2010

PERFORMANCE EFFECTIVENESS

REVIEW

Oklahoma
Louis Stokes Alliance for
Minority Participation

Submitted to
The National Science Foundation
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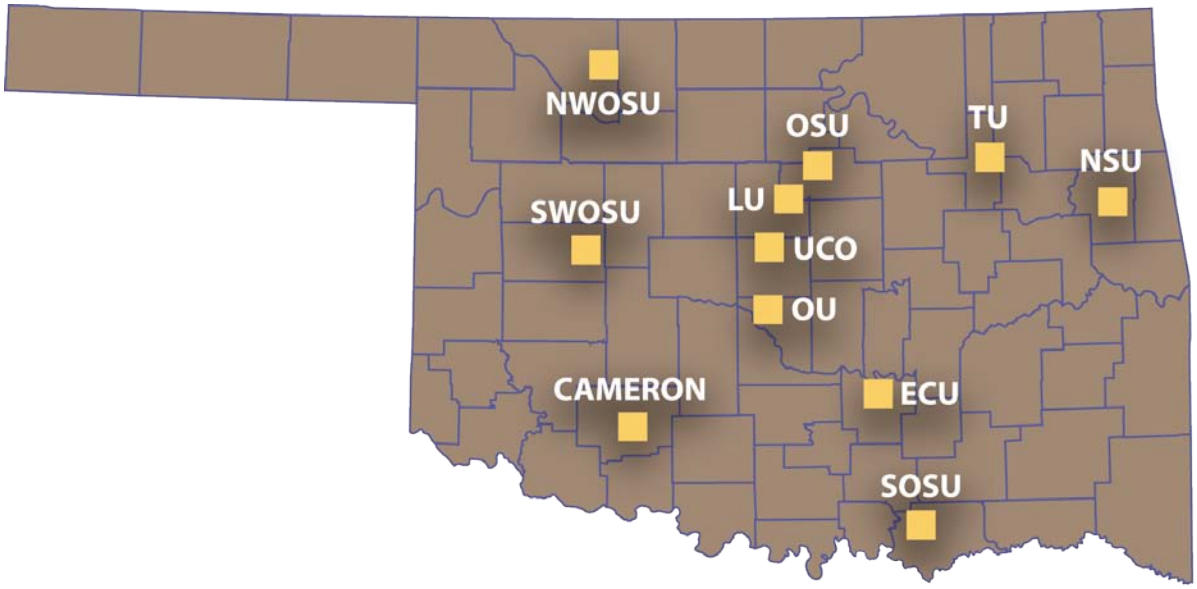

Oklahoma Alliance Institutions

2010

PERFORMANCE EFFECTIVENESS REVIEW

P.E.R.

Oklahoma

Louis Stokes Alliance for Minority Participation

in Science, Technology, Engineering, and Mathematics

(OK-LSAMP STEM)

Submitted by

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Lead Institution

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Fara Williams
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INTRODUCTION

The Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP) program concluded *Year One* of the five year National Science Foundation (NSF) grant (HRD09020027--2009-2014). This also concludes 16 years of successful LSAMP activities in Oklahoma.

The changes that occurred in the Oklahoma Alliance have been positive. Oklahoma continues to meet the NSF goal to increase the number of students from historically underrepresented groups completing degree programs in STEM fields. In 2009-2010 the Oklahoma Alliance had 149 Scholars; 42 completed Bachelor of Science degrees and 26 were admitted to graduate schools (62%). During the academic year, 46 percent of the scholars participated in research activities and 69% of scholars participated in summer internships at research institutions, private industry, and international locations.

Dr. Gordon Emslie, Principal Investigator and Program Director, left Oklahoma State University to assume the Provost position at Western Kentucky University. Dr. Emslie not only served as the PI for the OK-LSAMP program but for the Bridge to the Doctorate (BD) program.

Dr. Mark E. Payton, Associate Dean of the Graduate College, Oklahoma State University, assumed the role of Principal Investigator/Program Director for both the OK-LSAMP and Bridge to the Doctorate programs (See Appendix A).

Two scholars were selected to receive the UDALL Scholarship, 2 received the Goldwater Scholarship; 4 received the Graduate Research Fellowship Program fellowship, and three received Bridge to the Doctorate Program offers.

The first Pursuing Higher Degrees (PHD) Camp was held on the University of Central Oklahoma campus. Forty-four scholars participated in a two-day workshop on preparing for graduate school (See Appendix B).

The 15th Annual Research Symposium welcomed 179 attendees for a day of workshops, poster and oral presentations, ethics training, and guest speakers. Dr. Daniel H. Wilson, a former OK-LSAMP Scholar from the University of Tulsa, was the keynote speaker. Dr. Wilson is a robotist, a science fiction author, and a TV host. He spoke on the importance of graduate school and shared personal experiences. He addressed both the Bridge to the Doctorate Fellows and the undergraduate scholars.

Oklahoma State University Bridge to the Doctorate Fellows worked toward completion of their second year of graduate studies, while the University of Oklahoma Bridge to the Doctorate program sought to fill their 12 available positions.

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

Changes in OK-LSAMP personnel included the change in the Principal Investigator and two changes in Campus Coordinators.

At the end of June 2010, Dr. Gordon Emslie, Principal Investigator and Program Director, resigned his position as Dean of the Oklahoma State University Graduate College to assume the role of Provost at Western Kentucky University. Dr. Emslie's background in both undergraduate and graduate programs was an important factor enabling the LSAMP and BD programs in Oklahoma to achieve established goals for the period.

Dr. Mark E. Payton, Interim Dean, Oklahoma State University Graduate College, assumed the role of Principal Investigator and Program Director for the Oklahoma Alliance in July, 2010. Dr. Payton's background in statistics and graduate education will provide additional assets for the alliance.

In July 2009, Dr. Tim Hubin replaced Dr. Brian Campbell as Campus Coordinator of Southwestern Oklahoma State University. Dr. Hubin is a member of the Chemistry and Physics department.

In July 2009, Dr. Phil Schroeder replaced Dr. Keith Vitance as Campus Coordinator of Cameron University. Dr. Schroeder served as the Campus Coordinator for one year and left the university at the end of the Summer 2010 term to return to his home state. Dr. Keith White will fill this position.

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 2010 (Appendix F).

Close ties were developed with admission offices in the community colleges and a program was designed to work closely with faculty and students upon transitioning into four year institutions. Students from community colleges were introduced to faculty mentors on the four-year campuses and were provided opportunities to make the transition as smooth as possible. A meeting with Campus Coordinators and Community College leaders resulted in an agreement that minority students majoring in STEM disciplines transferring to one of the Alliance campuses would automatically become eligible to be scholars (Appendix C).

The 11 Oklahoma Alliance institutions supported 153 LSAMP scholars in the 2009-2010 academic year. This total reflects a 33 percent increase from the previous year of 116 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).

Oklahoma LSAMP Alliance institutions have awarded 8,461 Bachelor of Science degrees in Science, Technology, Engineering, and Mathematics (STEM) to minority and under-represented students during the last 15 years. During the 2009-2010 academic year, Alliance institutions awarded 870 STEM degrees, a 27 percent increase from the previous reported year (Table 2).

Table 1

Comparison Numbers to Meet Stated Goal

Institution	No. Scholars 2008-2009	No. Scholars 2009-2010	No. Scholars Increased
Cameron University	5	6	1
East Central University	13	14	1
Langston University	21	27	6
Northeastern State University	5	7	2
Northwestern Oklahoma State University	2	5	3
Southeastern Oklahoma State University	6	13	7
Southwestern State University	4	4	0
Oklahoma State University	27	42	15
University of Central Oklahoma	14	11	-3
University of Oklahoma	12	16	4
University of Tulsa	7	8	1
Totals	116	153	37

Table 2

Number of STEM Degrees Awarded in Oklahoma

Discipline	2008-2009	2009-2010*	Percent Difference
Agricultural Sciences	60	54	-10
Chemistry	29	34	17
Computer Science	86	102	19
Engineering	219	308	41
Environmental Science	4	8	100
Geosciences	8	2	-75
Life/Biological Sciences	254	324	28
Mathematics	20	32	60
Physics/Astronomy	5	6	20
	685	870	27

*Data from the University of Oklahoma is not yet available.

Table 3

Comparison of Scholars by Gender

	YEAR		
Category	2008-2009	2009-2010	Total
Male	60	72	132
Female	56	81	137
	116	153	

Table 4

Number of Scholars by Ethnicity

Ethnicity	2008-2009	2009-2010
African American	51	64
Native American	38	46
Hispanic	14	19
Pacific Islander	5	3
Asian American	4	3
White—First Generation Female	2	9
More than One Race		9
Total	116	153

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. Additionally, word of mouth of the program helped recruit potential scholars into the program.

Lead Institution Extra Activities

OSU, as lead institution, participated in several on-campus summer workshops for minority high school students from across the state. Additionally, OK-LSAMP has close working relationships with several programs. They include, but are not limited to: *Retention Initiative for Student Excellence (RISE) and RISE Jumpstart* is a program designed to help minority students make a smooth transition into college life; *Inclusion Leadership Program (ILP*), is 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. The *ConocoPhillips Minority Engineering Program Summer Bridge*, is 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 under-represented groups. Other camps which promoted diversity awareness, advocacy, leadership and education in the STEM disciplines were programs which involved under-represented/privileged young men and women of 14-18 years of age. These camps were: Leadership Education Advocacy and Diversity and Strengthening Today's Young Leaders Through Education (*Lead with STYLE)* and Retired Educators for Youth Agricultural Programs (*REYAP*).

Additional camps included those offered by the University of Oklahoma: *BP Engineering Academy*. This camp was a week-long residential camp for 9-12 grade students; *Passport to Engineering*, a four-day camp for selected middle school students from Northeast Academy in Oklahoma City; and the *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.

Throughout the academic year the OK-LSAMP program was involved with the TRiO Programs (Talent Search and Upward Bound) throughout the state. TRiO programs involve high school and freshman under-represented students

Shared-Database

Campus Coordinators worked closely with the Grant Coordinator in the development of a File Maker Pro data-base of all scholars and BD Fellows. The Grant Coordinator, housed at the lead institution site (Oklahoma State University), maintained the 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). The data were collected continually throughout the year with updates to the program on an as-needed basis. Information collected from each scholar includes, but is not limited to, degree program, presentations, research projects, completion of degree, and acceptance into graduate school. This database was 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.

- Twenty-six (26) 2009-2010 OK-LSAMP graduates were accepted to graduate schools throughout the nation. Examples include:

    - Bridge to the Doctorate Program, University of California-Santa Barbara
    - Graduate Research Fellowship, University of California-Berkeley
    - Bridge to the Doctorate Program, University of Oklahoma
    - Texas Tech
    - Bridge to the Doctorate, Drexel University

- The inaugural Pursuing Higher Degrees (PHD) Camp was developed and provided hands-on information regarding graduate school preparation.

Pursuing Higher Degrees (PHD) Camp

An invitation to attend the inaugural Pursuing Higher Degrees (PHD) Camp was sent to all Senior, Junior, and Sophomore scholars in the Oklahoma Alliance. The camp was based on a similar concept developed at the University of California-Berkeley by Diana Lizarrage, LSAMP Coordinator. With permission, Oklahoma developed the camp using and modifying the information provided by California.

OK-LSAMP's two day intensive hands-on workshop entitled Pursuing Higher Degrees (PHD) Camp was designed to help scholars develop a "tool box" of skills for entering and succeeding in graduate school. The camp was held on the University of Central Oklahoma campus due to its central location for all Alliance institutions. Each Scholar received a "tool box" containing items that will enable them to be better prepared as they begin the process of planning for graduate school. Examples of items included are: hanging files, stapler, colored highlighters, thumb drives, how-to sheets, envelopes, resume paper, post-it notes, and a resource binder. Experienced educators and professionals offered sessions on the selection and application process for graduate programs. Topics included: online search strategies, writing goal statements, crafting resumes, and preparing for the GRE. Individuals trained in national computer-based testing procedures were also present to explain the procedures on how the GRE is administered and the rules of conduct during computer-based testing. Professional writers were on hand to provide sessions which incorporated one-on-one editing opportunities for participants. The inaugural camp was attended by 44 scholars (Table 5 and Figure 1). Based on the enthusiastic reception by scholars and OK-LSAMP staff, plans are being made to repeat the camp in future years. A copy of the two-day agenda may be found in Appendix B.

Table 5

PHD Camp Participants by Institution

Institution	Number
Cameron University	1
East Central University	7
Langston University	5
Northwestern OSU	6
Northwestern OSU	0
Oklahoma State University	11
Southeastern State University	1
Southwestern OSU	0
University of Central Oklahoma	7
University of Oklahoma	6
University of Tulsa	0
TOTALS	44

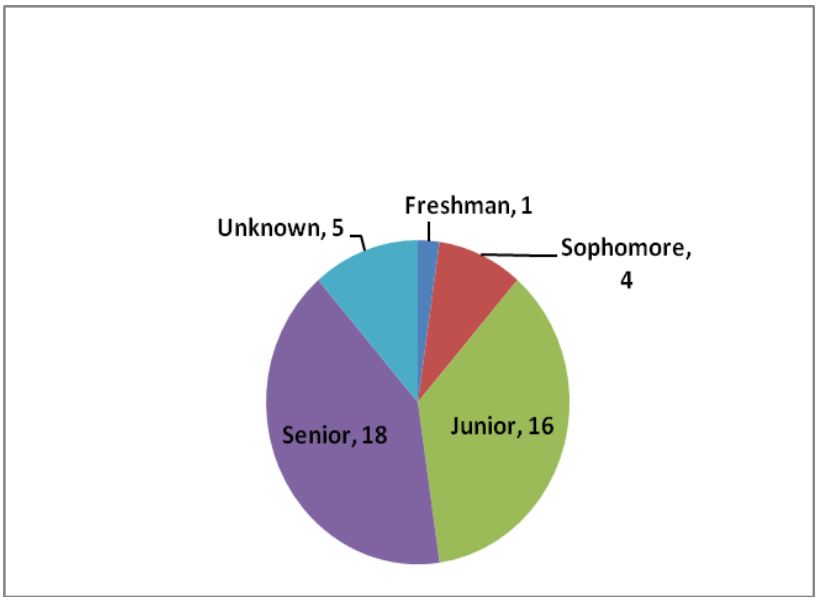


Figure 1. Pursuing Higher Degrees (PHD) Camp Participants by Classification

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 Campus Coordinators.
- Scholars were provided opportunities to attend lectures on Ethics during monthly scholar's meetings.
- The University of Tulsa course, *ES 4001: Research Ethics*, was available for scholars. The course continued to be taught by Dr. J. C. Diaz, OK-LSAMP Campus Coordinator for TU.
- Dr. Carl Rutledge, enhanced his Ethics Workshop and was available to travel to Alliance Institutions to present the workshop to scholars and faculty, as well as others interested in research ethics.
- 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.
- 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.

Annual Research Symposium

The 15th Annual Research Symposium was held Saturday, October 3, 2009, on the Oklahoma State University, Stillwater campus (Appendix D). The Symposium welcomed 179 attendees for a full day of workshops, poster and oral presentations, ethics training and guest speakers. This number indicated a 50 percent increase from the 2008 Symposium.

The program keynote speaker, Dr. Daniel H. Wilson, is a former OK-LSAMP Scholar from the University of Tulsa. He is nationally known for his television show aired on the History Channel, and his science fiction books on robots and robotics.

Table 6. Annual Research Symposium Attendees by Category

	Attendees	
	14th Annual	15th Annual
Scholars	51	76
Graduate Students	22	21
Faculty	24	33
Staff	11	16
Parents		12
Special Guests	5	21
Total	113	179

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.

Fifteen scholars participated in international research experiences in 18 different locations. One scholar travelled and conducted research in two locations, Egypt and Africa, while one travelled and conducted research in three countries, Honduras, Kenya, and the Philippines (Table 7).

Students who participated in international experiences during 2009-2010 included:

Gabrielle Brown, *Dalton Kelley*, *Charles "CJ" Williams*, and *Shawn Witt*, engineering scholars traveled to Italy on an Engineering Study Abroad Program.

Gabrielle Brown, Terrell Grayson, Jordan Knight, and Darron "DJ" Lamkin, traveled to Toronto, Canada, to attend and present at the 2010 National Society of Black Engineers Conference.

Cassie Camp, OSU, Biochemistry junior, participated in the summer research experience at the Organization for Tropical Studies, through the Native American and Pacific Islander Research Experience. She was able to spend the summer in Costa Rica conducting research and working with a faculty mentor.

Rachael Carson, OSU Engineering senior, traveled to France for an Engineering Study Abroad Program.

Kempner "Trey" Cole, OSU Industrial Engineering senior, traveled to Brazil for an engineering Study Abroad Experience.

Ryan Jordan, OSU Geology senior, traveled to Egypt and to Africa, conducting research with his faculty mentor.

Lauren Miller, OSU Geology senior, traveled to Antarctica for six weeks to study rock formations.

Cheyenne Pinkerman, OSU Agricultural Freshman, traveled to Nicaragua for a summer study session.

Lauren White, OSU Environmental Science junior, traveled to Honduras and the Philippines. Additionally, she will travel to Kenya to conduct rural education outreach research during the Fall 2010 semester.

Table 7

International Locations Scholars Travelled

Student	International Location
Gabrielle Brown	Italy and Canada
Dalton Kelley	Italy
Charles "CJ" Williams	Italy
Shawn Witt	Italy
Gabrielle Brown	Canada
Terrell Grayson	Canada
Jordan Knight	Canada
Darron "DJ" Lamkin	Canada
Cassandra Camp	Costa Rica
Rachael Carson	France
Kempner "Trey" Cole	Brazil
Ryan Jordan	Egypt and Africa
Lauren Miller	Antarctica
Cheyenne Pinkerman	Nicaragua
Lauren White	Honduras, Kenya and Philippines

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.

Forty-two (42) scholars received Bachelor of Science degrees in the 2009-2010 academic year. Twenty-six (26) scholars were admitted to graduate programs throughout the United States. This indicates that 63 percent of OK-LSAMP scholars are continuing their education by entering graduate programs (Table 8).

Table 8

Number of Graduates by Institution Entering into Graduate Programs

	Number of Graduates	Admitted to Graduate Programs
Cameron University	3	1
East Central University	4	1
Langston University	5	5
Northeastern State University	2	0
Northwestern Oklahoma State University	1	1
Oklahoma State University	11	8
Southeastern Oklahoma State University	6	2
Southwestern Oklahoma State University	1	1
University of Central Oklahoma	3	2
University of Oklahoma	5	5
University of Tulsa	1	0
TOTALS	42	26

- 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 program provides compensation to the tutor.

- Seven scholars traveled to Missoula, Montana, for the 2010 National Conference on Undergraduate Research (NCUR).

- Scholars participated in the National Society of Black Engineering Conference, Toronto, Canada.

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

- The Oklahoma Alliance presented a poster entitled "PHD Camp" at the National Science Foundation Joint Annual Meeting in Washington, D.C., June 5-10, 2010 (Appendix E).

- The University of Oklahoma Bridge to the Doctorate program presented a poster at the National Science Foundation Joint Annual Meeting in Washington, D.C., June 5-10, 2010 (Appendix E).

- 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 PHD Camp in a Speed Mentoring session. This session 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 throughout the year. The meetings are a forum for ongoing communication on overall program operation and specific program implementations on each campus.

- During Fall 2009, the Principal Investigator visited each Alliance campus to discuss the program with the institution president. Additionally, he meet 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 2009-2010, the Oklahoma LSAMP Alliance had seven scholars attend the conference in Missoula, Montana. The scholars made both oral and poster presentations.

Courtney Garcia, SWOSU Chemistry junior, made an oral presentation on "*Development in Potential Anti-HIV and Antimetastatic Drug: C3-Symmetric Tris-linked Bridged Tetraazamacrocycles as Potential CXCR4Antagonists*."

