the institution president or provost. Additionally, he met with the Campus Coordinator and with scholars.

- 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 is: 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 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.

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, 2010). In 2010-2011, the Oklahoma LSAMP Alliance had 11 scholars attend the conference in Ithaca, New York. The scholars made both oral and poster presentations. Mark Payton, PI and Tim Hubin, Campus Coordinator, SWOSU, both attended the conference (Appendix G).

National Society of Black Engineers (NSBE)

Seven scholars attended the National Society of Black Engineers Conference in Kansas City, MO. The conference/organization is designed to "stimulate and develop student interest in various engineering disciplines, increase the number of minority students studying engineering, and encourage members to seek advanced degrees" (NSBE, 2010). During the conference, Darryl Wells, Mechanical and Aerospace Engineering senior, received an award sponsored by the Board of Corporate Affiliates. Darron "DJ" Lamkin, former Scholar and current graduate student, was selected as the NSBE Region 5 Chair and serves as Oklahoma Parliamentarian (Appendix H).

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

The annual SACNAS conference was held in Anaheim, California. J. Connor Ferguson, OSU Plant and Soil Sciences senior, and Laura Scott, OSU Zoology senior, both received travel scholarships to the conference. Both Scholars presented their research in their respective disciplines.

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 2010 conference was held in Dallas, Texas, October 29-31, 2010. Oklahoma was represented with 40 OK-LSAMP Scholars and sponsors (Appendix I).

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 8

Academic Year Research Experiences and Internship Experiences

Institution	Academic Year Research	Summer Internship
Cameron University	4	3
East Central University	4	4
Langston University	2	14
Northeastern State University	8	7
Northwestern OSU	1	0
Oklahoma State University	32	39
Southeastern OSU	3	1
Southwestern OSU	6	4
University of Central Oklahoma	6	3
University of Oklahoma	16	17
University of Tulsa	4	6
TOTALS	86	98

Listed below are selected examples of internship activities conducted by OK-LSAMP scholars.

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 internship locations.

Baylor College of Medicine, Houston, TX – A private medical school known for its excellence in education, research, and patient care.

Boeing, Oklahoma City, OK – The world's largest aerospace company and the largest manufacturer of commercial jet airliners and military aircraft combined. (www.boeing.com)

Brookhaven National Labs (BNL), Long Island, NY – BNL conducts research in the physical, biomedical, and environmental sciences, as well as in energy technologies and national security. BNL also builds and operates major scientific facilities available to university, industry and government researchers from across the nation. Discoveries made at Brookhaven have won six Nobel Prizes.

BP, 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)

Creek Nation Summer Youth Work Program **--** The Summer Youth Employment Program is designed to provide Native Americans between the ages of 16 and 21 with work experience and the opportunity to develop life skills. All participants work forty hours a week. The eight-week program helps young people gain experience, training, responsibility and money. Mentors are provided for each youth in the program.

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).

Chevron Energy, – A global leader in the energy field, the company provides opportunities for internships in all aspects of oil and manufacturing (Chevron, 2010).

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.

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)

Holly Corporation, Tulsa, OK – an independent petroleum refiner and marketer producing high-value products such as gasoline, diesel and jet fuel as well as specialty lubricants, oil and waxes.

Johns Hopkins Summer Research, Baltimore, MD – The Summer Internship Program (SIP) provides experience in research laboratories to students of diverse backgrounds, including underrepresented minority students and students from economically disadvantaged and underserved backgrounds that have completed one – two or more years of college. The purpose of this exposure to biomedical and/or public health research is to encourage students to consider careers in science, medicine and public health (Johns Hopkins, 2010).

NASA, Langley Aerospace Research Center, Hampton, VA – Researchers at Langley are focusing on some of the biggest technical challenges of our time: global climate change, access to space and revolutionizing airplanes and the air transportation system. (www.nasa.gov)

De Na Zin Wildness, NM – Funded by the Whitten Foundation, to study geological strata and vertebrate fossils and plant fossils, as well as bulk carbon organic samples in conjunction with the New Mexico Museum of Natural History and Science.

Native Explorers, Center for Health Sciences, Tulsa, OK Black Mesa, OK – learn field techniques and measuring geologic sections, creating field notes and records, and learn Native American cultural experiences.

Native American Research Center for Health Programs, Norman, OK – Provide a cooperative structure for the development and implementation of high quality, culturally sensitive and community supported research linked to health disparity issues. Collaborative effort will facilitate the participation of American Indians and Alaskan Natives in the research process through training and mentoring opportunities within both academic and community settings. (www.glitc.org)

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.

Nomac Drilling, El Reno, OK – A part of the Chesapeake Drilling Company.

Oklahoma IdeA Biomedical Research Excellence (INBRE) **–** INBRE is a grant awarded by the National Institutes of Health Institutional Development Award (IdeA) Program. The award will bring over $17 million in research funding to fourteen Oklahoma institutions. The institutions include: University of Oklahoma Health Sciences Center, Norman, Oklahoma; Northeastern State University, Tahlequah, Oklahoma; and Southwestern Oklahoma State University, Weatherford, Oklahoma.

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)

Orthopedic Center of Tulsa, Tulsa, OK – a center dedicated to the wellbeing of patients with locations in Tulsa and Claremore.

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: Arizona State University, Drexel University, Louisiana State University, Oakland University, Oklahoma State University, University of Alabama, University of North Texas, Washington State University, University of Connecticut and Korea.

Schlumberger, Sugar Land, TX – One of the world's leading oilfield services supplying technology, information solutions, and integrated project management to the oil and gas industry. Sugar Land is one of 25 research facilities worldwide.

Tuskegee University, Tuskegee Institute, AL – Summer REU program in computer sciences.

University of Tulsa Junior Robotics Institute, Tulsa, OK – The Robotics Institute involves OK-LSAMP scholars in the promotion of science and engineering by mentoring high school students for two weeks during the summer in various aspects of robot building and programming.

EVIDENCE OF INSTITUTIONALIZATION, OUTREACH

AND FACULTY HIGHLIGHTS

Faculty and Student Teams (FaST) Grants

During the Summer 2011 one Faculty and Student Teams (FaST) grant was awarded. The FaST grant provided opportunities for faculty and students to travel to three different locations to conduct research. Selected faculty and students associate with members of the respective laboratories and professional staff in an educational training program to help provide the tools, knowledge, and resources needed to compete in future research funding opportunities (www.bnl.gov).

One Native American FaST team conducted research at Argonne Labs in Argonne, Illinois. The teams spent 10 weeks on site and were able to explore, develop and conduct research in different disciplines.

Faculty Publications and Activities

Mark E. Payton, PI, Oklahoma State University

Bonjour, E.L., Opit, G.P., Hardin, J., Jones, C.L., **Payton, M.E**., and Beeby, R.L. (2011). "Efficacy of Ozone Fumigation Against the Major Grain Pests in Stored Wheat," *Journal of Economic Entomology*, vol. 104, 308-316.

Carney, K.R., McKenzie, E.C., Mosley, C., and **Payton, M.E**. (2011). "Evaluation of the Effect of Hetastarch and Lactated Ringer's Solution on Plasma Colloid Osmotic Pressure in Healthy Llamas," *Journal of the American Veterinary Medical Association*, vol. 238, 768-772.

Greenstone, M.H., Weber, D.C., Coudron, T.C., and **Payton, M.E**. (2011). "Unnecessary Roughness? Testing the Hypothesis That Predators Destined for Molecular Gut-content Analysis Must Be Hand-collected to Avoid Cross-contamination," *Molecular Ecology Resources*, vol. 11, 286-293.

Kilburn, J.J., Murphy, D.P., Titus, M., **Payton, M.E**., and Backues, K.A. (2011). "Vaccination of Llamas, *Llama Glama*, with an Experimental Killed Encephalomyocarditis Virus Vaccine," *Journal of Zoo and Wildlife Medicine*, vol. 42, 65-68.

Ko, J.C., Freeman, L.J., Barletta, M., Weil, A.B., **Payton, M.E.,** Johnson, B.M., and Inoue, T. (2011). "Efficacy of Oral Transmucosal and Intravenous Administration of Buprenorphine Before Surgery for Postoperative Analgesia in Dogs Undergoing Ovariohysterectomy," *Journal of the American Veterinary Medical Association*, vol. 238, 318-328.

Richards, J.R., Zhang, H., Schroder, J.L., Hattey, J.A., Raun, W.R., and **Payton, M.E.** (2011)."Micronutrient Availability as Affected by the Long-Term Application of Phosphorus Fertilizer and Organic Amendments," *Soil Science Society of America Journal*, vol. 75, available online at doi:10.2136/sssaj2010.0264.

Vadakekut, E.S., Breese McCoy, S.J., and **Payton, M.E**. (2011). "Association of Maternal Hypoglycemia with Low Birth Weight and Low Placental Weight," *Journal of American Osteopathic Association,* vol. 111, 148-152.

"Williamson, K.K., Willard, M.D., Davis, M.S., and **Payton, M.E.** (2011). Efficacy of Gastric Acid Suppression for Prevention of Exercise-induced Gastritis in Racing Alaskan Sled Dogs," American College of Veterinary Internal Medicine Forum, Denver, CO, June 15-18, 2011.

Korlagunta, K., Hermann,J., Parker, S., and **Payton, M.E.** (2011). "Utilizing the Socio-ecological Model to Evaluate Factors Affecting Older Adult's Ability to Grocery Shop, Prepare Food, and Eat," Society of Nutrition Education Annual Conference, Kansas City, MO, July 23-26, 2011.

Rogers, S.M., Allen, R., Melcher, U., Fletcher, J. and **Payton, M.E.** (2011). "Validation of a Single Nucleotide Polymorphism Genotyping Method for Wheat Streak Mosaic Virus," Arabidopsis conference, American Phytopathological Society, Honolulu, HA, August 6-10, 2011.

Camille DeYong, Campus Coordinator, Oklahoma State University

Watson, G. and **DeYong, C.** (2010). "Design for Six Sigma: Caveat Emptor." International Journal of Lean Six Sigma. 1(1): 66-84

Larasati, A., **DeYong, C**. and Slevitch, L. (2011). "Comparing neural network and ordinal logistic regression for analyzing attitude responses." Service Science Journal. (under revision).

Timothy Patton, Campus Coordinator, SoutheasternOSU

Patton, T M.,.Newman, C, Sager, C. and Mauck, M. (2010). First report of Harris mud crab (*Rhithropanopeus harrisii*) in Oklahoma, and furthest inland report in the United States to date. Proceedings of the Oklahoma Academy of Science 90:59-66.

Patton, T. M., Butler, C., Bastarache, R., and Arbour, D. (2010). Trends from six years of spotlight surveys for American alligators (*Alligator mississippiensis*) in southeastern Oklahoma. Proceedings of the Oklahoma Academy of Science 90:67-76.

Patton, T. M. (2011). An assessment of channel catfish diets and predation upon native fishes in the San Juan River, New Mexico and Utah. United States Bureau of Reclamation. $41,000 Grant.

Simin Pulat, Co-PI and Campus Coordinator, University of Oklahoma

Aydin, S., Shen, G., Pulat, P.S. (2010, November 7-10). Impact of Disasters on National Freight, Institute for Operations Research & Management Sci. Annual Meeting, (INFORMS) Austin, TX.

Wang, C., Shen, G., Pulat, P.S., Global End-to-End Freight Movement Modeling, INFORMS Annual Meeting- Austin, Texas, Dec 7-10, 2010.

Wang, C., Shen, G., Pulat, P.S. (2010, October). Poster presentation, Containerized Freight Movement Modeling, OTC Research Day, Oklahoma City, OK.

Conference presentation (2010,October). Global End-to-End Freight Movement Modeling, Cipher ICFS Meeting, Norman, OK.

Greg Wilson, Campus Coordinator, University of Central Oklahoma

Promotion from Associate Professor to Professor of Biology, University of Central Oklahoma.

Caire, W., Loucks, L.S., **Wilson, G. M.,** McDonald, B. K., Early, D. A, and Payne, T. (2010). Annotated checklist of the mammals of the Four Canyon Preserve, Ellis County, Oklahoma. Proceedings of the Oklahoma Academy of Science, 90:19-27.

Lack, J. B., Nichols, R., **Wilson, G. M.**, and Van Den Bussche, R. A. (2011). Genetic signature of reproductive manipulation in the phylogeography of the bat fly, *Trichobius major*. *Journal of Heredity*. Manuscript accepted.

Wilson, G.M. and Radke, W.J. (2010). Promoting transformation: supporting student and faculty collaborations in research, creative, and scholarly activities at a metropolitan university. Council on Undergraduate Research, Weber State University, Ogden, UT, 19-22 June. (Poster)

Chen, W.R., Simmons, C.K., Endicott, B.E., Barthell, J.F. and **Wilson, G.M.** (2010). STEP@UCO: an undergraduate research program as an integral part of transformative learning for students throughout their college life in STEM disciplines. Council on Undergraduate Research, Weber State University, Ogden, UT, 19-22 June. (Poster)

Cloud, T.L., Koppari, K.L. Haynie, M.L. and **Wilson, G.M.** (2010). Comparative phylogeography of the deer mouse and white-footed mouse in Oklahoma and adjacent states. Oklahoma Academy of Science, Northeastern State University, Broken Arrow, OK, 5 November. (Poster)

Cloud, T.L., Koppari, K.L. Haynie, M.L. and **Wilson, G.M.** (2010). Comparative phylogeography of the deer mouse and white-footed mouse in Oklahoma and adjacent states. Oklahoma Research Day, Cameron University, Lawton, OK, 12 November. (Poster)

Chen, W.R., Simmons, C.K., Vaughan, M.B., Barthell, J.F., **Wilson**, **G.M**. & Endicott, B. E. (2011). Faculty mentoring and student retention among STEM majors. STEP 2011: Institutional Culture, Institutional Change and Institutionalization STEP Grantees Meeting, Omni Shoreham Hotel, Washington, D.C., 17-18 March. (Poster)

Chen, W.R., Vaughan, M.B., Barthell, J.F., **Wilson, G.M.,** , Endicott, B.E., & Simmons, C.K. (2011). UCO STEP and S-STEM programs – a transformative experience for STEM majors through faculty mentoring and student research. Transformative Learning Conference, University of Central Oklahoma, Edmond, OK, 20 April. (Poster)

Frank White, Campus Coordinator, Cameron University

Ashworth M.D., Ross, J.W., Stein, D., **White, F.J.**, DeSilva, U., & Geisert, R.D. (2010, April). Endometrial caspase 1 and interleukin-18 expression during the estrous cycle and peri-implantation period of porcine pregnancy and response to early exogenous estrogen administration. *Reproductive Biology and Endocrinology*, Vol. 9;8, No. 1 pp. 33.

Ashworth M.D., Ross, J.W., Stein, D., **White, F.J.**, DeSilva, U., & Geisert, R.D. (2010). Endometrial gene expression of acute phase extracellular matrix components following estrogen disruption of pregnancy in pigs. *Animal Reproduction Science*, Vol. 122, pp. 215-221.

