

National Science Foundation

**Louis Stokes
Alliances for Minority Participation**

LSAMP

Celebrating Achievement Through



Increasing Opportunities

Features

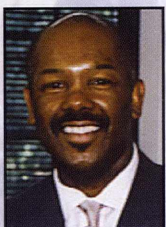
***Increasing Research Opportunities for Native Americans
and Pacific Islander Undergraduates***

***Faculty and Student Teams on the FaST track at
Argonne National Laboratory***

2006



Dr. Arden L. Bement, Jr.
Director
 National Science Foundation
 (703) 292-8000
 abement@nsf.gov



Dr. Donald Thompson
Acting Assistant Director
 Directorate for Education and
 Human Resources
 (703) 292-8600
 dthompson@nsf.gov



Dr. Victor Santiago
Acting Division Director
 Division of Human Resource Development
 (703) 292-4673
 vsantiag@nsf.gov



Dr. A. James Hicks
Program Director
 Louis Stokes Alliance for Minority Participation
 (703) 292-4668
 ahicks@nsf.gov

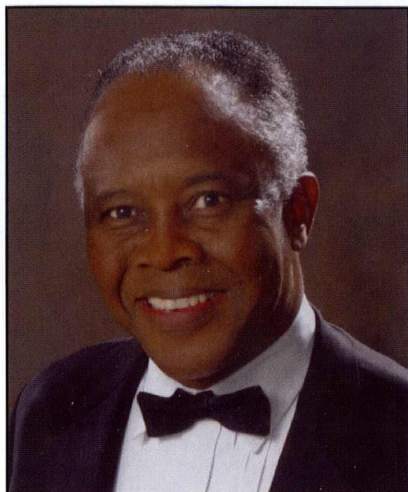
- 1 LSAMP Students Engage in International Research
- 2 Kathie L. Olsen Becomes Deputy Director of the National Science Foundation
Victor Santiago Appointed Acting Division Director for EHR
- 3 UREP/STEM Bachelor Degrees Reports
- 4 In Memoriam – Colonel C. McRae
LSAMP Students Receiving STEM Ph.D. Degrees
- 8 Bridge to the Doctorate Summary Report
- 9 LSAMP Community Congratulates Art Hicks
- 10 Increasing Research Opportunities for Native Americans and Pacific Islander
Undergraduates
- 12 Faculty and Student Teams on the FaST track at Argonne National Laboratory
- 17 Alliance Accomplishments and Highlights
- 23 LSAMP Student News
- 27 Conferences and Special Events
- 40 LSAMP Award History

LSAMP Profiles

- 42 Alabama
- 43 All Nations
- 44 California
- 45 California State University
- 46 Colorado
- 47 Florida-Georgia
- 48 Georgia
- 49 Houston
- 50 Illinois
- 51 Indiana
- 52 Louisiana
- 53 Michigan
- 54 Mid-Eastern
- 55 Mississippi
- 56 Missouri
- 57 New Mexico
- 58 New York City
- 59 North Carolina
- 60 Northeast
- 61 Ohio
- 62 Oklahoma
- 63 Pacific Alliance
- 64 Peach State
- 65 Philadelphia
- 66 Puerto Rico
- 67 South Carolina
- 68 State University of New York
- 69 Tennessee
- 70 Texas
- 71 University of Texas System
- 72 University System of Maryland
- 73 Washington/Baltimore/Hampton Roads
- 74 Western Alliance to Expand Student Opportunities
- 75 Wisconsin
- 76 LSAMP Directory

LSAMP STUDENTS ENGAGE IN INTERNATIONAL RESEARCH!

*A. James Hicks, Ph.D.
LSAMP Program Director*



Dr. A. James Hicks

Since the publication of the last magazine in the spring of 2005, the LSAMP Program has experienced some important programmatic developments congruent with the theme, "Celebrating Achievement through Increasing Opportunities." Two articles featured in this 2006 edition of the LSAMP Magazine summarize and highlight achievements of program students both in domestic and international laboratories. In the latter case, this marks the very first experience and extension, of LSAMP students, into an international setting. We are particularly inspired because fourteen talented Native Americans and Pacific Islander undergraduates led the way. Our vision is to continue exposing a larger number of students to such opportunities, globally.

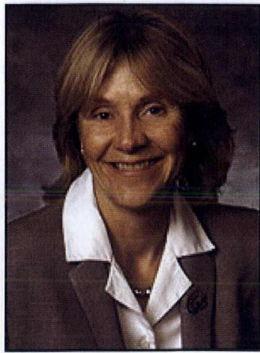
A second significant development is the production of the expanded executive summary of the three-year external evaluation of the LSAMP Program. The original two-page executive summary has now been expanded to 31 pages, including, charts, graphs, diagrams and theoretical models extracted from comprehensive and full evaluation. Also, a comparison of LSAMP science, technology, engineering and mathematics (STEM) graduates and those from STEM graduates nationally, is provided in the larger summary. The larger summary with conclusions and recommendations will, also, be widely disseminated.

Greater than 500 Bridge to Doctorate (BD) students continue stellar performances in graduate sites, across America! You are referred to the separate LSAMP publication focused on this subject.

With the addition of the three new alliances (Michigan, Peach State, and Wisconsin), in 2005, the national LSAMP portfolio now totals 34 alliance projects. In accordance with recommendations by the Urban Institute (UI) in its detailed and thorough evaluation of the LSAMP Program, the portfolio is likely to expand into other regions of the nation.

LSAMP is poised to continue providing talented, enthusiastic, well-educated and internationally competent individuals for America's future workforce. The 2006 LSAMP Magazine provides you an opportunity to review two feature articles, selected highlights and accomplishments of students and faculty, the broad range of alliances, contact directory, and the map. Also, this edition acknowledges the early, and long association of Chris McRae with the LSAMP Program. We shall miss him!

KATHIE L. OLSEN BECOMES DEPUTY DIRECTOR OF THE NATIONAL SCIENCE FOUNDATION



Dr. Kathie L. Olsen

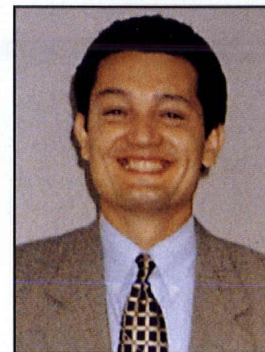
September 12, 2005 - Dr. Kathie L. Olsen has become the 11th deputy director of the National Science Foundation (NSF). Nominated by the president and confirmed by the Senate, Olsen was sworn into the post by NSF Director Dr. Arden L. Bement, Jr. on August 9, 2005. In addition to general responsibilities as deputy director, Olsen will serve as chief operating officer managing the day-to-day activities of the Foundation. One of her first responsibilities will be to lead the updating of the Foundation's strategic plan as required every three years by the Government Performance and Results Act of 1993. Olsen joins NSF from the Office of Science and Technology Policy (OSTP) in the Executive Office of the President, where she was the associate director and deputy director for science and responsible for overseeing science and education policy including physical sciences, life sciences, environmental science, and behavioral and social sciences. Prior to the OSTP post, Olsen served as chief scientist at NASA and acting associate administrator for their new Enterprise in Biological and Physical Research.

“Dr. Olsen brings a breadth of experience in a number of research, policy and administrative areas that make her well suited to her duties at NSF,” Bement said. “Most importantly, she’s an NSF veteran who has hit the ground running.”