Alesia Hallmark, OSU Botany and Zoology junior, presented a poster on "*Morphometric Comparisons and Fluctuating Asymmetry in Several Populations of Mexican Free-Tailed Bats."*

Ryan Jordan, OSU Geology senior, presented a poster on "*Kenematics of Kalaye Escarpment, Northern Zambia"*.

Dalton Kelley, OSU Aerospace and Mechanical Engineering senior, presented a poster on "*Measuring and Modeling Idle Energy Loss in Water Boilers."*

Lydia Meador, OSU Botany, Microbiology, and Biochemistry senior, presented a poster on "*Within- and Between-Generation Effects of Drought Stress for Leaf Hair Production and Flowering Time in Arabidopsis Thaliana."*

Andrew Mock, OSU Architectural Engineering junior, presented a poster on "*Preliminary Sizing of Mechanical and Electrical Rooms for Buildings."*

Lauren White, OSU Environmental Science junior, made an oral presentation on "*Tail Autonomy and Dominance in Uta Stansburiana, The Side-Blotched Lizard*."

National Society of Black Engineers

Several scholars attended the National Society of Black Engineers in Toronto, Canada. 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). The students attending from Oklahoma included:

Gabrielle Brown, OSU, Industrial Engineering sophomore; Terrell Grayson, Chemical Engineering senior; Jordan Knight, Electrical Engineering senior; and Darron "DJ" Lamkin, Mechanical Engineering senior.

Research Internship Experiences

Scholars are encouraged to participate in summer internship programs, both locally and internationally. 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.

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

Gabrielle Brown, Oklahoma State University junior, Lockheed Martin, Grand Prairie, TX

Eric Butson, Northeastern Oklahoma State University participated as a Faculty and Student Team (FaST) at Brookhaven National Labs, Long Island, NY

Nicole Bryant, Oklahoma State University senior, OSU Botany Department, Stillwater, OK

Cassandra Camp, Oklahoma State University junior, Organization for Tropical Studies (OTS), Native American and Pacific Islander Research Experience (NAPIRE), Costa Rica

Desiray Cannon, Southwestern Oklahoma State University junior, INBRE Summer Research Internship, Weatherford, OK

Kempner "Trey" Cole, Oklahoma State University senior, Wal-Mart Logistics, Sangre, TX

Gerardo Conanan, University of Oklahoma junior, General Electric, Arkansas, KS

Bryce Culhane, University of Tulsa sophomore, Google, California

Daniel Dixon, Oklahoma State University senior, OSU Mechanical and Aerospace Engineering Department, Stillwater, OK

C. Matt Duncan, Oklahoma State University senior, Geology Department, Field Camp, Stillwater, OK and Colorado

Joseph Dyer, Southeastern Oklahoma State University senior, SOSU Biological Sciences Department

Courtney Garcia, Southwestern Oklahoma State University junior, Brigham Women's Hospital (BWH) STARS Program in conjunction with Harvard Medical School, Boston, MA

J. Connor Ferguson, Oklahoma State University senior, Crop Quest, Enid, OK

Terrell Grayson, Oklahoma State University senior, Devon Energy, Oklahoma City, OK

Saad Gondal, Oklahoma State University junior, Engineering Department, Stillwater, OK

Alesia Hallmark, Oklahoma State University senior, Niblack Research Project, Stillwater, OK

Ryan Jordan, Oklahoma State University senior, Geology Department, Field Camp, Stillwater, OK and Colorado

David Lewis, University of Oklahoma sophomore, Ernst and Young Accounting Firm, Oklahoma City, OK

Phoebe Lewis, Langston University sophomore, Basic Science Institute, Summer Research Internship in Immunology, Bloomsburg School of Public Health, Johns Hopkins University

Lydia Meador, Oklahoma State University senior, Niblack Research Project, Stillwater, OK

Lydia Meador, Oklahoma State University senior, Brookhaven National Labs Winter Research Experience.

Andrew Mock, Oklahoma State University senior, Science Undergraduate Laboratory Internship (SULI) Program, Brookhaven National Labs, Long Island, NY

I. Abrrey Monreal, Oklahoma State University junior, Chemistry Research Experiences for Undergraduates (REU), Stillwater, OK

Molly Parkhurst, Oklahoma State University senior, Botany Department, Stillwater, OK

Jamee Ramsey, Oklahoma State University junior, Biochemistry Department, Stillwater, OK

Dwayne Riley, East Central University junior, REU in Physics, University of Nebraska, Lincoln, NE

Valentin Sanchez, Oklahoma State University senior, Engineering Department, Stillwater, OK

Laura Scott, Oklahoma State University senior, Botony, Stillwater, OK

Yasmeen Shumate, Langston University junior, University of California – Berkeley

Joshua Warren, Oklahoma State University junior, Zoology REU, Oklahoma State University, Stillwater, OK

Anthony Wellman, Northeastern Oklahoma State University, participated as a FaST team member at Brookhaven Labs, Long Island, NY

Lauren White, Oklahoma State University, Philippines Semester Abroad (Summer) Kenya Education Outreach Internship (Fall)

Charles "CJ" Williams, Oklahoma State University junior, Research Experience for Undergraduates (REU), Billings, MT

Shawn Witt, Oklahoma State University senior, OSU Mechanical and Aerospace Engineering Department, Tulsa, OK

Quinn Woodward, University of Tulsa junior, Chevron Oil Company, Tulsa, OK

Internship Partnerships

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.

Brigham and Women's Hospital (BWH) STARS Program, Harvard University, Boston, MA – The Summer Training in Academic Research and Scholarship (STARS) program provides opportunities for under-represented minority undergraduate students to engage in basic, clinical and translational research projects and to enhance opportunities for students to enhance research skills while preparing for advanced degrees.

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

Crop Quest, Enid, OK –The employee-owned company is the most complete crop consulting program available in a ten state region. The company has trained agronomists and agricultural professionals who support customers with local expertise and knowledge based on research and environmental sound procedures.

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)

General Electric, Arkansas City, KS – The world-wide company offers opportunities for research in 160 countries. The Undergraduate Leadership Program provides valuable experience quickly. Internship assignments and responsibilities rotate

across different aspects of a GE business so one can see the bigger picture while learning useful specifics. This experience is supplemented with formal classroom studies. GE also offers co-ops to four-year college students who want to work more than 12 weeks while maintaining their college schedules. Gain hands-on experience while working on challenging projects, network with professionals and learn from some of the brightest minds in business (GE, 2010).

Google, Mountain View, CA – The company hosts and develops internet-based services and products. The company runs over one million servers in data centers around the world and offers on-line productivity software such as g-mail.

Howard University, Summer Medical and Dental Program, Washington, D.C. – A six week summer academic enrichment program offered to freshman and sophomore students at different locations throughout the United States. The program provides a model learning community in which students examine health care issues in medically underserved communities. Through a research project, problem-based learning cases, lectures, clinical experiences, and small-group discussions, students will also improve their learning skills and increase their science knowledge. On completing this six-week program, students will be more aware of the types of health professions needed in medically underserved communities and the educational pathways that lead to those professions (SMDEP, 2010).

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).

Lockheed Martin, Grand Prairie, TX – Lockheed Martin is a global security company engaged in research, design, development, manufacture, integration and sustainment of advanced technology systems, products and systems. Operating units include: Aeronautics, Electrical Systems, Information Systems and Global Solutions, and Space Systems (Lockheed Martin, 2010).

Montana State University, Billings, MT – Research Experiences for Undergraduates (REU) Project: Parametric Test of Direction of Arrival Estimation using FPGA's. The project conducted parametric testing on an FPGA-Based direction of arrival system (DOA) that is part of a smart antenna system that has been developed at Montana State University. The Smart Antenna system is designed to detect the spatial location of users and form directional beams corresponding to their location. This allows the system to increase the power of the communication link to provide higher quality data transmission.

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

Oklahoma 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.

Oklahoma State University Geology Department, Stillwater, OK – The OSU Boone Pickens School of Geology owns and operates Les Huston Field Camp outside Cañon City, Colorado. During the degree program-required five-week course, OSU Geology students receive field-based experiences and conduct geologic mapping exercises.

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

Research Experiences for Undergraduates (REU) – REU programs are funded by the National Science Foundation and conducted on specific campuses in specific programs. Programs in which OK-LSAMP scholars participated include, but are not limited to, Chemistry at the University of Massachusetts, Oklahoma State University, Southeastern Oklahoma State University, East Central University, and the University of Tulsa.

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.

Wal-Mart Logistics, Sangre, TX – Considered to be the “heart” of the Wal-Mart Corporation, the logistics staff keep the products moving to the stores.

EVIDENCE OF INSTITUTIONALIZATION, OUTREACH AND FACULTY HIGHLIGHTS

Governing Board

On December 8, 2010 the OK-LSAMP Governing Board met in Oklahoma City in the offices of the State Regents for Higher Education. Board membership is limited to Presidents from Alliance institutions with the Oklahoma Chancellor for Higher Education serving as the President of the Board. Dr. Art Hicks, Program Director, National Science Foundation, attended the organizational meeting and presented the opening remarks to the Board. In addition, Dr. Hicks shared a video on the success of LSAMP and international research projects (See Appendix F for a copy of the agenda). Following the presentation, a question and answer session was held with Dr. Hick and Gordon Emslie answering questions.

Following the Board Meeting Dr. Art Hicks travelled to Tulsa to meet with the teachers and administrators from Tulsa Public Schools and the OSU Center for Health Sciences. Dr Hicks used this opportunity to again show his video and to speak individually with attendees regarding the LSAMP and BD program along with the benefits of each.

Fall 2009, the Principal Investigator, Gordon Emslie, visited each Alliance campus president and discussed their role as a governing board and the importance of the LSAMP program. Additionally, he met with each Campus Coordinator and scholars during his visits. A PowerPoint presentation was presented as well as copies left with the presidents for future reference. (See Appendix G for the presentation).

Faculty and Student Teams (FaST) Grants

During the Summer 2010 three Faculty and Student Teams (FaST) grants were awarded. The FaST grants 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).

Two Native American FaST teams conducted research at Brookhaven National Labs (BNL) in Long Island, New York. One team conducted research at Argonne Labs in Argonne, Illinois. All three teams spent 10 weeks on site and were able to explore, develop and conduct research in different disciplines. One BNL team was selected to

make an oral presentation at the closing ceremonies. This honor is only bestowed on a few research teams and is an honor to be chosen.

Campus Coordinator Retreat

The Principal Investigator, program staff, campus coordinators, and community college administrators meet for a two day retreat. The retreat provided an opportunity for the PI to explain his goals and objectives for the program and for the campus coordinators to discuss program objectives on their respective campuses. Additionally, the community college administrators brought their ideas for working with the OK-LSAMP program. This was the first time a retreat had been held and was considered to be very productive.

Faculty Publications, and Activities

Joby Buckholtz, (2010). Received a FaST grant to conduct research at Brookhaven Labs in Long Island, NY. She was the lead for a Native American research team.

Watson, G. & **DeYong, C.** (2010). 'Design for Six Sigma: Caveat Emptor." *International Journal of Lean Six Sigma*. Vol. 1, No. 1.

DeYong, C. (2010). "Systems Thinking Using Baldridge in Engineering Colleges." ASEE Conference, Louisville, KY. (Conference panel).

Hubin, T. J. and Timmons, J. C. (2010). "Preparations and Applications of Synthetic Linked Azamacrocycle Ligands and Complexes" *Coord. Chem. Rev., 254*, 1661-1685.

Khan, A.; Nicholson, G.; Greenman, J.; Madden, L.; McRobbie, G.; Pannecouque, C.; De Clercq, E.; Silversides, J. D.; Ullom, R.; Maples, D. L.; Maples, R. D.; **Hubin, T. J.** (2009). "Binding Optimization through Coordination Chemistry: CXCR4 Chemokine Receptor Antagonists form Ultrarigid Metal Complexes" Archibald, S. J. *J. Am. Chem. Soc.* 131, 3416-3417.

Maples, D. L.; Maples, R. D.; Hoffert, W. A.; Parsell, T. H.; van Asselt, A.; Silversides, J. D.; Archibald, S. J.; **Hubin, T.J.** (2009). "Synthesis and Characterization of the chromium(III) complexes of ethylene cross-bridged cyclam and cyclen ligands", T. J. *Inorg. Chim. Acta, 362*, 2084-2088.

Hubin, T. J. (2010). Spent 9 days in London, England at the University of Hull and King's College. The project was conducting research with collaborators.

Hubin, T.J. (2010, June 16-18). "Transition Metal Complex CXCR4 Antagonists as Anti-Metastatic Agents" NCRR 3rd Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Bethesda, MD.

Hubin, T.J. (2010, April 15-17). "Can Publishable Research Results Be Produced in Effective Undergraduate Chemistry Labs?" 24th National Conference on Undergraduate Research, Missoula MT.

Hubin, T.J. "Bio-Coordination Chemistry: Transition Metal CXCR4 Antagonists" (2009). IDeA Central Region Conference, Oklahoma City, OK: May 28-29, 2009.

Patton, T. M., and J. P. Wood. (2009). A Herpetofaunal Survey of the Boehler Seeps Preserve, with Reports of New County Records and Recommendations for Conservation Efforts. Proceedings of the Oklahoma Academy of Science, 89:67.

Kanno, Y., J. C. Vokoun, D. C. Dauwalter, R. M. Hughes, A. T. Herlihy, T. R. Maret, and **T. M. Patton**. (2009). Influence of Rare Species on Electrofishing Distance when Estimating Species Richness of Stream and River Reaches. Transactions of the American Fisheries Society, 138:1240.

Aydin, G. **Pulat, P. S.,** & Shen, G. (2009). "Freight Flow Movement Model Under an Extreme Event: Hurricane Katrina," presented at the 3rd Annual National Urban Freight Conference, Long Beach, CA.

Wang, J., Shen, G., & **Pulat, P. S.** (2009). "International Trade highlights through Exploratory Analysis of the Global Freight Flow to and From the U.S." presented at the3rd Annual National Urban Freight Conference, Long Beach, CA.

Aydin, G. **Pulat, P. S.,** & Shen, G., (2009) international presentation; "I-40 Bridge Collapse: Impact on Freight Flow in the U.S." 4th International Workshop on Freight Transportation and Logistics, Turkey.

Pulat, P. S. (2010). Founder, Sooner Engineering Education (SEED) Center in the College of Engineering. The mission is to increase the pathways to engineering through K-12 outreach, recruitment, retention, and graduation of a diverse group of engineering students at the University of Oklahoma.

Articulations Agreements with Community Colleges

Dr. Gordon Emslie, OK-LSAMP PI and Dr. Chris Lindley, Registrar, Seminole Community College, Seminole, Oklahoma, attended the *2009 Workshop on Best*

Practices for the Recruitment and Transition of Engineering and Science Students from Community Colleges to Four-Year Institutions, held on the University of Alabama at Birmingham campus, October 4-6, 2009. The workshop goals were to engage in a national dialogue on the best practices for the recruitment and transition of engineering and science students from community colleges to four-year institutions. The conference consisted of presidents, faculty, staff and students from both community colleges and four-year institutions, and principal investigators from NSF Louis Stokes Alliances for Minority Participation programs (LSAMP). The proceedings of the workshop were published and disseminated to community colleges and universities nation-wide. A total of 147 participants were in attendance.

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 collaborated with Northern Oklahoma College (NOC) to create 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.

Tulsa Community College (TCC) and OSU have partnered to create a "dual enrollment" program. 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 agreed that students entering into STEM degree programs and transferring from a community college would be automatically accepted into the OK-LSAMP program on that campus.

SCHOLAR PUBLICATIONS

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

Brandon "Bubba" Brooks & Lipman, A.. (2010). "SACNAS Member's Summer Experience at CDC." *SACNAS NEWS*, Winter/Spring.

Courtney Garcia, "Transition Metal Complex CXCR4 Antagonists as Anti-Matastatic Agents." Conference Proceedings, 2010 National Conference on Undergraduate Research (will appear in the 2011 volume).

Victoria Buch, J. Paul Devlin, **I. Abrrey Monreal**, Barbara Jagoda-Cwiklik, Nevin Uras-Aytemiz and Lukasz Cwiklik. (2009). Clathrate hydrates with hydrogen-bonding guests. *Physical Chemistry-Chemical Physics*, Vol. 11, pp. 10245-10265. DOI: 10.1039/b911600c

I**. Abrrey Monreal**, Lukasz Cwiklik, Barbara Jagoda-Cwiklik and J. Paul Devlin. (2010). Classical to Nonclassical Transition of Ether−HCN Clathrate Hydrates at Low Temperature. *Journal of Physical ChemistryLetters.* DOI: 10.1021/jz900073n. http://www.rsc.org/publishing/journals/CP/ article.asp?doi=b911600c

Scott Fine, Bridge to the Doctorate Fellow has submitted two articles for publication. They are in review and will be published sometime in the fall of 2010.

Matthew Matlock and Sandip Sen, (2009, May 10-15). "Effective tag mechanisms for evolving cooperation," in the *Proceedings of the Eighth International Conference on Autonomous Agents & Multi Agent Systems* (pages 489-496), held in Budapest.

SCHOLAR HIGHLIGHTS

OK-LSAMP scholars are among the top students on Alliance campuses and throughout the nation. This year, Oklahoma had two Goldwater Scholars, two UDALL Scholars, and one BD Fellow 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 I. Listed below are select examples of Scholar highlights.

Cammi Valdez, Southwestern alumna was selected` to attend the 2010 **Nobel Laureate** Conference in Germany. She is one of 77 US students chosen for this experience. Additionally, she was chosen to attend the Euroscience Open Forum in Torino, Italy. Cammi was one of only 3 US Students chosen for this experience. Currently, she is completing Ph.D. requirements at Harvard University.

Tomic Blocker, Langston University alumna and current OSU BD Fellow, was selected to receive the **Graduate Research Fellowship** Grant to study at Oklahoma State University.

Brandi Andrews, Oklahoma State University was honored as the 2010 Arthur Ashe, Jr. Sports Scholarship Winner. She was one of 14 featured in *Diverse: Issues in Higher Education.*

Kelan Berry, University of Oklahoma, served as camp mentor for *BP Engineering Academy*, Norman, OK.

Kelan Berry, University of Oklahoma, served as camp mentor for *BP Passport to Engineerng*, Norman, OK.

Kelan Berry, University of Oklahoma, served as camp mentor for *BP AT&T Summer Bridge Program*, Norman, OK.

Brandon "Bubba" Brooks, OSU, was selected for the **Graduate Research Fellowship** grant at the University of California at Berkeley. He will study in the area of microbiology.

Brandon "Bubba" Brooks, OSU, was featured in the *SACNAS* magazine, on his experience at the Center for Disease Control.

Erica Brown, University of Oklahoma, received the **Graduate Research Fellowship** Grant and will study biomedical engineering at Duke University.

Erica Brown, University of Oklahoma, received the **2009 Goldwater Scholarship.**

Leethanial Brumfield, **III,** Langston University alum, was selected to receive the **Graduate Research Fellowship Grant** to study at the University of North Carolina.

Eric Butson, Northeastern Oklahoma State University, presented a poster at Oklahoma Research Day entitled "Confinement Effects on the Thermal and Conductivity Properties of LiPF6-Dimethyl Carbonate Solutions."

Eric Butson, Northeastern Oklahoma State University, presented a poster at Research Day at the Capitol entitled "Confinement Effects on the Thermal and Conductivity Properties of LiPF6-Dimethyl Carbonate Solutions."

Desiray Cannon, Southwestern OSU, presented a poster entitled "Bio-Coordination Chemistry: Transition Metal CXCR4 Antagonists," at the 55th Annual American Chemical Society Penta-Sectional Meeting, April 10, 2010, Norman, OK.

Desiray Cannon, Southwestern OSU, presented a poster entitled "Does Ring Size Matter: Cyclen Based CXCR4 Antagonists," at the Third Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), June 16-18 2010 in Bethesda, MD.

Desiray Cannon, Southwestern OSU, received a Sidney A. McNair Student Travel Scholarship to attend the Third Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), June 16-18 2010 in Bethesda, MD.

Rachel Carson, Oklahoma State University, Environmental Science senior was selected to receive the 2010 Women's Faculty Research Award.