White, F. J. Awarded Oklahoma IDeA Network of Biomedical Research Excellence Summer Mentor Award: $7,200.

White, F. J. Awarded the Buck and Irene Clements Lectureship Award: $6,000.

White: F. J., Collaborating with Dr. Dennis Frisby, Carla Guthridge, and Phillip Schroder on $25,000 grant to evaluate antibiotic resistance in organic and traditional swine production.

White, F. J. Presenter, American Society of Animal Science Midwest Section Meeting, Des Moines, IA, March 15-17, 2010. *Factors Affecting the Formation of the Maternal: Placental Interface in the Pig.*

White, F. J. Presenter, Society for the Study of Reproduction Annual Meeting, Milwaukee, WI.

White, F. J. Presenter, Oklahoma Research Day at Cameron University, Lawton, OK.

Articulations Agreements with Community Colleges

The Oklahoma Alliance continues to work with community colleges throughout the state. The Oklahoma State Regents for Higher Education articulation agreement and policy "guarantees transferring students successfully completing Associate of Science or Associate in Arts degrees into higher education institutions in the Alliance."

Oklahoma State University continued collaboration with Northern Oklahoma College (NOC) in the NOC-OSU Gateway Program. The program is located on NOC's Stillwater campus. Students who have applied for freshman admission to OSU, but do not meet current admission requirements may qualify for admission to the NOC-OSU Gateway Program. Gateway courses transfer as equivalent to specific OSU courses and meet general education requirements. Students in the NOC-OSU Gateway Program are eligible to be OK-LSAMP Scholars and be paired with a faculty mentor.

The "dual enrollment" program between Tulsa Community College (TCC) and OSU continues to be successful. Students applying for the dual admission program are accepted at both TCC and OSU. Once admitted, a 4-year plan is developed. Students will complete courses at TCC before attending OSU, thus allowing students to graduate from Oklahoma State University.

Alliance institutions continue to work with community college staff in identifying minority and under-represented STEM major who are transferring to four-year institutions.

SCHOLAR AND BD FELLOW 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 J.

Bryant, N., Lloyd, J., Sweeney, C, Myouga, F., & Meinke, D. (April, 2011). Identification of Nuclear Genes Encoding Chloroplast-Localized Proteins Required for Embryo Development in Arabidopsis. *Plant Physiology*, Vol. 15, No. 4., pp. 1678-1689.

Camp, C. (2011). Dreams Take Native Student to Costa Rica. *Native American Times*, www.nativetimes.com.

Camp, C. (2010). Miss American Indian OSU 2009-2010. *American Indian Horizons*. Publication of the Oklahoma City Indian Clinic, pp. 4-5.

Edwards, R. (2011). Nano-Scale Fluidics for Ultra-Compact Lab-On-A-Chip Device Applications. Norman, OK: Biomedical Engineering.

Penn, C.J., Vitale, J., **Fine, S**., Payne, J., Warren, J.G., Zhang, H., Eastman, M., & Herron, S.L. (2010, December). Alternative Poultry Litter Storage for Improved Transportation and Use as a Soil Amendment. *Journal of Environmental Quality, V*ol. 40, pp. 232-233.

Fine, S.T. & Carter, B.J. (2010). The Use of Soil Types to Differentiate the Relative Age of the Sand Dunes Across a Modern Climatic Gradient in the Southern Plains, USA: Implications for Determining Past Climatic Change. Laramie, WY: AMQUA 2010 American Quaternary Association Program and Abstracts of the 21st Biennial Meeting, p. 83.

Harris, S., Schroeder, S. J. (2010). Nuclear Magnetic Resonance Structure of the Prohead RNA E-Loop Hairpin. *Biochemistry*, Vol. 49, No. 29, pp. 5989-5997.

Hughes, S. Editor. AACC International (American Association of Carbohydrates).

Patton, T., **Newman, C.,** Sager, C. and Mauck, M. (2010). First report of Harris mud crab (*Rhithropanopeus harrisii*) in Oklahoma, and furthest inland report in the United States to date. Proceedings of the Oklahoma Academy of Science 90:59-66.

SCHOLAR HIGHLIGHTS

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 former scholar selected to participate in the Nobel Laureate Conference in Germany.

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 K. Listed below are select examples of Scholar highlights.

Sheila Baradaran, OU, received Program of Excellence in Chemical Engineering Research.

Justina Bradley, LU, was selected to present Oklahoma Research Day at the Capitol. She won first prize in her division for her poster and research based on her summer research experience at Brookhaven National Labs in Long Island, New York. Additionally, Justina was featured on the main page for Brookhaven Labs following her internship experience.

Eric Butson, NSU, was a part of a FaST team selected to conduct research at Brookhaven National Labs in Long Island, New York. He was selected to give an oral presentation of his summer research project to staff at Brookhaven. This honor goes to few students.

J. R. Conanan, OU, Dean's Honor Roll, Tom J. Love Outstanding ASME student member, Third place in the Old Guards Oral Presentation at the ASME Student Professional Development Conference (SPDC), Highest Technical Score Award in the Old Guards Oral Presentation at the ASME Student Professional Development Conference (SPDC), received 3 Honor's College Undergraduate Research Opportunity Program Scholarships, and the Worstell Scholarship.

Matthew Duncan, OSU, was selected as one of 17 students from around the world to attend the American Association of Petroleum Geologists Annual Leaderships Summit in Tulsa, Oklahoma. During the conference Matt was elected to the Student Chapter Leadership Committee, and named as a Student representative to the AAPG Astrogeology Advisory Board.

Ryan Edwards, OU, presented research at two national conferences and three state conferences. Additionally, his involvement in community service is above others in the program.

J. Connor Ferguson, OSU, received one of the highest honors at OSU as an Outstanding Senior and as a Senior of Significance. Additionally, he served as a judge for the first Sac and Fox Nation Science and Engineering Fair for Native American elementary-high school students.

Elaine Harder, CU, traveled to Brazil and was awarded an internship with CRV Lagoa (the largest animal breeding company in the world); made four presentations at state conferences: Research Day at the Capitol (invitation only) placed first among regional universities and second overall; Oklahoma IDeA Network of Biomedical Research Excellence summer program; Oklahoma Research Day, and the OK-LSAMP Research Symposium.

Diana Lucero, OU, honored as the Minority Engineering Program Outstanding Junior and attended/presented at one state and four national conferences.

Alex Macharia, UCO, made three presentations at state conferences on "aneurysms have on hypertension."

Lydia Meador, OSU, received a Graduate Research Fellowship Program (GRFP) award and was recognized as an Outstanding Senior in the College of Arts and Sciences as well as being recognized as an OSU Senior of Significance.

Andrew Mock, OSU, received a 2011 Graduate Research Fellowship Program (GRFP) award. Andrew will attend graduate school at the University of Illinois.

Ricardo Montoya, OSU, Presentation at the NCUR conference selected for inclusion in the Conference Proceedings, received several awards for his architectural projects and attended the national AEI National conference.

Candice Pawnee, LU, participated as a judge for the first Sac and Fox Science Fair for elementary-high school Native American students.

Megan Salisbury, OU, recipient of the OU Honors College Undergraduate Research Opportunity Program (UROP) funding, as well as the OU College of Engineering Interdisciplinary UROP and a finalist in the BP Award for Achievement Scholarship.

Dominique Thomas, CU, made one presentation at an international conference and three presentations at national conferences on multimedia design. Additionally, she has been accepted into graduate school.

Larmar Williams, UCO, made three presentations at state conferences on "aneurysms have on hypertension."

Tanner Williams, SWOSU, presented a paper at the Society of Neuroscience 2011 international conference in Washington D.C. The conference had over 30,000 neuroscientists from around the world present.

STAFF TRAINING AND DEVELOPMENT

OK-LSAMP staff continually seek professional development opportunities. Learning is a continuing, life-long process that those working in education must embrace.

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 Joint Annual Meeting in Washington, D.C., June, 2011; (7) attended the Oklahoma Engineering Foundation Engineering Fair, Oklahoma City, OK; (8) Delegate to World Creativity Forum, November 2010; (9) Attended Inaugural National Science Fair, Washington, DC, October 2010; (10) Member, Women's Philanthropy Network, University of Oklahoma; (11) Board Member, Norman Community Foundation.

Kay Porter, Program Manager, Oklahoma State University: (1) State Coordinator for Women of Color National Conference; received Certificate of Achievement from the Career Communications Group for work with Women of Color (Appendix L); (2) served on the Planning Committee for the Women in Science Conference, Oklahoma City, OK for junior and high school girls; (3) served on the OSU Institutional Diversity Board; (4) served as Secretary to the Oklahoma State University Native American Faculty and Staff

Association; (5) Council Member, OSU Alumni Council and Alumni Leadership Council, representing the American Indian Alumni Association; (6) attended the Oklahoma Native American Students in Higher Education (ONASHE) state conference, Tahlequah, Oklahoma; (7) served on the Minority Engineering Program (MEP) summer selection committee; (8) Committee member for the Institutional Diversity Honors Convocation; (9) member Mexican American Engineers and Scientists (MAES) organization; (10) advisory council member, NSF project Red Light/Green Light; (11) board member, Oklahoma Distinguished Young Women of America (formerly Oklahoma Junior Miss Scholarship Program; (12) participated in *Read Across America* program; (13) presentations to state-wide higher education advisor council; (14) judge for the first Sac and fox Nation Science and Engineering Fair, Stroud, OK; (15) Board member, Native American Studies Center; (16) attended the Joint Annual Meeting in Washington, D.C., June 2011.

Fara Williams, Grant Coordinator, Oklahoma State University: (1) attended and presented at the Oklahoma Native American Students in Higher Education (ONASHE) state meeting, Tahlequah, Oklahoma; (2) participated in *Read Across America* with local elementary school; (3) volunteer during the Women in Science Conference, Oklahoma City, Oklahoma; (4) presented the LSAMP/BD program to faculty on the OSU campus; (5) met with parents and prospective scholars to explain one-on-one the benefits of OK-LSAMP; (6) Attended summer workshop for high school minority students, designed, developed, and hosted by an OK-LSAMP Scholar, entitled: *Class Matters*; (7) attended the Joint Annual Meeting in Washington, D.C., June 2011; (8) board member, Oklahoma Project WILD Facilitator program; (9) Served as a recruiter for the Hispanic American Foundation College Days; (10) attended Women of Color National Conference; received Certificate of Achievement from the Career Communications Group for work with Women of Color (Appendix L); (11) Judge, Cherokee Nation Science Fair; (12) presentation, Cherokee Meet and Greet reception; (13) judge at Oklahoma Research Day, Lawton, Ok; and (14) completed various safety training programs.

BRIDGE TO THE DOCTORATE

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 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 9 Master of Science degrees and 1 Doctor of

Philosophy degree. Eight (8) Doctor of Philosophy degrees are expected to be completed by December, 2010. Five students either transferred to another institution or left the program,

Cohort I and II Significant Highlights

Felix De La Cruz, University of Oklahoma, Cohort II completed requirements for the Master of Science degree in Mechanical Engineering in May, 2010

Steven Harris, University of Oklahoma, Cohort II completed requirements for the Ph.D. in Biochemistry and was accepted into the Seeding Postdoctoral Innovators in Research and Education(SPIRE) program at the University of North Carolina.

Desmond Harvey, University of Oklahoma, Cohort II became the Coordinator for the Multicultural Engineering Program (MEP) program at Oklahoma State University. The program works on recruitment and retention of under-represented undergraduate students in all STEM disciplines, especially engineering.

Jacob Henderson, University of Oklahoma, Cohort II, completed requirements for the Master of Science degree in Electrical Engineering, May 2011served as assistant to summer engineering K-12 camps during the summer. Additionally, he has travelled to public schools to make presentations on the Sooner Flight Academy and Robotics.

Quintin Hughes, University of Oklahoma, Cohort II, completed requirements for the Master of Science degree in Engineering Education and will defend his Ph.D. work in July, 2011. During the summer 2011 Quintin participated in the Engineers in Practice program in Thailand.

Kevin James, University of Oklahoma, Cohort II served as director for a course he developed with the National Society of Black Engineers entitled: Summer Engineering Experience for Kids (SEEK). The course was for 6th grade students in the Washington, D.C. area. Additionally, Kevin will be spending 3 weeks in Thailand participating in the Engineering in Practice program, teaching engineering lessons.

Brek Wilkins, Oklahoma State University, Cohort I, completed degree requirements for the Ph.D. and accepted a post-doc with the Oklahoma State University Center for Health Sciences, Tulsa, OK.

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.

Marcus Benjamin, received his BS degree in Chemistry from Jackson State University, 2006. BD emphasis: Chemistry. Expected MS completion date: Fall 2011.

Tomica Blocker, received her BS in Biology from Langston University, 2008. BD emphasis: Zoology. Expected MS completion date: Fall 2011 with continued Ph.D. work through the GRFP.

Zachary Carpenter, received his BS and MS degree in Electrical Engineering from the University of Tulsa. BD emphasis: Electrical Engineering. Expected Ph.D. completion date: Spring 2012.

Scott Fine, received his BS degree in Plant and Soil Sciences from Oklahoma State University. BD emphasis: Plant and Soil Sciences. Completed MS degree, July 2010 and continues in Ph.D. program.

Erik Gonzales, received his BS degree in Physics from East Central University. BD emphasis: Physics. Expected MS completion date: Fall 2012.

Jonathan Gonzales, received his BS degree in Physics from East Central University. BD emphasis: Electrical and Computer Engineering. Completed the MS degree in Fall, 2009, expected Ph.D. completion date: Spring 2012.

Matt Hough, received his BS degree in Plant and Soil Sciences from Oklahoma State University. BD emphasis: Plant and Soil Sciences. Completed MS in May, 2011 and accepted employment in his field.

Shawna Hughes, received her BS degree in Biology from South Carolina State University. BD emphasis: Food Sciences. Expected MS completion date: Fall 2011.

Minh Ngo, received her BS degree in Biochemistry and Molecular Biology from Oklahoma State University. BD emphasis: Forensic Sciences-Toxicology. Completed MS in December 2010 and accepted employment in her field. Her current employer will be paying for graduate school as a condition of employment.

Richard Osei, received his BS degree in Computer Science from Langston University. BD emphasis: Computer Science. Expected MS completion date: Fall 2011.

Molly Parkhurst, received her BS degree in Zoology from Oklahoma State University, BD emphasis: Zoology. Expected MS completion date: May 2012.

Cody Pinkerman, received his BS degree in Aerospace and Mechanical Engineering from Oklahoma State University. BD emphasis: Mechanical and Aerospace Engineering. Completed M.S. July, 2010 and continues in Ph.D. program.

C. Doug Yarholar, received his BS degree in Civil Engineering from Oklahoma State University. BD emphasis: Civil Engineering. Completed the MS degree in May 2010 and accepted employment in industry.