In the 1990’s, she was the senior staff associate for the Science and Technology Centers in the NSF Office of Integrative Activities and served for two years as acting deputy director for the Division of Integrative Biology and Neuroscience. She gained legislative experience as a Brookings Institute Legislative Fellow and as a staff member to Senator Conrad Burns of Montana. Olsen received her B.S. degree with honors from Chatham College, Pittsburgh, Pa., majoring in both biology and psychology and was elected to Phi Beta Kappa. She earned her Ph.D. degree in neuroscience at the University of California, Irvine. She was a postdoctoral fellow in the Department of Neuroscience at Children’s Hospital of Harvard Medical School. Subsequently at SUNY-Stony Brook, she was both a research scientist at Long Island Research Institute and assistant professor in the Department of Psychiatry and Behavioral Science at the medical school. Her research on neural and genetic mechanisms underlying development and expression of behavior was supported by the National Institutes of Health. Olsen replaces Joseph Bordogna, who resigned in June.

VICTOR SANTIAGO APPOINTED ACTING DIVISION DIRECTOR FOR HRD

Dr. Victor Santiago is acting director of the National Science Foundation’s Division of Human Resource Development (HRD). HRD serves as a focal point for NSF’s agency-wide commitment to enhancing the quality and excellence of science, technology, engineering, and mathematics (STEM) education and research by broadening participation in STEM fields. HRD programs (1) diversify the human resource and institutional base on which the nation’s performance in science, technology, engineering, and mathematics depends, (2) increase research and education opportunities for faculty – women, minorities, and persons with disabilities, and (3) increase the involvement of faculty from minority-serving institutions in the nation’s STEM enterprise. Prior to his appointment at the National Science Foundation, Dr. Santiago was an associate professor of Earth Science at Inter American University of Puerto Rico. There, he also held several administrative positions including dean of Science and Technology. Dr. Santiago earned a Ph.D. at the University of Michigan.



Dr. Victor Santiago

UREP/STEM, BACHELOR DEGREES REPORT

Population: All Institutions and Alliances
 Period: Academic Year 2004-2005/Reporting Year 2005

Disciplines by Race/Ethnicity						
Discipline	Black or African American	Hispanic or Latino	Native American	Native Hawaiian or Pacific Islander	More Than One Race Reported - Minority	Total
Agricultural Science	310	386	84	25	8	813
Chemistry	468	526	44	15	2	1055
Computer Science	2686	1642	162	182	15	4687
Engineering	3007	3922	364	160	14	7467
Geosciences	50	135	13	7	0	205
Life/Biological Sciences	3457	4042	435	292	25	8251
Mathematics	618	612	112	45	3	1390
Physics/Astronomy	96	299	19	5	1	420
Environmental Science	92	194	58	8	2	354
Total	10784	11758	1291	739	70	24642

Gender by Race/Ethnicity - All Disciplines						
Gender	Black or African American	Hispanic or Latino	Native American	Native Hawaiian or Pacific Islander	More Than One Race Reported - Minority	Total
Male	5195	6462	718	374	38	12787
Female	5556	5265	572	365	32	11790
Not Reported or Unknown	33	31	1	0	0	65
Total	10784	11758	1291	739	70	24642

Notes:

The Native American category includes American Indians and Alaska Natives.

The More Than One Race Reported - Minority category comprises individuals reporting a) two or more race/ethnicity categories and b) one or more of the reported categories includes: American Indian, Alaska Native, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander.

Definitions:

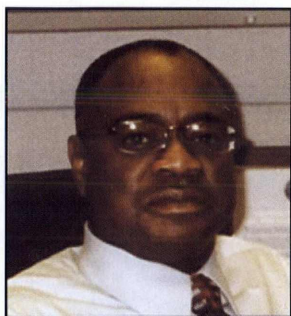
All STEM - All students studying science, technology, engineering and mathematics (STEM)

All UREP- Underrepresented minority students across all disciplines

UREP STEM- Underrepresented minority students working/studying in STEM fields

Printed: Jan 10, 2006

In Memoriam



Colonel Christopher L. McRae was with NSF more than 20 years and has been a friend to many people. Many made his acquaintance during the HRD JAM this past spring when Chris led and guided that constructive meeting. Some may have known Chris during the 20-plus years he devoted to NSF and of his efforts to diversify the STEM workforce and to cause the myriad administrative support programs to function well. For as many years and at an earlier time, Colonel McRae served our country in the U.S. Marines. He was a proud marine – Chris was someone that folks liked and respected, someone whose unattended office they were happy to maintain, reserve and protect while he was deployed for 2 1/2 years. He was always an easy, earnest, “can-do,” a “did-do” brother and “lets-do” professional. He liked outcomes, positive purposeful outcomes, which he was always ready to conceive and plan. Chris leaves behind his wife, Dawn McRae; sons, Christopher McCormick and Derrick McRae; daughter, Crystal McRae and stepdaughter, Alexa DeWitt. When the history of HRD is written, Chris McRae and successful opportunities for thousands of youngsters of color will surely appear in the same sentences.

LSAMP STUDENTS RECEIVING STEM PH.D. DEGREES

September 1, 2004 – August 31, 2005

Alabama (23)

1. Idris Adbi, Ph.D., Plant/Soil Sciences, 2005, Alabama A&M University
2. Mekonen Baysiie, Ph.D., Applied Physics, 2005, Alabama A&M University
3. William Bennett, Ph.D., Pathology, 2005, University of Alabama at Birmingham (UAB)
4. Edgar R. Blevins, Ph.D., Industrial & Systems Eng., 2005, University of Alabama in Huntsville
5. Chastity Bradford, Ph.D., Cellular & Molecular Physiology, 2005, UAB
6. Debra L. Byrd, Ph.D., Food Science, 2005, Alabama A&M University
7. Michael L. Curry, Ph.D., Chemistry, 2005, University of Alabama
8. Flavia Cunha Duncan, Ph.D., Metallurgical/Materials Engineering, 2005, University of Alabama
9. Melanie Sheree Eddins, Ph.D., Mathematics, 2005, University of Alabama
10. Tesfaye Gabre, Ph.D., Applied Physics, 2005, Alabama A&M University
11. Sabyasachi Ganguli, Ph.D., Materials Science, 2005, Tuskegee University
12. Davyda Hammond, Ph.D., Environmental Health Engineering, 2005, UAB
13. Crystal Johnson, Ph.D., Microbiology, 2005, UAB
14. Long Le, Ph.D., Pathology, 2005, UAB
15. Doug Liu, Ph.D., Electrical Engineering, 2005, University of Alabama
16. Kayvon Modjarrad, Ph.D., Epidemiology, 2005, UAB
17. Sheetal Purohit, Ph.D., Microbiology, 2005, UAB
18. Latisha Salaam, Ph.D., Biomedical Engineering, 2005, UAB
19. Carolyn D. Simmons, Ph.D., Mathematics, 2005, University of Alabama
20. Tommie Thompson, Ph.D., Applied Physics, 2005, Alabama A&M University

21. Torry Tucker, Ph.D., Cellular & Molecular Physiology, 2005, UAB
22. Vanessa Williams, Ph.D., Applied Physics, 2005, Alabama A&M University
23. Sidat Yaffa, Ph.D., Plant/Soil Sciences, 2005, Alabama A&M University

California State University (1)

1. Michael D. Davis, Ph.D., Biochemistry and Molecular Genetics, May 2005, University of Virginia

Colorado (12)