Chris Cheek, Southeastern OSU, attended and presented at the Southwest Association of Naturalists International Conference, Texas.

Joshua Coats, Northeastern Oklahoma State University, presented a poster at the Oklahoma Research Day, November 13, 2009 entitled "Preparation of 4-Ethoxyphenylurea Using Microwave Irradiation.

Joshua Coats, Northeastern Oklahoma State University, presented a poster at the NSU Undergraduate Research Day, Tahlequah, OK entitled "Microwave Assisted Organic Synthesis of Benzion and 4-Ethoxyphenylurea.

Jonathan Compos, University of Oklahoma Scholar was accepted to a Bridge to the Doctorate Fellowship at Drexel University.

Juan Manny Cortez, Oklahoma State University Senior was selected as one of ten Outstanding Seniors of Significance for the university.

Dawn Kennedy, Northeastern Oklahoma State University presented a poster at the NCRR Third Annual Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Bethesda, Maryland, June 16-18, 2010 entitled "Effect of Wastewater Treatment Plant Effluent on Antimicrobial Resistance in Aeromonads."

Alicia Hallmark, Oklahoma State University received the 2010 **UDALL Scholarship**.

Alicia Hallmark, Oklahoma State University attended and presented at the Southwest Association of Naturalists International Conference, Texas.

Matthew Matlock, University of Tulsa traveled to Budapest, Hungary and the 8th Annual International Conference on Autonomous Agents and Multi Agent Systems to present research entitled: "Effective tag mechanisms for evolving cooperation."

Lydia Meador, Oklahoma State University, received the 2010 **Goldwater Scholarship.**

Lydia Meador, Oklahoma State University, placed in the top three at the Research Day at the Oklahoma State Capitol. This event is sponsored by NSF, the Oklahoma State Regents for Higher Education, and EPSCoR.

Lauren Miller, OSU, was selected for the Bridge to the Doctorate program at the University of California at Santa Barbara. Lauren will study Geology.

Aubrey Monreal, Oklahoma State University was selected to make a presentation at the American Chemistry Society National Conference, California.

Molly Parkhurst, Oklahoma State University was selected to participate in a Research Experience for Undergraduates and EPSCoR. Her project was selected from 30 applications. She received a $5000 stipend to conduct her research with a faculty mentor on the OSU campus. The title of the project is: "Molecular Characterization of Genetic Diversity in Sorghum: A Dedicated Bioenergy Crop."

S. Pilcher, Northeastern Oklahoma State University, presented a poster at the Oklahoma Research Day, November 13, 2009 entitled "Preparation of 4-Ethoxyphenylurea Using Microwave Irradiation.

S. Pilcher, Northeastern Oklahoma State University, presented a poster at the NSU Undergraduate Research Day, Tahlequah, OK entitled "Microwave Assisted Organic Synthesis of Benzion and 4-Ethoxyphenylurea.

Susana Rodriguez, University of Oklahoma, served as camp mentor for *BP Engineering Academy*, Norman, OK.

Susana Rodriguez, University of Oklahoma, served as camp mentor for *AT&T Summer Bridge Program*, Norman, OK.

Susana Rodriguez, University of Oklahoma, served as camp mentor for *Passport to Engineering*, Norman, OK.

Sandip Sen, University of Tulsa traveled to Budapest, Hungary and the 8th Annual International Conference on Autonomous Agents and Multi Agent Systems to present research entitled: "Effective tag mechanisms for evolving cooperation."

Lauren White, Oklahoma State University received the 2010 **Udall Scholarship**.

Lauren White, Oklahoma State University, attended and presented at the Southwest Association of Naturalists International Conference, Texas.

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, 2010; (7) attended the Oklahoma Engineering Foundation Engineering Fair, Oklahoma City, OK; (8) attended the First Robotics Competition and Oklahoma Regional Botball Robot Tournament, Oklahoma City, Oklahoma; (9) attended the EPSCoR Women in Science Conference; (10) College of Engineering Centennial Week Volunteer.

Kay Porter, Program Manager, Oklahoma State University: (1) State Coordinator for Women of Color National Conference; (2) served on the Planning Committee for the Women in Science Conference, held in Oklahoma City, OK for junior and high school girls; (3) served on the OSU Institutional Diversity Board; (4) served as Secretary to the Native American Faculty and Staff Association at Oklahoma State University; (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 meeting, Stillwater, Oklahoma; (7) served on the Minority Engineering Program (MEP) summer selection committee; (8) Committee member for the Institutional Diversity Honors Convocation; (9) served as a recruiter for the Hispanic American Foundation College Days; (10) presented various workshops on BD/LSAMP program to faculty and student organizations on the OSU campus; (11) member Mexican American Engineers and Scientists (MAES) organization; (12) served on various scholarship committees on the OSU campus; (13) advisory council member, NSF project Red Light/Green Light; (14) completed Family Educational Rights and Privacy Act (FERPA) training; (15) board member, Oklahoma Junior Miss Scholarship Program; (16) attended the Joint Annual Meeting in Washington, D.C., June 2010.

Fara Williams, Grant Coordinator, Oklahoma State University: (1) attended and presented at the Oklahoma Native American Students in Higher Education (ONASHE) state meeting, Stillwater, 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 2010; (8) attended Oklahoma Project WILD Facilitator Reunion; (9) attended the Organization for Tropical Studies (OTS) Native American and Pacific Islander Research Experience (NAPIRE) Mentor Workshop in Costa Rica in May 2010; (10) completed Family Educational Rights and Privacy Act (FERPA) training.

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.

Significant Highlights

Cara Cowan-Watts, Oklahoma State University alumna and BD Fellow, was awarded the 2010 Robert E. Stewart Engineering—Humanities Award. The award was presented at the 2010 Annual International Meeting held in Pittsburgh, PA.

Cara Cowan-Watts, Oklahoma State University alumna and BD Fellow, appointed by the Oklahoma Governor Brad Henry to the Governors' Interstate Indian Council as a representative of the State of Oklahoma.

Cara Cowan-Watts, Oklahoma State University alumna and BD Fellow, elected as Vice President to the Executive Board of the National Congress of American Indians (2009-2011).

Tomica Blocker, Oklahoma State University BD Fellow, received the Graduate Research Fellowship Grant.

Kevin James, University of Oklahoma: (1) developed a National Society of Black Engineers Summer Engineering Experience for Kids (SEEK) for the Summer, 2010; (2) completed requirements for the Master of Science degree in December 2009; (3) served as a mentor for the PHD Camp; (4) Council member for the University of Oklahoma Black Student; (5) attended the International Society of Black Engineers in Toronto, Canada.

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. See Appendix J for complete list of Fellows for Cohort I and II.

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 Fellow withdrew from the program at the completion of one semester and was replaced, keeping the total at 12 Fellows for Cohort III. The fellows are progressing satisfactorily toward completion of degree requirements. One Fellow completed requirements for the Master of Science degree and left the program. The 11 remaining Fellows are continuing work toward the Ph.D. degree. Three are expected complete Master of Science degrees in the Summer 2010 semester and continue on with Ph.D. requirements. Listed below with their undergraduate degree and Bridge to the Doctorate concentration:

Marcus Benjamin, received his BS degree in Chemistry from Jackson State University, 2006. BD emphasis: Chemistry. Expected MS completion date: Fall 2010.

Tomica Blocker, received her BS in Biology from Langston University, 2008. BD emphasis: Zoology. Expected MS completion date: Fall 2010.

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. Expected MS completion date: Summer 2010.

Erik Gonzales, received his BS degree in Physics from East Central University. BD emphasis: Physics. Expected MS completion date: Spring 2011.

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.

Michael Henry, received his BS degree in Management Information Systems from Oklahoma State University. BD emphasis: Management Information Systems. Michael left the program after completing one semester. He returned to industry.

Matt Hough, received his BS degree in Plant and Soil Sciences from Oklahoma State University. BD emphasis: Plant and Soil Sciences. Expected MS completion date: Fall 2010.

Shawna Hughes, received her BS degree in Biology from South Carolina State University. BD emphasis: Food Sciences. Expected MS completion date: Fall 2010.

Minh Ngo, received her BS degree in Biochemistry and Molecular Biology from Oklahoma State University. BD emphasis: Forensic Sciences-Toxicology. Expected MS completion date: Summer 2010.

Richard Osei, received his BS degree in Computer Science from Langston University. BD emphasis: Computer Science. Expected MS completion date: Fall 2010.

Cody Pinkerman, received his BS degree in Aerospace and Mechanical Engineering from Oklahoma State University. BD emphasis: Mechanical and Aerospace Engineering. Expected MS completion date: Summer 2010.

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

Cohort III Highlights

Marcus Benjamin, (1) Served as a volunteer at the 15th Annual Research Symposium; (2) served as a peer mentor in general Chemistry undergraduate classes; (3) trained to operate specialized equipment at an off-campus site to aid in his research projects.

Tomica Blocker, (1) Peer Mentor for the Pursuing Higher Degrees (PHD) Camp; (2) Volunteer at the 15th Annual Research Symposium, (3) Served as Treasurer for the Oklahoma State University Black Graduate Student Association; (4) Served on the Graduate-Undergraduate Mentorship Program in the Oklahoma State University Black Graduate Student Association, (5) Serve as an undergraduate mentor at Langston University, making 5 presentations, (6) Attended the Joint Annual Meeting in Washington, D.C. in June 2010; (7) Served as a peer mentor for the Oklahoma Upward Bound program during a summer camp on the OSU campus, (8) Participated in Langston University Research Day with an oral presentation, (9) presented a research paper (*Effects of methylmercury on pair bonding in male prairie voles --Microtus ochrogaster") at th*e OSU Biology Department Spring Seminar Series, (10**) received the Graduate Research Fellowship Grant.**

Zach Carpenter, (1) continues to work on project in the Engineering program which is of a confidential nature, (2) volunteered at the OSU Research Week activities, and (3) volunteered at the 15th Annual Research Symposium.

Scott Fine, (1) Presented at the National Soil and Science Society of America annual meeting in Pittsburgh, PA; (2) had one article submitted for publication in the *Journal of Environmental Quality;* and has two more ready for submission to the *Agronomy Journal*; (3) made a poster presentation at the American Quaternary Association National Meeting in Pittsburg, PA; (4) Completed requirements for the

Master of Science degree in July, 2010; (5) carries 29 hours into the Ph.D. program; (6) volunteered at the OSU Research Week activities; (7) Volunteered at the 15th Annual Research Symposium; and (8) has served as a Teaching assistant on multiple occasions for his major advisor.

Erik Gonzales, (1) Volunteered as a Peer Mentor at the Pursuing Higher Degrees (PHD) Camp; (2) Volunteer for the 15th 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) W*rote a lab manual for ECEN 3314 in which 16 students took the course and completed the requirements in the manual, (2) Volunteer for Oklahoma State University Research Week, (3) Volunteer for the 15th Annual Research Symposium; (4) Served as a Peer Mentor at the Pursuing Higher Degrees (PHD) Camp; (5) Attended the Joint Annual Meeting in Washington, D.C., in July 2010, (6) Completed requirements for the Master of Science in Mechanical Engineering in December, 2009 and continues with PH.D. coursework.

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; and (4) volunteer at OSU Research Week.

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 15th 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)."*

Richard Osei, worked toward the completion of his Master of Science degree.

Cody Pinkerman, completed requirements for the Master of Science in Mechanical and Aerospace Engineering in July, 2010. His thesis title was: *Advancements in Finite Element CFD Visualization.* Additional activities include: (1) peer mentor at Pursuing Higher Degrees (PHD) Camp; (2) volunteer, 15th Annual

Research Symposium; (3) Volunteer, OSU Research Week activities; (4) mentored and assisted undergraduate students in class and labs.

Doug Yarholar, completed research and degree requirements for the Master of Science degree in Civil Engineering.

Cohort IV

The University of Oklahoma was awarded a Bridge to the Doctorate program to begin in the Fall 2009 semester. The fall semester began with 7 Fellows from a wide range of disciplines. The additional five Fellows will begin their program in the Fall 2010 semester.

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."

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."

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."

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 – 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."

EVALUATION PROCEDURES

LSAMP

To ensure the accomplishment of planned outcomes, a vigorous evaluation component was implemented for Phase III of the OK-LSAMP program. Evaluation is an on-going process, with information gathered on a regular basis and provided to the evaluator, Dr. Rosemary Hayes, Center for Institutional Data Exchange and Analysis, University of Oklahoma. Dr. Hayes works closely with the Data Coordinator to obtain the necessary information for the evaluation reports. Data is collected from all Alliance institutions and includes, but is not limited to, the number of scholars, degrees conferred, enrollment, performance, retention, graduate school preparation and graduate school applications, along with honors and awards and presentations.

The report generated by Dr. Hayes and her staff is attached as Appendix K. Based on the recommendation that Dr. Hayes and her staff recommended in the prior evaluation report significant contributions have been made to meet the recommendations.

Recommendation One: *Increased levels of institutional support for retaining studentsin the first two years.* The PI made individual visits to each Alliance campus to visit with the President of the institution. During the visit he presented a Powerpoint presentation showing the numbers and significance of the program. He received from each president commitments to the LSAMP program with staff and funding.

Recommendation Two: *Increase the numbers of upper classmen taking the GRE and making application to graduate schools.* Twenty-Six scholars made application to graduate programs throughout the country. This indicates that of the 46 graduates in the Alliance 26 percent are taking the GRE and being admitted to graduate school. Additionally, the PHD Camp was a “bridge” for the students to realize the benefits of applying for and being accepted into graduate programs. Additionally, the PHD Camp provided opportunities for peer mentoring and for the scholars to visit one-on-one with graduate students who have faced the same challenges they are facing. This endeavor will be continued.

Bridge to the Doctorate (Cohort III)

Evaluation procedures for the Bridge to the Doctorate Program (BD) were conducted by Dr. Katye Perry, Professor, Oklahoma State University and Dr. Mwarumba Mwabita, certified evaluators. The Evaluation Team developed an evaluation matrix based on the proposal submitted to the National Science Foundation.

APPENDIXES

APPENIDX A

MARK E. PAYTON

VITA

BIOGRAPHICAL SKETCH

MARK E. PAYTON

A. Professional Preparation

1991 Ph.D., Oklahoma State University (OSU), Statistics.

1988 M.S., OSU, Statistics.

1986 B.S.Ed., Southwest Missouri State University (SMSU), Mathematics Education.

B. Appointments

2006-Present	Associate Dean, OSU, Graduate College
2001-Present	Professor, OSU, Department of Statistics.
1996-2001	Associate Professor, OSU, Department of Statistics.
1991-1996	Assistant Professor, OSU, Department of Statistics.

C. Publications

1. Brunker, J.D., Ponzio, N.M., and Payton, M.E. (2009), "Indices of Urine N-acetyl-β-D-glucosaminidase and Gamma-glutamyl transpeptidase Activities in Clinically Normal Adult Dogs", *American Journal of Veterinary Research*, vol. 70, 297-301.

2. Burgos Rodriguez, A.G., Hoover, J.P., Zollinger, T.J., Schiller, C.A., Payton, M.E., Bahr, R.J., and Rodebush, C.J. (2009), "Distribution of ^{99m}Tc-dimercaptosuccinic Acid after Intramuscular Injection in the Caudal Limb and Tail of Green Iguanas (*Iguana iguana*) Using Nuclear Scintigraphy", *Journal of Herpetological Medicine and Surgery*, vol. 18, 37-44.

3. Chenault, K.D., Maas, A.L., Damicone, J.P., Payton, M.E., and Melouk, H.A. (2009), "Discovery and Characterizaation of a Molecular Marker for *Sclerotinia minor* (Jagger) Resistance in Peanut", *Euphytica*, vol. 166, 357-365.

4. Cole, J.C., Boyer, C.R., Payton, M.E., and Conway, K.E. (2009), "Anthracnose on Wintercreeper Euonymus if not Reduced with Polyethylene Sheeting or Sodium Hypochlorite", *Journal of Environmental Horticulture*, vol. 27, 115-118.

5. Fulton, R.W., Blood, K.S., Panciera, R.J., Payton, M.E., Ridpath, J.F., Confer, A.W., Saliki, J.T., Burge, L.T., Welsh, R.D., and Reck, A. (2009), "Lung Pathology and Infectious Agents in Fatal Feedlot Pneumonias and Relationship with Mortality, Disease Onset, and Treatments", accepted by *Journal of Veterinary Diagnostic Investigation*, vol. 21, 464-477.

6. Hessman, B.E., Fulton, R.W., Sjeklocha, D.B., Murphy, T.A., Ridpath, J.F., and Payton, M.E. (2009), "Evaluation of Economic Effects and the Health and Performance of the General Cattle Population after Exposure to Cattle Persistently Infected with Bovine Viral Diarrhea Virus in a Starter Feedlot", *American Journal for Veterinary Research*, vol. 70, 73-85.

7. Kariuki, S.K., Zhang, H., Schroder, J.L., Hanks, T., Payton, M.E., and Morris, T. (2009), "Spatial Variability and Soil Sampling in a Grazed Pasture", *Communications in Soil and Plant Analysis*, vol. 40, 1674-1687.

8. Mbata, G.N., Phillips, T.W., and Payton, M.E. (2009), "Effects of Cowpea Varietal Susceptibility and Low Pressure on the Mortality of Life Stages of *Callosobruchus maculatus* (Coleoptera: Bruchidae)", *Journal of Stored Product Research*, vol. 45, 232-235.

9. Rayas-Duarte, P., Francisco, C., Payton M.E., Bellmer, D.D., Carver, B.F., and Huang, W.N. (2009) "Alkaline Noodles and Flour/Gel Properties of Hard Red and White Winter Wheat", *Journal of Food Quality*, vol. 32, 627-643.

10. Rogers, K.M., Deatherage, M., Breshears, M.A., Chapman, S., Black, D., Ritchey, J.W., Payton, M.E., and Eberle, R. (2009), "Type I IFN Response to *Papiine herpesvirus* 2 (*Herpesvirus papio 2*; HVP2) Determines Neuropathogenicity in Mice, *Virology*, vol. 386, 280-289.

11. Shriver, L.H., Betts, N.M., and Payton, M.E. (2009), "Changes in Body Weight, Body Composition, and Eating Attitudes in High-School Wrestlers", *International Journal of Sports Nutrition and Metabolism*, vol. 19, 424-432.

12. Toetz, D., Bidwell, J., and Payton, M.E. (2009), "Temporal and Spatial Variation in Stable Isotopes of Carbon and Nitrogen in Lake Carl Blackwell, Oklahoma", *Journal of Freshwater Ecology*, vol. 24, 461-467.

13. Toetz, D. and Payton, M.E. (2009), "The Role of Humic Acid, Silicon, and pH in Accrual of Periphytic Biomass in a Subalpine Stream, Colorado Front Range", *Journal of Freshwater Ecology*, vol. 24, 1-6.

14. Zhang, H., Kariuki, S., Schroder, J.L., Payton, M.E., and Focht, C. (2009), "Interlaboratory Validation of the Mehlich 3 Method for Extraction of Plant-Available Phosphorus", *Journal of AOAC International*, vol. 92, 91-102.

D. Synertistic Activities

Dr. Payton has served as PI and coordinator of grants totally more than $3,411.188 in outside funding. In addition he has made a total of 142 presentations at professional meetings.

F. Collaborators and Other Affiliations

Faculty adviser to 24 Master and Doctoral degree seeking candidates, has served on 145 student committees and serves on OSU Instruction Council, OSU Assessment Council, OSU Professional Education Council, OSU School of International Studies Executive Committee.

