

Annual Report for Period:07/2005 - 07/2006**Submitted on:** 06/02/2006**Principal Investigator:** Manning, Jean .**Award ID:** 0310321**Organization:** Langston University**Title:**

Langston's Integrated Network College for Science, Technology, Engineering and Mathematics

Project Participants**Senior Personnel****Name:** Manning, Jean**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Coleman, John**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Goodman, Nathaniel**Worked for more than 160 Hours:** No**Contribution to Project:**

Nathaniel Goodman is not a CoPrincipal Investigator in this project. He is Director of Sponsored Programs.

Name: Barker, Shawn**Worked for more than 160 Hours:** Yes**Contribution to Project:**

Shawn Barker is the coordinator for the LINC Program.

Post-doc**Graduate Student****Name:** Quinn, Byron**Worked for more than 160 Hours:** Yes**Contribution to Project:**

Mr. Quinn worked as a facilitator for Chemistry Colloquiums for the LINC Program

Undergraduate Student**Name:** Howard, Christianna**Worked for more than 160 Hours:** Yes**Contribution to Project:**

Ms. Howard worked as an office and lab assistant @ \$7.00 per hour

Name: Martin, Tristan**Worked for more than 160 Hours:** Yes**Contribution to Project:**

Tristan Martin worked as a lab assistant for the LINC Program

Name: Anderson, Quincy**Worked for more than 160 Hours:** Yes**Contribution to Project:**

SI Leader \$1500 per semester

Name: Doss, Argenia

Worked for more than 160 Hours: Yes

Contribution to Project:

SI leader @ \$1500/ semester

Name: Harris, Steven

Worked for more than 160 Hours: Yes

Contribution to Project:

SI leader @ \$1500/semester

Name: Stevenson, Steven

Worked for more than 160 Hours: Yes

Contribution to Project:

Office assistant \$7.00 per hour

Name: Carroll, Deidre

Worked for more than 160 Hours: Yes

Contribution to Project:

SI leader @ \$7.00 per hour

Name: Patterson, James

Worked for more than 160 Hours: Yes

Contribution to Project:

SI leader - paid from other source

Name: Burdex, Ashley

Worked for more than 160 Hours: Yes

Contribution to Project:

SI leader - paid through other source

Name: Evans, Marchonda

Worked for more than 160 Hours: Yes

Contribution to Project:

SI leader - paid through other source

Name: Booker, Sheree

Worked for more than 160 Hours: Yes

Contribution to Project:

S. Booker worked as a office and lab assistant.

Name: Wilson, Jeremiah

Worked for more than 160 Hours: Yes

Contribution to Project:

J. Wilson worked as a math tutor.

Name: Green, Ebby

Worked for more than 160 Hours: Yes

Contribution to Project:

E. Green worked as a math tutor.

Name: Finley, Christopher

Worked for more than 160 Hours: Yes

Contribution to Project:

C. Finley worked as a lab assistant.

Name: Greene, Cedric

Worked for more than 160 Hours: Yes

Contribution to Project:

C. Greene worked as a lab assistant.

Name: Harrison, Jamie

Worked for more than 160 Hours: Yes

Contribution to Project:

J. Harrison work as a lab assistant.

Name: Blythe, Derek

Worked for more than 160 Hours: Yes

Contribution to Project:

D. Blythe worked as a tutor.

Name: Culver, Ralph

Worked for more than 160 Hours: Yes

Contribution to Project:

R. Culver worked as tutor.

Name: Sykes, Alexander

Worked for more than 160 Hours: Yes

Contribution to Project:

A. Sykes worked as tutor.

Name: Williams, Nathan

Worked for more than 160 Hours: Yes

Contribution to Project:

N. Williams worked as tutor.

Name: Gebrehiwote, Makda

Worked for more than 160 Hours: Yes

Contribution to Project:

M. Gebrehiwote worked as tutor.

Name: Daniels, Antawan

Worked for more than 160 Hours: Yes

Contribution to Project:

A. Daniels worked as a lab assistant.

Name: Roseburr, Johnnie

Worked for more than 160 Hours: Yes

Contribution to Project:

J. Roseburr worked as a lab assistant.

Name: Watt, William

Worked for more than 160 Hours: Yes

Contribution to Project:

William Watt work as lab assistant for the LINC Program

Name: Vann, Kendra

Worked for more than 160 Hours: Yes

Contribution to Project:

Kendra Vann assisted with office administration for the LINC Program

Name: Harvey, Desmond

Worked for more than 160 Hours: Yes

Contribution to Project:

Desmond Harvey assisted with tutoring as well as office administration for the LINC Program

Name: Bennet, La'Chevraun

Worked for more than 160 Hours: Yes

Contribution to Project:

La'Chevraun Bennet worked as a research intern at LU for the LINC

Name: Bridgewater, Tony

Worked for more than 160 Hours: Yes

Contribution to Project:

Tony Bridgewater worked as a lab assistant and tutor for the LINC Program

Name: Hawkins, Calvin

Worked for more than 160 Hours: Yes

Contribution to Project:

Calvin Hawkins worked as a tutor for the LINC Program

Name: Wesson, Jessia

Worked for more than 160 Hours: Yes

Contribution to Project:

Jessia Wesson worked as a research intern for the LINC Program

Technician, Programmer

Name: Johnson, Leander

Worked for more than 160 Hours: Yes

Contribution to Project:

Mr. Johnson assists with computer and Web design programs. Part-time at \$2,500 per semester

Name: Kesete, Tesfai

Worked for more than 160 Hours: Yes

Contribution to Project:

T. Kesete helps coordinate the new instrumentation laboratory.

Other Participant

Name: Stevenson, Bonita

Worked for more than 160 Hours: Yes

Contribution to Project:

Bonita Stevenson was the program coordinator for LINC at a salary of \$30,000/ yr.

Name: Ealy, David

Worked for more than 160 Hours: Yes

Contribution to Project:

David Ealy performed in-kind recruiting services for LINC at various high schools throughout Oklahoma and US.

Name: Lewis, Sharon

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Lewis facilitated the trial course-enhancement colloquium for general chemistry II for the spring 2004 semester and serves as coordinator for the curriculum enhancement program for LINC. Her addendum fee was \$1500 per semester.

Name: Jones, Doris

Worked for more than 160 Hours: Yes

Contribution to Project:

Doris Jones coordinated the supplementary instruction (SI) program for LINC and SURE-STEP collaboration for the spring semester 2004 and will continue for fall 2004. She was supported by EPscore for the spring semester and will be supported by LINC and Sure-Step in the fall. Her support is \$1500 per semester.

Name: Hill, Anthony

Worked for more than 160 Hours: Yes

Contribution to Project:

A. Hill facilitated the 'Preparation-for-success' Colloquium.

Name: Poudavood, Reza

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Poudavood will coordinate the efforts for faculty training and enhancement activities. LINC will support at \$1500 per semester.

Name: Chan, Douglas

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Chan will supervise the usage, upkeep and instructional efforts for the research instrumentation in the instructional laboratory. LINC will support at \$1500 per semester.

Name: Barker, Shawn

Worked for more than 160 Hours: Yes

Contribution to Project:

Mr. Barker will mentor undergraduates in a summer research project @ \$2000

Name: Matand, Kanyard

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Matand mentors student in research - Paid through other funding.

Name: McMahon, Timothy

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. McMahon mentors students in research activities - Paid through other funding.

Name: Williams, Robert

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Williams mentors students in research activities - paid by funding from other sources.

Name: Abraham, K.

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Abraham mentors students in research projects - paid through other sources.

Name: Benson, Bruce

Worked for more than 160 Hours: Yes

Contribution to Project:

Mr. Benson is a university recruiter for LINC - inkind services

Name: Harkins, Rosemary

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Harkins, Chair Biology Department, is on the internal advisory board, TEAM

Name: Hedge, Clarence

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Hedge, Chair of Technology department, is on the internal advisory board, TEAM

Name: Ro, In

Worked for more than 160 Hours: No

Contribution to Project:

Dr. RO is on the internal advisory board, TEAM

Name: Burns, Marvin

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Burns, Dean of Agriculture & Research & Extension at LU, is on the internal advisory board, TEAM.

Name: Clark, Joan

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Clark, Dean of HONORS Program, is on the internal advisory board, TEAM. She offers collaborative financial& personel support.

Name: Williams, Sonya

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Williams, Director of UBEP, is on the internal advisory board, TEAM

Name: Carter, Craig

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Carter, Director of Talent Search, is on the internal advisory board, TEAM

Name: Holloway, Ernest

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Ernest Holloway, president of Langston University is chair of the external board, PAC. He brings outstanding vision and leadership to the LINC program.

Name: Dale, Louis

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Dale is on the external advisory board, PAC.

His exensive experiences with large NSF projects & grants will bring enormous benefit to this advisory board.

Name: Mitchell, Earl

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Mitchel, Professor, Biochemistry and Director of Oklahoma Alliance for Minority Participation (OKAMP)at Oklahoma State University, Stillwater, OK, is on the external advisory board, PAC. He offers experience in managing NSF programs and offers a collaboration with NSF-OKAMP.

Name: Nelson, Donna

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Nelson, Professor, Organic Chemistry, University of Oklahoma, is on the external advisory board, PAC. She offers the opportunity for research internships for LINC faculty and students at OU.

Name: Barrick, Kirby

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Barrick, Assoc Dean, Academic Program, University of Illinois, is on the external advisory board, PAC. He offers the opportunity for research internships for LINC faculty and students at U of I.

Name: Jones, Wayne

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Jones, Director of Engineering at Tinker Air Force Base, OKC, Ok. will assist in obtaining internships at Tinker as well as give expert advise in his area.

Name: Ross, Richard

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Ross, Dean, College of Agriculture, Iowa State University, is on the external advisory board, PAC. He offers the opportunity for research internships for LINC faculty and students at ISU.