Cohort III Fellow Highlights

Bridge to the Doctorate Fellows participated in several activities during the third year of the program. All Fellows participated in the 16th Annual Research Symposium held on the OSU campus and hosted by the OK-LSAMP program staff. Fellows participated in OSU Research Week activities as moderators and presenters; participated in program/department specific research activities; and four Fellows attended the Joint Annual Meeting (JAM) in Washington, D.C., in June, 2010. One BD Fellow received funding for her research through the Graduate Research Fellowship Program (GRFP) and was chosen to represent Langston University, her alma mater, featuring STEM programs and opportunities for minority women. Additionally, Fellows provided one-on-one mentoring to undergraduate students; gave presentations on the benefits of graduate school; attended the Women of Color Conference and Women in Science conference; . visited local area middle schools, high schools, and other universities to promote STEM education and encourage the students to consider a STEM career field. Fellows had articles accepted for publication and made presentations at national conferences in their field.

Individual highlights include, but are not limited to:

Tomica Blocker, (1) Peer mentor for undergraduate OSU Zoology students and Langston University, a historically black college, STEM in preparation for their graduate careers; (2) presentation, Westbrook Elementary School 3rd Grade classrooms. Oklahoma City, OK: "It's not magic, its science!!" (interactive program to promote love of science among children); (3) Volunteer at the 16th Annual Research Symposium, (4) Served as Treasurer for the Oklahoma State University Black Graduate Student Association; (5) Served on the Graduate-Undergraduate Mentorship Program in the Oklahoma State University Black Graduate Student Association, (5) Serve as an high school mentor for summer Upward Bound program, (6) attended the Women of Color Conference, Dallas, Texas.

Scott Fine, (1) had one article submitted for publication in the *Journal of Environmental Quality* and has two more ready for submission to the *Agronomy Journal*; (2) made a poster presentation at the American Quaternary Association National Biennial Meeting in Laramie, WY; (3) Completed requirements for the Master of Science degree in July, 2010; (4) Volunteered at the 16th Annual Research Symposium; (8) has served as

a Teaching assistant on multiple occasions for his major advisor; (9) Assistant Soil Judging Coach (placed second at regional and earned the right to compete in the 2011 National Collegiate Soils Contest in Bend, Oregon).

Zach Carpenter, (1) volunteer for the FIRST robotics competition and served as a robot inspector; (2) STEM presentation to middle school students on the importance of pursuing degrees in STEM.

Erik Gonzales, (1) Volunteer for the 16th Annual Research Symposium; (3) Volunteer for OSU Research Week, (4) Attended the Joint Annual Meeting in Washington, D.C., in July 2010.

Jonathan Gonzales, (1) Volunteer for the 16th Annual Research Symposium; (2) Attended the Joint Annual Meeting in Washington, D.C., in July 2010, (3) Presented at the IEEE Ultrasonics Symposium 2011 in Orlando, FL. Presentation: "Sensing Acoustic Properties of Materials Using Piezoelectric Lateral-Mode Resonators;" (4) Filed an invention disclosure to the office of Intellectual Property for "Ultrasonic Interrogation of Materials by Microelectromechanical Piezoelectric Resonators;" (5) Served as a Teaching Assistant for ECEN 3314 and a Research Assistant in the Resonant Accelerometer Design/Fabrication, Aluminum Nitride Sputtering Optimization, and MEMS MicroResonator for Bio Medical Diagnostics.

Matthew Hough, (1) Selected to present his research on wetlands at the Society of Wetland Scientists in Salt Lake City, Utah; (2) presented at the National Soil and Science Society of American annual meeting in Pittsburgh, PA; (3) Volunteer at the 15th Annual Research Symposium; (4) volunteer at OSU Research Week, (5) completed a national hydric Soils class in North Carolina.

Shawna Hughes, served as the Associate Editor of the AACC International Carbohydrates Newsletter. Additional activities included: (1) attending the FAPC Research Symposium with a poster presentation entitled "*Confocal Scanning Laser Microscopy (CLSM) Studies of Foam Stability and Cell Structure of Underdeveloped Dough Containing Surfactant,"* (2) attended the 16th Annual Research Symposium; (3) Attended the NSF Joint Annual Meeting in Washington, D.C., July 2010; (4) Served as a volunteer for the Friends of Diversity Golf Tournament and Into the Streets; (5) Served as Secretary to the OSU Black Graduate Student Association.

Minh Ngo, participated in teaching a group of 49 high school and junior high school students about the degree program in forensic science. Students were provided with hands-on laboratory experiences. Additionally, she presented a poster at the Center for Health Sciences Research week entitled: "*Development of an analytical method for vinca-alkaloids using liquid chromatography tandem mass spectrometry (LC/MS/MS)."*

Cody Pinkerman, (1) volunteer, 16th Annual Research Symposium; (2) mentored and assisted undergraduate students in class and labs, (3) presented and co-authored an article "Modeling Hypersonic Propulsion Using Finite Element CFD" for the 49th AIAA Aerospace Science Meeting, Orlando, Florida.

Cohort IV

The University of Oklahoma was awarded a Bridge to the Doctorate program to begin in the Fall 2009 semester. The following Fellows were accepted into the program:

Chris Aguayo – Received a Bachelor of Science degree in Aerospace Engineering from the University of Oklahoma. His career goal is "to become a test pilot and focus on optimization and efficiency aircrafts."

Brittanie Atkinson – Received a Bachelor of Science degree in Biochemistry and Molecular Biology from Langston University. Her career goal is "to perform research investigating mechanisms that are operative to the pathogenesis of autoimmune diseases."

Mario Franklin – Received a Bachelor of Science degree in Industrial Engineering from the University of Oklahoma. His career goal is: "to pursue a Ph.D. in Industrial Engineering with an emphasis in Engineering Education."

Juan Herrera – Received a Bachelor of Science degree in Computer Engineering from the University of Oklahoma. His career goal is: "to develop novel computer architectures that use less power while increasing reliability and performance."

Jason Kimmel – Received his Bachelor of Science degree in Mechanical Engineering from the University of Oklahoma. His career goal is: to teach electromechanical engineering at a major university.

Lorne Jordan – Received a Bachelor of Science degree in Chemistry and Biochemistry from Bowling Green State University. His career goal is: "To become a leader in oncological research and contribute to the effects of the National Center Institute."

Ryan Jordan – Received a Bachelor of Science degree in Geology from Oklahoma State University. His career goal is: "to continue work in Africa and develop programs that expose undergraduate students to international research in new and interesting locations and to reveal earth's history by utilizing geophysics in creative ways."

Meghan Liles – Received a Bachelor of Science degree in Biochemistry and Molecular Biology from Oklahoma State University. Her career goal is: "To perform research investigating mechanisms that are operative in the pathogenesis of autoimmune diseases."

Chris Mace – Received a Bachelor of Science degree in Geology from Oklahoma State University. His career goal is: "To work in governmental research or the petroleum industry."

Chrystal Moore-McAndrews – Received a Bachelor of Science degree in Microbiology from Northeastern State University, Oklahoma. Her career goal is: "To operate a research lab examining antibiotic resistance in bacteria."

Shawna Ong – Received a Bachelor of Science degree in Electrical Engineering from the University of Oklahoma. Her career goal is: "To further research experiences and impact in the defense industry with an independent research division."

Ryan Watley – Received a Bachelor of Science degree in Chemistry from the University of Arkansas-Pine Bluff. His career goal is: "To work with organize synthesis mechanisms and to impact biological research."

Cohort IV Highlights

The second year of the BD program noted one Fellow defending his MS thesis with others expected to complete MS degree requirements by December, 2011. Fellows are continuing with Ph.D. requirements immediately upon receiving the MS. Two Fellows are preparing for general exams to be taken in the spring 2012 semester. One Fellow left the program upon completion of his M.S degree and returned to industry in his chosen career field.

Fellows attended a grant writing workshop and a professional ethics training in responsible conduct of research. Two Fellows in the Medical Sciences program have attended extensive training to understand the different professions in the unit.

Fellows have also been involved in activities such as *Loveworks,* a mentoring program for 6-8 grade students in the after school program; a tutoring program in the local high school; Tech Camp for elementary school students; freshman orientation projects; IEEE Hope project for elementary school students; involvement in the Black Graduate Student association; and projects with the OSU BD program Fellows.

Fellows presented their research at three state conferences, three national conferences, and one international conference.

Individual highlights include, but are not limited to:

Chris Aguayo: (1) assistant director for the 2011 AT&T Summer Bridge Program; (2) coordinated an aerospace engineering session during an additional summer bridge program; (3) panel presentations and guest speaker to undergraduate students in engineering; (4) serve as a mentor to several engineering undergraduate students.

Shawna Ong: (1) founding member and graduate liaison of the society of Asian Professional Engineers, (2) Attended 2010 NSBE in Toronto, Canada, (3) attended the 2010 IEEE Southwest Symposium on Image Analysis & Interpretation in Austin, Texas, (3) attended the Joint Annual Meeting in Washington, D.C., June 2010; (4) high school tutor in Trig and Special Math classes for local public school; (5) work with the elderly and special needs individuals in free time.

Lorne Jordan: (1) Secretary, OU Black Graduate Student Association; (2) President of Phi Lambda Upsilon (Chemistry graduate student organization); (3) volunteer 16th Annual Research Symposium, Stillwater, OK; (4) volunteer for various community service projects.

EVALUATION PROCEDURES

Dr. Rosemary Hayes, Director for the Center for Institutional Data Exchange and Analysis, located on the University of Oklahoma campus, Norman, Oklahoma remains as the outside evaluator for the Oklahoma Louis Stokes Alliance for Minority Participation program. Dr. Hayes works closely with the Grant Coordinator to collect data on all Scholars in the Alliance. The data is used to prepare a yearly evaluation report by Alliance institution. The report contains recommendations for improvement on each Alliance campus as well as Alliance-wide. In addition to recommendations, evaluators report on the positive efforts and activities that are being conducted both by Alliance campuses as well as Alliance-wide. Once-per year, the evaluation team meets with program staff and the Principal Investigator to discuss project outcomes and changes in the data base.

APPENDIXES

APPENDIX A

OKLAHOMA NATIVE AMERICAN STUDENTS IN HIGHER EDUCATION (ONASHE)

2011 ONASHE Conference Program

4th Annual
Oklahoma Native American Students
in Higher Education Conference

Northeastern State University

Tahlequah, OK
February 18-19, 2011

NORTHEASTERN STATE UNIVERSITY

APPENDIX B

OKLAHOMA STATE UNIVERSITY

SUMMER WORKSHOPS

AND CAMPS

SmartCars

Summer Academy

"Smart sensors" are being used in hundreds of application areas, like environmental monitoring, homeland security, medicine, aerospace and automobiles. Throughout the "Smart Cars" week long residential academy, students will use smart sensor concepts and develop a smart sensor system for steering an autonomous race car.

APPLICATIONS ARE DUE BY APRIL 1, 2011

High school students entering the 11th -12th are encouraged to apply at http://diversity.okstate.edu

FREE

Fired Up about Research, Science, & Engineering Summer Academy

What is Fired Up?

This camp is completely FREE and will be an intensive week-long residential program during which participants will be challenged with laboratory and field-based scenarios centered on a common theme "Fire". The participants will also investigate careers, learn new skills, and prepare for the fascinating world of technology. Some of the specific activities will include forensics, robotics, and the science and engineering of fire.

APPLICATIONS ARE DUE BY APRIL 15, 2011

High school students entering the 10th-12th grade are encouraged to apply at

http://diversity.okstate.edu

FREE

R-E-Y-A-P Spells Success

For 15 years, **REYAP** has been sowing and growing and is now reaping success. Early introduction to agricultural education strongly influences subsequent career choices.

- All **REYAP** high school senior interns attend college with most majoring in agriculture.
- **REYAP**'s programs and activities contributed to a 72 percent increase in students majoring in agriculture at Langston University.
- Five **REYAP** students have been recognized as USDA 1890 National Scholars.
- **REYAP** students have won national science research and public speaking competitions.
- **REYAP** interns are recruited from across the nation.
- **REYAP** alumni with degrees in agriculture are highly recruited for professional positions in fields such as natural resource management, animal science, agribusiness, agricultural education and food science.

REYAP Vision

Culturally diverse youth will live the American dream as they become informed and inspired by opportunities in agriculture.

For additional information, contact:

REYAP
P. O. Box 1647
Tulsa, OK 74101

Phone: (918) 619-3111
Fax: (918) 296-9729
Email: reap@sbcglobal.net
www.reyap.org

REYAP

Retired Educators for Youth Agricultural Programs

Promoting Opportunities in Agriculture for Culturally Diverse Youth

TURF


ConocoPhillips
SUMMER BRIDGE PROGRAM
STEP UP
TO THE PLATE
OKLAHOMA
STATE
UNIVERSITY

Welcome TRiO Students

Student Support Services

Provides opportunities for academic development, assists students with basic college requirements, and motivates students toward the successful completion of their postsecondary education.

Educational Talent Search

Provides academic, career, and financial counseling to its participants and encourages them to graduate from high school to continue on to and complete their postsecondary education.

Upward Bound

Provides opportunities for participants to succeed in their high school performance and ultimately in their higher education pursuits.

422 SCOTT HALL • STILLWATER, OK 74078 • 866-748-7979 • TRIODEPARTMENT.OKSTATE.EDU

What is Talent Search?

Educational Talent Search is a federally funded TRiO grant program targeting middle and high school students who are low-income and potential first generation college students.

The primary goal of the program is to help students successfully complete high school and encourage them to continue their education at the postsecondary level. Our services are not limited to academic support, but extend into the areas of college awareness, career exploration, and life skills. We also provide opportunities to visit various college campuses and take part in cultural and educational activities not otherwise available to them.

We serve approximately 600 students in our target area which includes **Agra**, **Carney**, **Cleveland**, **Davenport**, **Ripley**, and **Yale**.

Contact Information

OKLAHOMA STATE UNIVERSITY

EDUCATIONAL TALENT SEARCH

TRiO Department – Division of Institutional Diversity

422 Scott Hall, Stillwater, OK 74078

Phone: 405-744-6402

Fax: 405-744-4202

Email: tsosu@okstate.edu

http://triodepatment.okstate.edu

Diversity Inclusiveness

Educational Talent Search

A TRiO Grant Program Funded by the U.S. Department of Education

Oklahoma State University

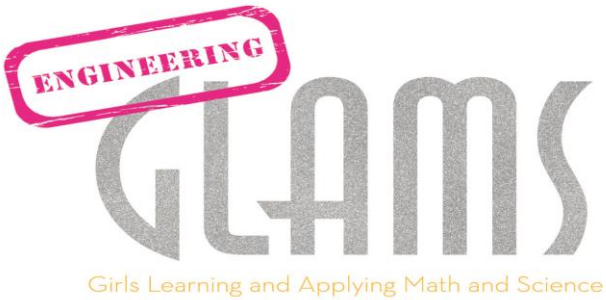
Division of Institutional Diversity

APPENDIX C

UNIVERSITY OF OKLAHOMA

SUMMER WORKSHOPS

AND CAMPS



WHO: Girls entering their 7th or 8th grade year in fall 2011 should apply. African American, Hispanic/Latino, American Indian/Alaskan Native, and/or First Generation students are strongly encouraged to apply; however, the program considers all applicants.