APPENDIX B

PURSUING HIGHER DEGREES (PHD)

CAMP

Pursuing Higher Degrees (PHD) Camp

Sponsored by the
Oklahoma Louis Stokes Alliance for Minority Participation
Hosted by the
University of Central Oklahoma
March 15-16, 2010
Nigh University Center, Edmond, Oklahoma

Sponsored by the Oklahoma Louis Stokes Alliance for Minority Participation
Hosted by the University of Central Oklahoma

March 15-16, 2010, Edmond, OK, Nigh University Center

Schedule of Events

Monday, March 15, 2010

Time	Presentation /Activity	Presenter	Location
8:00 - 8:30 AM	Check In and Networking		Cherokee Room
8:30 - 8:45 AM	Welcome	William Radke, UCO Provost	Cherokee Room
8:45 - 9:00 AM	Icebreaker	Amber Mitchell, UCO McNair	Cherokee Room
9:00 - 9:15 AM	Graduate School Toolbox	Kay Porter and Fara Williams, OK-LSAMP	Cherokee Room
9:15 - 10:00 AM	Why Graduate School	Mike Heppler, OSU	Cherokee Room
10:00 - 10:15 AM	Break		
10:15 - 11:00 AM	Successfully Navigating your Graduate Career	Aaron Christensen, OSU Tulsa	Cherokee Room
11:00 AM - 12:30 PM	Lunch / Speed Mentoring	Tomica Blocker, Eric Gonzales, Jonathan Gonzales, Mike Wine, Nathan Foell, Steven Harris	Cherokee Room
12:30 - 1:00 PM	Networking		Cherokee Room
1:00 - 2:00 PM	Resume and Personal Statement Tips	Aaron Christensen, OSU Tulsa	Cherokee Room
2:00 - 3:00 PM	The Application Process	Don Rogers, OU and Mike Heppler, OSU	Cherokee Room
3:00 - 3:15 PM	Break		
3:15 - 4:00 PM	Writing Tips	Dr. Nani Pybus, OSU and Michelle Eodice, OU	
4:00 - 5:30 PM	Group 1: Writing Assistance	Dr. Nani Pybus, OSU; Michelle Eodice, OU;	Forensic Sciences Institute, Evidence Bay

4:00 - 5:30 PM	Group 2: Graduate Program Search	Mike Wine, OSU	Forensic Sciences Institute, AT&T Resource Room
5:30 - 5:45 PM	Travel to restaurant		
5:45 - 7:15 PM	Dinner		Interurban Restaurant
7:15 - 7:30 PM	Travel back to campus		
7:30 - 9:00 PM	Group 2: Writing Assistance	Dr. Nani Pybus, OSU; Michelle Eodice, OU;	Forensic Sciences Institute, Evidence Bay
7:30 - 9:00 PM	Group 1: Graduate Program Search	Mike Wine, OSU and Nathan Foell	Forensic Sciences Institute, AT&T Resource Room
	HW: Continue working on Google Search and/or Writing Statements		Comfort Inn

Tuesday, March 15, 2010

Time	Presentation/ Activity	Presenter	Location
7:30 - 8:00 AM	Continental Breakfast		Comfort Inn
8:15 - 8:30 AM	Check In and Networking		Cherokee Room
8:30 - 9:30 AM	Homework Accountability	Nani Pybus and Mike Wine	Cherokee Room
9:30 - 10:30 AM	GRE Preparation	Stephanie Covington-Graham, Ed2Go, OSU-OKC	Cherokee Room
10:30 - 11:15 AM	Test Taking Strategies	Nathan Foell	Cherokee Room
11:15 - 11:30 AM	Break		Cherokee Room
11:30 AM - 12:00 PM	Why Pursue Higher Degrees	Rosemary Hayes, CIDEA	Cherokee Room
12:00 - 12:30 PM	Bridge to the Doctorate Program	Kay Porter	Cherokee Room
12:30 - 1:30 PM	Lunch Graduate School Jeopardy	Julie Dearing, UCO	Cherokee Room
1:30 - 1:45 PM	Closing Remarks		Cherokee Room

WORKSHOP SESSIONS

Graduate School Toolbox, Kay Porter and Fara Williams
Scholars are provided with a toolbox of supplies needed to research and apply for graduate school programs. This session will include a brief overview of the toolbox contents and how to utilize them.

Why Graduate School, Mike Heppler
Scholars will learn about the importance of graduate degrees and the benefits they provide.

Successfully Navigating your Graduate Career, Aaron T. Christensen
Scholars will learn helpful tips to increase their success during graduate school.

Speed Mentoring, Graduate Students including Bridge to the Doctorate Fellows
Scholars will visit with graduate students on various topics. Every twenty minutes, scholars will rotate tables.

Resume, Personal Statement, and Letter of Recommendation Tips, Aaron T. Chritensen and Mike Heppler
Scholars will receive valuable advice on creating resumes, writing personal statements, and asking for letters of recommendation.

The Application Process, Don Rodgers and Mike Heppler
Scholars will learn about the graduate school application process from submission to acceptance.

Writing Tips, Nani Pybus and Michelle Eodice
Scholars will receive valuable advice on creating resumes and writing personal statements.

Writing Clinic, Michele Eodice and Nani Pybus
Scholars will receive one-on-one assistance to improve their application documents.

Graduate Program Search, Mike Wine
Scholars will be given a brief overview on how to search for graduate programs and opportunities. Scholars will, then, be given time to search the internet for programs that meet their career and research interests and to complete on-line applications.

Homework Accountability, Aaron T. Christensen, Mike Heppler, Nani Pybus, & Mike Wine
Scholars will share the progress on their writing and graduate program searches.

GRE Preparation, Adrianne Covington-Graham
Scholars will learn strategies and test-taking tips. They will also learn how to find GRE test sites and how to register for the exam.

Test Taking Strategies, Nathan Foell
Scholars will learn tips for preparing for and taking computer-based exams such as the GRE.

Why Pursue Higher Degrees, Rosemary Hayes
Scholars will learn statistics on minority graduate degrees and why it is important to continue their education, not only for themselves, but for future generations as well.

Bridge to the Doctorate (BD) Program, Kay Porter
Scholars will learn about the BD Program including requirements and benefits.

Graduate School Jeopardy, Julie Dearing
Scholars will be tested on what they learned during the camp by playing Jeopardy. Questions will be based on information provided during the sessions. Prizes will be given for the winning team!

SPEAKER BIOGRAPHIES

Dr. Patricia LaGrow, UCO
Patricia A. LaGrow currently serves as the Vice Provost and Associate Vice President for Academic Affairs at the University of Central Oklahoma (UCO). She holds three degrees in nursing including a BS degree from UCO, a MS from the University of Oklahoma and a PhD from Texas Woman's University. Patricia's first job as a registered nurse was caring for patients in the medical intensive care and coronary care units at the Veterans Administration Medical Center. While teaching, she continued to work part-time on weekends for several years in ICU/CCU and later in home health. Since 1996, Patricia has served as a nurse consultant and expert witness in select medical malpractice cases.
Contact: plagrow@uco.edu

Amber Mitchell, UCO
Amber Mitchell is the Program Coordinator for the McNair Scholars Program. She has been working with TRiO programs since 2002 when she was hired as the Academic Advisor for the Student Support Services program at the University of Central Oklahoma. She holds a BA from the University of Oklahoma and a ME in Adult Education from the University of Central Oklahoma. Amber is a graduate of ODSA Emerging Leaders Institute, has served as a member of the TRiO Day committee for four consecutive years, has Chaired the Oklahoma TRiO Statistics Booklet committee for three years, is a graduate of the SWASAP Emerging Leaders Institute, and was elected to four terms on the ODSA Executive Board, serving as Secretary. In addition, Amber was selected to participate in the University of Central Oklahoma's Leadership UCO program.
Contact: AMitchell13@uco.edu

Rosario Riley, UCO
Rosario Riley holds both a BS and a ME from the University of Central Oklahoma (UCO). She is Academic Counselor for the Upward Bound (UB) Program at UCO. Her responsibilities include providing fundamental support to UB participants in their

preparation for post-secondary education. She has been with the UB Program, serving in several different capacities, for 9 years. In addition to UB, Rosario also serves on the Oklahoma Division of Student Assistance (ODSA) Executive Board as Southwest Association of Student Assistance Programs (SWASAP) Representative. She is the current Chair of the ODSA State Scholarship Committee and SWASAP Student Leadership Committee. Rosario is a graduate of the ODSA Emerging Leaders Institute (ELI) I and II and SWASAP ELI. Contact: rriley@uco.edu

Kay Porter, Program Manager, OSU
Kay Porter received a BS in Trade and Industrial Education and a MS in Occupational and Adult Education from Oklahoma State University. Kay became OK-LSAMP Program Manager in October, 2007, and constantly works on insuring that program procedures adhere to LSAMP and NSF guidelines. Her yearly reports tell the story of the accomplishments of scholars and staff alike. Contact: kay.porter@okstate.edu

Fara Williams, Grant Coordinator, OSU
Fara Williams received a BS in Elementary Education / Middle Level Science from Oklahoma State University. She taught for seven years in public and private schools. Fara joined OK-LSAMP in March, 2007, and as Grant Coordinator, continues to make strides in organizing and documenting the progress of the program. Contact: fara@okstate.edu

Michael Heppler, OSU
Mike Heppler has served Oklahoma State University since 1997. He was promoted to Director of Research Scholar Relations as a direct result of his work with undergraduate research scholar programs across the country. He has traveled throughout the United States speaking to students about successful graduate school application strategies. Mike has presented at many regional and national conferences. A few of his prior appearances are the National Society of Black Engineers Region V Conference; the North Carolina A&T University McNair Scholars Research Conference in Greensboro, North Carolina; Heartland McNair Scholars Research Conference in Kansas City, Missouri; the Rocky Mountain McNair Scholars Research Conference in Ft. Collins, Colorado; and the Oklahoma Louis Stokes Alliances for Minority Participation Annual Research Symposium. Contact: michael.heppler@okstate.edu

Aaron T. Christensen, OSU-Tulsa
Aaron T. Christensen has a BS in Applied Sociology, a MS in International Studies from Oklahoma State University, and is fluent in Spanish. At the University of Central Florida (UCF), Aaron began coursework on a PhD in Public Policy. He returned to his alma mater in the spring of 2008 to enhance the graduate student experience on the OSU-Tulsa campus. Aaron serves as the Graduate College liaison/matriculation officer and is available to assist graduate students and faculty with plans of study, matriculation processes, thesis/dissertation submissions, and general interpretation of university policies and procedures. He serves as advisor to the OSU-Tulsa International Student Organization and actively recruits graduate students. In addition, Aaron is part-time faculty for the Communications Division of Tulsa Community College, a member of the Board of Directors for the Simon Estes Educational Foundation, and a Diversity Crew

member of Tulsa's Young Professionals (TYPros - a division of the Tulsa Metropolitan Chamber of Commerce). In his spare time, Aaron volunteers in the community, attends cultural events, works to enhance his home and gardens, and travels at every opportunity. Contact: aaron.t.christensen@okstate.edu

Tomica Blocker, OSU
Tomica Blocker received a BS in Biology from Langston University. She is currently a Bridge to the Doctorate Fellow at Oklahoma State University working on a MS in Zoology. Her career goal is to become a professor studying behavioral neuroendrocrinology. Contact: Tomica@okstate.edu

Erik Gonzales, OSU
Erik Gonzales received a BS in Physics from East Central University. He is currently a Bridge to the Doctorate Fellow at Oklahoma State University working on a MS in Physics. His career goals are to become a physics professor, stay involved with research, and become a mentor to future students. Contact: erik.gonzales@okstate.edu

Jonathan Gonzales, OSU
Jonathan Gonzales received a BS in Physics from East Central University. He is currently a Bridge to the Doctorate Fellow at Oklahoma State University working on a MS in Electrical Engineering. His career goal is to completely learn about and apply how electrical power systems work. Contact: jonmgon@gmail.com

Steven Harris, OU
Steven Harris received a BS in Chemistry from Langston University. He is currently a Bridge to the Doctorate Fellow at the University of Oklahoma working on a PhD in chemistry. Contact: stevenharris6@ou.edu

Kevin James, OU
Kevin James received his BS degree in Electrical and Computer Engineering from Southern University A & M College, Baton Rouge, Louisiana. He is currently a Bridge to the Doctorate Fellow at the University of Oklahoma working on a MS in Electrical and Computer Engineering. Contact: kevinrjamesii@ou.edu

Michael Wine, OSU
From Brooklyn, New York, Mike Wine is a Natural Resource Ecology and Management graduate student studying land management effects on the water cycle in western Oklahoma. Mike recently received a fellowship from Decagon Devices to support his research. Contact: mlw63@me.com or mwine@okstate.edu

Doug Yarholar, OSU
Doug Yarholar received a BS in Civil Engineering from Oklahoma State University (OSU). He is currently a Bridge to the Doctorate Fellow at OSU working on a MS in Civil Engineering. His career goals are to own and operate a consulting firm.
Contact: doug.yarholar@okstate.edu

Don Rodgers, OU
Don Rodgers received a BS in Industrial Engineering from the University of Oklahoma and a MBA from Oklahoma City University. He has been trained in manufacturing processes, plant and production analysis, workstation analysis time studies, facility layouts, project management, and Microsoft applications. He is currently an academic counselor in the University of Oklahoma Graduate College. Contact: don@ou.edu

Dr. Nani Pybus, OSU
Nani Pybus received a BA in Linguistics from the University of Rochester where she graduated *Magna Cum Laude*. She continued her education with a MA in English and a PhD in History from Oklahoma State University. Nani has 25 years in administrative management, international operations, and USG contracting responsibility. She is well versed in professional grant writing and proposal development. Nani is also multilingual with training in Standard and Egyptian Arabic, Portuguese, French, German, Spanish, Latin, and English. She is currently Proposal Development Specialist at Oklahoma State University. Contact: nani.pybus@okstate.edu

Dr. Michele Eodice, OU
Michele Eodice is the Executive Director of Learning, Teaching, & Writing, a new unit at the University of Oklahoma that includes a teaching center, Expository Writing, the writing center, and writing across campus initiatives. Michele has published in several areas, including collaboration, co-authoring, academic integrity and plagiarism, and writing center theory and practice. With her co-authors, she has published two books, *(First Person)^2 : A Study of Co-Authoring in the Academy (*2001) and *The Everyday Writing Center: A Community of Practice* (2007). Currently, her work at the University of Oklahoma includes studies of general education, assessment, retention, and learning communities. Contact: meodice@ou.edu

Adrianne Covington-Graham, Ed2Go, OSU-OKC
Adrianne Covington-Graham received an AAS in Public Service from Oklahoma State University-Oklahoma City (OSU-OKC) as well as a BA in Liberal Studies and a MS in Human Relations from the University of Oklahoma. She is currently the Director of the Technology Education Center at OSU-OKC where she manages a $1.5 million grant for Certified Nurse Aide training. She also coordinates, maintains and writes curriculum for professional development opportunities for business and industry clients. In addition, Adrianne is an adjunct professor at OSU-OKC where she teaches American Government. She is an active volunteer for the Susan G. Komen foundation in Oklahoma City and the Oklahoma Medical Reserve Corps. Contact: Adrianne.covington@osu.okc.edu

Nathan Foell, Graduate Student, Harvard University
Nathan Foell received a BA in Philosophy and a BA in Political Science from the University of Oklahoma. He is currently working on an AM in Philosophy from Harvard University. Nathan has worked in industry for testing organizations and has experience in administering tests such as the GRE. Contact: nfoell@gmail.com

Dr. Rosemary Hayes CSRDE at OU
Rosemary Hayes serves as the NSF Program Evaluator for the OK-LSAMP Project. Rosemary was one of 20 women in 2004 to receive their doctoral degrees in Computer Information Services. In the computing sciences area, she focuses on usability of online interfaces and the multi-criteria evaluation models. Rosemary also has an extensive background in issues related to the retention of college students. As Executive Director of the Consortium for Student Retention Data Exchange, she works with over 600 colleges and universities that are dedicated to improving the retention and completion rates of college students. She has authored over twenty-five reports on the status of college student retention, including the retention of STEM students and maintains the National Database on the Retention and Graduation of First-time Full-time STEM students. Rosemary has convened all five National Symposiums on Student Retention. She has also served as a consultant to the U.S. Department of Education, and on behalf of the Kellogg Foundation worked with five South African colleges on methods to track the retention and completion of their students. Contact: rhayes@ou.edu

Julie Dearing, UCO
Julie Dearing received a BA in Communication Management from the University of Dayton and a MS in Wellness Management – Health Studies from the University of Central Oklahoma (UCO). In addition, she has received training in experiential learning and various behavior therapy methods from Eckerd Youth Alternatives Catatogas in Exeter, Rhode Island. Julie is also the recipient of an ODMHSAS Science 2 Service Grant. She is currently an adjunct faculty in Kinesiology & Health Studies teaching Healthy Life Skills and is a Grant Coordinator in the Office of Research and Grants at UCO. Contact: JDearing@uco.edu

Pam McDown, UCO
Pam has a BA from California State University, Sacramento, and a MA in Music from the University of Central Oklahoma (UCO). Her research interests include topics in music with a special interest in European 18th and 19th century historical performance practice. Currently, Pam is the Coordinator, Research Programs; Office of Research & Grants; and Academic Affairs. She is assisting in the preparation and launching of two new UCO Faculty on-campus grant programs and is also assisting in the preparation for Oklahoma Research Day in Broken Arrow. Contact: PMcDown@uco.edu

APPENDIX C

COMMUNITY COLLEGE

INFORMATION

SCHOLARSHIP OPPORTUNITY

Minority Students majoring in a Science, Math, or Engineering discipline

The Oklahoma Louis Stokes Alliance for Minority Participation

(www.ok-lsamp.okstate.edu)

Who?

US citizen students majoring in Science, Technology, Engineering or Mathematics (STEM) who are

- Native American, African American, Hispanic or Pacific Islander, or
- white female first generation college students

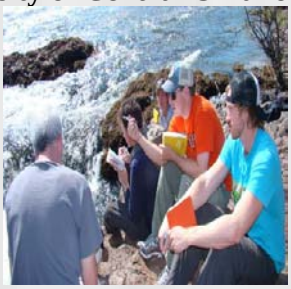
and who

- have a minimum 3.0 GPA

may be eligible for an OK-LSAMP scholarship upon transfer to one of the following institutions:

Cameron University
Langston University
Northwestern Oklahoma State University
Southwestern Oklahoma State University
Southeastern Oklahoma State University
University of Central Oklahoma
East Central University
Northeastern State University
Oklahoma State University
University of Oklahoma
University of Tulsa

What?



OK-LSAMP Scholars:

- receive a stipend every semester that they are enrolled full-time
- participate 5-10 hours per week in state-of-the-art research activities under the guidance of a faculty mentor
- receive a paid summer research internship
- travel to conferences to present research findings
- receive advice on how to prepare for graduate school

If you are interested visit: www.ok-lsamp.okstate.edu
or email: okamp@okstate.edu
for additional contact information at each participating school.

This project is funded by a grant through

National Science Foundation
WHERE DISCOVERIES BEGIN

APPENDIX D

15th ANNUAL RESEARCH SYMPOSIUM

You are invited to

Diversity Events

Oklahoma State University, Stillwater, OK

Saturday, October 3, 2009

9 AM-4 PM, Noble Research Center

Oklahoma Louis Stokes Alliance for Minority Participation in Science, Technology, Engineering, and Mathematics

15th Annual Research Symposium

Keynote Speaker: Daniel H. Wilson

noted author of science fiction books, and TV personality: *the Works,* History channel. www.danielhwilson.blogspot.com/

Other activities: scientific posters and oral presentations, seminar sessions on graduate school and research ethics.

More Info: www.ok-lsamp.okstate.edu or 405-744-7820

OSU Native American Student Association Annual Pow Wow-

PAYNE COUNTY FAIRGROUNDS AND EXPO CENTER
3 miles East of Perkins Road on Highway 51 (6th Street)

Program Schedule

12:00pm Gourd Dance
4:30pm Supper Break
5:30pm Gourd Dance
6:30pm Grand Entry
All Contests
11:00pm Closing

This is a great opportunity to come see and learn about an aspect of the Native American culture. There will be food, arts and crafts vendors. Come and support the Native American Student Association!
Free and Open to the Public
****Please bring your own chairs****
(Some chairs will be provided on a 1st come basis)
NASA is not responsible for theft and/or accidents.
For more information contact: Robin Williams at robin.starr.williams@okstate.edu or 405-744-0401
Security will be onsite.