Name: Lindsay, Donald

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Lindsay, Assoc. Dean and Director of Academic Affairs, New Mexico State University, is on the external advisory board, PAC. He offers the opportunity for research internships for LINC students at NMSU.

Name: Bell, Paul

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Bell is on the external advisory board, PAC.

Name: Mize, Dolores

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Mize, Associate Vice-Chancellor for Oklahoma State Regents of Higher Education, is on the external advisory board, PAC. Dr. Mize manages all of the Board of Regent's academies for grades K-12 for the state of Oklahoma. She will offer various outreach opportunities among the K-12 population for the LINC program.

Name: Hayes, Rosmary

Worked for more than 160 Hours: No

Contribution to Project:

Rosemary Hayes is the external evaluator. LINC supports a rate of \$500/day.

Name: Bucki, Andrew

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. A. Bucki facilitated the Calculus II Colloquium.

Name: Sivanesan, Sivalingam

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. S. Sivanesan facilitated the Calculus I colloquium

Name: Wuliji, Tumen

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. T. Wuliji facilitated the Biology II colloquium

Name: Wilson, Barbara

Worked for more than 160 Hours: Yes

Contribution to Project:

Ms. Wilson assisted the LINC Coordinator in data collection, communications and record keeping for the LINC Program.

Research Experience for Undergraduates

Organizational Partners

Other Collaborators or Contacts

Part I. 3. Have you had other collaborations or contacts?

NOTE: Exhibit I that is associated with this section is located at the end of the report.

One of LINC's major strategies is to provide strategic financial and developmental support to program participants in order to attract more quality students in the STEM areas. These funds are needed to compete with larger universities that do not have a good track record as Langston for graduating minority students in STEM disciplines. Langston wholeheartedly endorses LINC's efforts, and has supported collaborations with an array of programs that include financial, developmental, and recruiting resources.

1. Scholarship collaborations with NSF-OKAMP (Oklahoma Alliance Minority Program), (UBEP) Undergraduate Biomedical Program, and Honors Program at LU.

This financial collaboration expands the number of scholars in the LINC program.

The LINC program originally was scheduled to accept 12-15 new participants each year. However, due to effective leveraging of the scholarship monies with the OKAMP, UBEP and the HONORS program, the LINC program was able to initially attract 26 scholars (vs. 12-15). At year 3, we have accepted 63 new cohort scholars. We maintained 26 cohorts for year-one, 39 cohorts for year-two and 43 cohorts for year-three. Bottom line, the impact of scholarship collaborations has been to expand the number of scholars affected. See Exhibit I-LINC Cohort Scholars by Year.

LINC participants who are also part of the HONORS program (which has a higher g.p.a. requirement than LINC) are required to maintain their scholastic budgetary status.

2. a). SURE-STEP Summer Bridge Program for prospective STEM majors: Recruitment Vehicle

This collaboration provides a pool of potentially qualified LINC scholars as well as developmental opportunities for existing LINC Scholars. It also serves as an outreach effort into the Oklahoma community.

Program participants are 20 high school students scheduled to enter LU the following Fall term in a STEM curriculum. The program helps students to become acclimated to LU and LU's STEM offerings, as well as provides a \$500 stipend.

The LINC staff participates in this summer bridge program (sponsored by the NSF) by teaching Chemistry and Physical Science. LINC Scholars act as tutors and SI Student instructors.

This pool of students serves as a pool from which LINC scholarships may be offered for the Fall semester.

3. Langston University Department of Education: Recruitment Assistance

This collaborative recruiting effort with LU's Department of Education provides large-scale access to high school students throughout Oklahoma. Over 30 different high schools and 6,000 high school students from various towns throughout Oklahoma participate. Most high schools that attend have collaborative programs with LU's Department of Education.

LINC participates in a variety of large scale recruiting events that are sponsored by the Education department.

4. TALENT SEARCH: Recruitment Assistance

LINC's collaboration with TALENT SEARCH provides recruitment services, as well as access to students who excel on the ACT test. This program provides in-kind services that include recruiting personnel, service-learning tutorial opportunities for LINC participants, data bank of excelling ACT-testing participants, and other vehicles for recruitment.

5. Faculty Training Center and University Collaboration

This state-of-the-art facility provides in-kind training for the STEM faculty for the implementation and administration of technology in the classroom. Training activities include training in Computer Technology Integration, web CT, web Design, egrade, Visualization Techniques, Microsoft programs, etc.

70% of STEM faculty have participated in training through this facility, an increase of over 44% prior to LINC. This increase is due in part to LINC's acquiring a computer specialist to assist in the training and project implementation process.

LU continues to offer stipends to STEM faculty as an incentive to acquiring additional training in this area.

6. LINC-UBEP. Research Internship Collaboration.

The LINC and UBEP programs have collaborative agreements for placing undergraduate interns. Some of the collaborative programs include K-INBRE at the University of Kansas at Lawrence; INBRE at the OU Health Sciences Center (OKC, OK) and OSU (Stillwater, OK); the NSF Carver Project at the University of Arkansas (Fayetteville); the NSF-REU Program at Texas A&M (College Station); and the NSF-REU program at the University of North Texas HSC.

7. EPSCoR and LINC Collaboration for Supplemental Instruction

LINC and EPSCoR continue to collaborate to support LINC's Supplementary Instruction (SI), a curriculum enhancement program.

Background:

SI is a program that focuses on historically difficult classes (e.g. Chemistry, Biology, Algebra, Calculus, etc.) and is active at 500 institutions across the US. The goals of SI are to improve student grades, reduce the attrition rate within those courses, and increase the graduation rates of students. It helps students to master course content while they develop and integrate learning and study strategies.

Dr. S. Williams, who is a Biology Professor, obtained supplemental funding from EPSCoR to support the implementation of SI instruction. A SI 'train-the-trainer' workshop is conducted for selected STEM students by Ms. Doris Jones, Math Instructor, during the Fall & Spring terms. Many of these students are LINC scholars, all funded by EPSCoR and LINC.

Training workshops and SI sessions are ongoing during Spring and Fall semesters.

The impact of this collaboration on LINC performance is documented in the 'Activities and Findings' Education category.

Activities and Findings

Research and Education Activities:

NOTE: Exhibits I, II, III, IV, V, VI, VII associated with this section are located at the end of this section.

1. Describe the major research and education activities of the project.

Major education and research activities are listed by category.

EDUCATION CATEGORY:

In support of LINC's goal of increasing the number of underserved students who receive undergraduate and advanced degrees in STEM disciplines, and to increase the number of Langston's STEM graduates by 15% annually, LINC has implemented a number of programs during the first three years of its grant period.

Two of the aforementioned programs also support LINC's Curriculum Enhancement Program, designed to address pre-existing deficiencies of incoming STEM majors, incorporate preparation for nationally standardized testing into standard curriculum, ensure that students are motivated and well prepared for graduate school entry and program completion, and support personal and professional development. These programs are 1. Supplementary Instruction (SI), and 2. A Curriculum Enhancement Colloquium in General Chemistry I & II; Biology I & II; Calculus I & II; and a Preparation-for-Success (PFS) Colloquium.

(1)Supplementary Instruction (SI) (A collaboration between LINC and EPSCoR for Curriculum Enhancement)

Background on this program is documented in Part I, item # 7.

Supplementary Instruction (SI) courses help students to integrate learning and study strategies for STEM courses. Algebra, Chemistry I & II, Biology I & II, and Calculus I & II continue to be our focus. However, only selected SI courses are offered during a particular semester.

Overall, our experience with SI has yielded favorable results, as evidenced by an overall grade improvement of one-letter grade for approximately 64% of regular attendees versus a 31% improvement for non-attendees. (See Exhibit II: SI Results Spring and Fall 2005). However, we continue to experience difficulty with attendance, except for Biology which has seen a steady increase.

Following our assessment of the program after having administered it since the Fall 2004 semester, changes were put in place. However, the one thing that has made the most difference is the level of experience of our facilitators and heightened comfort level with the process among students. Following are positive changes:

1. SI leaders are more prepared as facilitators than tutors
2. SI participants became more comfortable with discussions, and open-ended questions
3. SI leaders are performing at a higher level in their own courses as a result of being an SI leader
4. Attending the class itself provides reinforcement for the SI leaders and a better understanding of the concept.
5. Students who attend the sessions are becoming more confident and competent in their course work and test taking.
6. SI participants are utilizing the sessions more as a study session

Evaluation and suggestions for improvement

1. Provide continuous training for SI leaders, faculty and staff
2. Increase ideas to create student interaction will be modeled
3. Provide more exercises or activities that will demonstrate some tried and true methods and generate student discussions
4. Develop ways to increase participation
5. Create an SI model that accommodates our population
6. Spend more time in SI sessions
7. Assist SI leaders to develop appropriate session activities
8. Encourage students who participate to attend sessions on a weekly basis
9. Continue to seek out and provide session times that meet the needs of the students

All STEM faculty, who are participating in the curriculum enhancement programs, received SI training. Techniques learned in the SI workshop are utilized in SI instruction, regular classes, as well as in LINC's curriculum enhancement colloquiums.

SI continues to be a dynamic activity that continues to evolve. It serves as a best practices incubator for student-to-student learning facilitation.

We continually assess its impact and explore techniques that support improved performance.

(2) Curriculum Enhancement Colloquiums

Colloquiums courses incorporate preparation for nationally standardized testing into standard curriculum.

Our curriculum enhancement program was implemented during the Spring 2004 semester with the launching of a trial General Chemistry II colloquium (CH 1501). Subsequently, curriculum enhancement colloquiums for Biology, Chemistry, and Mathematics courses were implemented. Dr. Sharon Lewis assisted with the curriculum enhancement program.