WHAT:

The Engineering GLAMS Summer Program is a four-day introduction and exploration of science, technology, engineering and mathematics (STEM) through fun, hands-on design projects with OU professors and current students. The program requires a $30 deposit per student, but will be refunded upon your selection and participation.

WHY:

Do you know that engineers create makeup and other beauty products? Do you want to do something that could improve the world or cure a disease? Do you want to design cool gadgets or create virtual worlds? These are just some of the cool things women engineers get to do! This program will help you explore and understand how to apply math, science and technology to see how as an engineer, you can affect the world. Come discover engineering with other girls your age!

ELIGIBILITY REQUIREMENTS:

1.) Must be a girl of any ethnic background.

2.) Middle school student in their 7th or 8th grade level in the Fall 2011 semester.

3.) Must be a U.S. citizen.

4.) Available for one week (June 20-23) in Summer 2011.

Application deadline: May 7th, 2011

Contact Information:
Tiffany Smith, Director – Engineering GLAMS- (405) 325-3892
WEBSITE: www.ou.edu/coe/glams

DEVAS

Discovering Engineering Via Adventure in Science

June 20 – 26, 2010

www.ou.edu/devas

Application Deadline: April 30, 2010

The BP Devas Summer Camp program is a weeklong journey exploring engineering through hands on projects while staying on the University of Oklahoma (OU) Norman campus. The camp program fee per student includes all housing, meals, seminars, tours, entertainment and engineering project supplies.

Who: Young women entering the 10th, 11th, or 12th grade in the Fall 2010 should apply. African-American, Hispanic/Latina, American Indian/Alaskan Native students are strongly encouraged to apply, however the program considers ALL applicants.

Contact Information

Tiffany Smith, BP DEVAS Director •405-325-4096 •
devas@ou.edu •www.ou.edu/devas

Shell Passport to Engineering Camp

WHO: Students entering 7th or 8th grade in the fall of 2011 should apply. African American, Hispanic/Latino, American Indian/Alaskan Native and/or first generation students are strongly encouraged to apply. However, all applicants are considered for the program.

WHAT: Passport to Engineering will introduce students to diverse engineering disciplines including solar power and battery powered electronics. To reserve a spot, a $30 deposit per student is requested. This will be refunded upon selection and completion of the program. If you are unable to pay the deposit, please contact us for other arrangements.

WHY: Engineers are the brains behind the coolest technologies. Do you want to design spaceships, roller coasters, or life-saving medicine? Do you want to do something that could improve society and our way of life? These are just some of the cool things engineers get to do! This program will help you explore and understand how to apply math, science and technology to see how as an engineer, you can affect the world. Come discover engineering with other students your age!

Eligibility Requirements:

1. Middle school student in her 7th or 8th grade level in the Fall 2011 semester.
2. Must be a U.S. citizen.
3. Available for four days (June 6-9) in Summer 2011.

Application deadline: May 7th, 2011

Contact Information:
Jackie Foos, Director – Passport to Engineering- (405) 325-3445
WEBSITE: www.ou.edu/coe/passport

BP Engineering Academy

June 12-18, 2011

www.ou.edu/bpea

The BP Engineering Academy is a 1-week residential summer program for *young men* in high school entering 10th, 11th, and 12th grade in 2010 who also have an interest in math, science, and/or technology. Students from African-American, Hispanic/Latino American, American Indian/Alaskan Native, and/or first generation backgrounds are strongly encouraged to apply however the program considers all applicants. If you are selected for this program your on-campus experiences will include the following:

- Design, Build and Fly a creation of your own in OU's two new engineering buildings
- Full access to our high-tech engineering facilities and research laboratories
- Hands on exposure to different engineering fields via fun activities with our best OU engineering professors
- Meeting other students like yourself from all over the United States

Application deadline: May 7th, 2011

Contact Information:

Teara Flagg, Director – BP Engineering Academy – (405) 325-0095

EMAIL: bpea@ou.edu WEBSITE: www.ou.edu/bpea

APPENDIX D

16TH ANNUAL RESEARCH

SYMPOSIUM

OKLAHOMA

Louis Stokes Alliance
For Minority Participation In
Science, Technology, Engineering, and Mathematics
(OK-LSAMP STEM) Funded by the National Science Foundation (HRD 0902027)

16th ANNUAL RESEARCH SYMPOSIUM

Saturday, September 25, 2010

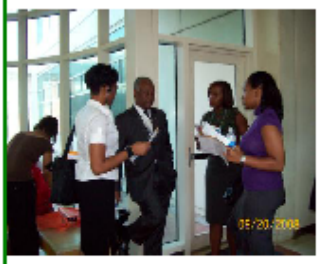
Keynote Speaker: Dr. Henry Neeman, Director, Supercomputing Center for Education and Research (OSCER), University of Oklahoma

Noble Research Center
Oklahoma State University, Stillwater, OK
9:00 AM – 3:00 PM

Oral/Poster Presentations by OK-LSAMP
& Invited Scholars from Other Programs

Historically Black College/University Undergraduate Program (HBCU-UP)
McNair Scholars Program
Native Americans in Biological Sciences (NABS) Program
Undergraduate Biomedical Education Program (UBEP)

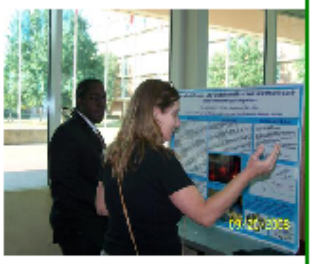
Register On-line, www.ok-lsamp.okstate.edu.
Abstract Deadline, Friday, September 3, 2010.



Participating OK-LSAMP Institutions

Cameron University (CU)
East Central University (ECU)
Langston University (LU)
Northeastern State University (NSU)
Northwestern Oklahoma State University (NWOSU)
Oklahoma State University (OSU-Lead Institution)*
Southeastern Oklahoma State University (SOSU)
Southwestern Oklahoma State University (SWOSU)
University of Central Oklahoma (UCO)
University of Oklahoma (OU)*
University of Tulsa (TU)

**Program Encompasses Bridge to the Doctorate (BD) Supplemental Initiative*



Mark Payton, Ph. D., Interim Dean, OSU Graduate College and OK-LSAMP PI; 405-744-6368; mark.payton@okstate.edu
Program Offices: 409 Scott Hall, Stillwater, OK 74078; 405-744-7820; okamp@okstate.edu; www.ok-lsamp.okstate.edu

APPENDIX E

WENTZ FOUNDATION AWARDS

create / innovate / educate / Go STATE

Oklahoma State recognizes Wentz Research Project Scholars PDF | Print

Monday, 25 April 2011 19:14

Forty four Wentz Scholars were recognized and honored April 22 at the annual Lew Wentz Foundation and Oklahoma State University Awards Program. The prestigious Wentz Research Project scholarship of $4,500 per year helps outstanding undergraduates prepare for graduate study or national competitions. With this award, students outline a research project and paper that can be completed in one academic year, and work with a faculty mentor. In addition to the research awards, Wentz also sponsors general leadership scholarships worth $2,750 each, music awards, and a special category of awards for non-traditional students who have overcome significant obstacles to work on their degrees.

"OSU has always owed much to the Wentz Foundation for decades of generous programming that has helped countless students," said Bob Graalmar, director of Scholar Development, the office that manages Wentz Research. "Being able to conduct high level research for several years now has made it possible for our best students to compete for major awards, be admitted to the best graduate schools, and acquire excellent jobs. This program shows why."

At Friday's event awards of $250 were presented to three Wentz Scholars for their poster displays. The winners were: Henry Hartmann, Stillwater philosophy senior "On Polarization of Public Opinion"; Katie Haning, Allen, Texas chemical engineering senior, "Investigating How Drug Properties Play a Role in the Release Characteristics from Drug Delivery Systems"; and Daniel Ede, Broken Arrow civil and environmental engineering senior, "Effects of Stress and Strain on Concrete Blocks Used as Infrastructure in Developing Countries." Judges for the awards were Assunta Martin of ELI, and Jennifer Garrett, Nelli Kimler, Jamie Sieber Lee Miller and Brian Strecker from Nomadics.

The Wentz Scholarships were established in 1926 with a $50,000 endowment gift that was five times larger than the sum of all other student loan funds at what was then Oklahoma Agricultural and Mechanical College

Before the poster presentation awards were given out, the OSU Serenity String Quartet, performed two songs. Two students who played in the quartet were Wentz Music Scholars. Also on the program were Bob Stemberg, OSU Provost, who spoke on how research can affect students' lives, as it did his; and Patricia Houston, Wentz administrator, who spoke about Mr. Wentz's life and contributions to society, and how the Wentz fund got started and is used today in several different areas.

Students who received Wentz General Scholarships, Non-Traditional Scholarships, Music Scholarships, and the Ponca City Scholarship also were recognized.

The Wentz Project Scholars and the subjects of their research were:

Jamie Andrews, Social Sciences/Education Business, "An Assessment of the Economic Impact of OSU Graduates on the Oklahoma Economy";

Evan Booher, Agriculture/Biological/Physical Sciences/Mathematic, "Monitoring Microinvertebrate Populations as a Tool to Measure Impacts of Management Practices on Sustainable";

Kelsie Brooke, Biological/Physical Sciences/Mathematics, "Effects of Truncations in the Soluble G Protein of Human Respiratory Syncytial Virus (HRSV) on Infectivity";

Shayla Barnett, Biological/Physical Sciences/Mathematics, "Effect of Invasive Tamarix on Soil Salinity in Riparian Areas of Oklahoma";

James Caswell, Social Sciences/Education/Business, " Kinesthetic Experience in Visual Memory Tasks";

Patrick Coit, Biological/Physical Sciences/Mathematics, "Genetic variation of the internal transcribed spacer regions of Cytauxzoon felis in domestic cats from Oklahoma".

Trey Cole, Engineering/Technology, "Continuous Statistical Data Analysis of an EKG and iPhone Integration";

John Cooper, Biological/Physical Sciences/Mathematics, "Cyclization Studies to Prepare Agents to Treat Cancer";

Claisissa Craige, Agriculture, "Dietary Effects on Insulin and IGF-I Levels in Growing Horses - new: Dietary Effects on Insulin and Glucose in Growing Horses";

Jonathan Crossley, Biological/Physical Sciences/Mathematics, "Special Values of L-Functions";

Amanda Curtis, Biological/Physical Sciences/Mathematics, "Mutational Analysis of Deoxycholate Binding Site on IpaD from Shigella flexneri";

Cale Darling, Social Sciences/Education Business, "The Influence of Icon Perception on Investment Decision-Making";

Jonathan De Los Santos, Social Sciences/Education Business, "Influence of Parenting Behavior on Interpersonal Dysfunction";
Daniel Ede, Engineering/Technology, "Effects of Stress and Strain on Concrete Blocks Used as Infrastructure in Developing Countries";
Connor Ferguson, Agriculture, "Control Methods for Herbicide Resistant Cheat and Italian Ryegrass in Winter Wheat";
Kody Franklin, Agriculture, "Hormone Regulation of Wnt Pathway Gene Expression in an Ovarian Cancer Cell Line";
Michael Gallin, Biological/Physical Sciences/Mathematics, "Blue Catfish (I. furcatus) Gut Passage as a Vector for the Dispersal of Invasive Zebra Mussels (D. ploymorph)";
Jared Gipson, Engineering/Technology, "Small Scale Solar Powered Stirling Engine Development";
Matthew Grant, Biological/Physical Sciences/Mathematics, "Synthesis of Agents for the Treatment of Brain Disorders";
Alexis Hallmark, Biological/Physical Sciences/Mathematics, "Botany is the Modern Age: Creating an Interactive Key to the Asteraceae of Oklahoma";
Katie Haning, Engineering/Technology, "Investigating How Drug Properties Play a Role in the Release Characteristics from Drug Delivery Systems";
Logan Henni, Agriculture/Engineering/Technology, "Bio-Sand Filtration for Third World Communities";
Henry Hertman, Humanities/Arts, "On Polarization of Public Opinion";
Kalen Holbrook, Agril/Engr/Tech, "Characteristics of native Oklahoma Microalgae in the Removal of Pollutants from Flue Gas";
Jacob Keeling, Biological/Physical Sciences/Mathematics, "Effects of Post-Translational Modifications on the Kar9 Protein";
Stephanie Kline, Social Sciences/Education/Business, "Psychopathic Traits, Empathy, and Objective Assessment of Emotion";
Katharine Lasley, Biological/ Physical Sciences/Mathematics, "The Effect of Selenium on the Bone Calcium Restoration of Mother Mice After Nursing";
Justin Lollman, Social Sciences/Education Business, "Assessing the Race Issue: An Analysis of Jim Crow Politics at Oklahoma's Constitutional Convention";
Mikayla Marvin, Agriculture/Engineering/Technology, "Water Contamination Through Macropores";
Lydia Meador, Agriculture, "Effect of genetic modifications on antioxidant production in canola seeds";
Laura Merriman, Engineering/Technology, "Effectiveness of Riparian Buffer Zones on Subsurface Phosphorus Transport";
Amanda Neujahr, Biological/Physical Sciences/Mathematics, "Investigating the Dynamics of the Acute Phase Response in Zebra Finches: an Analysis of Plasma Iron and Zinc";
Sarah Oppel, Biological/Physical Sciences/Mathematics, "The Missing Link in Synechocystis";
Qualla Perman, Agriculture/Engineering/Technology, "Physical Modeling of Bioretention Cells";
Mrinalini Patil, Social Sciences/Education/Business, "The Effect fo the Age of Acquisition on Trilingual Word Translation";
Kevin Roehm, Engineering/Technology, "Examining the Viability of an Antimicrobial Coating for use on Prosthetic Surfaces";
Wyatt Sherber, Biological/Physical Sciences/Mathematics, "Morphometric and Molecular Phylogenetic Investigations of Asclepias pringlei (Greenm.) Woodson, a Poorly Understood Subtropical Milkweed";
Jaron Soulek, Biological/Physical Sciences/Mathematics, "Regulation of PLGF by shear stress in human vascular cells";
Jenifer Van Schuyver, Social Sciences/Education/Business, "Relationship difficulties in college students with ADHD is mediated by working memory deficits";
Markus Vasquez, Biological/Physical Sciences/Mathematics, "Algebraic Graph Theory";
Maria Vera, Engineering/Technology, "Testing the Effect of High Glucose Concentration on Retinal Cell Stability";
Stephanie Watkins, Agriculture, "Assessing Genetic Diversity Among Sorghum Germplasm and Breeding";
Claire Wilson, Biological/Physical Sciences/Mathematics, "New Phosphate Absorption Blocker for Dialysis Patients";
Amelia Wilson, Engineering/Technology, "Ultrasonic frost breaker for compact microchannel heat exchangers";
Current Wentz board members are OSU President Burns Hargis, chair; Stan Lybarger, president and CEO, Bank of Oklahoma; James C. Orbison, chair of the Oklahoma Lottery Commission and a senior shareholder in one of Oklahoma's largest law firms; and Tom Muchmore, Ponca City News publisher. Trish Houston, CPA of Houston Wealth Management, serves as administrator.
Pictures from the event and winners located at: http://www.flickr.com/photos/ostatenews/5854033262/in/set-72157626574908576