Oklahoma State University Division of Institutional Diversity www.diversity.okstate.edu

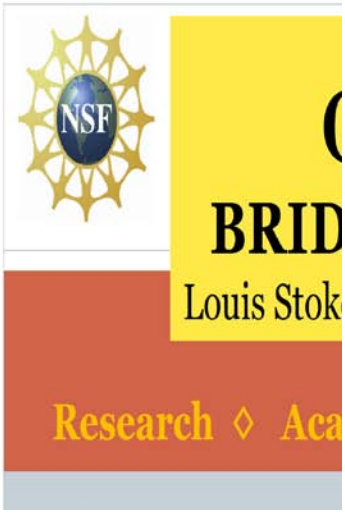
APPENDIX E

JOINT ANNUAL MEETING (JAM)

POSTER PRESENTATIONS

2010


2010


NSF
BRID
Louis Stok
Research ◊ Aca

APPENIDX F

GOVERNING BOARD AGENDA

Oklahoma Louis Stokes Alliance for

Minority Participation

AGENDA

December 8, 2009

State Regents for Higher Education
Council Room
655 Research Parkway
Oklahoma City, OK

Call to Order	Chancellor Glen D. Johnson
Welcome	Chancellor Glen D. Johnson
Introduction of Presidents	Dr. Gordon Emslie, PI
Introduction of Guests	Dr. Gordon Emslie, PI
Presentation	Dr. Art Hicks, Program Director National Science Foundation
Question and Answers	

GOVERNING BOARD MEMBERS

Glen D. Johnson, Chancellor, Oklahoma State Regents for Higher Education

Burns Hargis, President, Oklahoma State University

Cindy Ross, President, Cameron University

Duane Anderson, President, East Central University

JoAnn Haysbert, President, Langston University

Don Betz, President, Northeastern Oklahoma State University

Janet Cunningham, President, Northwestern Oklahoma University

Michael Turner, President, Southeastern Oklahoma State University

John Hays, President, Southwestern Oklahoma State University

Roger Webb, President, University of Central Oklahoma

David Boren, President, University of Oklahoma

Stedman Upham, President, University of Tulsa

APPENDIX G

PRESENTATION TO GOVERNING BOARD

BY PRINCIPAL INVESTIGATOR

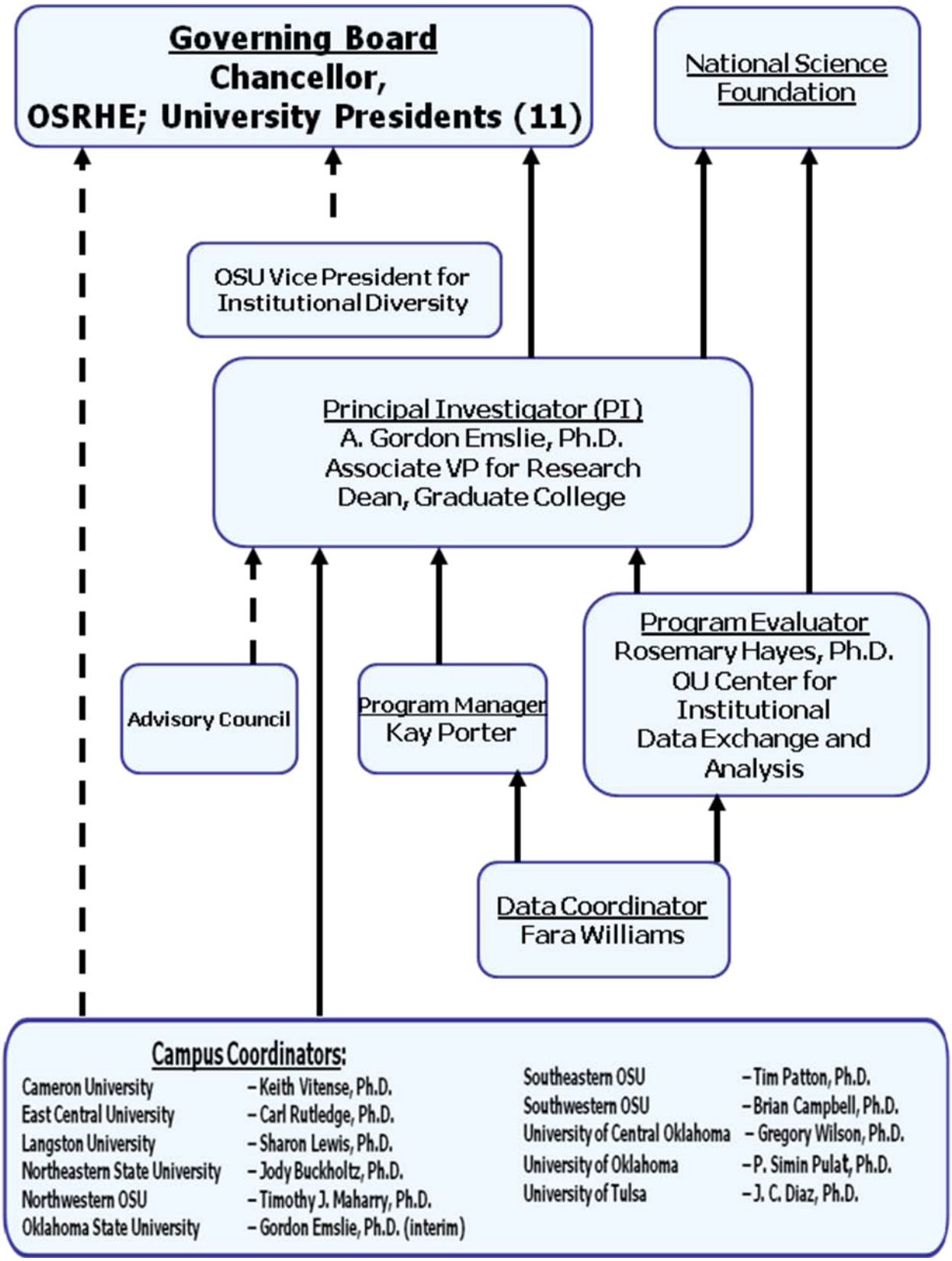
Oklahoma Louis Stokes Alliance for Minority Participation

Phase IV Organization and Goals

Gordon Emslie
OK-LSAMP PI

BACKGROUND

- **Oklahoma LSAMP program funded by NSF since 1994; current funding $2.5M through 2014**
- **Goal is to increase participation of under-represented minorities in STEM fields at the baccalaureate level**
- **Augmented by $2M Bridge to the Doctorate programs at OSU and OU to fund graduate study ($30K/year stipends + university allowance)**
- **Eleven-member Alliance of OK institutions**


Governing Board
Chancellor,
OSRHE; University Presidents (11)
National Science Foundation
OSU Vice President for Institutional Diversity
Principal Investigator (PI)
A. Gordon Emslie, Ph.D.
Associate VP for Research
Dean, Graduate College
Program Evaluator
Rosemary Hayes, Ph.D.
OU Center for Institutional Data Exchange and Analysis
Advisory Council
Program Manager
Kay Porter
Data Coordinator
Fara Williams
Campus Coordinators:
Cameron University – Keith Vitense, Ph.D.
East Central University – Carl Rutledge, Ph.D.
Langston University – Sharon Lewis, Ph.D.
Northeastern State University – Jody Buckholtz, Ph.D.
Northwestern OSU – Timothy J. Maharry, Ph.D.
Oklahoma State University – Gordon Emslie, Ph.D. (interim)
Southeastern OSU – Tim Patton, Ph.D.
Southwestern OSU – Brian Campbell, Ph.D.
University of Central Oklahoma – Gregory Wilson, Ph.D.
University of Oklahoma – P. Simin Pulat, Ph.D.
University of Tulsa – J. C. Diaz, Ph.D.

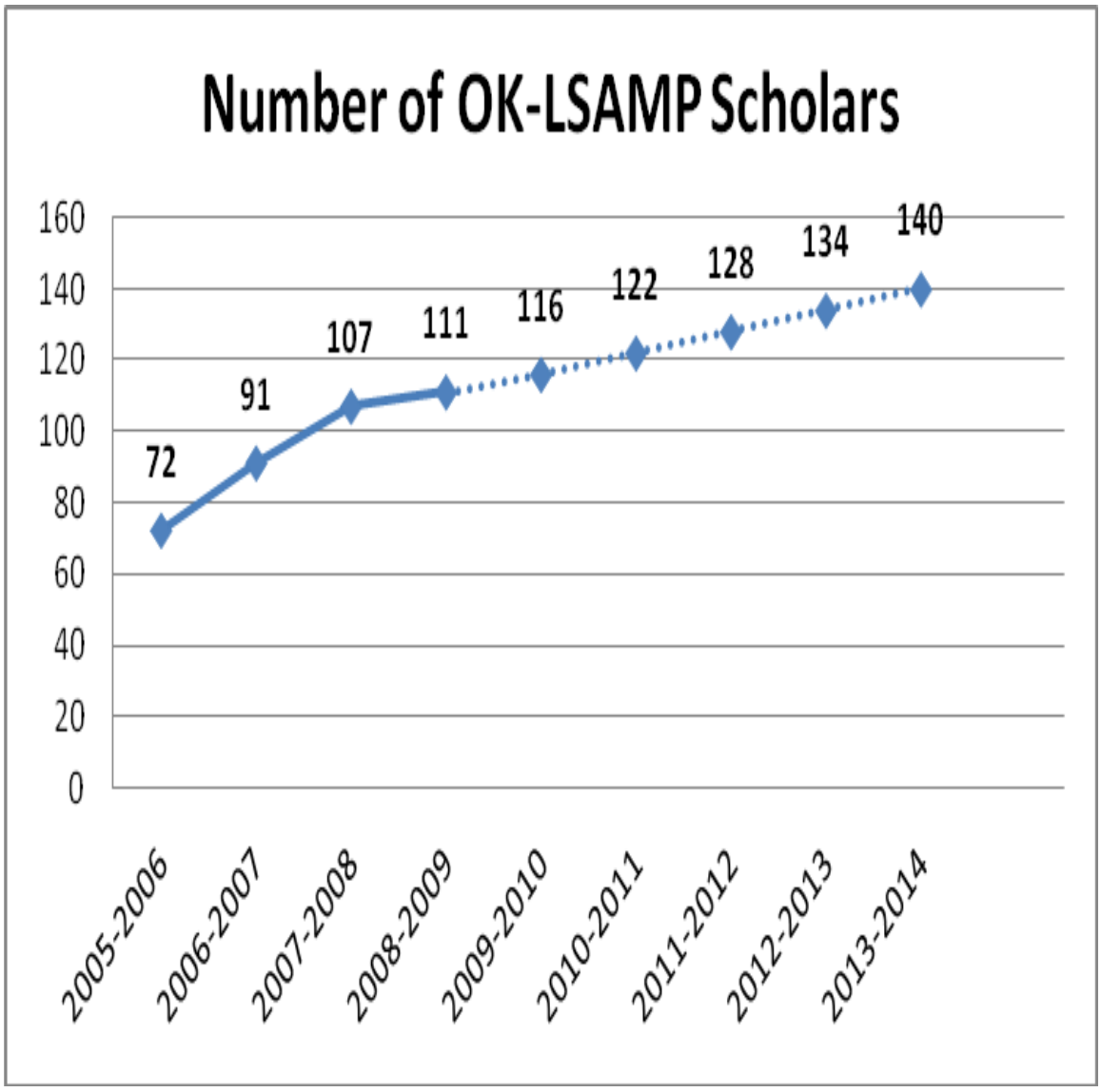
Governing Board Meeting with

Dr. Hicks NSF Director

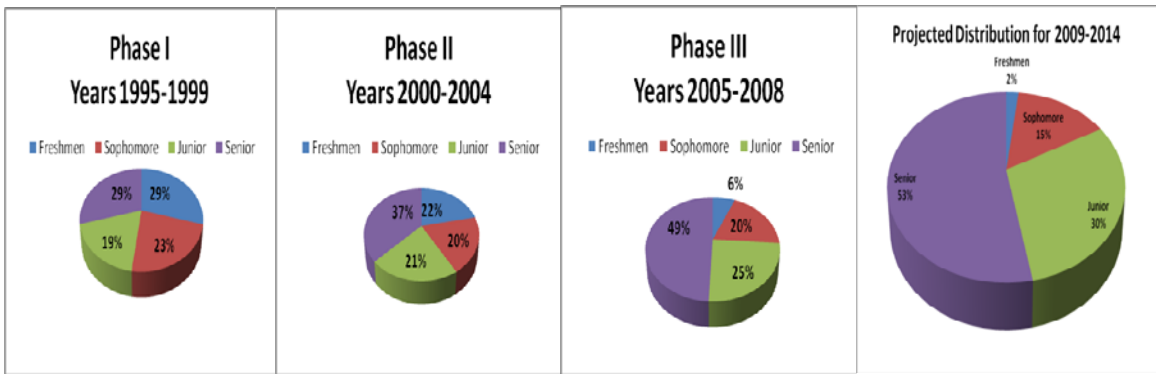
(President's Council, Oklahoma City,

Tuesday, December 8)

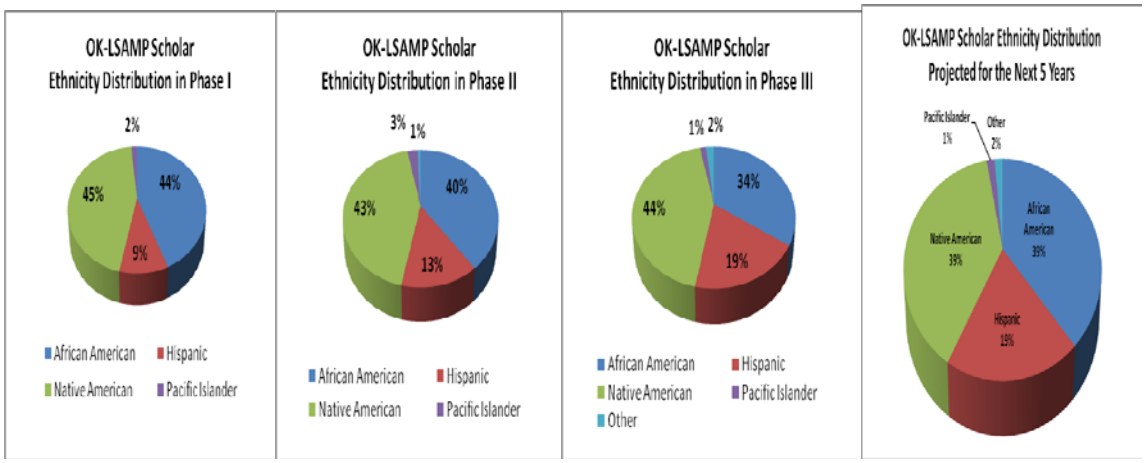
Projected Growth in Number of OK-LSAMP Scholars



Demographics of OK-LSAMP Scholars

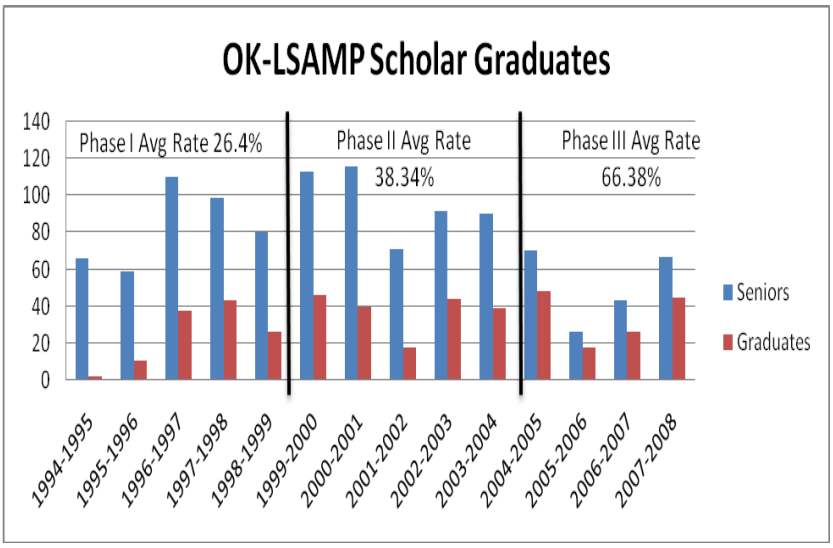


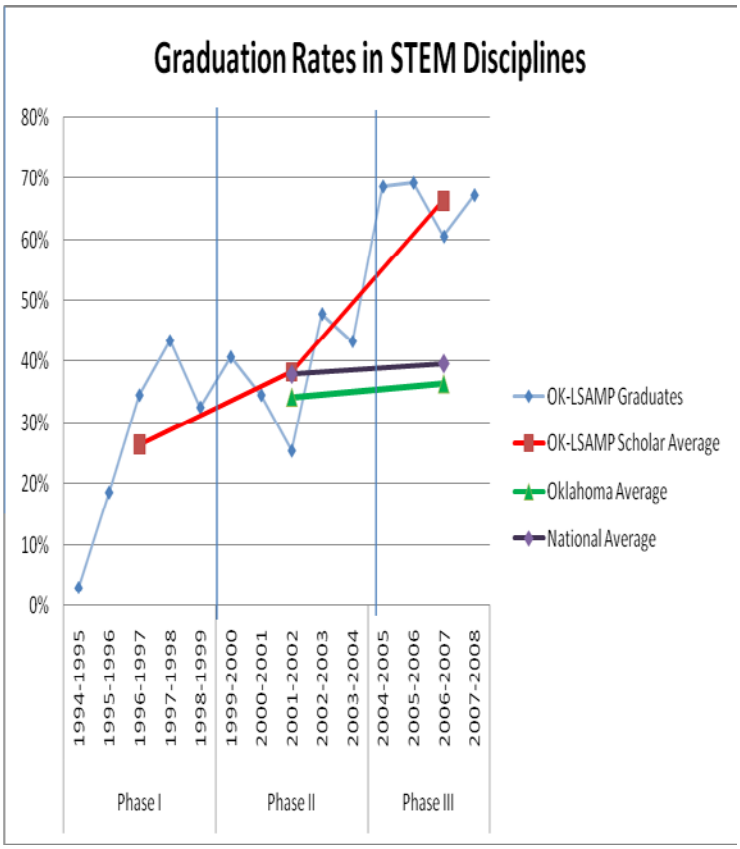
Academic Level



Ethnicity

Graduation Rates





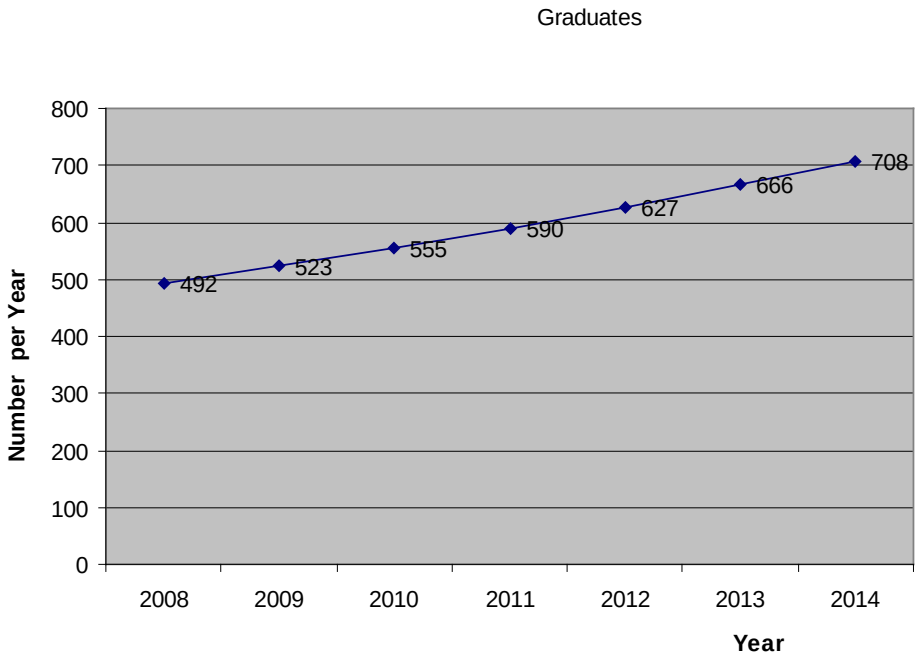
Evaluator Recommendations for Phase IV (2009-2014)