Background: In keeping with LINC's stated planned activity of implementing STEM course curriculum enhancements, a trial colloquium for General Chemistry II (colloquium CH 1501) was conducted during the spring 2004 semester that served as a prototype for subsequent colloquiums.

Since our last report, curriculum enhancement colloquiums for the biology, chemistry and mathematics departments were implemented for the Spring 2005 & Fall 2005 semesters for the following courses:

Biology I & II
Chemistry I & II
Calculus I & II

In addition, two (2) Preparation-for-Success (PFS) Colloquiums were implemented. LINC scholars are required to take STEM colloquium classes.

Our findings are that there is a much higher percentage of students who achieve a grade of 'B' or better among colloquium participants versus their non-colloquium student counterparts. See Exhibit III, Colloquium Curriculum Course Enhancements: Spring & Fall 2005. Further, students who participate in colloquium classes fare substantially better on ACS standardized exams than their non-colloquium student counterparts. See Exhibit IV, Impact of Colloquium on ACS Performance: Spring & Fall 2005.

Our colloquiums are of 90 minute duration as a result of our findings during earlier sessions.

(3) Math Tutorials & enhanced teaching tool

(In-Kind collaboration with Langston University)

LU provides the following Math software:

Educo: tutorial
ALEX: Advanced software for Calculus
MAPLE V: Advanced math software
Mathematica: software tool

Educo continues to be an excellent tutorial offered by the Math Department. It enables students to become more proficient in algebra through self-paced learning. The project has developed into an online laboratory that has generous hours of accessibility. Students are able to electronically access tutorial assistance on a broad range of mathematical problems. It is also an excellent teaching & testing tool.

Case studies and best practices suggest that this and other education enhancements will impact the retention rate and performance of STEM students.

(4) Hand-held PDAs (Personal Digital Assistance)

LINC scholars are given PDAs to demonstrate how technology assists learning, assist in their managing schedules and commitments, serve as a learning-assist tool in the PFS colloquiums and serve as a personal computer. The PDA has wireless capability. Students can

obtain Internet access for classroom participation, and enjoy mentor-student & student-student sharing of digital information at a moments notice.

This tool continues to be used to impact retention rates and performance of students in the LINC program.

(5) Faculty Education: Faculty Training

(A collaborative effort with Langston University)

Effective faculty is crucial to the success of all educational programs. LU is committed to support LINC by supporting faculty education in technology and new teaching methods. To this end LU's faculty training facility (FTC Center) and staff provide In-Kind training for STEM faculty in technology in the classroom.

This state-of-the-art facility provides in-kind training for the STEM faculty for the implementation and administration of technology in the classroom. Training activities include training in Computer Technology Integration, web CT, web Design, egrade, Visualization Techniques, Microsoft programs, etc.

70% of STEM faculty have participated in training through this facility, an increase of over 44% pre-LINC. This increase is due in part to LINC's acquiring a computer specialist to assist in the training and project implementation process. STEM faculty implemented these technology tools to enhance students' learning experiences.

Additionally, LINC supported Faculty travel to various training workshops. Others traveled to proposal evaluation workshops in the local area.

Developmental meetings and research forums included:
 LS-OKAMP Annual Research Symposium. Stillwater, OK
 UCO Research Day. Edmond, OK
 Arts & Sciences Research Day. Langston, OK
 HBCU-UP Annual Research Conference. Baltimore, MD
 63rd Annual BKX/NIS Convention. Montgomery, AL

LU continues to offer stipends to STEM faculty as an incentive to acquiring additional training in this area.

(6) Education support: Mentoring

Although mentoring is embedded in special research programs, each LINC participant has been assigned a faculty mentor who is required to meet with assigned students bi-monthly.

Mentoring relationships can help to uncover potential problems before they become real issues, and assist in finding solutions to them. As a result, LINC scholars are more likely to meet or exceed requirements of the program as well as remain in STEM disciplines.

Each STEM department recommends STEM candidates for LINC and assigns mentors. Participating departments include Biology, Chemistry, Agriculture, Mathematics, and Computer Science.

Our latest assessment indicates that our mentoring program could be strengthened through a more robust process. We are currently working to implement such a process.

RESEARCH ACTIVITIES:

Student Research is one of LINC's strategies to improve the retention rate of STEM students. Through this experiential learning, students are exposed to challenging and exciting applications of 'book learning'.

LINC-UBEP Research Internship collaboration. The LINC & UBEP programs have collaborative agreements for placing undergraduate interns. Some of the collaborative programs include the K-INBRE program at the University of Kansas at Lawrence, The INBRE program at the OU Health Sciences Center and Oklahoma State University, Stillwater, OK; the NSF Carver Project at the University of Arkansas, Fayetteville; the NSF-REU Program at Texas A & M at College Station and the NSF-REU Program at North Texas HSC. Through these collaborations and with other entities 43 STEM students are participating in research internships during the 2006 summer session. Exhibit V, provides details about the 2006 internships. Exhibit VIIa, shows progression of summer internship assignments for Pre/Post LINC: summers 2002, 2003, 2004, 2005 & 2006.

All research projects are expected to culminate with an oral and poster presentation.

(4). STEM Instructional Laboratory

Dr. Douglas Chan & Tesfai Kesette facilitate instruction.

The Instructional laboratory has acquired appropriate equipment and became operational during the summer 2004 session. Equipment includes: HPLC (high performance Liquid Chromatography), Infra Red Spectrophotometer, UV Spectrophotometer, Gas Chromatograph.

This STEM Instructional Laboratory is the base for introducing students to state-of-the-art laboratory equipment, and enhances tutoring and mentoring efforts. It also enhances student interaction and laboratory skills development. This state-of-the-art facility is anticipated to aid in our recruitment efforts.

(5). Research Conferences and Presentations

(a) 63rd Annual BKX/NIS Convention. Alabama State University. March 22-26, 2006. Montgomery, AL.

LINC in collaboration with the NIS supported eight (8) STEM students' attendance at Beta Kappa Chi-NIS national convention. Each student presented an oral or poster presentation. Steven Harris won 1st place for his oral presentation in Chemistry Research.

(b) HBCU-UP Annual Research Conference. Bowie State University. February 9-12, 2006. Baltimore, MD.

LINC supported nine (9) LINC scholar participants' attendance at this conference. Each presented a poster or oral presentation of their respective research projects. Damon William won 3rd place for his poster presentation in Biology Research.

Exhibit VI: Out-of-state Research Events. Attendees at out-of-state events.

(c) UCO Research Day. University of Central Oklahoma. November 11, 2005. Edmond, OK.

Research day was held at the University of Central Oklahoma, Edmond, OK for regional universities. LINC supported 26 STEM majors to attend this event. Each student presented a poster presentation.

(d) LS OKAMP Annual Research Symposium. Oklahoma State University. September 24, 2005. Stillwater. OK.

A Research Symposium was held at Oklahoma State University, Stillwater, OK for the NSF-OKAMP Program. LINC supported 32 STEM majors to attend this event. Each student presented an oral or poster presentation.

(e) Arts & Sciences Research Day. April 20, 2006. Langston University. Langston, OK.

The School of Arts & Sciences held its annual Research Day. 60 Abstracts were presented by STEM majors who presented their research projects either as an oral or poster presentation.

(f) Research Symposium. Kansas University. Lawrence, KS January 14-15, 2006

14 STEM students attended.

(g) Research Day at the capitol - March 27, 2006

Research day for undergraduate research papers was held at the Oklahoma state capitol during March 27, 2006. All schools in the state of Oklahoma were allowed to send a representative for the research competition. Steven Harris, a LINC scholar, won 2nd place for his poster presentation of his chemistry research project done at the University of Michigan.

(h) GRE Kaplan Course. Langston University. Langston, OK.

25 Juniors and Seniors who had been enrolled in the course during the Fall 2005 semester participated. This is an ongoing event each Fall semester for STEM scholars. This course is a collaboration between EPSCoR and LINC...

ADDITIONAL DATA AND TRACKING:

Through SEIS data tracking and management system, LU collects data necessary to support our objectives.

Internal assessments of colloquiums are established. Teacher observations and student assessment forms are utilized. Assessments are done for all colloquium courses as well as for each SI session.

External Evaluation is in place. Dr. Rosemary Hayes, Director of The Center for Institutional Data Exchange and Analysis at the University of Oklahoma has been retained to complete appropriate Evaluation for each year of the program.

OTHER SALIENT POINTS:

During the three years (2001- 2003) before the LU LINC program was established there were 16 LU STEM students entering advanced degree programs after graduation; six (6) were MS/PhD programs. During the (2004- 2006, including the 2006 seniors) period after LINC's inauguration, 28 LU STEM students will enter advanced degree programs, 19 are MS/PhD programs. This reflects a 75 % and well over a 138 % increase respectively for these categories. (See Exhibit VII & VIIa STEM Grads Entering Grad School). Eight (8) of the 19 students who are in PhD programs have received the NSF-Bridge-to-the-Doctorate scholarship.

Findings:

1. Describe major findings resulting from these activities.
(Barriers, with anticipated solutions)

Although LINC is on target with most of its activities, we are making some adjustments based upon three (3) years of experience, as summarized below:

(d) Curriculum Enhancement

The number of course -enhancement colloquiums outlined in the proposal appears to have been too aggressive for Langston's resources (8 for each of the five participating departments).

Our experiences thus far indicate that a more cautious approach of implementation of these courses is required. We have implemented Chemistry I & II, Biology I & II and Calculus I & II. These departments (chemistry, biology & mathematics) contain the gate-keeping courses (as suggested by NSF) and they will be the initial focus. Our experience is that 90 minute sessions are optimal instead of the 2-hour sessions

originally envisioned.

Presently Supplementary Instruction (SI) is a volunteer program; and some students do not attend on a regular basis. Regular attendees of the SI program consistently show improvement; however, surveys from the SI Instructors, SI Leaders, SI participants and independent evaluation indicated the following strategies for improvement.