APPENDIX F

JOINT ANNUAL MEETING

POSTER

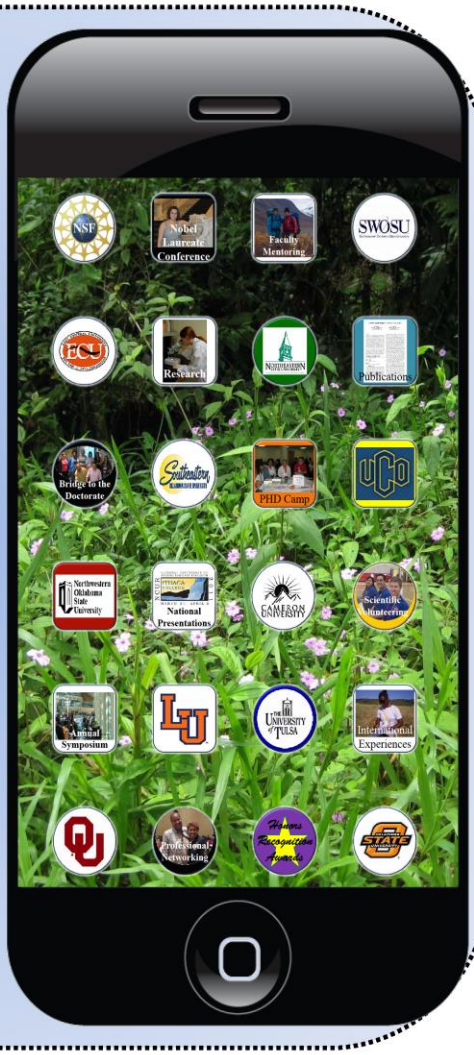
IT'S MORE THAN JUST ANOTHER

"APP"

Oklahoma

Louis Stokes Alliance for Minority Participation

Providing Under-represented Science, Technology, Engineering, and Mathematics (STEM) Scholars with the Tools to Succeed in a Diverse Global Future



www.ok-lsamp.okstate.edu, okamp@okstate.edu, 405-744-6710, 405-744-7820

APPENDIX G

NATIONAL CONFERENCE ON UNDERGRADUATE RESEARCH (NCUR)

Oklahoma Experimental Program to Stimulate Competitive Research (EPSCoR) again provided support for OK-LSAMP scholars to attend the **National Conference for Undergraduate Research (NCUR)**. This year, 13 Oklahoma undergraduates (11 of whom were OK-LSMAP scholars) presented at Ithaca College. **Dr. Tim Hubin**, Campus Coordinator, and **Dr. Jimena Aracena**, mentor, from Southwestern Oklahoma State University accompanied the students to New York. Additionally, **Dr. Mark Payton**, OK-LSAMP PI, attended the event as a representative of the OSU Graduate College as well as OK-LSAMP. Dr. Payton says, "*What made the trip totally worth it was the opportunity to be with the scholars. That was priceless.*"

Pictured L-R: **Ana Tehrani**, UCO mathematics, presented a poster on "Statistical Analysis for Electro-Mechanical Response of Poly Vinyl Alcohol (PVA) and Poly Acrylic Acid (PAA) Hydrogels." **Vicky Kelly**, OSU entomology, presented a poster on "The Effects of Rabon Mineral on Gastrointestinal Nematodes in Sheep." **Irene Lopez**, SWOSU biology, presented a poster on "Decision-Making in Feeding and Mating Behaviors of Field Collected Fruit Flies (*Drosophila Melanogaster*)." **Daniel Dixon**, OSU engineering, gave an oral presentation on "Exploration of Fluid Eccentricities and Hot Film Anemometer Probes." **Laura Scott**, OSU environmental sciences, made an oral presentation on "Anthropogenic Organic Compounds in Surface Waters in Stillwater, Oklahoma." **Lydia Meador**, OSU botany, microbiology and molecular genetics, and biochemistry and molecular biology, gave an oral presentation on "Characterization and Evolutionary Potential of Tandemly Duplicated Genes in Arabidopsis Thaliana and Arabidopsis Lyrata." **Dr. Payton**. **Alesia Sharber**, OSU botany and zoology, gave an oral presentation on "Why is the Bluebird Blue?" **Ricardo Montoya**, OSU architecture engineering, presented a poster on "Use Response to the Newly Renovated School of Architecture Facility: Post Occupancy Evaluation." **Jennifer Roach**, OSU Freshman Research Scholar, presented a poster on "Impact of Physical Activity Performed During Puberty and Early Adulthood on Bone Mineral Density in Native American Women Fifty Years of Age and Older." **Dr. Aracena** presented "Using Foraging Behavior of Fruit Flies to Introduce Undergraduates to Research in Biology." **Tiffany Evans**, TU computer sciences, made an oral presentation on "Creating Realistic Human Expression for a Robotic Application." **Kevin Wilson**, SWOSU chemistry student, presented a poster on "Synthesis and Characterization of Pyridine-Armed Reinforced Macrocycles and Their Metal Complexes." *Not Pictured:* **Wilmon Brown, III**, OSU microbiology, presented a poster on "Purification of Protein Antigens from Shigella." **Sharonne Goode**, UCO chemistry, presented a poster on "Tracking Phthalate Esters and Bis Phenol A in Oklahoma Surface Waters Using SPME and GCMS."

In 2012, NCUR will be held at Weber State University in Ogden, Utah. Abstracts will be due in December. Be sure to bookmark the NCUR website for future reference and remember to submit an abstract for next year's event.

APPENDIX H

NATIONAL SOCIETY OF BLACK ENGINEERS (NSBE)

OSU Engineering Grad Student Honored Nationally

Lamkin recognized for leadership excellence

March 30, 2011
Story by Caitlin Kinser, OSU Library Communications Intern

For Immediate Release

STILLWATER – Darron Lamkin, a first-year industrial engineering graduate student at Oklahoma State University, was awarded the Leadership of Excellence Award at the 2011 National Society of Black Engineers conference. Lamkin, one of 300 nominees, was chosen based on his involvement in the organization and in the community.

"I'm so humbled to be nominated," Lamkin said. "I worked extremely hard."

Lamkin currently serves as a regional parliamentarian for NSBE. In May, he will become a regional chair, covering Oklahoma, Texas and Louisiana. Before serving as parliamentarian, he was president of the NSBE-OSU chapter which was recognized as "2008 regional chapter of the year."

Aside from his involvement in NSBE, Lamkin spends much of his time giving back to his community. He founded the non-profit organization *Class Matters* in August 2010, which is targeted toward teenagers and focuses on professional and academic development, and the promotion of engineering, technology and mathematics.

He started the organization after giving speeches to underprivileged kids through the Trio Program at OSU. He realized he wanted to help teenagers by providing inspiration and teaching life lessons.

"The world is bigger than yourself, so the best way to grow is by impacting your community because helping others is what it's all about."

After acquiring his masters, Lamkin plans to pursue a Ph.D. in educational psychology and technology so he can understand why people think the way they do. He would like to serve as a diversity recruiter for universities. Lamkin currently works as a student assistant at Edmon Low Library. In his spare time, he enjoys spending time with his daughter, bowling and writing poetry.

Oklahoma State University is a modern land-grant system that cuts across disciplines to better prepare students for a new world. Oklahoma's only university with a statewide presence, OSU improves the lives of people in Oklahoma, the nation, and the world through integrated, high-quality teaching, research and outreach. OSU has more than 32,000 students across its five-campus system and nearly 21,000 on its Stillwater campus; with students from all 50 states and about 110 nations. Established in 1890, OSU has graduated more than 200,000 students who have made a lasting impact on Oklahoma and the world. CREATE – INNOVATE – EDUCATE – GO STATE!

APPENDIX I

WOMEN OF COLOR CONFERENCE

2010 WOMEN OF COLOR STEM CONFERENCE

A MULTICULTURAL EVENT

Conference Guide

Thursday, October 28-Saturday, October 30, 2010
Sheraton Dallas Hotel
Dallas, Texas

HOSTED BY
IBM Corporation
Prairie View A&M University
Career Communications Group's *Women of Color* magazine

www.womenofcolor.net

APPENDIX J

SCHOLAR / BD FELLOW

PUBLICATIONS

AMQUA 2010 American Quaternary Association Program and Abstracts of the 21st Biennial Meeting

THE USE OF SOIL TYPES TO DIFFERENTIATE THE RELATIVE AGE OF SAND DUNES ACROSS A MODERN CLIMATIC GRADIENT IN THE SOUTHERN PLAINS, USA: IMPLICATIONS FOR DETERMINING PAST CLIMATIC CHANGE

Fine, Scott T. scott.fine@okstate.edu and Carter, Brian J., Dept. of Plant and Soil Science, Oklahoma State University, Stillwater, OK 74078; and Scott, Gregory, Natural Resources Conservation Service, Stillwater Soil Survey Office, 100 USDA, Suite 206, Stillwater, OK 74074.

Sand dunes fields and sand sheets are common along the northern and eastern edge of Cimarron River throughout its course in Kansas and Oklahoma. These windblown deposits occur in vegetative types ranging from the short and tall grass prairies of northwestern Oklahoma to the forests of east-central Oklahoma, along a climatic gradient of increasing precipitation from west to east. Soil orders associated with the aeolian parent material in the eastern part of the Oklahoma are ultic, psammentic, and arenic Alfisols (Eufaula, Konawa, and Dougherty soil series for "old dunes"), lamellic Entisols (Derby soil series for "middle-aged dunes"), and typic Entisols (Goodnight soil series for "young dunes"). Soil orders for the western half of Oklahoma and Kansas consist of typic Alfisols (Devol soil series for "old dunes") lamellic Entisols (Eda soil series for "middle-aged dunes"), and typic Entisols (Tivoli soil series for "young dunes"). The aeolian parent materials (late Pleistocene- and Holocene-aged) responsible for these series are a direct result of climatic change (decrease moisture) at the global and regional level leading to destabilization of prior stabilized dunes and alluvial sands. With the return of udic and ustic (relatively moist) soil conditions, as current, re-stabilization ultimately leads to soil development of these soil series with evidence available for multiple cycles of climate change.

Through new detailed mapping and dating of soils across the proposed study area an improved understanding of past climate change and the extent of these conditions across Oklahoma and Kansas can be determined. Descriptions of past climatic schemes hold great interest as these environmental changes have been proposed to play significant roles in the shaping of past civilizations. An understanding of these changes will be no less important to our future as these sandy soil landscapes impact regional ground-water recharge and fragile ecosystem preservation. These soil-landscapes are an important natural buffer to environmental degradation by human population growth.

Journal of Environmental Quality - Abstract

Alternative Poultry Litter Storage for Improved Transportation and Use as a Soil Amendment

1. Chad J. Penn [*a], Jeffery Vitale[a], **Scott Fine[a]**, Joshua Payne[a], Jason G. Warren[a],
2. Hailin Zhang[a], Margaret Eastman[a] and Sheri L. Herron[b]

- Author Affiliations

1. ***a*** *Oklahoma State Univ., Stillwater, OK 74078*
   b *S.L. Herron, BMPs Inc. Assigned to Associate Editor Xiying Hao.*

Abstract

Transportation of poultry litter out of nutrient limited watersheds such as the Illinois River basin (eastern Oklahoma) is a logical solution for minimizing phosphorus (P) losses from soils to surface waters. Transportation costs are based on mass of load and distance transported. This study investigated an alternative litter storage technique designed to promote carbon (C) degradation, thereby concentrating nutrients for the purpose of decreasing transportation costs through decreased mass. Poultry litter was stored in 0.90-Mg conical piles under semipermeable tarps and adjusted to 40% moisture content, tested with and without addition of alum (aluminum sulfate). An additional study was conducted using 3.6-Mg piles under the same conditions, except tested with and without use of aeration pipes. Samples were analyzed before and after (8 wk) storage. Litter mass degradation (i.e., loss in mass due to organic matter decomposition) was estimated on the basis of changes in litter total P contents. Additional characterization included pH, total nutrients, moisture content, total C, and degree of humification. Litter storage significantly decreased litter mass (16 to 27%), concentrated nutrients such as P and potassium (K) and increased proportion of fulvic and humic acids. The addition of aeration pipes increased mass degradation relative to piles without aeration pipes. Nitrogen volatilization losses were minimized with alum additions. Increases in P and K concentrations resulted in greater monetary value per unit mass compared with fresh litter. Such increases translate to increased litter shipping distance and cost savings of $17.2 million over 25 year for litter movement out of eastern Oklahoma.

Identification of Nuclear Genes Encoding Chloroplast-Localized Proteins Required for Embryo Development in Arabidopsis[1,OA]

Nicole Bryant, Johnny Lloyd, Colleen Sweeney, Fumiyoshi Myouga and David Meinke*

Author Affiliations

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Abstract

We describe here the diversity of chloroplast proteins required for embryo development in Arabidopsis (Arabidopsis thaliana). Interfering with certain chloroplast functions has long been known to result in embryo lethality. What has not been reported before is a comprehensive screen for embryo-defective (emb) mutants altered in chloroplast proteins. From a collection of transposon and T-DNA insertion lines at the RIKEN chloroplast function database (http://rarge.psc.riken.jp/chloroplast/) that initially appeared to lack homozygotes and segregate for defective seeds, we identified 23 additional examples of EMB genes that likely encode chloroplast-localized proteins. Fourteen gene identities were confirmed with allelism tests involving duplicate mutant alleles. We then queried journal publications and the SeedGenes database (www.seedgenes.org) to establish a comprehensive dataset of 381 nuclear genes encoding chloroplast proteins of Arabidopsis associated with embryo-defective (219 genes), plant pigment (121 genes), gametophyte (three genes), and albinate (138 genes) phenotypes. Loci were ranked based on the level of certainty that the gene responsible for the phenotype had been identified and the protein product localizes to chloroplasts. Embryo development is frequently arrested when amino acid, vitamin, or nucleotide biosynthesis is disrupted but proceeds when photosynthesis is compromised and when levels of chlorophyll, carotenoids, or terpenoids are reduced. Chloroplast translation is also required for embryo development, with genes encoding chloroplast ribosomal and peptidyl-tRNA hydrolase proteins well represented among EMB datasets. The chloroplast accD locus, which is necessary for fatty acid biosynthesis, is essential in Arabidopsis but not in Brassica napus or maize (Zea mays), where duplicated nuclear genes compensate for its absence or loss of function.