- Increase number of students making application to graduate school

- Increase levels of institutional support

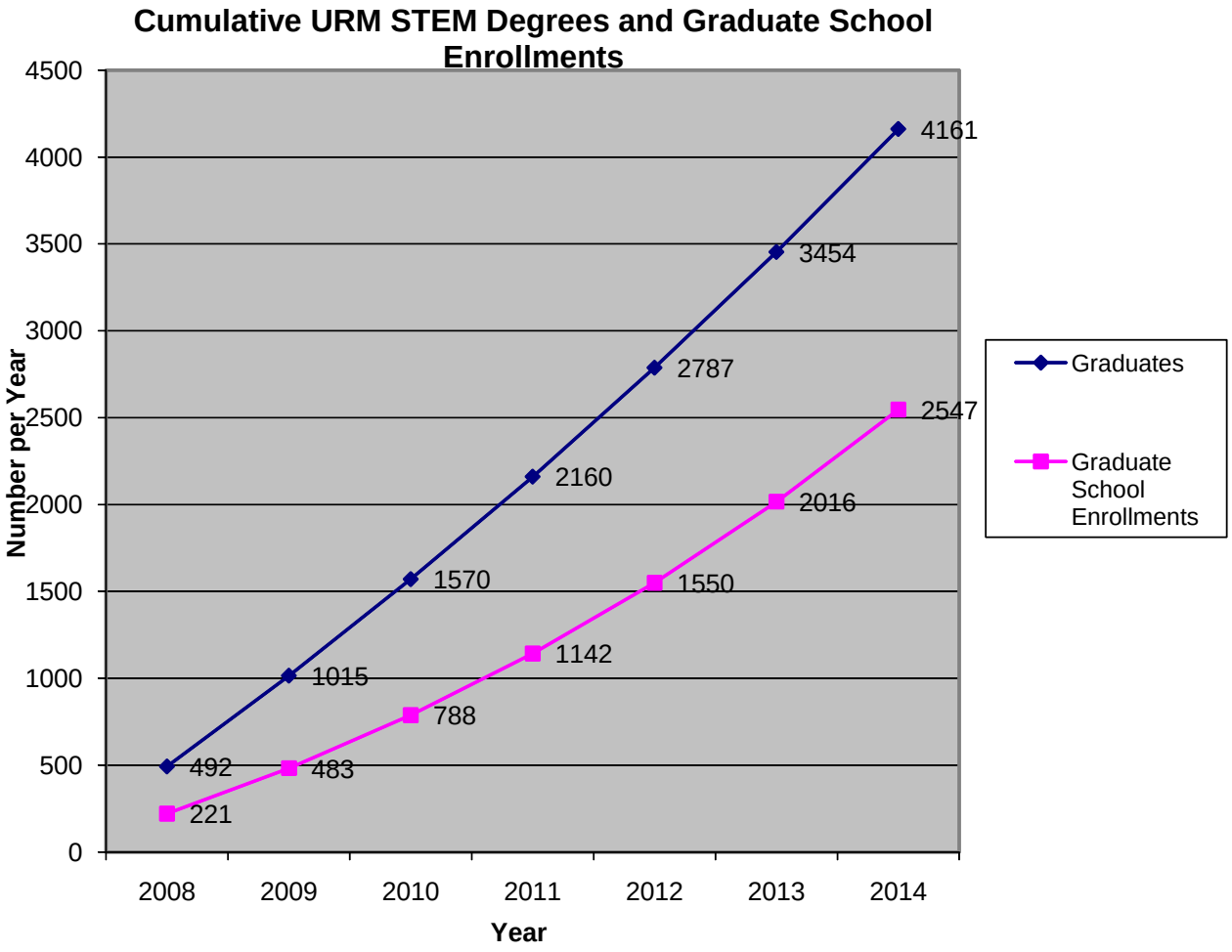
Increase number of students making application to graduate school

Growth in STEM BS Production



Growth in Graduate School Enrollments

Cumulative Effect



Increase fraction of URM STEM BS recipients that pursue graduate degrees

- Currently ~45%; seek growth to ~70% (!)
- ***Introduce students to the graduate school experience early***

(1) Campus visits by individual students (or small groups); visit with graduate program directors, faculty, and students

(2) Site visits by graduate school personnel

- Dedicated GTA will be in place within a year

(3) OK-LSAMP Symposium – October 3, 2009

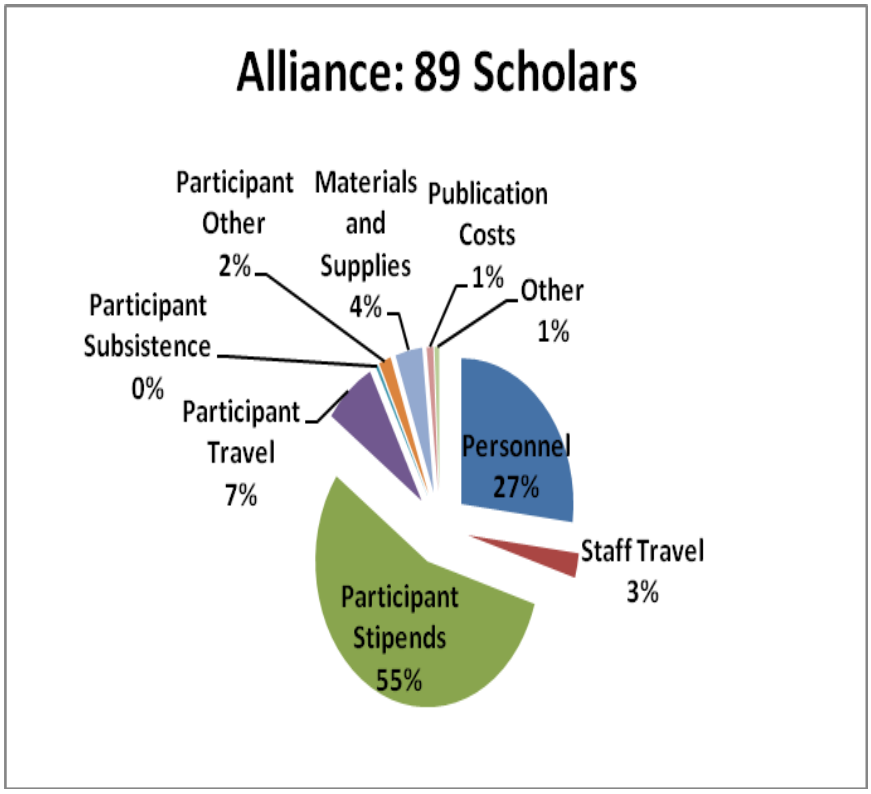
(4) Create MOUs to permit students at Alliance institutions to take courses for graduate credit at other Alliance institutions

Increase fraction of URM STEM BS recipients that pursue graduate degrees

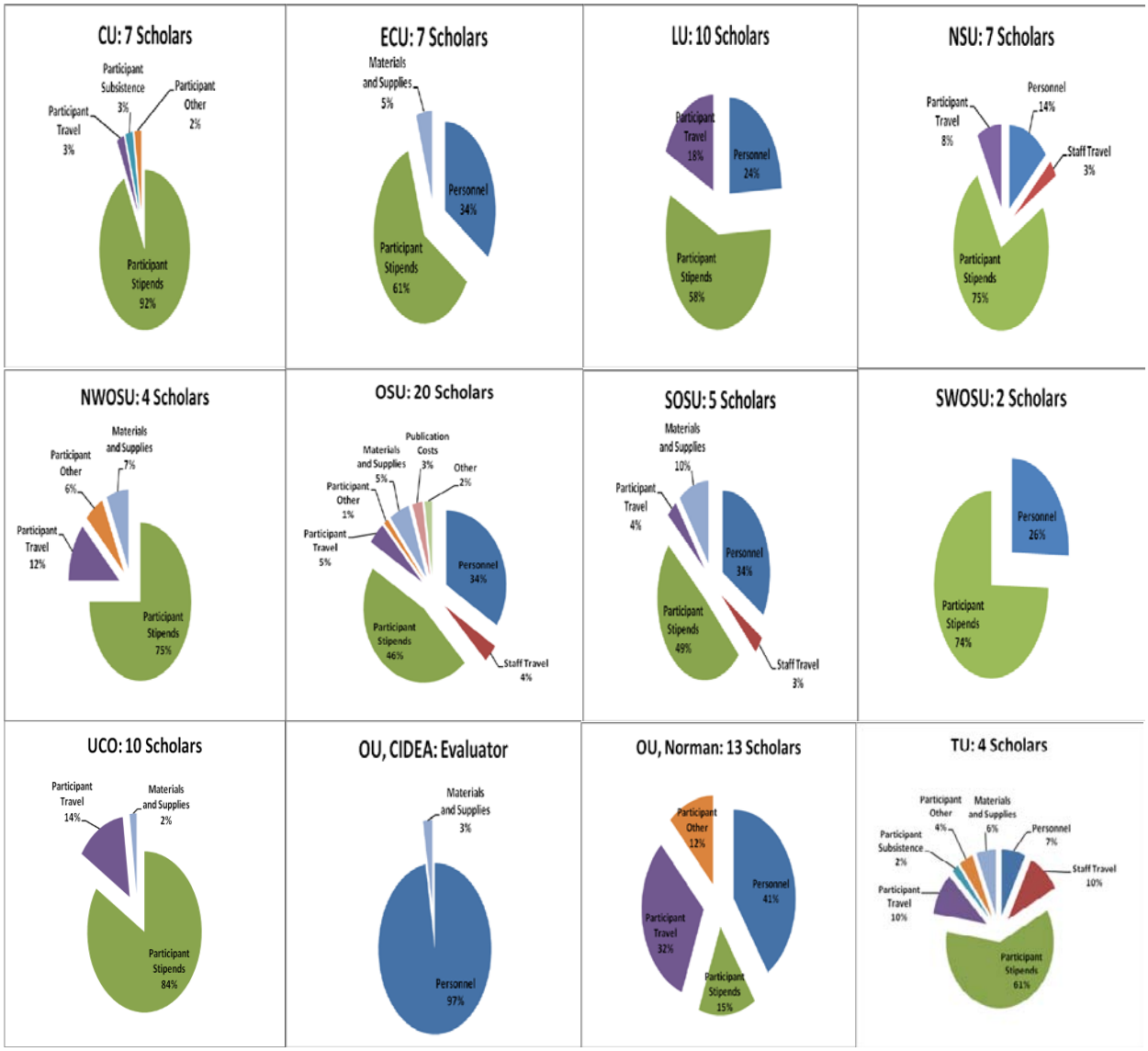
- Use of dedicated GTA (OSU-funded) to help scholars
  - understand the benefits of attending graduate school
  - prepare graduate applications
  - prepare for GRE
  - arrange campus visits

Increase levels of institutional support

Budget (FY 2010)



Budget (FY 2010)



Summary

- Strengthen the (already strong) alliance through increased institutional support

- Increase the number of OK-LSAMP participants applying to graduate school

- Meeting with Dr. Hicks (President's Council, Oklahoma City, December 8, 2009)

APPENDIX H

STUDENT ARTICLES

RSC Publishing

Publishing

PCCP

High quality research in physical chemistry, chemical physics and biophysical chemistry.

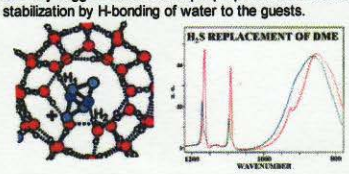
Perspective

Phys. Chem. Chem. Phys., 2009, 11, 10245 - 10265, DOI: 10.1039/b911600c

Clathrate hydrates with hydrogen-bonding guests

Victoria Buch, J. Paul Devlin, I. Abrrey Monreal, Barbara Jagoda-Cwiklik, Nevin Uras-Aytemiz and Lukasz Cwiklik

Clathrate hydrates (CHs) are inclusion compounds in which "tetrahedrally" bonded H_2O forms a crystalline host lattice composed of a periodic array of cages. The structure is stabilized by guest particles which occupy the cages and interact with cage walls *via* van der Waals interactions. A host of atoms or small molecules can act as guests; here the focus is on guests that are capable of strong to intermediate H-bonding to water (small ethers, H_2S, *etc.*) but nevertheless "choose" this hydrate crystal form in which H-bonding is absent from the equilibrium crystal structure. These CHs can form by exposure of ice to guest molecules at temperatures as low as 100–150 K, at the (low) guest saturation pressure. This is in contrast to the "normal " CHs whose formation typically requires temperatures well above 200 K and at least moderate pressures. The experimental part of this study addresses formation kinetics of CHs with H-bonding guests, as well as transformation kinetics between different CH forms, studied by CH infrared spectroscopy. The accompanying computational study suggests that the unique properties of this family of CHs are due to exceptional richness of the host lattice in point defects, caused by defect stabilization by H-bonding of water to the guests.



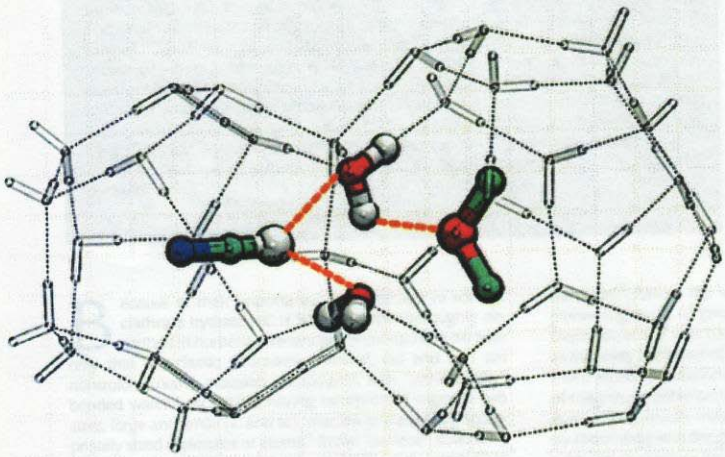
Vacancy (+) stabilized by ether-water H-bonds
=> rapid catalyzed 120 K CH transition

Classical to Nonclassical Transition of Ether−HCN Clathrate Hydrates at Low Temperature

I. Abrrey Monreal,[†] Lukasz Cwiklik,[‡] Barbara Jagoda-Cwiklik,[‡] and J. Paul Devlin*[,†]

[†]Department of Chemistry, Oklahoma State University, Stillwater, Oklahoma 74078 and [‡]Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic and Center for Biomolecules and Complex Molecular Systems, Flemingovo nam. 2, 16610 Prague 6, Czech Republic

Abstract



Guest molecules of typical clathrate hydrates are stabilized by weak nonspecific interactions with the cage walls of the host lattice. Despite their ability to form hydrogen bonds, this description also generally applies to encaged ether and other moderately strong proton acceptor molecules. However, on the basis of infrared spectroscopic and molecular dynamics results, an altered structure is indicated when guests such as HCN or SO_2, capable of binding to oxygen lattice sites, occupy the small cages. During cooling from 140 to 60 K, structure-II clathrate hydrates, with HCN in the small cages and either tetrahydrofuran or trimethylene oxide as the large-cage guests, convert to nonclassical structures in which most "guest" molecules establish hydrogen bonds to water. The nonclassical structure is stable at even higher temperatures for the dimethyl ether−HCN double clathrate hydrate.

THURSDAY, 14 MAY

09.00 – 11.00 Session 7 – MABS/Emergent Behaviour I

Room Rome Chair: Marie-Pierre Gleizes

On the Significance of Synchroneity in Emergent Systems (36)
Adam Campbell, Annie Wu
On Recursive Simulation (37)
Latek Maciej, Rob Axtell, Bogumil Kaminski
Adaptive Learning in Complex Evolving Trade Networks (38)
Tomas Klos, Bart Nooteboom
A Mathematical Analysis of Collective Cognitive Convergence (39)
Van Parunak
Emergent Service Provisioning and Demand Estimation through Self-Organizing Agent Communities (40)
Mariusz Jacyno, Seth Bullock, Michael Luck, Terry Payne

Effective Tag Mechanisms for Evolving Cooperation (41)

Matthew Matlock, Sandip Sen

09.00 – 11.00 Session 8 – AOSE/Applications

Room Brussels Chair: Danny Weyns

GDT4MAS: An Extension of the GDT Model to Specify and Verify Multiagent Systems (42)
Bruno Mermet, Gaële Simon
Actor-Agent Based Train Driver Rescheduling (43)
David Mobach, Pieterjan Fioole, Erwin Abbink, Leo Kroon, Eddy van der Heijden, Niek Wijngaards
Evolutionary Testing of Autonomous Software Agents (44)
Cu Nguyen, Simon Miles, Anna Perini, Paolo Tonella, Mark Harman, Michael Luck
An Agent-Based Approach to Component Management (45)
David Lillis, Rem Collier, Dragone Mauro, Gregory O'Hare
Stable Multi-Project Scheduling of Airport Ground Handling Services with Heterogeneous Agents (46)
Xiaoyu Mao, Nico Roos, Alfons Salden

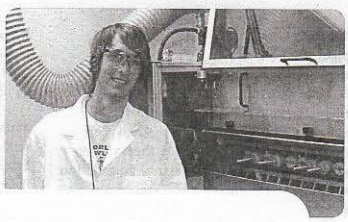
SACNAS

Advancing Hispanics/Chicanos & Native Americans in Science

SACNAS NEWS

WINTER/SPRING 2010

SACNAS COMMUNITY



LEFT
SACNAS member Brandon "Bubba" Brooks was an intern with the Centers for Disease Control during the first year of a partnership between CDC and SACNAS.

SACNAS Member's Summer Experience at CDC

By Brandon Brooks and Andrea Lipman

THIS SUMMER, *I had the privilege of working with Dr. Greg Polzin at the Centers for Disease Control in Atlanta, Georgia. My main project for the summer was studying make-your-own cigarettes by analyzing the tar, nicotine, and carbon monoxide (TNCO) deliveries.*

This is currently a hot topic in tobacco research due to the recent passage of the historic Family Smoking Prevention and Tobacco Control Act, an act granting the Food and Drug Administration regulatory authority over the tobacco industry. Through the project, I acquired proficiency in gas chromatography, mass spectrometry, and even learned how to smoke 16 cigarettes simultaneously (with the help of a 16-port ASM 500 smoking machine)! The results showed that tube type, namely filter ventilation holes, dictates TNCO yields, while tobacco type plays a noticeable but not significant role. ■

—Brandon "Bubba" Brooks

FOR THE FIRST TIME in its history, SACNAS was able to recommend and place a SACNAS-affiliated member as a summer fellow at the Division of Laboratory Sciences (DLS) at the National Center for Environmental Health (NCEH), Centers for Disease Control and Prevention (CDC). Fellows are hired through the Oak Ridge Institute for Science and Education (ORISE) and given a monthly stipend. CDC's NCEH is unique in the federal government because of its particular focus on public health issues related to the environment. DLS develops and applies laboratory science to prevent disease and death caused by exposure to environmental chemicals and to improve the diagnosis, treatment, and prevention of selected chronic diseases. For more information about DLS, visit www.cdc.gov/nceh/dls.

Applications were requested in January, and sent through the objective review. All applications are then ranked and the top SACNAS applicant is chosen to come to CDC for the summer. Non-SACNAS members who apply do have a second chance because all of the remaining applications are then placed in the entire pool of applications that DLS receives, and those who rank high enough are placed in a highly qualified list for the summer mentors to choose from. This past summer, a second SACNAS member was actually chosen, but had already accepted another summer position.