1. Provide continuous training for SI leaders, faculty and staff
2. Increase ideas to create student interaction will be modeled
3. Provide more exercises or activities that will demonstrate some tried and true methods and generate student discussions
4. Develop ways to increase participation
5. Create an SI model that accommodates our population
6. Spend more time in SI sessions
7. Assist SI leaders to develop appropriate session activities
8. Encourage students who participate to attend sessions on a weekly basis
9. Continue to seek out and provide session times that meet the needs of the students

Evaluation:

Our program is evaluated by an external evaluator. That report is due imminently, after spring semester grades have been properly assessed.

Training and Development:

3. Describe the opportunities for training and development provided by your project.

Effective faculty is crucial to the success of all educational programs. LU is committed to support LINC by supporting faculty development and training as follows:

1. Technology in the Classroom Training

(A collaborative effort with Langston University)

LU's faculty training facility and staff provide In-Kind training for STEM faculty for technology in the classroom.

70% of STEM faculty have participated in training through this facility, an increase of over 44% pre-LINC. This increase is due in part to LINC's acquiring a computer specialist to assist in the training and project implementation process. STEM faculty implemented these technology tools to enhance students' learning experiences.

STEM faculty implemented this learning into its teaching methods during the Fall, 2004 term, and find that it enhances students' learning experiences.

2. Additional Training and Development

LINC continues to support Faculty travel to various training workshops. Two professors traveled to Washington D.C. for a QEM workshop for grant writing in Fall 2005. Others traveled to proposal evaluation workshops in the local area.

Developmental meetings and research forums included:

LS-OKAMP Annual Research Symposium. Stillwater, OK

UCO Research Day. Edmond, OK

Arts & Sciences Research Day. Langston, OK

HBCU-UP Annual Research Conference. Baltimore, MD

63rd Annual BKX/NIS Convention. Montgomery, AL:

LU continues to offer stipends to STEM faculty as an incentive to acquiring additional training in this area.

LU's commitment to faculty training & development is in progress.

Student training and development activities are in the areas of 1) serving as SI Facilitators, 2) Mentoring during outreach activities, 3) receiving guidance from faculty mentors, 4) participating in research activities, and 5) PDA training.

1. Supplementary Instruction (SI) Facilitators

(A collaboration between LINC and EPSCoR for Curriculum Enhancement) strategies.

Since the spring 2004-semester, trained LINC students facilitated SI sessions for courses in algebra, general chemistry I, general chemistry II, biology I and Organic chemistry II.

Further information is on page 4, under 'Research and Education Activities'.

2. Mentoring during outreach activities

LINC, in collaboration with Langston University, has a number of outreach forums wherein faculty and Scholars interact with the Oklahoma community in an effort to showcase the facility, LINC, and the value of pursuing STEM disciplines. Following is a list of major activities:

(a) Recruiting event:

LINC collaborates with LU's Department of Education to reach over 30 different high schools and 6,000 high school students throughout Oklahoma. LU's recruiters distribute LINC's brochure and application, which feature a link to our website. LINC personnel attend High School Day activities.

(b) SURE-STEP summer 2005 bridge program for perspective STEM majors.

LINC staff continues to participate in this NSF-sponsored program by teaching Chemistry and Physical Science, with LINC scholars serving as mentors. Student participants serve as a pool from which LINC scholarships may be offered for the Fall semester.

(c) TALENT SEARCH

TALENT SEARCH provides In-Kind services that include a bank of high-performing ACT-test participants (over 500) for consideration by LINC. It also provides use of its recruiting personnel and service-learning tutorial opportunities. TALENT SEARCH has collaborative programs with over 30 high schools throughout Oklahoma.

3. Guidance from Mentors

Although mentoring is embedded in special research programs, each LINC participant has been assigned a faculty mentor who is required to meet with assigned student bi-monthly.

It is anticipated that mentoring relationships will uncover potential problems before they become real issues, and assist in finding solutions to them. As a result, LINC scholars are more likely to meet or exceed requirements of the program as well as remain in STEM disciplines.

Each STEM department recommends STEM candidates for LINC and assigns mentors. Participating departments include Biology, Chemistry, Agriculture, Technology, and Computer Science.

4. Research

Student Research is one of LINC's strategies to improve the retention rate of STEM students. Through this experiential learning, students are exposed to challenging and exciting applications of 'book learning.'

LINC has established a number of collaborations that provide these enriching experiences for LINC scholars. Specific arrangements for summer 2006 are contained in Exhibit V - Internships.

(b) STEM Instructional Laboratory

The Instructional laboratory has acquired appropriate equipment and has been operational since the summer 2004 session. Equipment includes: high performance Liquid Chromatography, Infra Red Spectrophotometer, UV Spectrophotometer, Gas Chromatograph.

This STEM Instructional Laboratory is the base for introducing students to state-of-the-art laboratory equipment, and enhance tutoring and mentoring efforts. It also enhances student interaction and laboratory skills development. It is anticipated that it will attract students who may be on the borderline of attending a larger university because of access to state-of-the-art facilities.

(c) Research Conferences and Presentations.

5. PDA - Training

Students received training on the use of their PDAs in order to more effectively use them. Students have wireless access to the internet, managing schedules & commitments, vocabulary usages, WEBCT assignments, and wireless sharing of digital information between mentor-student & student-student.

Outreach Activities:

4. Describe outreach activities your project has undertaken.

LINC, in collaboration with Langston University, has a number of outreach forums wherein faculty and Scholars interact with the Oklahoma community in an effort to showcase the facility, LINC, and the value of pursuing STEM disciplines. Following is a list of major activities:

Recruiting event:

LINC collaborates with LU's Department of Education to reach over 30 different high schools and 6,000 high school students throughout Oklahoma. LU's recruiters distribute LINC's brochure and application, which features a link to our website. LINC personnel attend High School Day activities.

SURE-STEP Summer Bridge program for perspective STEM majors.

LINC staff participates in this NSF-sponsored program by teaching Chemistry and Physical Science. LINC scholars serve as mentors. This pool of students serve as a pool from which LINC scholarships may be offered for the Fall semester.

TALENT SEARCH

TALENT SEARCH provides In-Kind services that include a bank of high-performing ACT-test participants for consideration by LINC. It also provides use of its recruiting personnel and service-learning tutorial opportunities. TALENT Search has collaborative programs with over 30 high schools throughout Oklahoma.

Journal Publications

Books or Other One-time Publications

John K. Coleman, "Langston's Integrated Network College for Science, Technology, Engineering & Mathematics _ Brochure", (2004).

Brochure, Published
 Editor(s): N/A
 Collection: N/A
 Bibliography: N/A

John K. Coleman, "Langston's Integrated Network College for Science, Technology, Engineering & Mathematics _Application", (2004).
 Application, Published
 Editor(s): N/A
 Collection: N/A
 Bibliography: N/A

Web/Internet Site

URL(s):

www.lunet.edu/linc

Description:

III. Publication and Products

What have you published as a result of this work?

1. Internet Dissemination

LINC is utilizing current technology to effectively and efficiently disseminate information about its offerings. Our site is online at www.lunet.edu/linc. From the site, Internet visitors can learn about LINC's program and philosophy, as well as access its application and brochure. A calendar of events keeps interested parties advised of upcoming special events.

Hardcopies of the brochure and application are also available at Langston's recruiting office and placed strategically throughout the university's physical facility. They were mailed to target high schools and organizations throughout Oklahoma.

Other Specific Products

Contributions

Contributions within Discipline:

Contributions to Other Disciplines:

Contributions to Human Resource Development:

Contributions to Resources for Research and Education:

4. Contributions to Resources for Science and Technology:

STEM Instructional Laboratory

Dr. Douglas Chan will facilitate instruction.

The Instructional laboratory has acquired appropriate equipment and has been operational since the summer 2004 session. Equipment includes: HPLC (high performance Liquid Chromatography), Infra Red Spectrophotometer, UV Spectrophotometer, Gas Chromatograph.

This STEM Instructional Laboratory is the base for introducing students to state-of-the-art laboratory equipment, and enhances tutoring and mentoring efforts. It also enhances student interaction and laboratory skills development. It is anticipated that it will attract students who may

be on the borderline of attending a larger university because of access to state-of-the-art facilities.

While acquisition of equipment is on schedule, an inordinate amount of time was required to scrutinize and assess the many proposed choices by numerous vendors presented during the lengthy open bid process.