1. Bernie Hernandez, Chemistry, Fall 2004, CSU
2. Jennifer Malone, Cell and Molecular Biology, Fall 2004, CSU
3. Max Lau Teehee, Microbiology, Fall 2004, CSU
4. Damon Perez, Environmental Health, Spring 2005, CSU
5. Kristy Duran, Environmental Biology, Fall 2004, UC-B
6. Christina Rumbaitis del Rio, Environmental Biology, Fall 2004, UC-B
7. Oge Arum, Molecular, Cellular, & Developmental Biology, Spring 2005, UC-B
8. Teresa Segura, Atmospheric & Oceanic Sciences, Spring 2005, UC-B
9. Miguel Arias, Civil & Architectural Engineering, Summer 2005, UC-B
10. Tomas Carlo-Joglar, Environmental Biology, Summer 2005, UC-B
11. Brandy Gamblin, Chemistry & Biochemistry, Summer 2005, UC-B
12. Moriba Jah, Aerospace Engineering Sciences, Summer 2005, UC-B

*Key (Institutions): CSU = Colorado State University UC-B = University of Colorado – Boulder

Florida-Georgia (12)

1. Michael Sadeghinia, Geotechnical Engineering, 2004, FIU
2. Javier Gonzalez, Structural Engineering, 2004, FIU
3. Elio Espino, Transportation Engineering, 2004, FIU
4. Edward Lule, Computer Engineering, Electrical Engineering, 2004, FIU
5. Irinia Fernandez, Cell Biology, 2004, FIU
6. Li Guangyi, Collaborative Engineering, Industrial Systems Engineering, 2004, FIU
7. Stellanios Drakatos, Optical Networks, Electrical Engineering, 2005, FIU
8. Jennifer Porrello, Electrical Engineering, 2005, FIU
9. Tramone Curry, Engineering, 2005, FAMU
10. LeNitra Clayton, Chemistry, 2005, USF
11. Anthony Adueya, Chemistry, 2005, Purdue University
12. Mark Weatherspoon, Engineering, 2004, FSU

Illinois (1)

1. Mekita Davis, Electrical Engineering, 2004, Georgia Institute of Technology

Louisiana (5)

1. Jeremiah Abiade, Physics, 2004, University of Florida at Gainesville
2. Robert Crosby, Physics, 2005, University of Florida at Gainesville
3. Wendell Peter Griffith, Chemistry, 2005, University of Massachusetts-Amherst

4. Conrad Jones, Physical Chemistry, 2005, University of Iowa
5. Rafael Luna, Molecular Biology, 2004, Louisiana State University

Mississippi (6)

1. Judge Brown, Cellular Biology, 2005, Jackson State University
2. Terance Dubreus, Computational Engineering, 2005, University of Southern Mississippi
3. LaTina Gambles, Veterinary Medicine, 2005, Tuskegee University
4. Benita Myles, Pharmacology, 2005, University of Mississippi
5. Antwon Robinson, M.D., Ph.D., 2005, University of TN Memphis
6. Willa Williams, Ph.D. ABD, 2004, Louisiana State University

Missouri (1)

1. Leroy R. Cox, Engineering Management, 2005, UMR

New Mexico (3)

1. David Garcia-Ibilcieta, Ph.D., Molecular Biology, New Mexico State University
2. Lorenzo Aleman, Ph.D., Molecular Biology, New Mexico State University
3. Melanie Moses, Ph.D., Biology, University of New Mexico

Philadelphia (2)

1. Alfred Haynes, Ph.D., Medicinal Chemistry, 2004, Florida A&M University
2. Inneke Jackson, Ph.D., Pharmacology, 2005, Florida A&M University

Puerto Rico (4)

1. Ruth G. Leon, Chemistry, 2005, UPR-Rio Piedras
2. Gretchen Y. Lopez, Biology, 2005, UPR-Rio Piedras
3. Jose Mojica Perez, Biology, 2005, UPR-Rio Piedras
4. Ileana Soto Reyes, Biology, 2005, UPR-Rio Piedras

South Carolina (1)

1. Sheriase Sanders, Ph.D., Food Microbiology, 2005, University of Georgia

State University of New York (1)

1. Niquiche Sangster, Biology, 2004, University at Albany

Tennessee (5)

1. Cordelia M. Brown, Electrical Engineering, 2005, Vanderbilt University
2. Jeffrey R. Johnson, Electrical Engineering, 2005, Vanderbilt University
3. Robert L. Palmer, Biomedical Engineering, 2005, Vanderbilt University
4. Corey D. Jones, Biology, 2004, Tennessee State University
5. Roderick L. Rolle, Biology, 2004, Tennessee State University

University System of Maryland (4)

1. Nicole Dingle, Chemical Engineering, 2005, Purdue University
2. Olugbenga Famodu, Materials Science and Engineering, 2005, University of Maryland, College Park
3. Curtis Taylor, Mechanical Engineering, 2005, University of Arkansas
4. Daniel Klein, Biochemistry, 2005, Yale University

Texas (2)

1. Migvia Del C Vidal, Chemical Engineering, August 2005, Texas A&M University
2. Juan Carlos Juarez, Electrical Engineering, August 2005, Texas A&M University

Washington/Baltimore/Hampton Roads (34)

1. Abdool, Karen L., Microbiology, 2005, Howard University
2. Allard, Joanne, S., Physiology and Biophysics, 2005, Howard University
3. Ashley, Karen Marie, Chemistry, 2005, Howard University
4. Bi, Shundong, Anatomy, 2005, Howard University
5. Blackwell, Krista Natasha, Physiology and Biophysics, 2005, Howard University
6. Capers, Tanya Tamika, Electrical Engineering, 2005, Morgan State University
7. Che, Magnus Mutah, Biochemistry, 2005, Howard University
8. Cummings, Simone Sumner, Genetics, 2005, Howard University
9. Dai, Donghua, Chemistry, 2005, Howard University
10. Davis, Jillian Heather, Pharmacology, 2005, Howard University
11. Dixon, Michael Owen, Nutritional Sciences, 2005, Howard University
12. Dobbins, Aleisha T., Biochemistry, 2005, Howard University
13. Duan, Xiaodong, Mechanical Engineering, Howard University
14. Farrier, Sandra Nicole, Mathematics, 2005, Howard University
15. Fryar, Elizabeth Beulah, Pharmacology, 2005, Howard University
16. Goodson, Lisa Marie, Nutritional Sciences, 2005, Howard University
17. Hayslett, Renee Louise, Pharmacology, 2005, Howard University
18. Hodges, Marcus G., Biology, 2005, Howard University
19. Johnson, Carey M., Electrical Engineering, 2005, Morgan State University
20. Johnson-Horne, Kisha LaVon, Electrical Engineering, 2005, Morgan State University
21. Kamendi, Harriet W., Pharmacology, 2005, Howard University
22. Law, Michelle Patrice, Microbiology, 2005, Howard University
23. Morris, Gay Sherrel, Biology, 2005, Howard University
24. Nyein, Ei., Physics, 2005, Hampton University
25. Rust, Cheryl F., Physiology and Biophysics, 2005, Howard University
26. Shibeshi, Shewaferaw Solomon, Physics, 2005, Howard University
27. Smith, Aubrey A., Biochemistry, 2005, Howard University
28. Syafrida, Mathematics, 2005, Howard University
29. Taliaferro-Smith, LaTonia D., Biochemistry, 2005, Howard University
30. Tankersley, Barbara Ann, Mathematics, 2005, Howard University
31. Toppin, Veronica A.L., Physiology and Biophysics, 2005, Howard University
32. Varghese, Mathew Shiny, Pharmacology, 2005, Howard University
33. Washington, Kareem N., Genetics, 2005, Howard University
34. Weech, Michelle C., Biochemistry, 2005, Howard University