We hope the SACNAS and DLS partnership continues to grow and thrive. Please be on the lookout for information about next summer's opportunities. ■

—Andrea Lipman

APPENDIX I

NEWS ARTICLES

Four OSU students receive Udall scholarships

Special to the NewsPress

A remarkable four Morris K. Udall Foundation Scholarships have been awarded Oklahoma State University students this spring. Only 80 students nationwide are selected for this honor.

Receiving the awards were Jeremy Bennett of Yukon, Alesia Hallmark of Chandler, Brooke Hill of Hugoton, Kan., and Lauren White of Idabel.

"You are models for the rest of our students," OSU President Burns Hargis told the students at a surprise announcement ceremony.

The Udall scholarship provides $5,000 for educational expenses to outstanding sophomores and juniors who are studying the environment and related fields, or are Native Americans or Alaska Natives in fields related to health care or tribal public policy. The four students will attend the Udall Scholar Orientation Weekend in Tucson, Ariz., in August where they will meet the other 2010 Udall Scholars.

The scholarship was created in 1992 to honor Congressman Morris K. Udall of Arizona. For three decades, the congressman fought to preserve and to protect the nation's environment, public lands, and natural resources. He also was a champion of tribal self-governing rights for Native American and Alaska Natives.

The application process includes an 800-word essay on a significant public speech, legislative act or public policy statement by Congressman Udall and its relationship to their interests or coursework.

Jeremy Bennett

Bennett, an environmental science junior and a member of the Citizen Potawatomi Nation, was a Udall Congressional Intern last summer and hopes to work in Indian health care.

"There are many factors that contribute to obesity among American Indian children, but none more important than failing to educate mothers and teach children the importance of healthy lifestyles in schools," he said.

Photo submitted

Oklahoma State University President Burns Hargis, left, congratulates OSU's four Udall Scholars, Lauren White, Alesia Hallmark, Brooke Hill and Jeremy Bennett.

Bennett believes Native Americans can find a balance between traditions and customs and the world changing around them.

Alesia Hallmark

Hallmark, a zoology and botany junior, wants to work in a high risk area like the tropics where conservation is needed.

"Without the faculty at OSU, I wouldn't have been able to do everything I wanted. OSU faculty members are always open to work with me on research projects and be my mentors in the classroom and to help me get the career I want in the future," she said.

Hallmark plans to pursue a career in conservation research to help ensure the protection of organisms and their environment.

Brooke Hill

Hill, a psychology junior, has worked in the OSU clinical neuroscience lab for the past two years and hopes to complete a doctorate in clinical psychology specializing in addiction medicine. She hopes to advance and promote culturally-sensitive treatment of nicotine dependence for Native Americans.

"It is well known that tobacco is the leading preventable cause of death," Hill said. "What is not so well known is that the prevalence of nicotine dependence among Native Americans is higher than the national average."

Lauren White

White, an environmental science junior and a graduate of the Oklahoma School of Science and Math, said she would rather be at OSU than anywhere else.

"I am completely overwhelmed with the opportunities I have had as a student at OSU," she said.

She plans to pursue policy and litigation work for a non-profit or government organization that focuses on environmental justice for underrepresented communities and at the same time promotes sustainable business growth.

OSU captures remarkable four Udall awards

A remarkable four Morris K. Udall Foundation Scholarships have been awarded Oklahoma State University students this spring. Only 80 students nationwide are selected for this honor.

Receiving the awards were Jeremy Bennett, an environmental science junior from Yukon; Alesia Hallmark, a zoology and botany junior from Chandler; Brooke Hill, a psychlogy junior from Hugoton, Kan.; and Lauren White, a envrionment science junior from Idabel.

"You are models for the rest of our students," OSU President Burns Hargis told the students at a surprise announcement ceremony. "Student success is what OSU is about and we will point to you when we are out recruiting top students. Your legacy will live on for a long, long time. I also want to congratulate the faculty and staff who have supported these students."

To read more about the students and to view a video of the scholars, go to: news.okstate.edu.

The Udall scholarship provides $5,000 for educational expenses to outstanding sophomores and juniors who are studying the environment and related fields, or are Native Americans or Alaska Natives in fields related to health care or tribal public policy. The four students will attend the Udall Scholar Orientation Weekend in Tucson, Ariz., in August where they will meet the other 2010 Udall Scholars.

The scholarship was created in 1992 to honor Congressman Morris K. Udall of Arizona. For three decades, the congressman fought to preserve and to protect the nation's environment, public lands, and natural resources. He also was a champion of tribal self-governing rights for Native American and Alaska Natives.

Oklahoma State University President Burns Hargis, left, congratulates OSU's four Udall Scholars, Lauren White, Alesia Hallmark, Brooke Hill and Jeremy Bennett.

"The enormity of the accomplishment of the students at OSU is almost impossible to comprehend," said Dr. Bob Graalman, director of the OSU Office of Scholar Development and Recognition. "It is unlikely that we'll ever see another competition with this kind of result because of how competitive these programs are."

Graalman said the students' undergraduate research is the key to their accomplishment, and credits their faculty mentors as a "well-kept OSU secret."

The application process includes an 800-word essay on a significant public speech, legislative act or public policy statement by Congressman Udall and its relationship to their interests or coursework.

The Boom Bang

170 beats with the noise garage band at NMF

Page 2

Tennis timing

Cowgirls hope to finish season strong

Page 3

WEATHER

Today — H: 63 L: 40

THE DAILY O'COLLEGIAN

At Oklahoma State University since 1895

Monday
April 26, 2010

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spected, specially cleaned, and repaired, all of which our company can perform. The money that we have won from the Big Idea will most likely be used to do further research, and make sure we have a feasible plan," said Donald Bowman, a fire protection and safety technology major and partner of the company.

Second place went to Integ Medical Devices LLC, a company that "produces a medical device that will be attached on to IVs to prevent exposure of one's blood, when changing an IV, to the hospital air which can hold germs to other sickness that are commonly found at a hospital," said Yolando Odenyo, an international business MBA and partner of the business.

Integ Medical Devices LLC received a prize of $10,000.

First Place went to Metcel LLC. Ganapabhi Ranjan Mahabevan, a mechanic and aerospace engineer MBA said, "we were not expecting to win, and are so pleased with our work and what we have accomplished. We hope to put the winnings towards research and development for our product which is composite honeycomb material that creates panels and walls for airplanes." Not only did Metcel LLC win the top prize of $25,000 but they also went home with an award of $1,000 for best technology.

OSU's newest Goldwater scholar

By AMANDA BLAND
General Assignment Reporter
news@ocolly.com

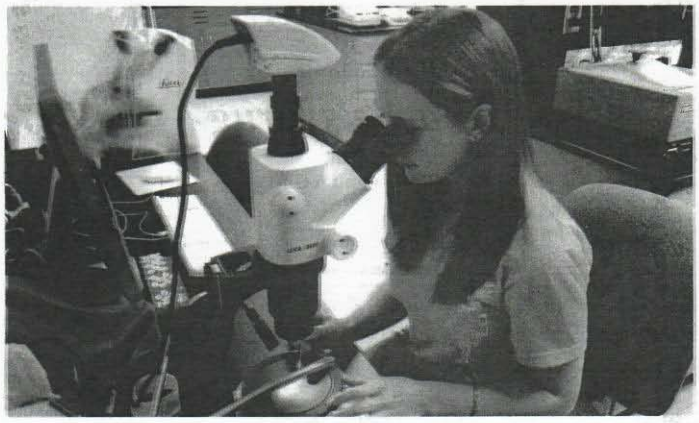
OSU's 18th Goldwater Scholar was announced this month. Lydia Meador was one of less than 300 hundred recipients of the $7,500 scholarship out of 1,111 nominees nationwide.

Not only is Meador a triple major in botany, microbiology/cell and molecular biology, and biochemistry and molecular biology, but she also had to meet the 3.70 GPA requirement to apply for the award. After being chosen as a nominee from OSU, she then submitted several essays as part of the application process which lasted from September 2009 to January of this year.

"Science was always my favorite subject," she said. "I loved doing experiments and science fair projects."

Meador said since she's the first in her family to attend college, the financial assistance the scholarship provides is helpful, and becoming a Goldwater Scholar has been a goal since her freshman year.

SEE SCHOLAR PAGE 7



COURTESY JANETTE STEETS AND THE OSU BOTANY DEPARTMENT

2010 Goldwater Scholar Lydia Meador counts leaf hairs from plant Arabidopsis thaliana as part of her research for the 2008-2009 Wentz Research Scholarship.

Meador selected as Oklahoma State's 18th Goldwater Scholar

Tuesday, 13 April 2010 19:25

Lydia Meador of Broken Arrow, an Oklahoma State University junior with a triple major of botany, microbiology/cell and molecular biology, and biochemistry and molecular biology, has been named a Barry M. Goldwater Scholar.

Meador is the 18th student from OSU to be selected for this prestigious honor.

Receiving an honorable mention for this year's scholarship was John Cooper, a Wichita, Kan., senior who is majoring in chemistry and microbiology/cell and molecular biology.

"This has been an exciting spring semester at Oklahoma State with all of the major national and international scholarships our students are receiving," said OSU President Burns Hargis. "To have a Goldwater Scholar of the caliber of Lydia this year is wonderful. She and John have exciting futures in store for them."

According to Peggy Goldwater Clay, chair of the board of trustees of the Barry M. Goldwater Scholarship and Excellence in Education Foundation, the 2010-11 Goldwater Scholars were selected on the basis of academic merit from a field of 1,111 mathematics, science, and engineering students nominated by the faculties of colleges and universities nationwide.

"Lydia is highly deserving of this honor," said Dr. Janette Steets, botany assistant professor. "She is an exceptionally bright, ambitious and dedicated student. In addition to her outstanding academic achievements, she excels in research and will go far in the sciences."

Meador's career goal is to receive her doctorate in plant genetic engineering and biotechnology and to conduct research in genetic engineering of antibiotics, edible vaccines and other medicinal compounds.

"As a first generation college student, I never dreamed my college experience would involve winning a national award," Meador said. "I am honored and humbled to be considered one of the many outstanding scholars at OSU."

"This year's competition for the Goldwater Scholarship was extremely competitive due to the reduced number of awards and high numbers of applications, making Lydia's accomplishment even more impressive," said Dr. Robert Graalman, director of the OSU Office of Scholar Development and Recognition. "She's worked toward this goal since arriving at OSU, taking advantage of every research opportunity that came her way, and this award affirms her prowess and prospects."

The Goldwater Scholarship is the most prestigious and competitive scholarship for undergraduate sophomores and juniors who plan to pursue careers in mathematics, natural sciences or engineering, and will cover the cost of tuition, fees, books and room and board up to $7,500 per year. The Goldwater Foundation is a federally endowed agency established by Public Law 99-661 in 1986 in honor of the late Sen. Barry M. Goldwater.

Meador was one of four OSU students nominated at OSU last fall following a campus-wide competition, according to Graalman.

She was selected as a Niblack Scholar for her senior year, received a Wentz Research Scholarship her junior year, and was an OSU Freshman Research Scholar. She was named the OSU Botany Department Outstanding Senior in 2009.

Meador is the daughter of Gregory and Judith Meador of Broken Arrow and is a 2007 graduate of Union High School.

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Vol. 21 No. 17 February 5, 2010

News from OSU Communications

Weird Science

Fellowship gives student new direction

By Katie Butler

Recent OSU graduate Bubba Brooks credits a summer research fellowship for helping him redirect his career.

Brooks, from Tulsa, became the first member of a group of Hispanic/Chicano and Native American Scientists (SACNAS) to land the fellowship at the Division of Laboratory Sciences at the Center for Disease Control and Prevention in Atlanta.

Brooks graduated in December 2009 with a degree in microbiology and a minor in ethics and leadership. His work at the center focused on analyzing the tar, nicotine and carbon monoxide delivery systems of make-your-own cigarettes.

"My favorite part of my internship at the CDC was the quick gratification I got to see with my research," Brooks said. "Often times in science you don't get to see the affects of your work, but at the CDC I got to see my results directly affecting and helping public health immediately."

Through his research, Brooks got hands-on experience and became proficient in gas chromatography, mass spectrometry and even learned how to smoke 16 cigarettes simultaneously, with the help of a machine.

The research results showed that the cigarette's tube type dictates how much carbon monoxide is received by the smoker while tobacco type plays a noticeable but non-significant role.

"I learned a lot about the tobacco industry," than just 'smoking is bad,' it is actually a complex and continuous field of study."

Brooks encourages all students to get involved with research and said that any opportunity should be considered beneficial.

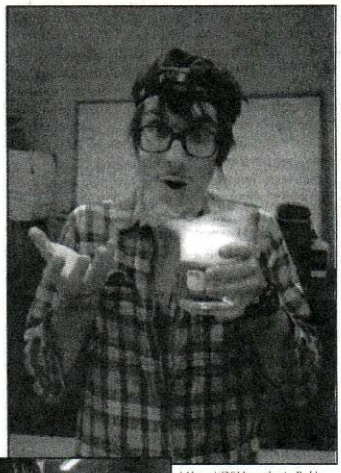
"Whether required for a class at OSU or outside of OSU, doing research gives students a different perspective other than what can be learned in a classroom," Brooks said. "It can also open your eyes to a career path you may have never known you were interested in."

Brooks, who had planned to attend Medical School before participating in scientific research, has decided instead to stay in the research field.

Dr. Robert Miller, Regents Professor of Microbiology & Molecular Genetics at OSU, is Brooks' mentor. "It's not very often that an undergraduate comes to me with a research idea looking for a home," Miller said. "But that's what Bubba did. He is an exceptional and unique young man and it's a pleasure to know him."

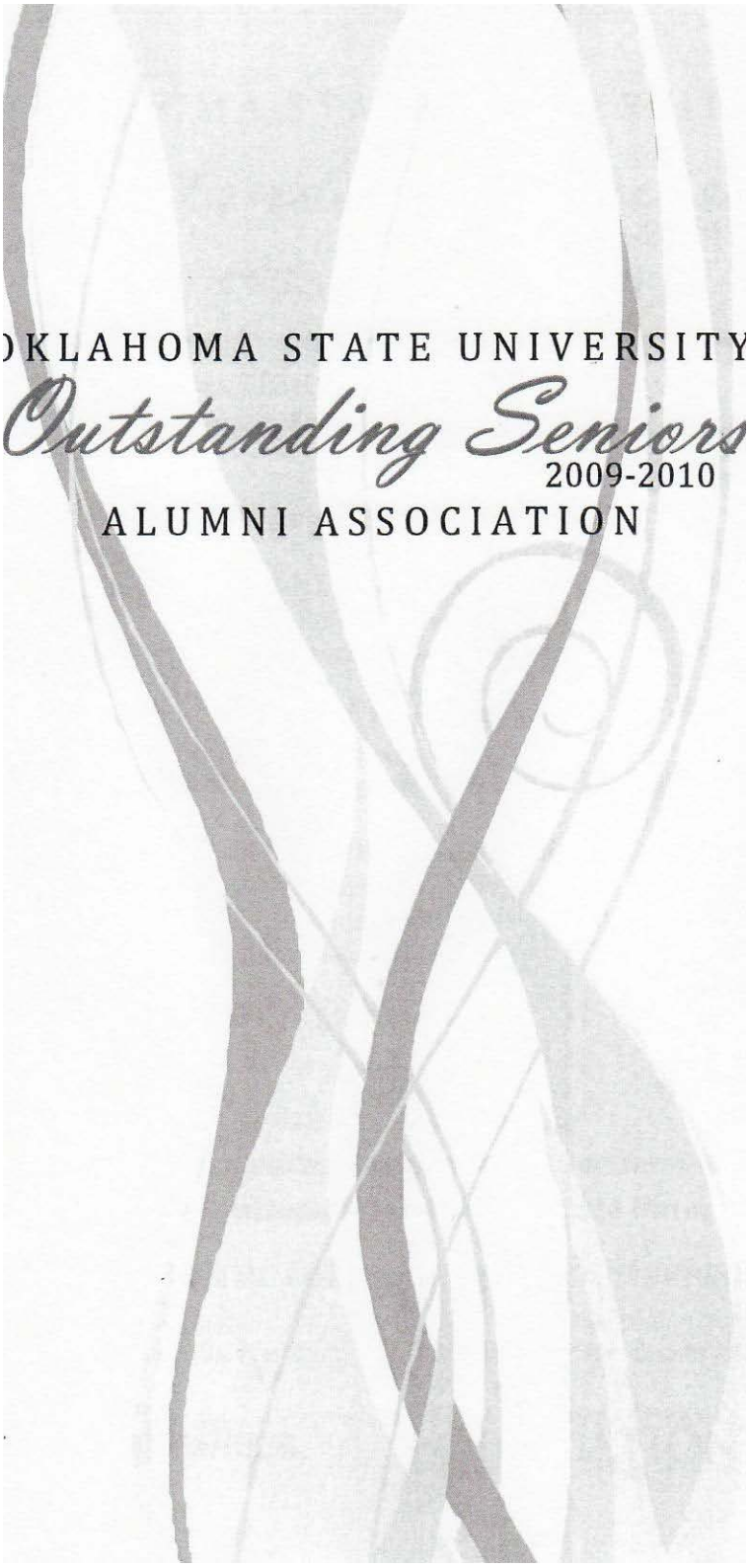
Since graduating, Brooks has been applying to graduate schools and will start in the fall after spending the summer in Paris as a bicycle guide.

For more information about the Division of Laboratory Sciences at the Center for Disease Control and Prevention visit www.cdc.gov/nceh/dls.



(Above) OSU graduate Bubba Brooks became the first member of a group of Hispanic/Chicano and Native American Scientists (SACNAS) to land a summer research fellowship at the Division of Laboratory Sciences at the Center for Disease Control and Prevention in Atlanta.

(Left) Brooks is pictured with Nobel Peace Prize Mario Capecchi. Brooks is holding the Nobel Peace Prize Capecchi won for his work with knockout mice.


OKLAHOMA STATE UNIVERSITY
Outstanding Seniors
2009-2010
ALUMNI ASSOCIATION

Manny Cortez is a mechanical engineering major from Stillwater, Okla. He is the son of Kathryn and Manuel Cortez.

During his time at OSU, Cortez was the president of Pi Tau Sigma, a mechanical engineering honor society. He also served as the vice president of finance for the College of Engineering, Architecture and Technology Student Council. He was coordinator of the CEAT Freshman Council and president of the Society of Hispanic Professional Engineers. He was also on the Multicultural Engineering Program Student Advisory Board.

Cortez was named a ConocoPhillips SPIRIT Scholar, an ExxonMobil Technical Scholar and a HENAAC Scholar. He was named a CEAT Dean's Outstanding Student Award Nominee and received the CEAT St. Patrick's Award.

After graduation, Cortez will be marrying his high school sweetheart and moving to Houston, Texas, to work as a field or project engineer for ExxonMobil.

"OSU has provided me with so many opportunities while I have been here. I am especially thankful for the life-long friendships I have made with the faculty, staff and my fellow students. While I will no longer be at OSU, OSU will forever be my extended family and I will be proud to call myself an OSU Cowboy."

Vol. 21 No. 22 March 12, 2010

News from OSU Communications

DASNR students go deep into the heart of Honduras

The relationship started more than 15 years ago when two Oklahoma State University students from Honduras knocked on Tom Kuzmic's door.

Kuzmic, forestry professor with the Division of Agricultural Sciences and Natural Resources at OSU, shared similar interests with the students. After building a solid relationship, Kuzmic was invited to the Hondurans' native land to observe their agricultural practices and natural resources.

"I went to Honduras and traveled around the country and saw an opportunity there for OSU students," he said. "A couple years later, I took my first group of students in 1999 as part of this course and I've been going every spring ever since."