Contributions Beyond Science and Engineering:

Special Requirements

Special reporting requirements: None

Change in Objectives or Scope: None

Animal, Human Subjects, Biohazards: None

Categories for which nothing is reported:

Organizational Partners

Any Journal

Any Product

Contributions: To Any within Discipline

Contributions: To Any Other Disciplines

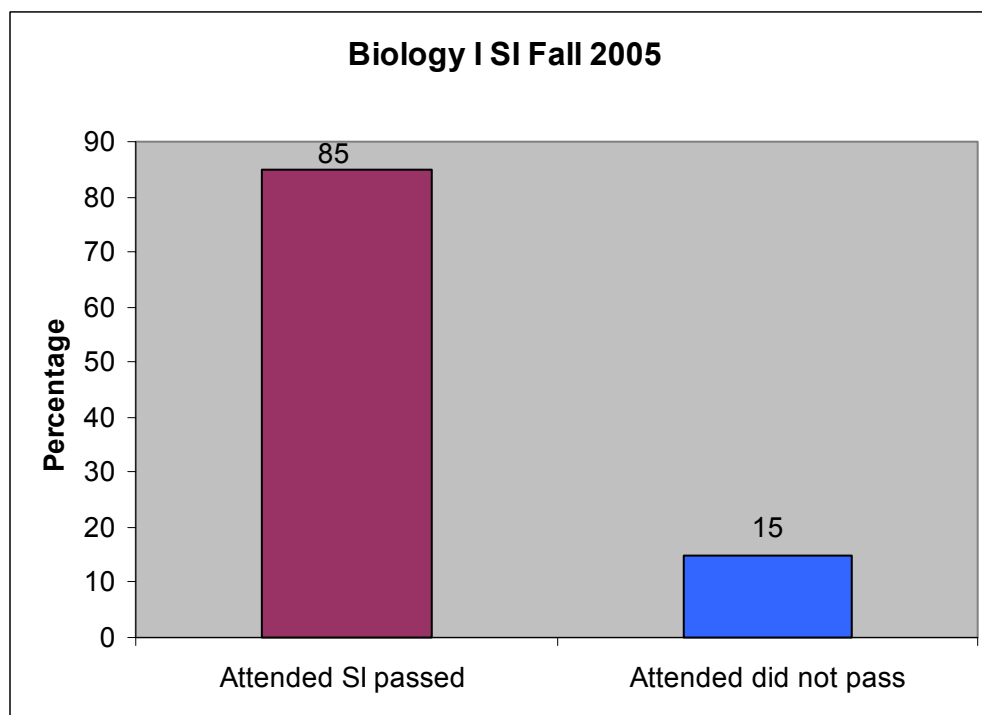
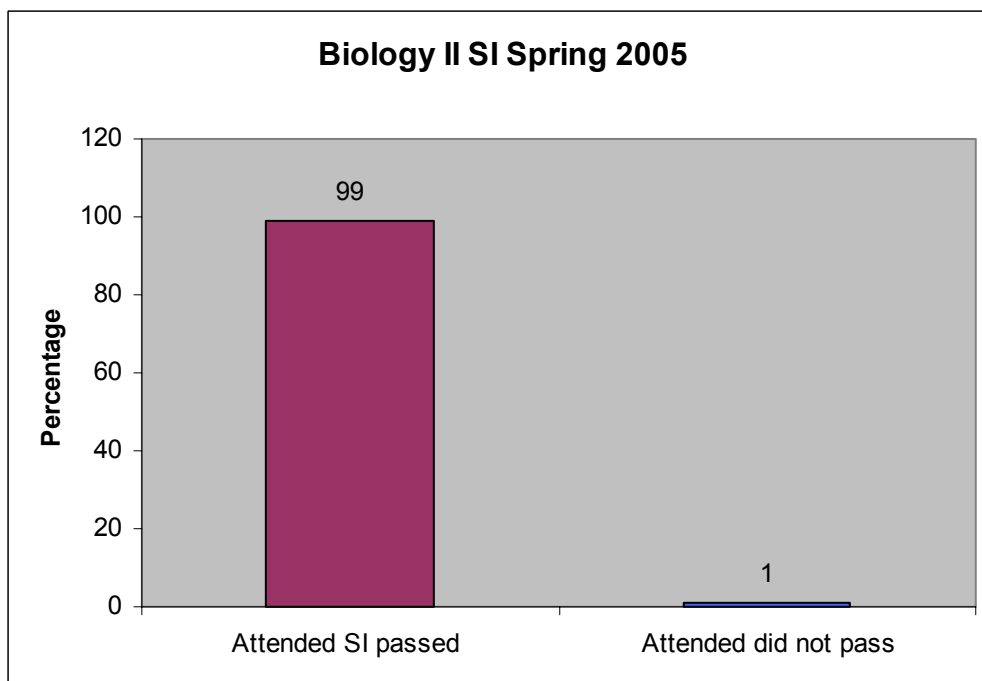
Contributions: To Any Human Resource Development

Contributions: To Any Beyond Science and Engineering

EXHIBIT I

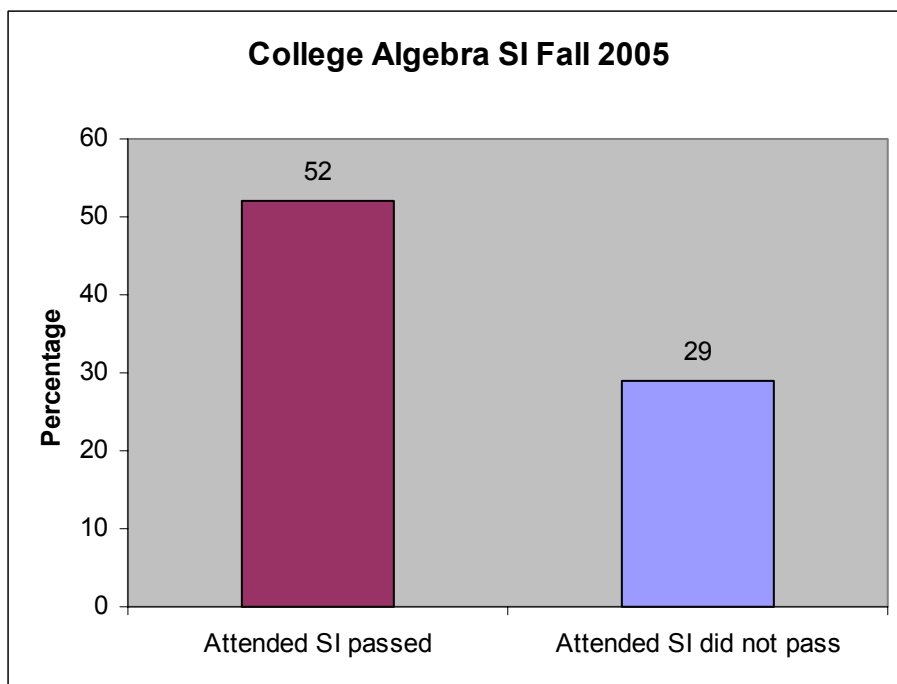
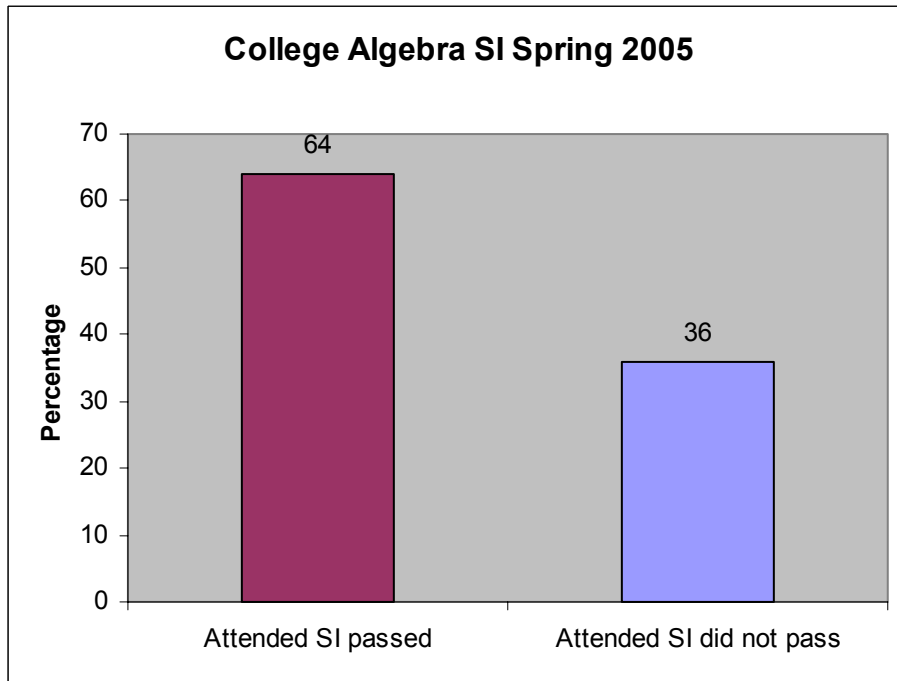
LINC COHORT SCHOLARS 2003-2006					
YEAR-ONE, 2003-4		YEAR-TWO, 2004-5		YEAR-THREE, 2005-6	
NAME	Class/Major/Comm	NAME	Class/Major/Comm	NAME	Class/Major/Commentary
1 Anderson, Quincy	So/Chem	Anderson, Quincy	Jr/Chem	Anderson, Quincy	Sr/Chem/graduates Fall 06
2 Billingslea, Robert	Sr/Comp Sci/Gradu	Blythe, Derek	So/Math	Atkinson, Brittanie	Fr/Bio
3 Blythe, Derek	Fr/Math	Bolton, Tremella	Fr/Bio	Blocker, Tomica	So/Bio
4 Booker, Sheree	Jr/Bio/	Booker, Sheree	Sr/Bio/Graduated	Blythe, Derek	Jr/Math/Comp Sci
5 Buford, Joe	Jr/Ag-Sci	Bridgewater, Tony	So/Chem	Blythe, Karole	Fr/Chem
6 Burdex, Ashley	So/Bio	Brison, Shanequah	Jr/Comp Sci	Bradford, Amber	Fr/Bio
7 Carroll, Deidre	Sr/Chem/Graduated	Buford, Joe	Sr/Ag-Sci/Graduated	Bridgewater, Tony	Jr/Chem
8 Charlot, Adrienne	So/Bio	Burdex, Ashley	Jr/Bio	Brison, Shanequah	Sr/Comp Sci/grad school
9 Culver, Ralph	Fr/Math	Brumfield, Leethan	Fr/Bio	Brumfield, Leethan	So/Bio
10 Davis, Mark	Sr/Ag-Sci/Graduated	Carpenter, Christal	Jr/Bio	Burdex, Ashley	Sr/Bio/grad program
11 Doss, Argenia	Jr/Bio/	Chandler, Jason	Fr/Chem	Carpenter, Christal	Sr/Bio/grad program
12 Ekpo, Joy	Sr/Bio/Graduated	Charlot, Adrienne	Jr/Bio	Chandler, Jason	So/Chem
13 Evans, Marchonda	So/Math	Crane, Domonick H	Fr/Math	Charlot, Adrienne	Sr/Bio/graduated
14 Harris, Steven	So/Chem	Culver, Ralph	So/Math	Clemoens, Brandon	Jr/Comp Sci
15 Harrison, Jamie	So/Chem	Doss, Argenia	Sr/Bio/Graduated	Crane, Domonick H	So/Math
16 Harvey, Desmond	So/Chem	Evans, Marchonda	Jr/Math/Trans to Io	Culver, Ralph	Jr/Math/Comp Sci
17 Johnson, Marcus Jr	Sr/Comp Sci/Gradu	Gipson, Shannon	So/Bio	Epko, Felicia	Fr/Bio
18 Laws-Rodriquez, Jes	So/Bio	Harris, Steven	Jr/Chem	Gipson, Shannon	Jr/Bio
19 Majors, Contessa	Fr/Bio	Harrison, Jamie	Jr/Chem	Harris, Steven	Sr/Chem/grad program
20 Rider, Teremun	Jr/Bio/	Harvey, Desmond	Jr/Chem	Harrison, Jamie	Sr/Chem/grad program
21 Roseburr, Johnnie	So/Chem	Hawkins, Calvin	So/Chem	Harrison, Corey	Fr/Chem
22 Sherman, Adrian	Jr/Ag-Sci	Holland, Davia	So/Bio	Harvey, Desmond	Sr/Chem/grad program
23 Sykes, Aleksandr	So/Math	Kimbell, Tamika	So/Math	Hawkins, Calvin	Jr/Chem
24 Tenner, David	So/Bio	Laws-Rodriquez, Jes	Jr/Bio	Holland, Davia	Jr/Bio
25 Walter, Deandre	Jr/Comp Sci	Loftis, Charles E.	Fr/Chem	Horton, Terra	Sr/Comp-Sci/graduated
26 Washington, Aaron	Fr/Bio	Majors, Contessa	So/Bio	Kimbell, Tamika	Jr/Comp Sci
27		Ognibene, Cherie	Fr/Bio	Loftis, Charles E.	So/Chem
28		Relerford, Quanetta	Fr/Bio	Majors, Contessa	Jr/Bio
29		Robinson, Monique	So/Chem	Martin, David	Jr/Math
30		Roseburr, Johnnie	Jr/Chem	Ognibene, Cherie	So/Bio
31		Rowland, Marquita	Jr/Bio	Price, Via'Ney	So/Bio
32		Sherman, Adrian	Sr/Ag-Sci/Graduated	Relerford, Quanetta	So/Bio/Trans to UCO
33		Sykes, Aleksandr R.	Jr/Math/Trans to KS	Robinson, Monique	Jr/Chem
34		Tenner, David	Jr/Bio	Roseburr, Johnnie	Sr/Chem/graduates Fall 06
35		Terry, Danny R.	Fr/Chem	Ross, Kariel	Jr/Bio
36		Todd, Syndia	So/Bio	Rowland, Marquita	Sr/Bio/grad program
37		Walter, Deandre	Sr/Comp Sci/Gradu	Tenner, David	Sr/Bio/graduated
38		Washington, Aaron	So/Bio	Terry, Danny R.	So/Chem
39		Williams, Nathan	So/Comp Sci	Thomas, Victoria	Fr/Bio
40				Todd, Syndia	Jr/Bio
41				Vann, Kendra	Fr/Chem
42				Washington, Aaron	Jr/Bio
43				Williams, Nathan	Jr/Comp Sci
44					
45					