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Articles citing this article

Two Novel Proteins, MRL7 and Its Paralog MRL7-L, Have Essential but Functionally Distinct Roles in Chloroplast Development and Are Involved in Plastid Gene Expression Regulation in Arabidopsis
Plant Cell Physiol 2011 52: 1017-1030.
Abstract Full Text Full Text (PDF)

NATIVE AMERICAN TIMES
TODAY'S INDEPENDENT INDIAN NEWS

Dreams take Native student to Costa Rica

Written by [illegible], Native American Times
Monday, 13 September 2010 09:15

User Rating: 4
Poor Best Rate

Cassandra Camp / COURTESY PHOTO

STILLWATER, Okla. The second grade is life changing for "Cassie."

She marches home from school one day and, without any uncertainty, blurts out her destiny.

"Mommy I know what I want to be when I grow up." Cassandra Camp explained to her mom, "A biochemist."

Camp's mom Sheri asked her if she knew what a biochemist does. Camp said, "They're the ones that make the medicines." She just learned about the profession during a test introducing second grade students to different careers.

Today, she still has medicine on her mind. Camp, 21, is a senior biological sciences major and zoology minor at Oklahoma State University (OSU) in Stillwater. She recently spent eight weeks in Costa Rica with the Native American Pacific Islander Research Experience (NAPIRE).

The program familiarizes undergraduate Native American and Pacific Islander students to the ecosystem in the tropics. They experience field work, gather data and analyze their results. Each student is assigned a mentor and a cultural advisor.

Camp, Seminole/Creek, began her journey on the Pacific side of Costa Rica near Panama and stayed at the Las Cruces Biological Station. She spent the majority of her time with the Ngobe tribe, and studied parasites in both humans and dogs.

Camp said about 70 percent of the people has parasites. They are given anti-parasite pills and taught the importance of wearing shoes and hygiene, yet she said most people have wood homes with mud floors and that may contribute to the infections.

There are also a high number of dogs there that have not been vaccinated. Camp said there has never been a dog census, but while there she did help survey 51 homes and about 101 dogs in total belonged to these homes. In a random survey, veterinarian students took blood, fecal, tic and other samples from dogs. They found hook and round worms, and some dogs had bully.

A Giardia test will also be done on the samples since parasites were transmitted to humans in two households and caused weight loss. One hypothesis, Camp said, was that parasites may have been transferred through the water source, but tests are still being conducted. She said all test results will be shared with the native people.

"I would love to go back and elaborate on what we did," Camp said.

Yet, before approaching the Ngobe people for permission to go into the territory, there were lessons to be learned and trust to gain. Camp said she was warned to watch her facial expressions, because if she had a sad look on her face the native people would not want to show their animals. Plus, she said there have been people who previously went through the territory for research, but never followed through with any action.

Not to mention, when Camp and her colleagues arrived they had to untangle some miscommunication about why they were there. She said there was a meeting and many people arrived, even from other territories, with their cats and dogs because they heard a veterinarian was going to vaccinate their animals.

"They really care about their animals," she said. "They're really humble, really nice. I really liked working there with them. We're fortunate people. They live with the bare minimums and they're humble and happy."

Camp said her movie moment came when children from the territory ate with her and her colleagues for lunch.

"We gave them an apple to share and they were so grateful. Later more children came and circled around us so we gave them the rest of our snacks," she said. "The children were so intrigued by us. They even followed us talking the entire way as we finished our surveys. This was a huge humbling turning point for me. We had several encounters like this one with the children of the community. They are beautiful people who have so little, yet offer so much to strangers. I wish I could express how the children made me feel in words."

Sheri Camp said relationships are very important to her daughter.

"She's a people person," Sheri Camp said. "She always wanted to save the world one person at a time."

The experience not only introduced Camp to another climate and culture, but also to another genre of science.

"I never had any experience with field work. You get to see what's going on right then and there," she said. "Before, I worked in a lab ... I

Camp, Cassandra, Scholar OSU .

AMERICAN INDIAN
HORIZONS
A PUBLICATION OF THE OKLAHOMA CITY INDIAN CLINIC
Spring 2010

By Cassandra Camp

I give thanks to the Lord for all his blessings, grace, and tests of faith that he has planned and will continue to plan for my life. I also give thanks to my family for supporting me financially and emotionally, and last but certainly not least, spiritually.

I believe that education is the key to success and it is driven by ambition, desire or university's door is personal barriers. Barriers such as age, lack of finances, lack of support… you fill in the blank.

The reality of the situation is that higher education is at everyone's finger tips. If an individual's personal barrier is their financial status then there are resources that are available. The ludicrous part about it is many scholarships do not receive applicants; therefore, the money is left unclaimed.

lous. As a student you are charged X amount of dollars for each hour, which means you are hiring the professors to expand your knowledge and are not benefiting from what you have chosen to invest in if not present. Studying can also be thought of in the same context. A person only gets out of tomorrow what they put in today.

The pursuit of higher education among American Indians is essential for the

Nano-Scale Fluidics for Ultra-Compact Lab-On-A-Chip Device Applications

Ryan Edwards
Biomedical Engineering, University of Oklahoma

NNIN REU Site: Microelectronics Research Center, Georgia Institute of Technology, Atlanta, GA

NNIN REU Principal Investigator(s): Dr. Ali Adibi, Electrical and Computer Engineering, Georgia Institute of Technology
NNIN REU Mentor(s): Dr. Siva Yegnanarayanan, Electrical and Computer Engineering, Georgia Institute of Technology
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Abstract:

Ultra-high quality factor (*Q*) chip-scale silicon nitride (SiN) optical microresonators are very attractive for lab-ona-chip biological sensing. Two key challenges in developing multiplexed sensor arrays are fluidic sample delivery and surface coating of the sensor surface. This project focused on designing, fabricating, and testing various SU8 microfluidic channels tightly integrated on the top of an array of SiN microresonators. Each resonator was functionalized with a specific surface coating for a particular analyte, using a large-angle surface patterning tool and the Nano eNabler™ System from BioForce Nanosciences, Inc. Fluidic channels were sealed by a polydimethylsiloxane (PDMS) or glass cover slip and inlet/outlet ports were provided for the sample injection through external syringe. Preliminary experimental results, obtained by flowing a set of Brix fluids in the microfluidic channel with different refractive index units (RIU), showed that the sensor bulk refractive index sensitivity was ~ 1 nm/RIU.

Harris, Steven, BD Fellow, Cohort II

BIOCHEMISTRY
Publication of the American Chemical Society
Article

Biochemistry **2010**, *49*, 5989–5997 5989
DOI: 10.1021/bi100393c

Nuclear Magnetic Resonance Structure of the Prohead RNA E-Loop Hairpin†,‡

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Received March 14, 2010; Revised Manuscript Received June 12, 2010

ABSTRACT: The *Bacillus subtilis* phage φ29 packaging motor requires prohead RNA for genome encapsidation. The nuclear magnetic resonance structure of the prohead RNA E-loop hairpin, r(5′AUUGAGUU), is presented and compared to predictions from MC-SYM. The prohead RNA E-loop hairpins contain sequences similar to rRNA hairpins. Comparison of predicted and experimentally determined prohead and ribosomal hairpin structures reveals that sequence similarity is a stronger determinant of hairpin structural similarity than grouping similar types of RNA. All the hairpins contain a U-turn motif but differ in the first noncanonical pair and backbone orientation. These structures provide benchmarks for further improvements in RNA structure predictions from sequence.

Bacillus subtilis phage φ29 utilizes a nanomolecular motor to encapsidate the DNA genome into an empty viral capsid (*1*, *2*). The φ29 motor contains an essential prohead RNA (pRNA)[1] that works in concert with several proteins to complete the packaging process (*3*−*5*). Previous chemical modification and phylogenetic studies on pRNA show very little primary sequence conservation but a well-conserved secondary structure (*6*−*9*). The pRNA E-loop hairpin sequence is conserved in φ29, M2/NF, and SF5 pRNA sequences but varies in GA1 pRNA (Figure 1) (*7*). The pRNA E-loop hairpin interacts with gene product 10, the viral head−tail connector protein, a 290-amino acid monomer that forms a 422 kDa dodecameric complex (*10*−*14*). Mutations in the pRNA E-loop hairpin reduce the level of protein binding to less than 30%, and mutation of the A nucleotide in the hairpin loop to a C reduces packaging activity 95% (*15*), although substitution of this hairpin with a UUCG terminal loop retains some packaging activity in vitro (*16*). Nucleotides in the pRNA E-loop hairpin show protection from chemical modification when pRNA forms dimers and multimers (*17*). Thus, the pRNA E-loop hairpin is a conserved structural piece of the RNA and protein interactions in the φ29 packaging motor.

NMR studies of RNA hairpins provide benchmarks for methods for predicting three-dimensional RNA structure from sequence. MC-SYM, a computational program that predicts RNA three-dimensional structure from sequence using symbolic programming and cyclic motifs, is trained on high-resolution ribosome crystal structures (*18*). Isostericity matrices, which classify and predict base pairing interactions, are based on phylogenetic and structural studies of rRNA and structures in the rfam database (*19*, *20*). pRNA presents a good test of these prediction methods because the degree of sequence conservation is unusually low but the secondary structure is well-conserved.

Ribosomal hairpins S2 in the small subunit and L11 in the large subunit were determined by both NMR and crystallography and contain sequences similar to pRNA hairpins. The ribosomal hairpins have the same structure both in the small oligonucleotide model of the hairpin determined by NMR and in the context of the RNA−protein interactions determined by crystallography (*21*−*23*). Thus, in this case, the three-dimensional structure of the ribosomal hairpins is determined by the RNA sequence and is not altered by protein and RNA tertiary interactions. Comparisons of the experimental and predicted structures for the pRNA E-loop and ribosomal hairpins S2 and L11 test the applicability of MC-SYM and isostericity matrices in predicting RNA structure.

Both the ribosome and the φ29 packaging motor are large RNA−protein assemblies with complex architectures that support and direct biological catalysis. The S2, L11, and pRNA E-loop hairpins share a common structural function at junctions where RNA helices and proteins pack closely together through nonspecific electrostatic interactions between residues such as arginine, lysine, glutamine, asparagine, and the RNA phosphate backbone. The high-resolution ribosome crystal structures (*25*−*27*) provide an enormous database of RNA−protein structural interactions upon which structure prediction methods can be developed and tested. The small size of these six-nucleotide hairpins is advantageous for testing computational predictions and assessing the accuracy of local three-dimensional structure prediction in detail. Accurate structure prediction from sequence can provide models for stimulating hypothesis of function in RNA−protein complexes. In the absence of high-resolution structural information for the complete φ29 packaging motor, atomic-resolution structure determination of parts of the motor can be modeled into the low-resolution cryo-electron structures to design experiments for determining the mechanism of the packing motor and the role of the essential pRNA. Atomic-resolution crystal structures of proteins gp7, gp12, gp8B, and gp13 have been determined and modeled into cryoEM maps of the prohead motor at 7.9 Å (*10*, *28*−*34*). Models of pRNA hexamers and dimers have been computationally predicted (*35*, *36*), and experimental validation

†This work was supported by Oklahoma Center for the Advancement of Science and Technology Grant HR09-160, National Science Foundation Bridges to Doctorate Program Grant 0902123, and an American Cancer Society Institutional Research Grant to the University of Oklahoma Cancer Center (Seed Grant 0601391).

‡The structure has been deposited in the Protein Data Bank as entry 2KYN and in RCSB as entry 101629.

*To whom correspondence should be addressed. E-mail: susan.schroeder@ou.edu. Phone: (405) 325-3092. Fax: (405) 325-6111.

[1]Abbreviations: NMR, nuclear magnetic resonance spectroscopy; NOE, nuclear Overhauser effect; NOESY, nuclear Overhauser effect spectroscopy; COSY, correlation spectroscopy; HSQC, heteronuclear single quantum coherence spectroscopy; HETCOR, heteronuclear correlation spectroscopy; pRNA, prohead ribonucleic acid; rRNA, ribosomal ribonucleic acid; MC-SYM, monte carlo secondary structures by symbolic programming.

Published on Web 06/15/2010

APPENDIX K

SCHOLAR HIGHLIGHTS

NEWSOK

POWERED BY THE OKLAHOMAN THE STATE'S MOST TRUSTED NEWS

5 OSU students receive major science grants

STILLWATER – Five Oklahoma State University students are receiving more than $121,000 each in grants awarded by the National Science Foundation.

By the Associated Press
Published: April 26, 2011

The students names as NSF graduate fellows and receiving the grants are ***Lydia Meador*** of Broken Arrow, Laura Merriman of Holdenville, Taber Midgley of Durant, ***Andrew Mock*** of Edmond, and Jessica Morrison of Bay City, Mich.

Michael Heppler, the assistant director of the university's Student Academic Services for the graduate college, says the grant includes $90,000 paid directly as stipends to each student as well as $10,500 annually to cover tuition and fees.

Taber and Morrison will use their fellowships at Oklahoma State. **Meador** will use hers at Arizona State University, **Mock** will use his at the University of Illinois, and Merriman will use hers at North Carolina State University.

http://www.newsok.com/article/3562165

NSF grant awarded to five OSU students

Monday, 25 April 2011 18:46

 Five Oklahoma State University students have been selected to receive more than a half a million in funding from the prestigious National Science Foundation.

Named NSF Graduate Fellows this spring are **Lydia Meador**, a Broken Arrow botany, biochemistry and microbiology senior; Laura Merriman, a Holdenville biosystems engineering senior; Taber Midgley, Durant biosystems engineering graduate student; **Andrew Mock**, an Edmond civil engineering senior; and Jessica Morrison, a Bay City, Michigan, microbiology graduate student.

Receiving honorable mentions were Phillip Long, a Stillwater botany graduate student, and Elisabeth Ponce-Garcia, a Life Span Development Psychology Ph.D. student from Mustang.

"The quality and success of OSU students is on full display with both undergraduates and graduate students bringing home such major awards," said OSU President Burns Hargis. "We are proud of these extremely talented students and the faculty and others who supported them in their success."

The value of each three-year Fellowship is $121,500, according to Michael Heppler, assistant director of Student Academic Services for the graduate college. This includes $90,000 in funding paid directly as stipends to each student, plus $10,500 annually to cover tuition and fees and other ancillary support at the institution where each student chooses to study.

"We are very proud of the five OSU students who have been awarded NSF Graduate Research Fellowships," said Dr. Mark Payton, Interim Dean of the Graduate College. "These awards are the result of outstanding research performed by our students and their faculty mentors, and we extend our congratulations to them and their families. We wish all our scholars the best, whether they continue their research endeavors at OSU or choose to display the Oklahoma State brand at other prestigious research institutions."

Taber and Morrison plan to use their Fellowships at OSU. Taber will study biosystems engineering and Morrison will study microbiology.

Meador will be using the grant for the Biological Design Ph.D. program at Arizona State University, ***Mock*** will study civil engineering at the University of Illinois and Merriman will study biological and agricultural engineering at North Carolina State University.

The Fellowship program is NSF's oldest program, founded in 1952. The program has supported more than 44,000 U.S. citizens, nationals and permanent residents in pursuing advanced degrees in science or engineering. The program is highly competitive and is designed to help the U.S. maintain a talented and diverse scientific and technological workforce. According to the NSF, the Fellows are expected to become knowledge experts who will contribute to the nation's research, teaching, and scientific and engineering innovations.