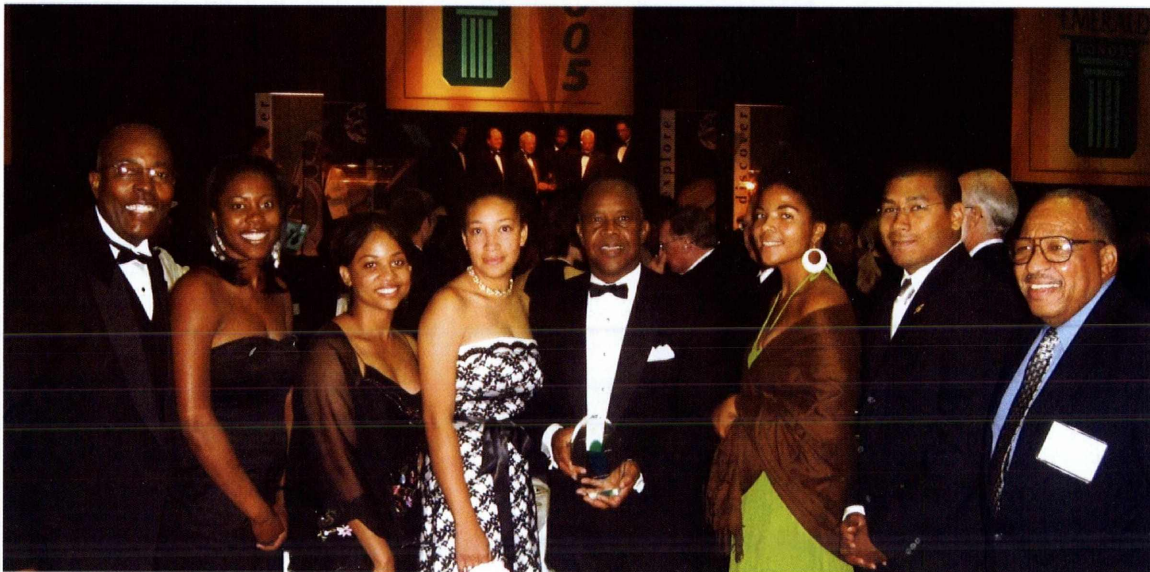
BRIDGE TO THE DOCTORATE SUMMARY

LSAMP	BD Site	Cohort	LS	Ph. S	Egr	Math	CIS	Total	Grand Total
Alabama	Auburn University	C 1	2	4	2	2	0	10	37
	University of Alabama in Huntsville	C 2	4	3	4	1	3	15	
	University of Alabama at Birmingham	C 3	1	2	5	1	3	12	
California	University of California, Los Angeles	C 1	2	6	1	0	0	9	33
	University of California-Irvine	C 2	4	2	4	0	2	12	
	University of California-San Diego	C 3	6	2	3	0	1	12	
California State University	San Francisco State University	C 1	11	1	1	1	1	15	40
	California State University Los Angeles	C 2, C 3	9	6	4	4	2	25	
Florida-Georgia	Florida State University	C 1	3	2	3	1	1	10	34
	University of South Florida	C 2, C 3	10	4	8	2	0	24	
Illinois	Southern Illinois University at Carbondale	C 2, C 3	12	7	6	0	1	26	26
Louisiana	Louisiana State University	C 3	3	5	4	0	0	12	12
Mississippi	Jackson State University	A	15	11	3	1	4	34	34
New Mexico	New Mexico State University	A	1	7	24	2	0	34	34
New York	The City University of New York	A	11	3	14	2	8	38	38
North Carolina	North Carolina A&T State University	C 1	0	2	7	0	1	10	34
	The University of North Carolina at Charlotte	C 2	0	3	6	0	3	12	
	North Carolina Central University	C 3	5	6	0	0	1	12	
Oklahoma	Oklahoma State University	C 2	8	1	3	0	0	12	24
	The University of Oklahoma	C 3	2	3	5	1	1	12	
Philadelphia	The University of Delaware	C 1	2	2	6	0	0	10	34
	New Jersey Institute of Technology	C 2	1	0	8	0	3	12	
	Drexel University	C 3	4	0	8	0	0	12	
Puerto Rico	University of Puerto Rico at Rio Piedras	C 1, C 3	11	11	0	0	0	22	34
	University of Puerto Rico-Mayaguez	C 2	3	6	3	0	0	12	
Texas	Texas A&M University	C 1, C 2	6	1	13	1	1	22	34
	Prairie View A&M University	C 3	0	0	9	2	1	12	
University of Texas System	University of Texas, El Paso	C 1, C 3	4	4	10	0	4	22	34
	University of Texas-Pan American	C 2	3	0	3	5	1	12	
University System of Maryland	University of Maryland Baltimore County	C 3	0	1	7	0	3	11	11
Washington-Baltimore-H R	Howard University	C 2, C 3	15	3	1	5	1	25	25
WAESO	Arizona State University	A	5	1	8	14	0	28	28
Total			163	109	183	45	46	546	546
KEY									

LSAMP COMMUNITY CONGRATULATES ART HICKS

The LSAMP principal investigators, managers, directors, staff and students congratulate Dr. Art Hicks on the receipt of three significant awards during the 2004-2005 academic year. These include the following:

1. **The 2005 Emerald Honors Award** (September 17, 2005) - The Emerald Honors are the premier awards for Blacks, Hispanics, Asian Americans, and Native Americans working in the research sciences. In addition to being recognized at the ceremony, this year's award recipients will also be featured in Science Spectrum magazine. "Multicultural communities are where the action is in finding, preparing, and recruiting a new generation of science researchers in the U.S.," says Dr. Tyrone D. Taborn, editor-in-chief of Science Spectrum magazine and CEO of Career Communications Group, producers of the Minorities in Research Science conference. Dr. Hicks was selected for the award for stellar career achievement in the advancement of science, technology, engineering and mathematics (STEM) education and research opportunities to underrepresented minorities and for his work at NSF in significantly increasing the number of undergraduate STEM degrees awarded minorities. Considered the grand finale of the three-day Minorities in Research Science conference, the prestigious Emerald Honors awards ceremony and gala was held on Saturday, September 17, 2005 at the Baltimore Convention Center.



Dr. Hicks (center) with Howard University Bridge to the Doctorate Students

2. **Torch Bearer Award** – Dr. Art Hicks was Honored Special Guest and recipient of the Torch Bearer Award at the National Symposium on Student Retention. He was recognized for work as the National Science Foundation Director of the Louis Stokes Alliances for Minority Participation, an initiative that has led to significant increases in the retention and graduation of minority STEM students and as former Dean of the College of Arts and Sciences at North Carolina A&T University where he had more than 20 years of successful experience in administration, proposal reviews, and research evaluation.

3. **Tougaloo College Hall of Fame** – The Tougaloo College National Alumni Association inducted Dr. Art Hicks into its Hall of Fame on October 14, 2005. The Hall of Fame Ceremony and Banquet publicly honors and acknowledges the distinguished achievements of outstanding Tougaloo Alumni. Selection criteria are based on the individuals' significant and noteworthy achievements and success in their chosen field. Dr. Hick's career achievement in providing opportunities and advancement for underrepresented minorities in science education and research was crucial to his selection for this great honor.