**Exhibit IIa: SI Results
Biology II: Spring & Fall 2005**



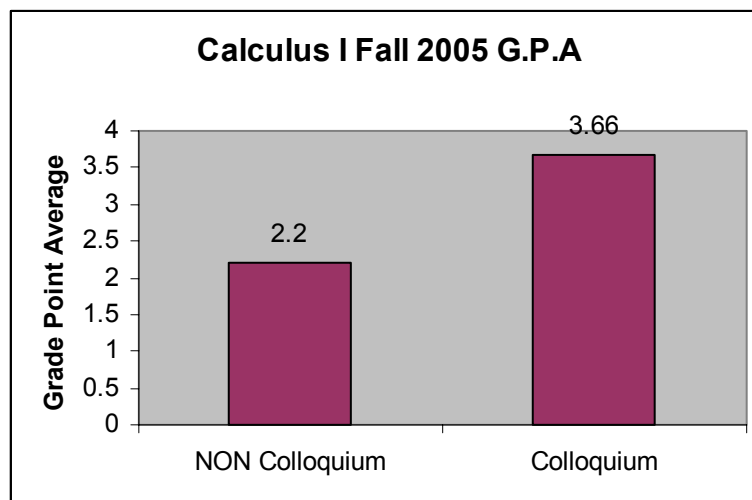
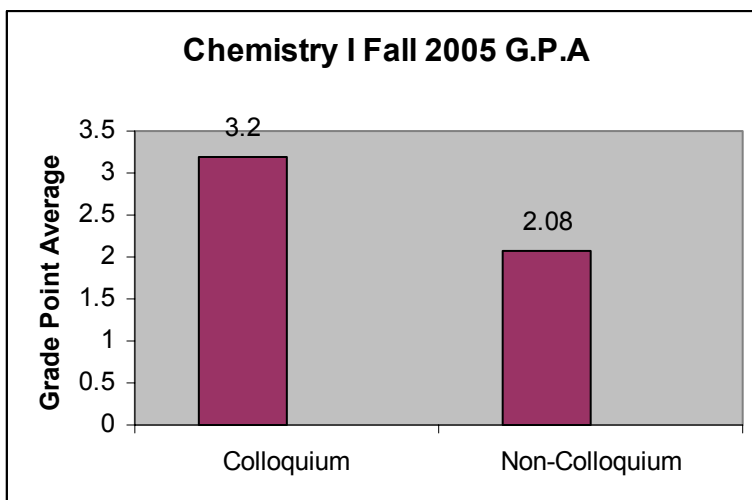
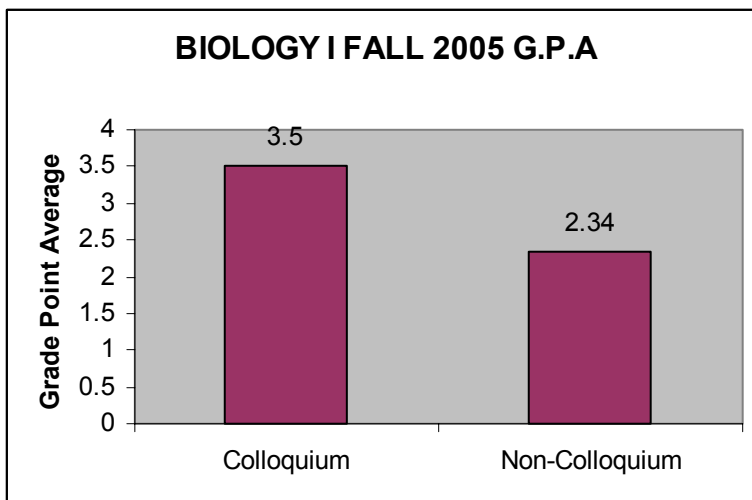
Class range:	Biology I 65-70 students	Biology II 30-35 students
SI class range	15-20	15-17

**Exhibit IIb: SI Results
College Algebra: Spring & Fall 2005**



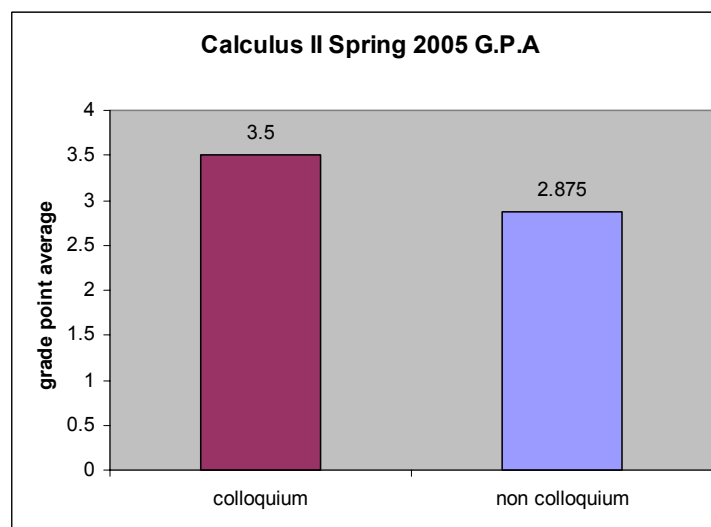
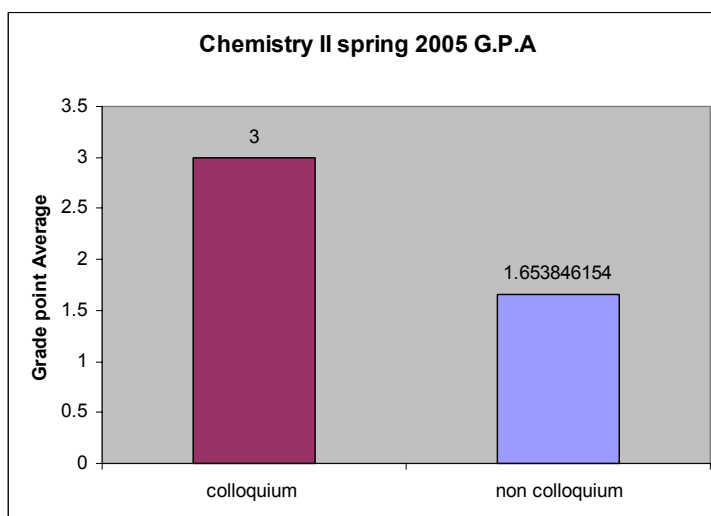
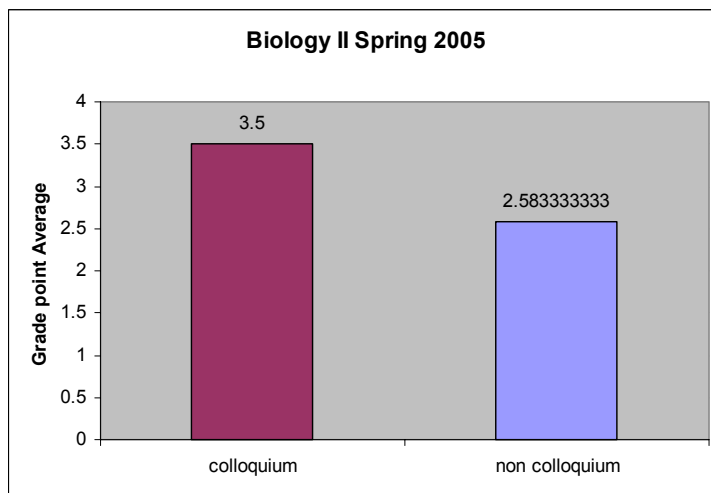
Algebra class range:	45-48 students
SI class range:	10-12 students