CPN member Andrew Mock earns $121,500 fellowship

SF grant awarded to five OSU Students

Andrew Mock

Five Oklahoma State University students, including a Citizen Potawatomi Nation member, have been selected to receive more than a half-a-million dollars in funding from the prestigious National Science Foundation. Joining CPN member Andrew Mock in receiving the awards and being named NSF Graduate Fellows this spring are Lydia Meador, a Broken Arrow, Oklahoma botany, biochemistry, and microbiology senior; Laura Merriman, a Holdenville, Oklahoma biosystems engineering senior; Taber Midgley, a Durant, Oklahoma biosystems engineering graduate student; and Jessica Morrison, a Bay City, Michigan microbiology graduate student. Mock, of Edmond, Oklahoma, is a civil engineering senior. Receiving honorable mentions were Phillip Long, a Stillwater, Oklahoma botany graduate student, and Elisabeth Ponce-Garcia, a Life Span Development Psychology Ph.D. student from Mustang, Oklahoma. “The quality and success of OSU students is on full display with both undergraduates and graduate students bringing home such major awards,” said OSU President Burns Hargis. “We are proud of these extremely talented students and the faculty and others who supported them in their success.” The value of each three-year Fellowship is $121,500, according to Michael Heppler, assistant director of Student Academic Services for the graduate college. This includes $90,000 in funding paid directly as stipends to each student, plus $10,500 annually to cover tuition and fees and other ancillary support at the institution where each student chooses to study. “We are very proud of the five OSU students who have been awarded NSF Graduate Research Fellowships,” said Dr. Mark Payton, Interim Dean of the Graduate College. “These awards are the result of outstanding research performed by our students and their faculty mentors, and we extend our congratulations to them and their families. We wish all our scholars the best, whether they continue their research endeavors at OSU or choose to display the Oklahoma State brand at other prestigious research institutions.” Taber and Morrison plan to use their Fellowships at OSU. Taber will study biosystems engineering, and Morrison will study microbiology. Meador will be using the grant for the Biological Design Ph.D. program at Arizona State University. Mock will study civil engineering at the University of Illinois, and Merriman will study biological and agricultural engineering at North Carolina State University. The Fellowship program is NSF’s oldest program, founded in 1952. The program has supported more than 44,000 U.S. citizens, nationals, and permanent residents in pursuing advanced degrees in science or engineering. The program is highly competitive and is designed to help the U.S. maintain a talented and diverse scientific and technological workforce. According to the NSF, the Fellows are expected to become knowledge experts who will contribute to the nation’s research, teaching, and scientific and engineering innovations.

“The Native American Speaks”

Home of the Bulldogs
Weatherford Daily News
stablished 1900 Weatherford, Oklahoma Wednesday, March 16, 2011

SWOSU chemistry student headed to Spain

Ryan Felder
City Editor

When most people are in college, they are worried about playing video games, when the next big game is or what they're doing over the weekend. SWOSU chemistry major Courtney Garcia thinks about those things too, but she has a couple of other things to think about as well. Garcia was recently selected as a SWOSU representative for Research Day at the state capitol March 31. She was also recently selected by the Council on Undergraduate Research as one of 74 - out of approximately 700 people - presenters to present her research results and meet with members of the Oklahoma congressional delegation at the U.S. Capitol April 13. And, she was recently selected as one of eight students given the opportunity to participate in a 10 week research program in Cadiz, Spain, where she will do marine chemistry research with marine life beginning May 24. In her research for the capitol, she is working with a drug that is already in use and is trying to improve upon that drug for uses in HIV and anti-cancer. She will be presenting that research at the state and U.S. capitols. In Spain, she will be working in the International Research Experiences for Undergraduates program at the University of Cadiz, Spain, sponsored by Bucknell University in Pennsylvania. She will be working in an organic chemistry setting. "I will be helping characterize metabolites from various sea creatures in an organic chemistry setting," Garcia said. "I was actually born in Spain, in Madrid. This will be the first time I'll be going back since I was four years old." The research program in Spain is funded by the National Science Foundation and all travel, housing, food and additional spending money is all provided. "I am very excited," Garcia said. The next couple of months will be busy for Garcia, but she is up for the task. Garcia said she will graduate in May 2012 and will apply for M.D./Ph. D. school because she wants to be a physician and researcher. She spent last summer at Harvard medical school, serving as an intern. She will be applying to Harvard and the University of Oklahoma for M.D./Ph. D. school after she graduates from SWOSU. Garcia's mentor has been Dr. Tim Hubin, an Associate Professor in the Department of Chemistry and Physics. "He has been a great mentor and I want to thank him for all he's done to help me," Garcia said. She also wanted to thank Dr. Brian Campbell, a professor in the Department of Chemistry and Physics for his help as well. She said both have helped her throughout her career. Garcia is the daughter of Lisa and Dan Turklay of Norman. She has one sister, Sarah Black, and one brother, Dane Garcia and she is engaged to fiancée Garic Johnson.

SWOSU's Courtney Garcia Wins Grand Prize at Oklahoma Research Day

Southwestern Oklahoma State University student Courtney Garcia of Altus (Navajo) was selected the grand prize winner at the recent 16th annual Research Day held at the Oklahoma State Capitol in Oklahoma City.

SWOSU student Courtney Garcia (center) of Altus (Navajo) was selected the grand prize winner at the recent 16th annual Research Day held at the Oklahoma State Capitol in Oklahoma City. Garcia won a $4,000 grant to help pay for her summer research internship plus a $500 cash award. Pictured with her are (left) Oklahoma State Representative Harold Wright and Oklahoma State System of Higher Education Chancellor Glen D. Johnson.

Twenty-one undergraduate student researchers from 15 Oklahoma colleges and universities gathered for the event, sponsored by the Oklahoma Experimental Program to Stimulate Competitive Research (EPSCoR), the Oklahoma State Regents for Higher Education and the National Science Foundation.

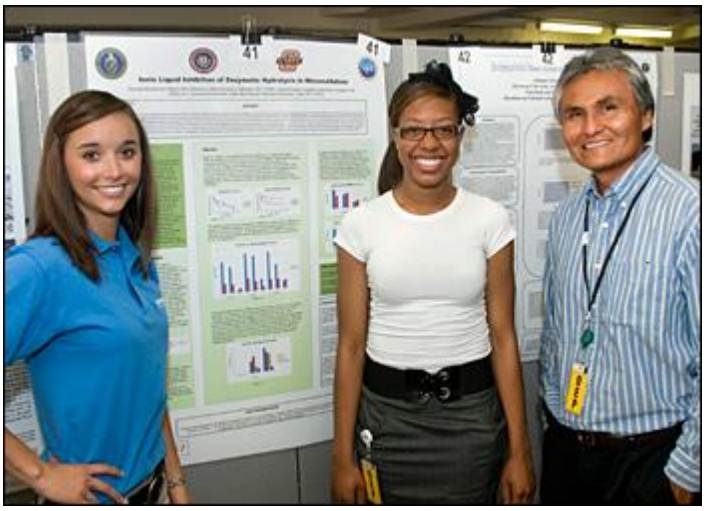
Garcia's poster topic was on HIV/Cancer Drug. Her faculty sponsor on the project is Dr. Tim Hubin, associate professor of chemistry at SWOSU. For winning the grand prize, Garcia won a $4,000 grant to help pay for her summer research internship plus a $500 cash award. Hubin's laboratory gets a $2,500 award for supplies.

Garcia is also a SWOSU OK-LSAMP Scholar (Oklahoma Louis Stokes Alliance for Minority Participation), a program that nurtures and assists students through their undergraduate program while creating opportunities for students to pursue graduate degrees in their selected field of science, technology, engineering or mathematics.

At the Research Day, student participants were hand-selected by their institutions to present scientific research posters during the prestigious event, which is designed to showcase the outstanding research being conducted on Oklahoma college campuses and to make legislators and the public aware of how the research can positively impact our state.

Students' posters were competitively judged by an independent panel that selected the top seven research presentations in three categories — overall winner, regional universities and research-intensive institutions. An award ceremony, hosted by Glen D. Johnson, chancellor of the Oklahoma State System of Higher Education, was held at the end of the day.

BROOKHAVEN NEWS!



Interns Danielle Nichols and Justina Bradley Investigate Biofuel

Interns Danielle Nichols (left) and Justina Bradley (center) share their poster with FaST program professor, Dr. Gilbert John .

As the push to liberate society from fossil fuels continues, researchers like those at Brookhaven National Lab are pursuing alternate sources of energy. This summer, Danielle Nichols and Justina Bradley, two interns in the Faculty and Student Teams (FaST) program, joined the hunt at BNL's Environmental Sciences Department.

"We're doing biofuels research, generating ethanol from raw natural materials," explained Nichols, a rising senior at Oklahoma State University (OSU). Ethanol, unlike its fellow motor fuel gasoline, can be made from renewable resources. As Bradley, a rising junior at Langston University, put it, "We're trying to find an effective and efficient way to go green."

Under the supervision of BNL researchers Arokiasamy J. (AJ) Francis and Ashutosh Gupta, and FaST program professor Gilbert John from OSU, Nichols and Bradley investigated the production of ethanol from cellulose, a common organic compound, that had been pretreated with liquid salts called ionic liquids. In the lab, they used a glucose assay to monitor the effects of different ionic liquids on the cellulose's breakdown into glucose. The glucose assay monitors the change in a material by measuring how much light it absorbs, using an instrument called a spectrophotometer. Specifically, the interns investigated the efficiency of two enzymes, cellulase and β-glucosidase, in converting cellulose to glucose. Ultimately, they used the bacteria *Clostridium* to ferment the glucose into two products: butanol and the biofuel ethanol. "It's been a good experience to learn new techniques in the lab and to have access to such high-quality facilities," said Nichols. She said she also enjoyed the brown-bag lunches on Fridays, when researchers in a variety of fields presented their work to the interns.

Both Nichols and Bradley came to Brookhaven because of encouragement from their professors. "The summer was long but beneficial," said Bradley. "I feel that it was a great experience, and has broadened my horizon for future research." Added Nichols, "If I weren't graduating next year, I'd come back to BNL for another summer." After graduation, both interns plan to attend medical school.

2010-1958 INT/EXT | Media & Communications Office

Langston University's LINC STEM Scholar Wins First (1st) Place Award at Oklahoma EPSCoR Research Day at the Capitol

Langston University's LINC scholar and STEM (Science, Technology, Engineering, and Technology) major Justina Bradley earned a 1st place award for her poster presentation at Oklahoma EPSCoR's 2011 Research Day at the Capitol event on March 31. Her award comes with a $500 cash prize, and recognition for her stellar achievement.

Oklahoma EPSCoR's Research Day at the Capitol has been around since 1996, and the competition is intensely competitive. Outstanding undergraduate students from Oklahoma's comprehensive and regional colleges and universities are nominated by their institutions to participate in the program. Participating institutions include just about every college and university throughout Oklahoma.

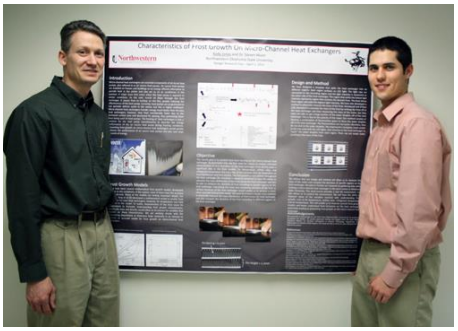
Nominees must prepare a scientific research poster on a research project that they have completed. Posters are competitively judged the day of the event by an independent panel. Posters are judged on 1) scientific presentation (clear purpose, hypothesis, background info, results, impact, further study expected), 2) student's ability to explain project, 3) visual appearance of the poster, 4) clarity for general audiences, and 5) societal impact statement.
A lot of work goes into preparing the poster for the competition. The event oversight team recognizes this, and requires nominees to participate in a training session in order to ensure a high quality presentation. Langston's Department of Chemistry Chair and LINC Director, Dr. John Coleman, takes preparation to an even higher level. Nominees get his personal guidance on every detail and nuance, as well as the support of other STEM faculty and LINC staff. He says that he wants Langston's participants to be the absolute best that they can be. "Nobody can ask for anything beyond your very best efforts," he frequently tells his scholars who participate in this event, and other competitive scientific research related events around the country. Justina did not disappoint. Her grasp of her subject matter, poise, and overall presentation skills were apparently recognized by the independent judging panel. Her mother and father were on site to witness her presentation.

Justina's research project, "Ionic Liquid Inhibition of Enzymatic Hydrolysis in Mircrocellulose", was completed at the Brookhaven Institute in New York during a 2010 Summer Research Internship. She earned her participation on this project from a field of competitors from across the U.S. Justina also won 2nd place earlier in March for this presentation at the National Institute of Science (NIS) and the Beta Kappa Chi Scientific Honor Society (BKX) 68th Joint Annual Meeting at Clark Atlanta University in Atlanta, Georgia.

Langston University is pleased to have one of its own recognized at this event. It serves to display the institution's capabilities in preparing students to be leaders in STEM disciplines to the legislature, media and the general public at the State Capitol. It also serves to validate the trust that its partner, the National Science Foundation, has placed in it by awarding the institution an HBCU-UP Implementation project grant that is aimed at increasing the number of underserved students who enter college, receive undergraduate and advanced degrees in STEM disciplines, and choose STEM careers. This is the second (2nd) Oklahoma EPSCoR Research Day at the Capitol award for a Langston LINC scholar. Steve Harris won a 2nd place award for his oral presentation in chemistry in 2006. In addition to this stellar accomplishment, Langston's LINC scholars (including Justina) have garnered other awards on a national level for their scholarly, scientific research projects. "Our participation in the NSF HBCU-UP grant project has provided us with the impetus to leverage Langston's many resources to create opportunities that were either not available or recognized in the past. We will use the synergy and energy to move forward," says Dr. Coleman. LINC is primarily funded by two successive HBCU-UP grants from the National Science Foundation (NSF), with rigorous support by the Langston University community. Since the beginning of LINC, forty eight (48) awards have been earned by LINC scholars for their participation at regional and national competitive events for research presentations.

Increase in projects at Ranger Research Day

April 6, 2011



More than 20 students and faculty members from Northwestern Oklahoma State University submitted abstracts for Ranger Research Day last week. With 23 entries, the fifth annual Ranger Research Day event reached its second highest record of participants.

Student entries were critiqued and eligible for awards. Three winners were announced at the end of the day. Winners with hometown, classification, research project name and sponsor include:

• First place – Kody Jones, Mustang sophomore, "Characteristics of Frost Formation of Micro-Channel Heat Exchangers;" Dr. Steven Maier, associate professor of physics;

• Second place – Rebecca Fenton, Kiowa (Kan.) senior, "Dyslexia: A Difference in Visual Comprehension;" Dr. Cynthia Pfeifer-Hill, professor of biology;

• Third place – Gerald Mbara, Seattle (Wash.) freshman, "Identification of the Cryptic North American Treefrog;" Dr. Aaron Place, assistant professor of biology.