INCREASING RESEARCH OPPORTUNITIES FOR NATIVE AMERICANS AND PACIFIC ISLANDER UNDERGRADUATES

Dr. Ethel Villalobos

The Organization for Tropical Studies (OTS) received a one-year grant to support a pilot program aimed at improving research skills of undergraduate students. Although the program is open to any student participating in LSAMP, the program targets students from Native American, Alaskan, Native Hawaiian and other Pacific Islander communities.

As a leader in the field of tropical ecology since 1963, OTS, a consortium of more than 60 domestic and international colleges and universities has trained some of the world's most renowned tropical ecologists. In 1999, OTS created what is now the OTS Minority Scholars Programs to address the dearth of minorities in the environmental and biological sciences. Since its inception, OTS has provided research opportunities to more than 82 minority students to participate in the undergraduate study abroad program. This new initiative further extends OTS' commitment to broadening participation of underrepresented groups in the sciences.

This five-week program, named NAPIRE (Native American, Pacific Islander Research Experience) was conceived as a multidisciplinary experience in which students were introduced to patterns and processes of tropical ecosystems, and met with members of local native communities to learn about conservation dilemmas in tropics. Combining the natural sciences with the human aspects of conservation created a program with strong appeal for minorities. ***"The program was interesting to me because it dealt with conservation issues, resource management, and it offered the opportunity to visit and interact with local communities"*** said Leilani Digmon, from the University of Hawaii at Manoa, about her decision to apply to the program.

During the program, participants worked on group research projects under close supervision. The program staff consisted of seven professors with a



NAPIRE Students guiding their canoe during a visit to the Naso community in Panama.
Photo by Sarah Huber

wide range of scientific research interests and a strong commitment to teaching. Two of the professors were Latin American natives, four teach at minority serving institutions, and five have research projects in tropical regions.

The research topics developed during the program included water quality and environmental health, biodiversity, microhabitat selection by fresh water fish, ant-plant interactions, forest fragmentation, and bird ecology. The diversity of field projects allowed the participants to explore a variety of ecological concepts and field techniques. Participants gathered data in small research teams, which encouraged the exchange of ideas and cultural perspectives.

"The highlights of this program for me were a better understanding of ecological conservation, meeting other indigenous peoples and learning first hand about biodiversity" concluded Justin Parisien, an environmental major from Sitting Bull College, North Dakota.

While at Las Cruces Field Station, the participants learned basic field sampling and monitoring techniques, assessing

biological diversity in different habitats within the reserve. In addition, the program provided training and access to sophisticated field equipment, such as the YSI 600 Series Multi-parameter Probe, that records chemical and physical characteristics of water. Students such as Medley Lee, from Southwestern Indian Polytechnic Institute, showed great interest and aptitude in learning how to calibrate and record data using this valuable piece of equipment.

The interest and commitment to the scientific research they were conducting at the station was enhanced through cultural exchange with the local communities as indicated by the impressions of Jade Ducheneaux, a first year student at Sitting Bull College: ***"When visiting the Boruca community in Costa Rica and learning about the problems associated with the dam being built on their land, I was quick to realize the same thing happened to my people, the Cheyenne River Sioux Tribe (Minneconju) people of South Dakota. The main difference is that the onset of this conflict is about sixty years later."***

In Panama the students visited the

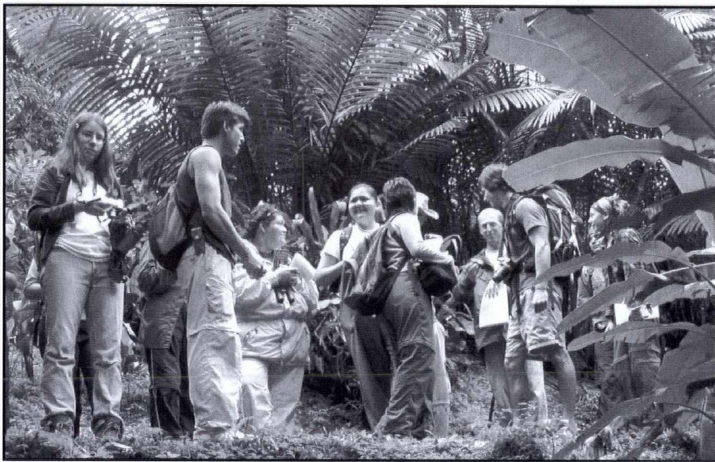
Naso community, a small tight knit group that lives in a forested area about four hours upstream from the nearest town. Traveling by dug out canoe to stay in the ecological reserve run by the Naso was an eye opening experience for all the participants. They traveled 4 or 5 per canoe, upstream in a fast moving river, dodging rocks and navigating rapids and shallow parts. At certain parts of the trip the students had to get out and help push the canoe or walk along the river's edge to catch up with their boat in a calmer stretch of the river.

work schedule. This kind of active long day was typical of the program schedule, which usually involved morning field work, afternoon data summary and evening lectures.

But perhaps nothing reflects better the nature of the program than the willingness of the participants to share their knowledge of traditional culture with each other and with visitors to the program. Participants spontaneously shared their native chants and dances with the native peoples, thus making this cultural exchange highly



Jennifer Digmon and Leilani labeling samples at Las Cruces. Photo by Eric DeCarlo



NAPIRE at Las Cruces. Photo by Eric DeCarlo

The remote jungle camp where the Eco-preserve is located was used as a training ground for Panamanian soldiers, and the students were amused by the camouflage décor of some the abandoned buildings and the paintings of snakes and machetes on some of the crumbling old walls. The guest buildings however, are new and built with attractive native materials such as palm roofing and bamboo walls. The evening meal of a delicious local fish was held by candle light under a thatched roof structure. The sense of accomplishment over the long trip was still in the air as we discussed the next day

significant for both the students and the local communities that hosted their visits.

"The cultural exchange was magical" said Jennifer Tadina, a student at the University of Hawaii, who led the students in impromptu hula dance presentations at the native communities. ***"This experience has truly motivated me to become more educated about the issues that many indigenous people face and use my knowledge in a way that will positively impact the world even if just in a small way."***

Participation in the program strengthened the students' research skills and

sparked their interest to continue in the sciences. For some students, like Dustyn Whitecrow Williams from Haskell University KA, the experience gained identifying and collecting specimens in Costa Rica helped him prepare for the botany course he is currently taking. ***"The wonderful thing is that a lot of the work I have to do for my "Plants of Kansas" class is similar to things we did in the program, that helps a lot, especially since I am taking 18 credits this semester"***.

Already, only a couple months after completing the program, three students are considering applying for a semester program through OTS and one has already enrolled in Spanish classes to prepare for this opportunity. Additionally, one student transferred this semester to a four year college to continue as science major. One student is planning to attend a semester exchange program at another university to evaluate his interest in environmental biology. Three students have

expressed interest in continuing to work with one of the faculty mentors in a comparative research project that would build on the results obtained in Costa Rica.

The integration of science with culture and conservation produced a well-rounded perspective on difficult issues such as conservation and protection of biodiversity. ***"Through my participation in this program I was able to see how interconnected the natural sciences are to cultural and environmental preservation and am more likely to study these areas in the future"*** said Leilani Digmon who is currently enrolled in Ethnobotany at the University of Hawaii.

Additional information on OTS and its programs can be found at www.ots.duke.edu.

Dr. Ethel Villalobos served as coordinator for the summer 2005 program. She is an associate researcher at the University of Hawaii at Manoa.

Faculty and Student Teams on the FaST track at Argonne National Laboratory

Dr. Linda Phaire-Washington, Argonne National Laboratory, Argonne IL 60439-4845

Executive Summary

The National Science Foundation (NSF) and the Department of Energy (DOE) implemented an inter-agency Cooperative Activity which provides fellowships for faculty and students¹. This report provides demographic, institutional, financial, and research information on one of the fellowship programs: the Faculty and Student Teams (FaST) Program at Argonne National Laboratory, since. A photographic montage of the teams is also provided.