**Exhibit III-a: Impact of Colloquium Course Enhancements on GPA:
Spring & Fall Semesters 2005**



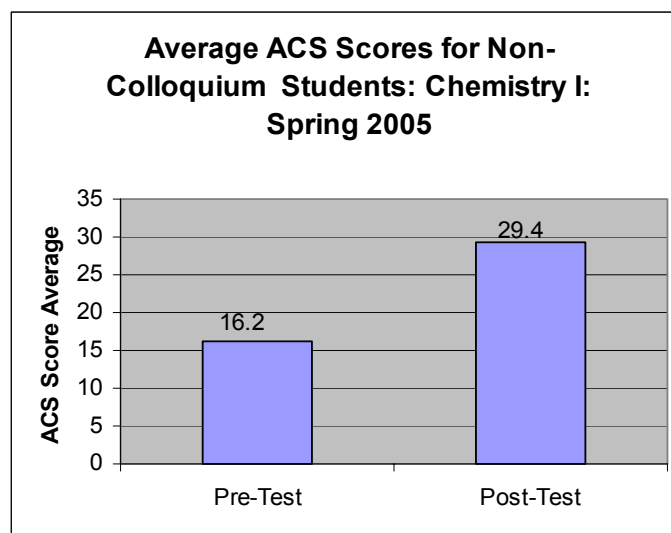
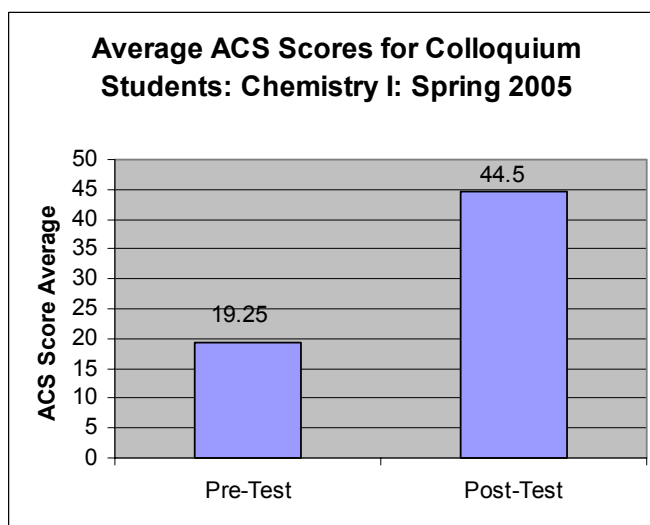
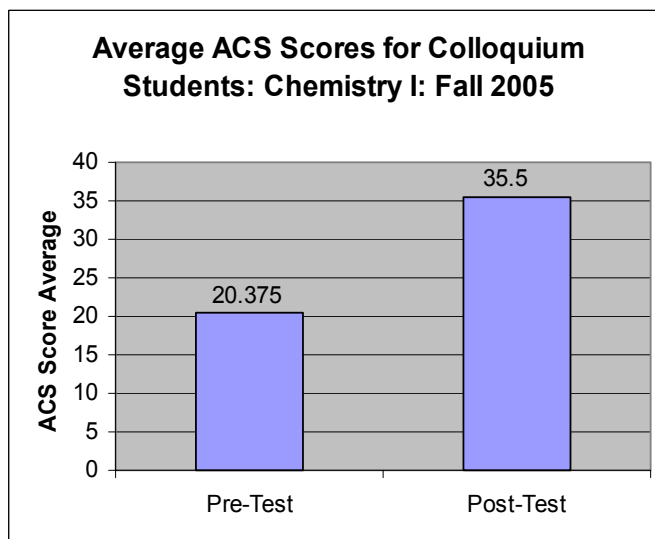
	Biology I	Chemistry I	Calculus I
Class Range (#students)	65-70	50-60	20-25
*Colloq. Range	7-10	7-10	7-10
* Restricted to LINC Participants			

**Exhibit III-b: Impact of Colloquium Course Enhancements on GPA:
Spring & Fall Semesters 2005**



	Biology II	Chemistry II	Calculus II
Class Range (#students)	30-35	30-35	15-20
*Colloq. Range	7-10	7-10	7-10
* Restricted to LINC Participants			

**Exhibit IV: Impact of Colloquiums and Non-Colloquiums on ACS Performance:
Chemistry I: Spring and Fall 2005**



	Chemistry I	Chemistry II
Class Range (#students)	50-60	30-35
*Colloq. Range	7-10	7-10
* Restricted to LINC Participants		

EXHIBIT V

2006 SUMMER INTERNSHIPS

	NAME	AFFILIATION
1	ANDERSON, QUINCY	UNIVERSITY OF ARKANSAS
2	ATKINSON, BRITTANI	UNT-HSC FT. WORTH, TX
3	BLOCKER, TOMICA	NSF/REU -TURKEY/UCO GRANT
4	BLYTHE, DEREK	U.S. DEPARTMENT OF AGRICULTURE
5	BRANDON BARNETT, BRANDON	USDA COLORADO
6	BRIDGEWATER, TONY	UNIVERSITY OF OKLAHOMA
7	BRUMFIELD, LEETHANIEL	UNIVERSITY OF ARKANSAS
8	CHANDLER, JASON	UNIVERSITY OF OKLAHOMA, HSC
9	CRANE, DOMINICK	TEXAS A&M UNIVERSITY, COLLEGE STATION
10	CULVER, RALPH	TEXAS A&M UNIVERSITY COLLEGE STATION
11	CURRY, LATURA	USDA KANSAS
12	DUKES, RODERICK	USDA MINNESOTA
13	EKPO, FELICIA	UNT-HSC FT. WORTH, TX
14	GIPSON, SHANNON	OKLAHOMA STATE UNIVERSITY
15	HAWKINS, CALVIN	UNIVERSITY OF ARKANSAS
16	HOLLAND, DAVIA	UNIVERSITY OF OKLAHOMA, HSC
17	HOOKES, MERCEDES	NJ COLLEGE OF DENTISTRY
18	HULSE, JOHN	USDA KANSAS
19	JONES, ROBERT	USDA NORTH DAKOTA
20	KEBEDE, BIZAWE	LANGSTON UNIVERSITY
21	KEBEDE, WANDWESSEN	LANGSTON UNIVERSITY
22	KEPLI, GEORGE	UNIVERSITY OF OKLAHOMA, HSC
23	KIMBELL, TAMIKA	EXXON -MOBILE
24	LOFTIS, CHARLES	UNIVERSITY OF ARKANSAS
25	MAJORS, CONTESSA	UNIVERSITY OF OKLAHOMA, HSC
26	MITCHELL, LATOYA	USDA GUTHRIE
27	NORTH, NELL	USDA ARKANSAS
28	OGNIBENE, CHERIE	UNIVERSITY OF NORTH TEXAS, HSC
29	OKONOBOR, IVORIE	LANGSTON UNIVERSITY/CHEMISTRY
30	PERRY, CHARLES	UNIVERSITY OF OKLAHOMA, HSC
31	POLLARD, VINICIA	UNIVERSITY OF OKLAHOMA, HSC
32	PRICE, VIA'NEY	UNIVERSITY OF OKLAHOMA, HSC
33	ROBINSON, MONIQUE	LANGSTON UNIVERSITY CHEMISTRY
34	ROGERS, CHARLES	USDA PERRY, OK
35	ROSS, KARIEL	UNIVERSITY OF OKLAHOMA, HSC
36	TAYLOR, EDDIE	USDA PAWNEE, OK
37	TERRY, DANNY	DUKE UNIVERSITY
38	TODD, SYNDIA	OKLAHOMA STATE UNIVERSITY
39	VANN, KENDRA	UNIVERSITY OF OKLAHOMA, HSC
40	WASHINGTON, AARON	UNIVERSITY OF OKLAHOMA, HSC
41	WILLIAMS, NATHAN	TEXAS A&M UNIVERSITY COLLEGE STATION
42	WILSON, JENNA	UNIVERSITY OF OKLAHOMA, HSC
43	WOOD, DANIEL	USDA INDIANA

EXHIBIT VI

OUT-OF-STATE RESEARCH TRIPS SPONSORED BY LINC

HBCU-UP ANNUAL RESEARCH CONFERENCE
BOWIE STATE UNIVERSITY FEBRUARY 9-12 2006
BALTIMORE, MD

<u>PARTICIPANTS</u>	<u>PRESENTATION</u>
---------------------	---------------------

ASHLEY BURDEX	ORAL
MARQUITA ROWLAND	POSTER
CHERIE OGNIBENE	ORAL
DANNY TERRY	POSTER
NATHAN WILLIAMS	ORAL
AARON WASHINGTON	POSTER
DAMON WILLIAM	POSTER (WON THIRD PLACE, BIOLOGY)
STEVEN HARRIS	ORAL
DESMOND HARVEY	POSTER