All participants received a certificate of participation, and researchers were encouraged to enter their research projects in Oklahoma Research Day 2011 at Cameron University on Nov. 4.

-NW-

Posted on Wed, April 6, 2011 by Erika Birk Ranger Research Day Kody Jones

CLASS MARSHALS - SPRING 2011

For commencement, each of the University of Central Oklahoma's five undergraduate colleges award a student the title of Class Marshal. These five students have the highest grade-point averages and number of Central credit hours in their respective colleges.

Each honoree receives a Class Marshal stole, signifying the highest degree of academic excellence. First presented in 1994, the stoles have become a UCO tradition, now enhanced by a bronze Class Marshal graduation gown.

The following are the Class Marshals for the Spring 2011 Commencement.

Ethan B. Rowell - College of Mathematics and Science

Ethan B. Rowell is Biology major with a 4.0 grade point in the College of Mathematics and Science. From Ninnekah, he has been a member of the Biology Club, the Alpha Chi Honor Society and UCO Commons Hall Council, while having membership in the Texas Society of Mammalogists and the Southwestern Association of Naturalists. He **was named a Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP) Scholar.** Future plans include pursuing a master's at UCO.

NORTHEASTERN STATE UNIVERSITY GATHER HERE. GO FAR.

NSU announces Outstanding Seniors

In recognition of long-term academic excellence and civic dedication among students at Northeastern State University, the awards committee of the Alumni Association board of directors has named the Outstanding Seniors for 2010-11.

Seniors selected for the honor are Shane Franklin of Norman, Allyson Hall of Broken Arrow, Sheri Dawn Kennedy of Ochelata, Dylan Medeiros of Muldrow, Chris Nettles of Lawton, Matthew Reece of Westville, Darla Rodgers of Enid, Elaina Ross of Tulsa, Kyle Tate of Bixby and Seth Vansell of Crescent.

"The Jack Kaufman Outstanding Seniors awards process is challenging and the Alumni Association board of directors takes it very seriously," said Daniel Johnson, director of alumni services. "It is challenging because there is a thin line separating the amazing group of seniors who are nominated and apply each year."

From the 10 honorees, the committee will select the Jack Kaufman Outstanding Male and Female Seniors through an interview process held March 22 at the Branscum Alumni Center. The Jack Kaufman award winners will be announced at the Ovation Assembly on April 9. All Outstanding Seniors will be recognized during the ceremony.

Johnson said the 2010-11 Outstanding Seniors are exceptional students who dedicated themselves to the university and the community throughout their NSU years.

"This group being honored truly represents the spirit of NSU and our institution's core values, and the board looks forward to them adding their energy and enthusiasm to the Alumni Association," Johnson said.

The two seniors selected to receive the Kaufman award will have the honor of addressing the graduating class at the Spring 2011 commencement ceremonies.

Published: 3/31/2011 5:07:27 PM

Alumni Home | Login | First-Time Login | Support

OSU ALUMNI ASSOCIATION

Your ORANGE Connection

Oklahoma State University

Seniors of Significance

The OSU Alumni Association is proud to announce the 2010-2011 Seniors of Significance:

Paul Barbour
Jeremy Bennett
Karolyn Bolay
Stephanie Bowen
John Brooks
Allison Brown
Megan Bryant
Austin Burton
Huyen Cao
Emily Cole
Haley Cosner
Amalia Deines
Jessica DeLong
J. Connor Ferguson
Jessica Fernandez-Flack
Katie Foley
Gretchen Frost
Sarah Fry
Katie Fuchs
Katie Gruntmeir
Courtney Hargis
Andrew Henry
Blair Kirkpatrick
Stefanie Krull
Crystal LaGrone
Allison Lyons
David McKellips
Lydia Meador
Laura Merriman
Sara Oppel
Cody Ott
Erin Prutow
Andrea Richardson
Teresa Richert
Johnna Lynn Rushin
Dillon Sparks
Devin Stanfield
Ben Stukenborg
Wyatt Swinford
Maria Vera
Whitney Wernimont

Honorary Reception

Join us at a reception to celebrate the 2010-2011 Seniors of Significance and their outstanding achievements at Oklahoma State University. Please RSVP by Nov. 29 to joy.fieldsend@okstate.edu.

December 2, 2010
5:30-7 p.m.
Click Family Alumni Hall
ConocoPhillips OSU Alumni Center

About the Award

The Seniors of Significance Award recognizes students who have excelled in scholarship, leadership and service to campus and community and have brought distinction to Oklahoma State University.

Oklahoma State University Alumni Association
201 ConocoPhillips OSU Alumni Center | Stillwater, OK 74078 | 405.744.5368
info@orangeconnection.org | orangeconnection.org

Lydia Meador: botany and microbiology molecular genetics major

Connor Ferguson: plant and soil sciences major

CAMERON UNIVERSITY

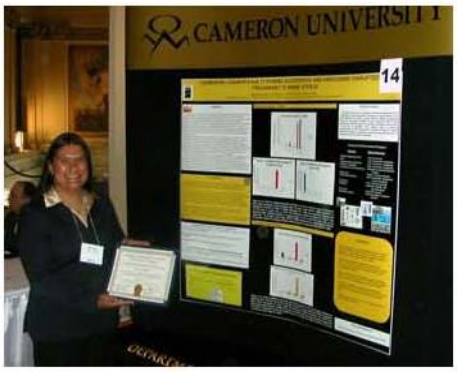
LAWTON, OK
Wed, 22 Jun 2011 96F (36C)

Cameron University student takes honors at Research Day at the Capitol

Cameron University student **Elaine Harder** placed first among students from regional universities during the annual **Research Day at the Capitol** event held at the Oklahoma State Capitol in Oklahoma City. Harder, an agriculture major from Snyder, placed second overall and was one of 21 undergraduate students representing 15 Oklahoma colleges and universities who presented competitive research posters to the State Legislature and the public. As a result of her presentation, she has been invited to speak at the next Research Day at the Capitol and an INBRE event this year.

Working under the mentorship of Dr. Frank White, CU Professor Agriculture and Joseph H. Mullins Endowed Chair in Agriculture, Harder's research topic is "Endocrine Disruption of Pregnancy", which focuses on endocrine disruptors in the environment and how they may cause pregnancy loss in animals and humans. She presented research data on this topic last summer at an international conference in Canada, when she was the only undergraduate student selected to present.

Funding for the research project provided by the Joseph H. Mullins Endowment has allowed Harder to network with research scientists from across the world.



"Elaine Harder did a great job representing Cameron University at Research Day," says Dr. White. "Elaine has excelled in the research lab and classroom and has demonstrated a unique ability to balance classes, research, and family. I wish I had a classroom full of students with her dedication."

Research Day at the Capitol is sponsored by Oklahoma EPSCoR, the Oklahoma State Regents for Higher Education and the National Science Foundation. The event is designed to bring about awareness of the outstanding research taking place in Oklahoma's colleges and universities.

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April 19, 2010

PR#10-079

APPENDIX L

STAFF RECOGNITION FROM

WOMEN OF COLOR

Certificate of Achievement

Career Communications Group, Inc.
Recognizes

Kay Porter

Oklahoma State University

For outstanding contributions to the STEM Disciplines
at the 15th Women of Color STEM Conference

Chairman/CEO/Publisher
Career Communications Group, Inc.

October 29, 2010
Date

Certificate of Achievement

Career Communications Group, Inc.
Recognizes

Fara Williams

Oklahoma State University

For outstanding contributions to the STEM Disciplines
at the 15th Women of Color STEM Conference

Chairman/CEO/Publisher
Career Communications Group, Inc.

October 29, 2010
Date

APPENDIX M

UNIVERSITY OF OKLAHOMA BRIDGE TO THE DOCTORATE UPDATE

THE BRIDGE TO THE DOCTORATE PROGRAM

The 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.

FELIX ISRAEL DE LA CRUZ

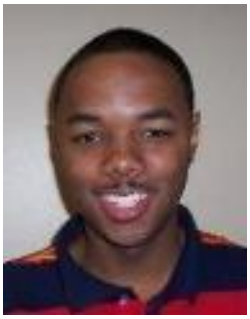
GRADUATED

BS Institution: The University of Oklahoma
Major: Mechanical Engineering
Career Goals: To specialize in the area of advanced basic sciences and the enhancement of diversity in the field of advanced materials, in particular, the area of polymeric composite laminates.
Mr. De La Cruz completed his Master of Science in Mechanical Engineering degree in Spring 2010.

STEVEN HARRIS

GRADUATED

BS Institution: Langston University
Major: Chemistry
Career Goals: To set up a laboratory for the production, testing and research of new drugs.
Completed Ph.D. requirements in Spring, 2011



DESMOND HARVEY

GRADUATED

BS Institution: Langston University
Major: Industrial Engineering
Mr. Harvey received his Master of Science degree in 2008. In Fall 2010, he will continue on his PhD in Adult and Higher Education.

JACOB HENDERSON

BS Institution: The University of Oklahoma
Major: Computer Engineering
Career Goals: To continue research in the vibrant academic atmosphere.

QUINTIN HUGHES

GRADUATED

BS Institution: Langston University
Major: Industrial Engineering
Career Goals: Creating, developing, and acquiring funding for more programs that will engage and expose under-represented minority communities to engineering & the sciences, as well as other avenues that can improve overall quality of life.
Mr. Hughes completed his Master of Science in 2009 and is continuing toward PhD.

KEVIN JAMES

GRADUATED

BS Institution: Southern University A&M College -- Baton Rouge, LA
Major: Electrical and Computer Engineering
Career goals: To be a professor at an institution where he can conduct research, establish programs for less privileged minorities and be a mentor to students needing guidance. Mr. James completed his Master of Science in 2009 and is continuing toward PhD.

CHRISTOPHER AGUAYO

2009 COHORT

BS Institution: University of Oklahoma
Major: Aerospace Engineering
Career Goals: To become a test pilot and focus on optimization and efficiency of aircrafts.

BRITTANIE ATKINSON

2009 COHORT

BS Institution: Langston University
Major: Biology
Career Goals: To perform research investigating mechanisms that are operative in the pathogenesis of "diabetes mellitus."

MARIO FRANKLIN

2009 COHORT

BS Institution: University of Oklahoma
Major: Industrial Engineering
Career Goals: to pursue a Ph.D in Industrial Engineering with an emphasis in engineering education

JUAN HERRERA

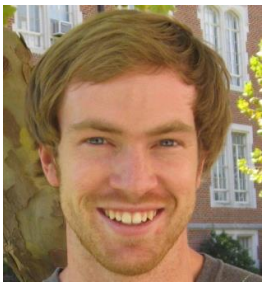
2009 COHORT

BS Institution: University of Oklahoma
Major: Computer Engineering
Career Goals: to develop novel computer architectures that use less power while increasing reliability and performance.

LORNE D. JORDAN

2009 COHORT

BS Institution: Bowling Green St. University
Major: Chemistry and Biochemistry
Career Goals: To become a leader in oncological research and contribute to the efforts of the National Cancer Institute.



RYAN JORDAN

2009 COHORT

BS Institution: Oklahoma State University- Stillwater
Major: Geology
Career Goals: To reveal earth's history by utilizing geophysics in creative ways.

MEGHAN LILES

2009 COHORT

BS Institution: Oklahoma State University
Major: Biochemistry and Molecular Biology
Career Goals: To perform research investigating mechanisms that are operative in the pathogenesis of autoimmune diseases.

CHRISTOPHER MACE

2009 COHORT

BS Institution: Oklahoma State University
Major: Geophysics
Career Goals: To work in governmental research or the petroleum industry.

CHRYSTAL MOORE

2009 COHORT

BS Institution: Northeastern St. University, Tahlequah, OK
Major: Microbiology
Career Goals: To operate a research lab examining antibiotic resistance in bacteria.

SHAWNA ONG

2009 COHORT

BS Institution: University of Oklahoma
Major: Electrical Engineering
Career Goals: To further research experience and impact in the defense industry with an independent research division.

RYAN WATLEY

2009 COHORT

BS Institution: University of Arkansas – Pine Bluff
Major: Chemistry
Career Goals: To work with organic synthesis mechanisms and to impact biological research.

APPENDIX N

OKLAHOMA RATING FOR NATIVE AMERICAN GRADUATES IN ALLIANCE INSTITUTIONS

NewSOK
The Associated Press. Produced by NewsOK.com

Oklahoma Universities Top List of Most American Indian Grads

BY DARLA SLIPKE dslipke@opubco.com Published: June 26, 2011

Oklahoma State University student Dalton Kelley plans to graduate in December contributing to a list that's a source of pride for several Oklahoma universities -- a ranking of colleges producing the most American Indian graduates with bachelor's degrees.

Oklahoma schools again top that list, compiled annually by a national publication called Diverse Issues in Higher Education.

“We’re really proud of that statistic, but we're also constantly trying to improve,” said Kelley, a mechanical engineering technology major from Eakly. The report is based on preliminary data from the U.S. Department of Education for the 2009-10 school year. OSU ranked first with 355 Indian graduates, down 4 percent from the previous year. About 9 percent of all OSU's graduates in 2009-10 were Indian, according to the report. Northeastern State University was second with 335 Indian graduates, down about 9 percent. The University of Oklahoma ranked third with 241 graduates, about 7 percent of total graduates. That's a 7 percent decline in Indian graduates from the prior year. Oklahoma had three other schools in the top 12: Southeastern Oklahoma State University, sixth with 170; East Central University, tenth with 143; and the University of Central Oklahoma, 12th with 127. Bacone College, Northeastern State and Southeastern Oklahoma State had the highest percentage of Indian graduates among the Oklahoma schools listed, at 36 percent, 24 percent and 28 percent, respectively. About 8.6 percent of Oklahoma's population is American Indian or Alaskan Native, according to 2010 U.S. Census data. That compares to nearly 1 percent of the U.S. population. Oklahoma has 39 Federally recognized tribes. Overall, Oklahoma's public colleges and universities had 1,501 Indians graduate with bachelor's degrees in 2009-10. That represents 9.6 percent of all such graduates. Kelley, a Choctaw, said he knew a little about his heritage growing up, but not much. At Southwestern, he became involved in American Indian programs on campus. The more he learned, he said, the more he wanted to know. He later transferred to OSU and joined the Native American Student Association. Kelley was president of the organization last year and helped sponsor various cultural events, including informational sessions for high school students and an annual pow wow. Kelley said Indian students worry about leaving behind their culture when they come to college, but they shouldn't. Indians can stay connected to their culture through campus programs and meeting other Indian students, he said. Last year, OSU started a retention program where Indian students help build connections, said Robin Williams, coordinator of Native American Affairs at OSU. “That sense of community is very important for Native students” she said. Williams said she's not concerned about the decline of Indian graduates because enrollment remains high. About 60 percent of Indian students who entered OSU in 2004 graduated within six years, she said.