Introduction

To support the continued leadership of the United States in science, technology, engineering, and mathematics (STEM) and the continued development of a highly competitive and diverse STEM workforce, the NSF and DOE are implementing an interagency Cooperative Activity that began in 2002¹. The NSF-DOE activity integrates collaboration between the agencies' programs to strengthen and expand intellectual capital and human resource development in STEM. The programs provide hands-on summer research opportunities for students and faculty in DOE national laboratories. Applications are online (www.sci.ed.science.doe.gov) for the: Science Undergraduate Laboratory Internships (SULI), Faculty and Student Teams (FaST), Community College Institute of Science and Technology (CCI), and Pre-Service Teacher (PST) programs. Since its inception, Argonne National Laboratory has hosted 126 FaST participants from institutions across the nation. Argonne's FaST program is the largest in the DOE national laboratory system. The program is administered by the Division of Educational Programs at the Laboratory. We are proud to report on the Laboratory's research focus, progress of FaST and also provide a photo montage of many participants.

Argonne National Laboratory

Argonne National Laboratory is one of the U.S. government's oldest and largest science and engineering research laboratories. The Laboratory conducts basic sciences research, operates national scientific facilities, enhances the nation's energy resources, and develops better ways to manage environmental problems and national security. The mission areas are organized into 5 major clusters, comprised of interdisciplinary teams of scientists².

Overview of the FaST Program

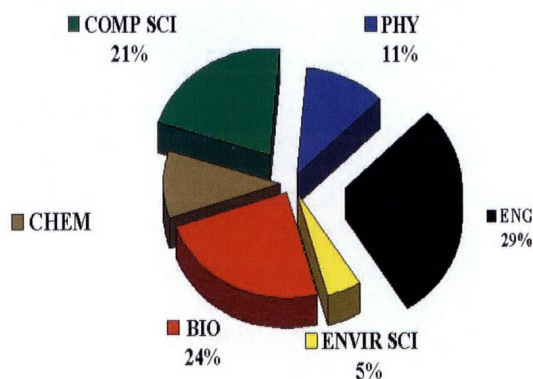
A major goal of FaST is to develop long-term inter-institutional collaboration between DOE laboratory scientists and faculty from institutions funded by the Education and Human Resources Directorate at NSF. Collaboration is based upon well defined, mutually beneficial research interests. The second goal is to provide research experiences to undergraduates which may have positive influences on the decisions of students to pursue graduate degrees in science

and engineering⁵⁻⁷. Manifestations of FaST's success may include: joint submissions of manuscripts and proposals to DOE and non-DOE sponsors, development of new courses, and development of a solid pipeline of students conducting research at DOE laboratories. At the end of the program, students are required to present their research findings at *Argonne's Annual FaST Student Symposium*. Student abstracts and selected full-length manuscripts are published annually in the DOE Journal of Undergraduate Research³.

Demographic Data

FaST participants conducted research in engineering, chemistry, computer sciences, biosciences, environmental sciences, energy technology, and physics. From 2002 through 2005, the majority of FaST participants conducted research in the engineering sciences (29%). The percentages of FaST participants conducting research in other STEM disciplines are: biosciences 24%, computer sciences 21%, chemistry 10%, physics 11%, and environmental sciences 5% (Figure 1).

Figure 1. STEM Disciplines Represented

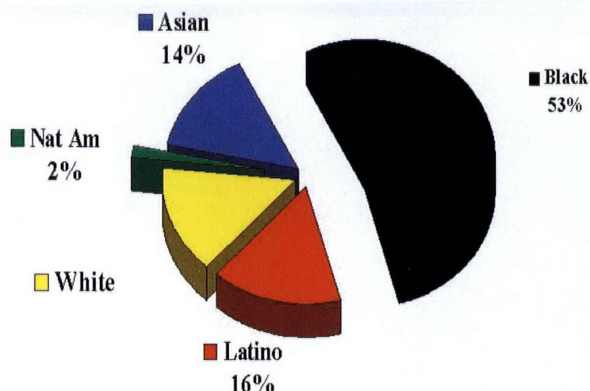


Although faculty are the major engine of FaST, the majority (68%) of the participants benefiting are students. It's encouraging that the percentage of females in FaST (43%) is close to their representation in the general population (~50%) and higher than their population in the STEM workforce⁴.

FaST is committed to developing human intellect in STEM fields. Ethnic groups historically underrepresented in STEM⁴, constitute the majority of FaST participants (71%). Disaggregated group data show that Blacks comprise 53%, Latinos-16% and Native Americans-2% of all participants. Other groups include Asians-14% and Whites-15% (Figure 2).

Future efforts will focus on enhancing Native-American and Hispanic participation.

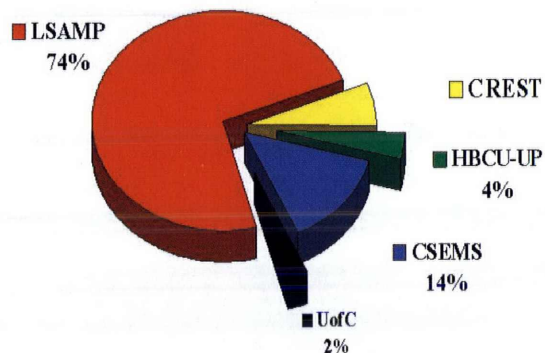
Figure 2. Ethnic Diversity of Participants



National Science Foundation Programmatic Support

Best practices have been identified for programs that successfully broaden participation in STEM at the undergraduate level. The Louis Stokes Alliance for Minority Participation (LSAMP) has that distinction⁵. Keys to LSAMP's success include research experiences, mentoring, alliance structure, caring faculty and staff, and a drop-in center⁷. LSAMP provided the lions share of financial support for FaST participants at the Laboratory (74%)(Figure 3).

Figure 3. NSF Programmatic Support



Other funds were provided by NSF's: Computer Science, Engineering and Mathematic Scholars (CSEMS) – 14%; Historically Black Colleges and Universities Undergraduate Program (HBCU-UP) – 4%; and Centers for Research Excellence in Science and Technology (CREST) – 6%. The University of Chicago (UofC), provided support for 2% of the participants (Figure 5). Statewide LSAMP Alliances participating in the FaST Program include Florida-Georgia, Illinois, Louisiana, North Carolina, University of Texas System, University of Puerto Rico, and the Washington-Baltimore-Hampton Roads. Due to FaST and through the efforts of Argonne's African American Black Club and the Division of Educational Programs, the Laboratory has developed formal Memoranda of Agreements with LSAMP

Alliances in Louisiana and Illinois. Future goals are to increase participation from institutions with CREST, HBCU-UP, as well as other NSF-awardees committed to broadening participation.

Participating Institutions

Over the 2002-2005 period Argonne hosted a variety of institutions including: Chicago State University (Chicago IL); Elizabeth City State University (Elizabeth City, NC); Florida State University (Tallahassee, FL); Governors State University (University Park, IL); Grambling State University (Grambling LA); Hampton University (Hampton, VA); Illinois Institute of Technology (Chicago, IL); Illinois State University (Normal, IL); Jackson State University (Jackson, MS); Kennedy King Community College; LaSierra University (Riverside, CA); North Carolina A&T University (Greensboro, NC); Pace University (New York City, NY); Southern University of New Orleans (New Orleans, LA); Southern University and A&M College (Baton Rouge, LA); Tuskegee University (Tuskegee, AL); University of Missouri – Rolla (Rolla, MO); University of Puerto Rico – Mayaguez (Mayaguez, PR); University of Texas - El Paso (El Paso, TX); University of Texas – Kingsville (Kingsville, TX); and the University of Texas Pan American (Edinburg, TX).