MENTORS: John K. Coleman
Shawn Barker

63RD ANNUAL BKX/NIS CONVENTION
ALABAMA STATE UNIVERSITY MARCH 22-26 2006
MONTGOMERY, AL

<u>PARTICIPANTS</u>	<u>PRESENTATION</u>
---------------------	---------------------

CONTESSA MAJORS	POSTER
MARQUITA ROWLAND	POSTER
CHERIE OGNIBENE	ORAL
DANNY TERRY	POSTER
AARON WASHINGTON	POSTER
NATHAN WILLIAMS	ORAL
STEVEN HARRIS	ORAL (WON FIRST PLACE, CHEMISTRY)
DESMOND HARVEY	POSTER

MENTORS: John K. Coleman
Shawn Barker

EXHIBIT VII

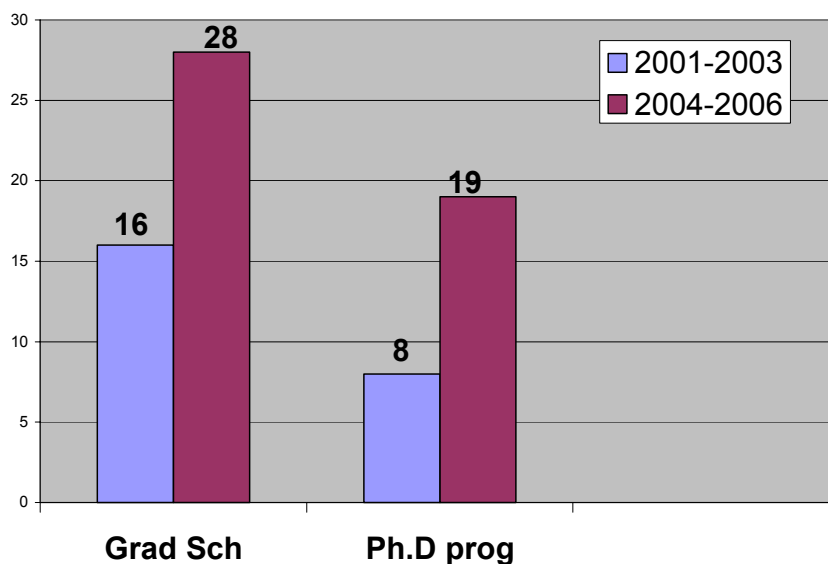
STEM GRADUATES ENTERING GRADUATE PROGRAMS SINCE 2001			
Name	Major/Year Graduate	University Affiliate	Degree Program
Lee, Chris	Biology/Sp'01	UCO/Forensics/Edmond, Ok	MS
James, Alfred	Comp-Sci/Sp'01	OSU/Comp-Sci/Stillwater, OK	MS
Guy, Shalonda	Ag-Sci/Sp'01	Univ of Ark/Soil Sc/Fayetteville, Ar.	MS
Graham, Dianca	Biology/Sp' 01	OUHSC/GPIBS Program, OKC, OK	PhD
Harris, Terraina	Biology/Sp' 02	OUHSC/School of Public Health, OKC, OK	MS
Pinkney, LaTanya	Biology/Sp' 02	LU School of Physical Therapy, Langston, OK	DPT
Taite, Ashley	Biology/Sp' 02	LU School of Physical Therapy, Langston, OK	DPT
Hornbeak, Daquanat	Chemistry/Sp' 02	Howard University School of Dentistry, Wash, DC	DDS
Mayes, Brandon	Biology/Sp' 02	LU, School of Physical Therapy, Langston, OK	DPT
Trotter, Barry	Chemistry/Sp 02	Johns Hopkins, Baltimore, MD.	MS
Hughes, Curtrina	Biology/Sp' 03	KUMC, Kansas City, KS	MD
Matthews, Camelia	Biology/Sp' 03	Touro University of San Francisco, San Francisco, CA	PA./MPH.
Denton, Kristen	Biology/Sp' 03	OSU, School of Veterinarian Medicine, Stillwater, OK	DVM
Depona, Theophilus	Ag-Sci/Sp' 03	University of Arizona/Computation Biology, Phoenix, AZ	PhD
Hutcherson, Tiffany	Chemistry/Sp 03	University of Nebraska Pharmacy Program	PharmD
Johnson, Leander	Comp-Sci/Sp 03	Oklahoma State Univ, Stillwater, OK	PhD
Daniels, Antawan	Chemistry/Sp 04	Univ. of Tenn after Post-Back at Univ of Ok. LU 03	PhD
Patterson, James	Biology/Sp' 04	OUHSC/GPIBS Program (accepted)	PhD
Carroll, Deidre	Chemistry/Sp'04	University of Tennessee, Dept. of Chemistry, Nashville,	PhD
Ross, DeAndre	Biology/Sp' 04	Duke University Biomedical Sciences Program- Postbac.,	PhD
Terrell, Nina	Biology/Sp' 04	LU, School of Physical Therapy, Langston, OK	DPT
Hill, Thomas	Biology/Sp' 04	LU, School of Physical Therapy, Langston, OK	DPT
Barrett, Courtney	Biology/Sp' 04	OUHSC, School of Dentistry, OKC, OK	DDS
*Peal, Lila	Biology/Sp' 04	OSU, Dept. of Biochemistry, Stillwater, OK	PhD
*Harris, Victor	Biology/Sp' 04	University of Alabama, Nutritional Physiology, Huntsville,	PhD
Davis, Mark III	Ag-Sci/Sp' 04	University of South Dakota, School of Law, Bismarck, SD	JD
*Singleton, Nicole	Ag-Sci/Sp,04	Toxicology/ Oklahoma State University	Ph.D.
Miller, Nichole	Biology/Sp' 05	UNT HSC, Fort Worth, TX	PhD
*Sherman, Adrian	Ag-Sci/Sp' 05	OSU, Stillwater, OK	PhD
Buford, Joe	Ag-Sci/Sp' 05	Kansas State University, Manhattan, KS (Spring '06	PhD
Doss, Argenia	Biology/Sp' 05	KUMC, Interdisciplinary Biomed. Sci. Program, Kansas	PhD
Morris, Tiffany	Biology/Sp' 05	LU, School of Physical Therapy, Langston, OK	DPT
Street, Theran	Biology/Sp' 05	LU, School of Physical Therapy, Langston, OK	DPT
Booker, Sheree	Biology/Sp' 05	Hampton University, School of Pharmacy, Hampton, VA	PharmD
Ekpo, Joy	Biology/Sp' 05	OSU DO School of Medicine, Tulsa, OK	DO/Ph.D
Burdex, Ashley	Biology/Sp' 06	OSU DO School of Medicine, Tulsa, OK	DO
Carpenter, Christal	Biology/Sp' 06	Kansas State University	Ms/Ph.D.
*Rowland, Maraquita	Biology/Sp' 06	Oklahoma University, Norman, Ok	Ph.D.
*Harvey, Desmond	Chemistry/Sp' 06	Oklahoma University, Norman, Ok	Ph.D.
*Harris, Steven	Chemistry/Sp' 06	Oklahoma University, Norman, Ok	Ph.D.
*Wallace, T'Aire	Biology/Chemistry/	Biology/ Ph.D Program/ Univ. of Oklahoma, Post-Back :	Ph.D
Harrison, Jamie	Chemistry/Sp' 06	University of Alabama, Biochemistry, Huntsville, AL	Ph.D
Brisson, Shanequah	Comp-Sci/Sp' 06	Computer Science/OCU Univ.	MS/Ph.D
William, Damon	Biology/Sp' 06	LU School of Physical Therapy, Langston, OK	DPT

*These eight (8) students received the NSF-LSAMP Bridge-To-The-Doctorate Scholarship to attend a Ph.D. Program

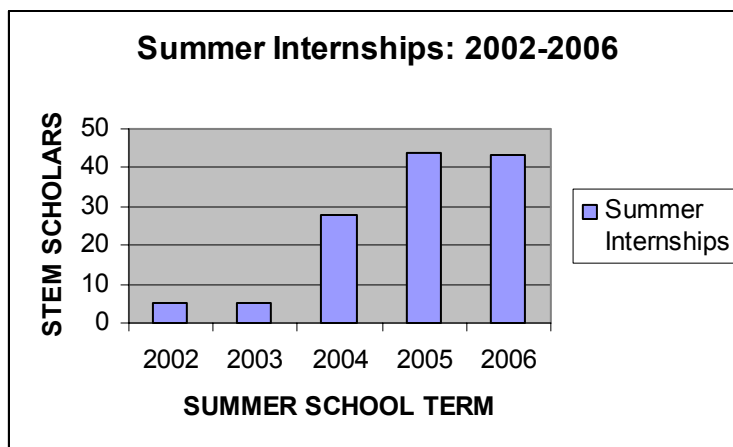
EXHIBIT VII-a

PRE/POST LINC STATISTICS: 1) STEM GRADS ENTERING GRADUATE SCHOOL, 2) GRADS ENTERING PH.D PROGRAMS, & 3) SUMMER INTERNSHIPS

STEM Grads Entering Graduate School & Number in Ph. D. Programs



During the three years (2001-2003) before the LU LINC program was established there were 16 LU STEM students entering advanced degree programs after graduation; eight (8) were MS/PhD programs. During the 2004-2006 period, after LINC's inauguration, twenty eight (28) LU STEM students entered advanced degree programs. Nineteen (19) are MS/PhD programs. This reflects a 75%, and well over 130% increase respectively for these categories.



PRE/POST LINC STATISTICS: SUMMER INTERNSHIPS