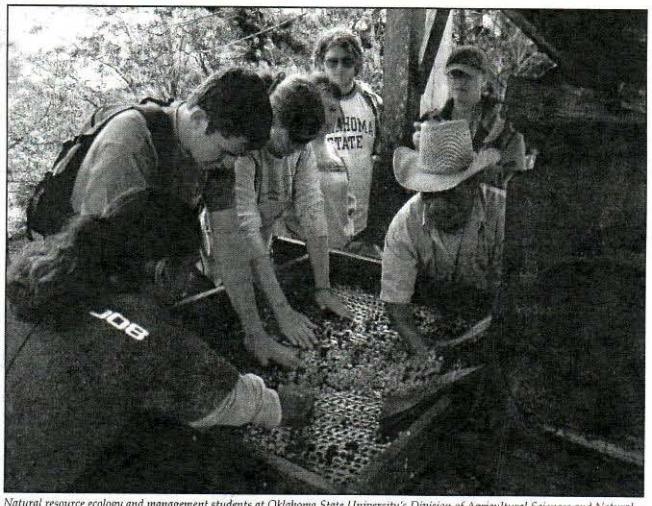
The course, "Honduras: Linkages Between People and the Land," is offered through the department of natural resource ecology and management as either a graduate or an undergraduate course. However, it is not like any others.

There are eight weeks of preparation in the classroom before the 16-day trip.

"I really try to impress upon our students that when you leave our borders, you become an ambassador for your country, your university, yourself, and you are the ambassador for me," Kuzmic said.

During this eight-week preparation section, students learn about Honduran culture, history, traditional agricultural practices and travel preparedness including currency exchange, how to make purchases, navigate the airport and other nuances they may have never experienced before.

"My objective for this course is to develop an ideological foundation that includes an understanding and appreciation of the social, political and economic issues and constraints that influence life and living in the developing world of the Latin American tropics," Kuzmic said.



Natural resource ecology and management students at Oklahoma State University's Division of Agricultural Sciences and Natural Resources help a local farmer pick coffee "cherries" at the depulping and washing machine at his family farm in Cruz Alta, Honduras.

After the training crash course, the students travel to Honduras the week before spring break and return 16 days later. During their time on foreign ground, students observe different farming methods and receive a greater understanding of the reality behind why the rainforests are disappearing.

"The students have been taught forever that we are running out of rainforests because of our consumptive habits in the U.S. However, only a tiny proportion of that loss is due to demand for some of the products produced from tropical wood," Kuzmic said. "The biggest issue with the loss of rainforest is domestic."

Most of the tropical countries are also developing nations, where people need the land and resources to sustain themselves. The natives to these countries do not think about what "we are losing." Rather, a community of villagers sees the land the forest is on and grows crops on it, after cutting down and burning the trees.

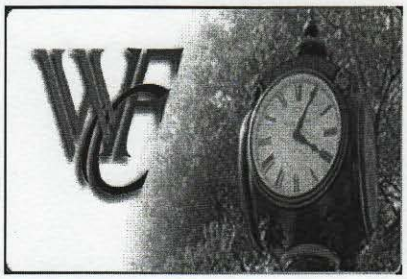
The problem is recognized when farming techniques are observed. Farmers do not have access to tractors, so they use oxen. This is insufficient considering the oxen can only till straight down the hill, creating channels for water to flow through and erode the plot.

"Somebody could stay on the same piece of ground forever if they use a more sustainable technique," said Kuzmic. "We can dramatically reduce the amount of deforestation and loss of rainforests in these countries if we can get people to develop more sustainable techniques."

These new techniques are not limited to agricultural ideas, but involve more efficient ways of using the wood cleared from the rainforests. Much of this wood is used as a fuel to heat living quarters, or to cook with, so more sustainable wood burning stoves is a mission of the students.

While in Honduras, Kuzmic and his students work with various non-government agencies that promote educational programs to encourage people to accept and implement new ideas. The OSU group also works alongside Honduran farmers, workers and resource managers.

"It's the experience of a lifetime," Kuzmic said. "When this is done, the 12 students who participate this year will be more open-minded, caring, environmentally conscience and altruistic people. Their lives will change because of this."



WOMEN'S FACULTY COUNCIL
2010 RESEARCH AWARDS

Congratulations to our 2010 winners

Jessica Parker, "Mate Poaching: Who Is Most Likely to Poach and Why?"
Advisor, Melissa Burkley

Virginia Cannon, "Coming Out: Cultural Negotiations of my Disabled Life, with a Critical Introduction"
Advisor, Elizabeth Grubgeld

Nani Pybus, "Whirlwind Woman: Native American Tornado Mythology and Global Parallels"
Advisor, L. G. Moses

Rachel Carson, "influence of detention Basin Releases on Downstream Channel Erosion and Bank Stability"
Advisor, Garey A. Fox

Robin M. Carstensen, "Rivers Murmuring Sea And Every Winged Thing"
Advisor, Lisa Lewis

Ngan Nguyen, "Dietary Manipulation of Cuticular Hydrocarbons in Termites"
Advisor, Jack W. Dillwith

Lisa Overall, "Incidence of Xylella Fastidiosa in Oklahoma"
Advisor, Eric J. Rebek

Corey Adams, "improving swallow function in progressive dysphagia Associated With Huntington's Disease"
Advisor, Cheryl L. Giddens

OKLAHOMA NATIVE AMERICAN STUDENTS IN HIGHER EDUCATION

OKLAHOMA STATE UNIVERSITY
STILLWATER, OKLAHOMA
FEBRUARY 19 - 20, 2010

"ONASHE 2009 Attendees"

OSU Has 14 Named Arthur Ashe Scholars

Tradition of award winners continues for Cowboys & Cowgirls

July 28, 2010

Krista Lopez

STILLWATER, Okla. – Fourteen Oklahoma State student-athletes have been named 2010 Arthur Ashe Jr. Sports Scholars, it was announced by *Diverse: Issues In Higher Education*. OSU had student-athletes from eight different sports named Ashe Sports Scholars, led by football and dance/pom, which each had three honorees.

The OSU student-athletes named 2010 Arthur Ashe Jr. Sports Scholars include: Joseph Ali (wrestling), **Brandi Andrews** (women's track), Mark Chesnut (football), German Fernandez (men's track), Chelsea Garcia (softball), Anthony Hill (football), Jessica Lewis (women's track), Krista Lopez (women's soccer), Samantha Mahan (dance/pom), Trey Munden (football), Courtney Ned (dance/pom), Morgan Pierce (equestrian), Katie Ann Robinson (cheer/pom) and Kilee Stewart (equestrian).

OSU's 14 Arthur Ashe Jr. Sports Scholars in 2010 ranked second in the Big 12 Conference and eighth nationally. Over the last five years, OSU has the most Ashe Scholars in the league and ranks sixth nationally. In 2009, OSU soccer star Yolanda Odenyo received the Arthur Ashe Jr. Sports Scholar Athlete of the Year Award.

The Arthur Ashe Jr. Sports Scholar Awards were established by *Diverse: Issues In Higher Education* to honor undergraduate students of color who have made achieving both academically and athletically a winning combination.

Inspired by tennis legend Arthur Ashe Jr.'s commitment to education, as well as his love for the game of tennis, every college and university in the country is invited to participate in this annual awards program by nominating their outstanding sports scholars. In addition to their athletic ability, Arthur Ashe Jr. Sports Scholars must exhibit academic excellence and community activism.

To be included, students have to compete in an intercollegiate sport, maintain a cumulative grade point average of at least 3.2 and be active on their campuses or in their communities.

APPENDIX J

BRIDGE TO THE DOCTORATE

Oklahoma LSAMP

4th Bridge to the Doctorate Cohort

Oklahoma State University, 409 Scott Hall, Stillwater, OK 74078, okamp@okstate.edu, www.ok-lsamp.okstate.edu

Mark Payton, Ph.D.
OK-LSAMP & Bridge to the Doctorate PI
Oklahoma State University
Interim Dean, Graduate College
mark.payton@okstate.edu
405-744-6368

University of Oklahoma

Created by the Oklahoma Territorial Legislature in 1890, the University of Oklahoma is a doctoral degree-granting research university serving the educational, cultural, economic, and health-care needs of the state, region, and nation.

The Norman campus serves as home to all of the university's academic programs except health-related fields. Both the Norman and Health Sciences Center colleges offer programs at the Schusterman Center, the site of OU-Tulsa. The OU Health Sciences Center, which is located in Oklahoma City, is one of only four comprehensive academic health centers in the nation with seven professional colleges.

The University of Oklahoma enrolls more than 30,000 students, has more than 2,400 full-time faculty members, and has 20 colleges offering 158 majors at the baccalaureate level, 167 majors at the master's level, 81 majors at the doctoral professional level, and 24 graduate certificates. The university's annual operating budget is $1.46 billion. The University of Oklahoma is an equal opportunity institution. (2/6/09)

P. Simin Pulat, Ph.D.
OK-LSAMP Co-PI
University of Oklahoma
Associate Dean for Undergraduate Programs
pulat@ou.edu
405-325-1069

Chris Aguayo - BS Aerospace Engineering, University of Oklahoma
Career Goals: to become a test pilot and focus on optimization and efficiency aircrafts

Brittanie Atkinson - BS, Biochemistry and Molecular Biology, Langston University
Career Goals: to perform research investigating mechanisms that are operative in the pathogenesis of autoimmune diseases

Kelan Berry - (conditional acceptance) BS, Industrial Engineering, University of Oklahoma, est. Fall 2010
Career Goals: to explore areas of engineering for Ph.D. focus

Mario Franklin - BS, Industrial Engineering, University of Oklahoma
Career Goals: to pursue a Ph.D. in Industrial Engineering with an emphasis in engineering education

Juan Herrera - BS, Computer Engineering, University of Oklahoma
Career Goals: to develop novel computer architectures that use less power while increasing reliability and performance

Lorne Jordan - BS, Chemistry and Biochemistry, Bowling Green State University
Career Goals: to become a leader in oncological research and contribute to National Center Institute effects

Meghan Liles - BS, Biochemistry and Molecular Biology, Oklahoma State University
Career Goals: to perform research investigating mechanisms that are operative in the pathogenesis of autoimmune diseases

Chris Mace - BS, Geology, Oklahoma State University
Career Goals: to work in government research or the petroleum industry

Chrystal Moore - BS, Microbiology, Northeastern State University
Career Goals: to operate a research lab examining antibiotic resistance in bacteria

Shawna Ong - BS, Electrical Engineering, University of Oklahoma
Career Goals: to further research experience and impact in the defense industry with an independent research division

David Supeck - BS, Chemistry and Biology, Southwestern Oklahoma State University
Career Goals: to continue research in chemistry/ biochemistry that will positively affect the community and the nation

Ryan Watley - BS, Chemistry, University of Arkansas—Pine Bluff
Career Goals: to work with organic synthesis mechanisms and to impact biological research

Oklahoma LSAMP

1st, 2nd and 3rd Bridge to the Doctorate Cohorts

Oklahoma State University, 114 Thatcher Hall, Stillwater, OK 74078, okamp@okstate.edu, www.ok-lsamp.okstate.edu

SUCCESSES TO DATE

Dominic Barrett—Cohort I, OSU
BS, Fisheries & Wildlife Conserv., Southeastern OSU, 2004
MS, Natural Resource Ecology Management, OSU, 2008

Brett Cowan—Cohort I, OSU
BS, Civil Engineering, OSU, 1999
MS, Civil Engineering, OSU, 2000
Ph.D., Civil Engineering, OSU, 2007

Felix de la Cruz—Cohort II, OU
BS, Mechanical Engineering, OU, 2007
MS, Mechanical Engineering, 2010

Marty Heppler—Cohort I, OSU
BS, Entomology/Plant Pathology, OSU, 1994
MS, Entomology/Plant Pathology, OSU, 2007

Shawn McCarroll—Cohort II, OU
BS, Computer Science, OU, 2006
MS, Computer Science, OU, 2009

Israel Osisanya—Cohort II, OU
BS, Petroleum Engineering, OU, 2003
MS Petroleum Engineering, OU, 2008

Adrienne Sherman—Cohort I, OSU
BS, Natural Resource Management, Langston University, 2005
MS, Environmental Sciences and Biosystems, OSU, 2009

William Vazquez—Cohort II, OU
BS, Mathematics, Cameron University, 2005
MS, Mathematics, OU, 2008

Cristee Wright—Cohort I, OSU
BS, Biology, Southern University
MS, Microbiology/Cell and Molecular Biology, OSU, 2007

C. Doug Yarholar—Cohort III, OSU
BS, Civil Engineering, OSU, 2008
MS, Civil Engineering, OSU, 2010

CONTINUATION OF THE PROGRAM

Marcus Benjamin—Cohort III, OSU
BS, Chemistry, Jackson State University, 2006
Continuing MS—estimated graduation Fall 2010

Tomica Blocker—Cohort III, OSU
BS Biology, Langston University, 2008
Continuing MS—estimated graduation Fall 2010

Zachary Carpenter—Cohort III, OSU
BS, Electrical Engineering, University of Tulsa, 2005
MS, Electrical Engineering, University of Tulsa, 2008
Continuing Ph.D.—estimated graduation Spring 2012

Cara Cowan-Watts—Cohort I, OSU
BS, Mechanical Engineering, OSU, 1997
MS, Telecommunications Management, OSU, 2002
Continuing Ph.D.—estimated graduation Fall 2010

Scott Fine—Cohort III, OSU
BS, Plant and Soil Sciences, OSU, 2008
MS, Plant and Soil Sciences, estimated Summer 2010
Continuing Ph.D.—estimated graduation Spring 2012

Erik Gonzales—Cohort III, OSU
BS, Physics, East Central University, 2007
Continuing MS, Physics—estimated graduation Spring 2011

Jonathan Gonzales—Cohort III, OSU
BS, Physics, East Central University, 2007
MS, Electrical Engineering, OSU, 2009
Continuing Ph.D.—estimated graduation Spring 2012

Steven Harris—Cohort II, OU
BS, Chemistry, Langston University, 2006
Continuing Ph.D.—estimated graduation Spring 2011

Desmond Harvey—Cohort II, OU
BS, Chemistry, Langston University, 2006
MS, Industrial Engineering, OU, 2008
Continuing Ph.D.—estimated graduation Fall 2013

Jacob Henderson—Cohort II, OU
BS, Computer Engineering, OU, 2007
Continuing MS—estimated graduation Fall 2010

Matthew Hough—Cohort III, OSU
BS, Plant and Soil Sciences, OSU, 2008
Continuing MS—estimated graduation Fall 2010

Quintin Hughes—Cohort II, OU
BS, Industrial Engineering, OU, 2004
MS, Industrial Engineering, OU, 2009
Continuing Ph.D.—estimated graduation Summer 2012

Shawna Hughes—Cohort III, OSU
BS, Biology, South Carolina State University, 2007
Continuing MS—estimated graduation Fall 2010

Kevin James—Cohort II, OU
BS, Electrical Engineering, Southern Univ. A & M Coll., 2005
MS, Electrical Engineering, OU, 2009
Continuing Ph.D.—estimated graduation Fall 2012

Jacob Manjarrez—Cohort I, OSU
BS, Cell/Molecular Biology, OSU, 2003
Continuing Ph.D.—estimated graduation Spring 2011

Minh Ngo—Cohort III, OSU
BS, Biochemistry, OSU, 2008
Continuing MS—estimated graduation Summer 2010

Richard Osei—Cohort III, OSU
BS, Computer Science/Math, Langston University, 2008
Continuing MS—estimated graduation Fall 2010

Thomas Patten—Cohort I, OSU
BS, Mechanical Engineering, OSU, 2002
MS, Mechanical Engineering, OSU, 2004
Continuing Ph.D.—estimated graduation Fall 2010

Lila Peal—Cohort I, OSU
BS, Biology, Langston University, 2004
Continuing Ph.D.—estimated graduation Summer 2010

Cody Pinkerman—Cohort III, OSU
BS, Aerospace and Mechanical Engineering, OSU, 2008
MS, Aerospace and Mechanical Engineering, est. Summer 2010
Continuing Ph.D.—estimated graduation Spring 2012

Brek Wilkins—Cohort I, OSU
BS, Microbiology, OSU, 2004
Continuing Ph.D.—estimated graduation Fall 2010

APPENDIX K

EVALUATION REPORT FROM

DR. ROSEMARY HAYES

The University of Oklahoma
Center for Institutional Data Exchange and Analysis (C-IDEA)

To: Dr. Mark Payton
PI, OK-LSAMP

From: Dr. Rosemary Hayes
OK-LSAMP Evaluator

Date: August 9, 2010

RE: Year 1 Review Summary

OK-LSAMP Year 1 Review Summary

The National Science Foundation has often said that the goal of the Louis Stokes Alliance for Minority Participation is to not just produce graduates; but to produce quality graduates. Moving into this new phase of The LSAMP, the Oklahoma Alliance has a history of high standards in terms of grade point averages, research, and internships. As a result, minority students that have participated in this program have benefited by receiving the support necessary to graduate with the qualifications that open the potential for receiving advanced degrees.

At the close of the last phase I issued two challenges to Dr. Gordon Emslie, the PI at that time:

1. Garner support for increased levels of institutional support for retaining students in the first two years
2. Increase the numbers of upper classmen taking the GRE and making applications to graduate schools

The Alliance continues to meet its goals with respect to program recruitment, retention, graduation within STEM fields, and qualifications for and applications to Graduate STEM degrees. However, with the increased focus on increasing the numbers of students eligible for admission to STEM graduate programs, it is important to maintain the flow of quality students into the program and encourage as many student scholars as possible to meet all of the hurdles required for graduate school admission.

This summary will address the progress on these two issues as well as the progress that has been made on the student recruitment into the program. National comparative data on the graduation rates of STEM majors will not be available until September. At that time the evaluator will place the graduation rates of the Oklahoma Alliance in a national context and share this information with the PI.

1. Increased Levels of Institutional Support for retaining students in first two years.

During the initial and better funded early phases of this program, institutions were called upon to build capacity to insure the sustainability of the program. By sustainability, it is meant not only the existence of the program but the vitality. The first recommendation is for the institutional leadership to identify ways in which the institution can demonstrate continuing financial support of this program, with a renewed inclusion of support for freshmen and sophomores. Their retention is key to increasing graduation rates. Given the proven track record of success of this program in producing underrepresented minority STEM graduates, such support is an investment that will show returns.

Dr. Emslie met this challenge for the current program year by visiting each Alliance campus president and vice president of research to discuss the importance of the LSAMP program. In addition, he created a governing board with the intent of garnering institutional support and commitments for the LS-OKAMP Alliance. Board membership was limited to the presidents of Alliance institutions, with the Oklahoma Chancellor for Higher Education serving as the Chair of the Board. The first meeting of the board was held in the Oklahoma City offices of the State Regents for Higher Education. Dr. A. James Hicks, Program Director, National Science Foundation, attended this meeting and presented a video on the success of LSAMP and international research. All of the presidents indicated their commitment to the program.

2. Increase the numbers of upper classmen taking the GRE and making application to graduate schools.

In the previous phase of the project only 32% of the program graduates had taken the GRE, despite high percentages of participants with the grades and research experience needed to quality graduate students.

This year the Alliance made a concerted effort to support, encourage, and cajole students to take the GRE. **As a result, this year 68% of the graduates took the GRE.** This represents a significant improvement over last year.

3. Programmatically the Alliance is on track.

There are two key successes which are related to STEM pipeline that should be highlighted. In this program the Alliance needs to actively recruit students into the program and ultimately help them develop into high quality graduate school candidates. The Alliance is demonstrating good progress on both fronts. First, the Alliance has had a significant increase in participation. Last year 116 students were in the program. This year 153 students are participating. This represents a 32% increase in scholars. It appears the on-campus and off-campus programs to generate interest in the program are continuing to be effective.

Second, almost 62% of the students graduating from the program this year (46) are going on to graduate school. As is understood, solid undergraduate research experiences are key not only to developing skills, but also for developing students into attractive graduate school applicants. The research and cultural experiences of the Alliance participants have been significantly enhanced over this past year by the focus on international experiences. Students not only had placements at

companies with international ventures, but also have traveled to countries such as Antarctica, Kenya, France, Egypt, and Costa Rica.

There has been a change in Principal Investigators since the beginning of this year. Dr. Mark Payton has now taken the reins. It is recommended in the next year that Dr. Payton reconvene the governing board to report on the progress made during this past year and to encourage the Alliance presidents to continue their support for the program.