Successes

FaST faculty have submitted research and educational infrastructure proposals, requesting approximately \$5.7 million in funds; nearly \$1 million was awarded. Past FaST faculty fellows from Jackson State University (Dr. Barbara Wilson) and Southern University of New Orleans (Dr. Shirley Scott-Williams) are currently conducting sabbatical research at the Laboratory.

Conclusions

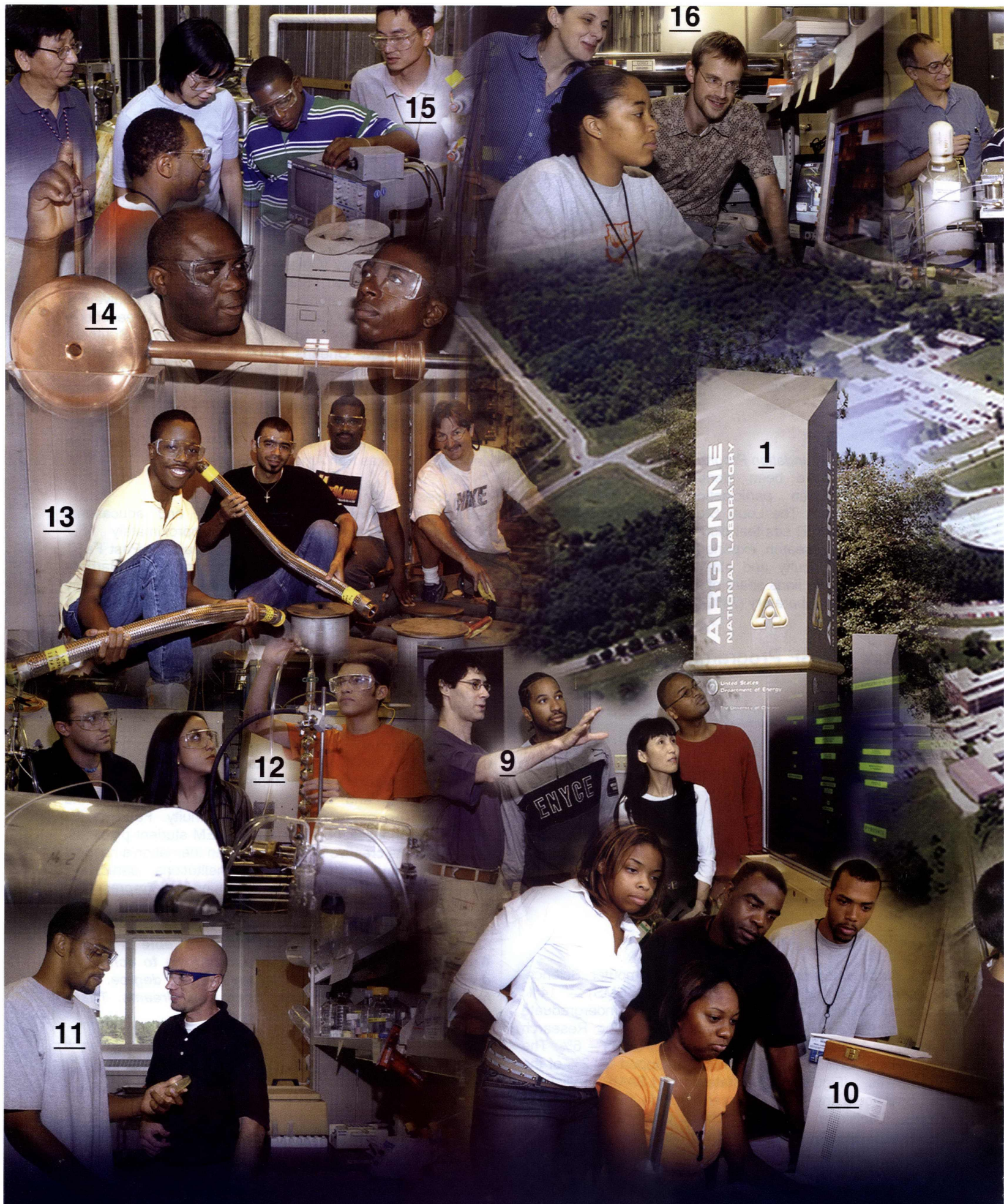
For decades, the United States has excelled in building and sustaining institutions of higher education that attract science and engineering talent from all over the world. The Nation has done less well in encouraging and developing the mostly untapped potential of historically underrepresented groups in STEM⁵. The FaST program taps this potential. FaST contributes towards the development of intellect in STEM utilizing faculty and students as teams from the same institution. The approach provides continuity. FaST builds inter-institutional collaboration, solid STEM student pipelines, and represents creative synergy between the nation's national laboratories and higher education institutions, particularly those serving large populations of groups underrepresented in STEM.

"Thank you for the experiences that I was able to have at Argonne. The FaST fellowship allowed me to achieve a dream of going on to complete my Masters degree. FaST has opened doors that were once only dreams. Thank you for all your effort and hard work".
Micah Baquera, MS Candidate, UTEP

Figure 4: Digital Montage of FaST teams at Argonne National Laboratory, Summer 2004. The institutions and research projects are highlighted.

Description of numbered photo insets

1: Aerial view of Argonne National Laboratory. The Laboratory occupies a serene wooden site spanning 1500 acres.



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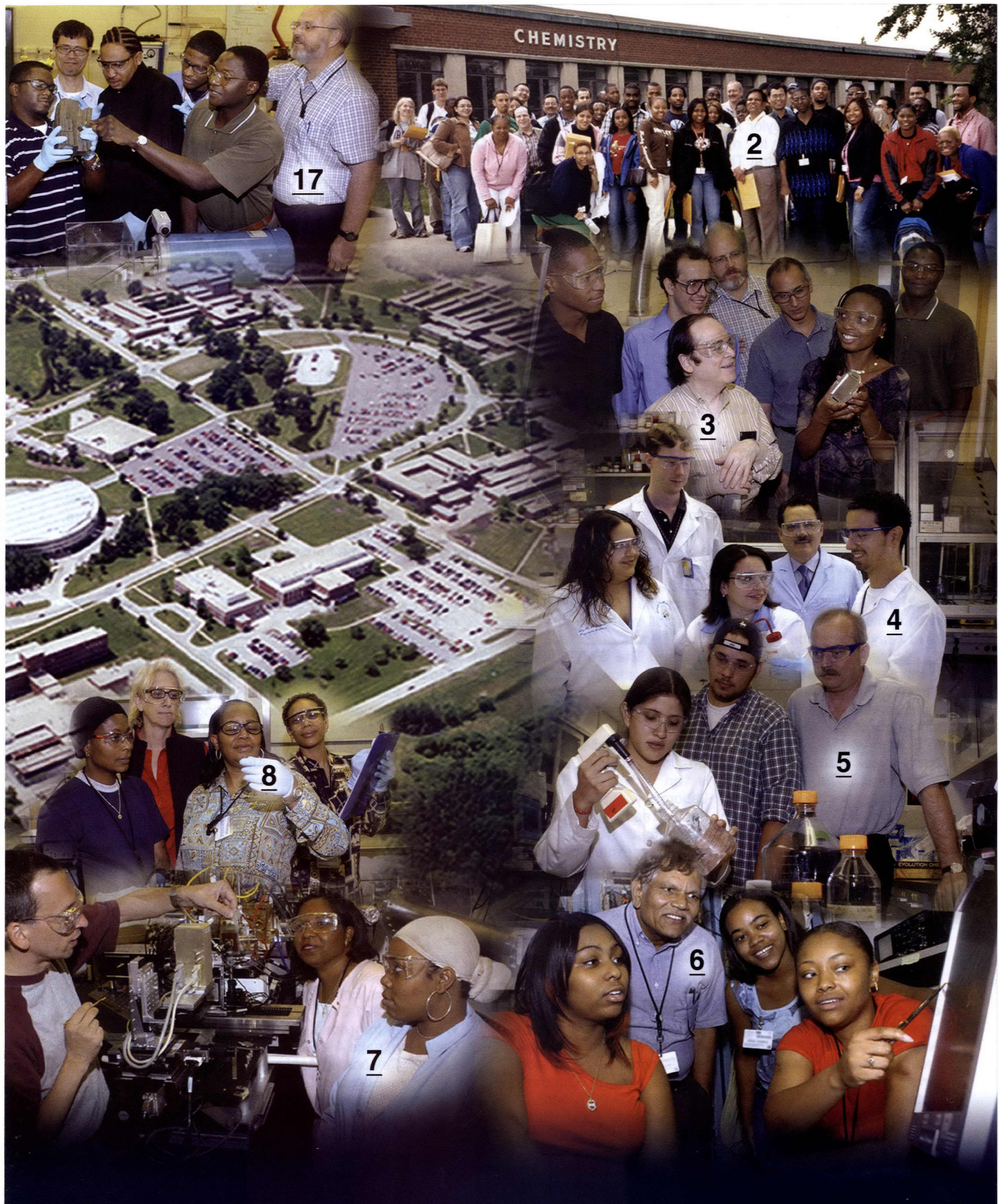
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NSF - DOE Faculty and Student Teams (FaST)



Research at Argonne National Laboratory

2: Group Photo of FaST participants in front of Argonne's Chemistry Division.

3: Illinois Institute of Technology. The FaST team studies the friction and wear of near-zero friction and super hard coatings. LaShawna Taylor is holding a plate that the team designed. Photo, left to right: Scotty Cade, Francisco Gutierrez, Professor Bharat Thakkar, Dr. George Fenske, Dr. Robert Erck, LaShawna Taylor, and Dr. Oyelayo Ajayi.

4: University of Puerto Rico – Mayaguez. FaST students (front, left to right), Liz Rodriguez, Mariangel Ruiz and Cristian Gonzalez. Also seen (back left to right) is the Professor Luis Rivera and Argonne scientist Dr. Daniel Hay. The team worked with scientists in the Laboratory's Nano Cluster. The team conducted research on the purification of polymerizable monomers which could be used as molecular components for the fabrication of self-assembled nanostructures. The work was conducted in Dr. Millicent Firestone's laboratory.

5: University of Texas – Pan American. Students prepare solutions for crystallization of proteins. From right to left: Professor Cunningham, Lucas Koester and Fatima Zapata. The research was conducted in the laboratory of Dr. Joachimiak (not shown).

6: Elizabeth City State University. From left to right - Tracey Ward, Professor Krishna Kulkarni, Tonette Latham, and Audrey Dance examine tomographic images from experimental data. The research was conducted in the Laboratory of Dr. Francesco DeCarlo.

7: Jackson State University. FaST Team is interested in using X-ray microprobe analysis at the Advance Photon Source (APS) to generate elemental maps in liver cells, exposed to heavy metals. Shown are Professor Barbara A. Wilson (far back) and Seymone Powell (right). Argonne's Dr. Jorg Maser (left) demonstrates the mounting of a cell specimen into the hard x-ray microprobe.

8: Kennedy King Community College. The FaST team, comprised Professor Arlicia Corley (not shown), Gayetta Sledge, Samella Matsey, & Felice Watson, analyze soil and sand samples for a phytoremediation effort conducted in the laboratory of Dr. Christina Negri (red blouse).

9: Governors State University. The FaST team is discussing a biochemical pathway visualization tool running on the microMural. The microMural is an advanced display technology developed at the Laboratory. Left to right: Argonne's Dr. Ed Frank with FaST Team Rico Carrell, Professor Soon-Ok Park, and Fredrick Logan.

10: Grambling State University. FaST faculty Professor Bobby Burkes review microchips, along with his students April Kittel (seated), Ashley Reed (left), and Justin Henry (right). The team conducted research in Dr. Brian Kay's laboratory (not shown).

11: Grambling State University. Justin Henry (left) examine bacterial cultures. His mentor – Dr. Michael D. Scholle (right) encourages him.

12: University of Texas – El Paso (UTEP). The team is exploring Silicides of Ta and Nb for super-high temperature applications. FaST students worked under the leadership of Argonne's Dr. Ken Natesan and UTEP's Professor Varma (both not shown). David Lopez adjusts condenser on reort furnace to prepare for oxidation work. Priscilla Guerrero watches intently, while Micah Baquera oversees the process.

13: Southern University and A&M College. FaST team conducts studies on the assembly of a new cryomodule for

the ATLAS accelerator facility. From front to back: - Henry Blake, Brandan Darensbourg, and Professor Terrence Reese. Dr. Gary Zinkann from Argonne's Physics Division served as project supervisor.

14: Chicago State University. The FaST team, comprised of Dr. Akujieze (left) and Chinedum Ibeabuchi (right), examines a model of a drift tube from the Intense Pulsed Neutron facility's Drift Tube Lineac (DTL). Drift tubes provide focusing of the hydrogen ion beam between open accelerating gaps. Other FaST students: Tracey Williams and Virginia Hayes and Argonne scientist Ray Teller are not shown.

15: Tuskegee University. Using the ultrasonic flow instrument, students investigate ultrasound echo signals in the oscilloscope for the measurement of fluid density and viscosity. Standing from left to right are Argonne's Dr. Sheen, Onondaga Community College student Jenny Chin, and the FaST team Ellis Mimms, Professor Chen, and Travis Harper (seated).

16: Jackson State University. FaST student Shi'Nitta Woulard (seated) with Argonne's Dr. Stephan Vogt (far back) and Northwestern University's Dr. Tatjana Paunesku (standing). The research uses scanning X-ray fluorescence microscopy to detect and calculate the quantities of some specific rare metals for use as elemental standards at the APS facility.

17: Tuskegee University. The FaST team and Argonne scientists examine a section of a laser-glazed railroad wheel. Shown from left to right: Dr. Robert Erck, Steve Elmore, Professor Hsiao, Brandon Aldridge, Ian Smith, Dr. Oyelayo Ajayi, and Dr. George Fenske (Group Leader).

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- 1) http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf06522
- 2) <http://www.anl.gov/welcome.html>
- 3) Journal of Undergraduate Research, United States Department of Energy, Office of Science Volume IV, 2004 editors: Faletra, Peter, Aaron Schuetz, and Todd Clark. 1000 Independence Avenue, Washington DC.
- 4) National Science Board Science and Engineering Indicators, 2004. Underrepresented Minorities in Science and Engineering include: African Americans, Hispanic Americans, Native Americans /Alaskan natives, and Women.
- 5) National Science Board Report *Broadening Participation in Science and Engineering Faculty*, NSB publication # - NSB04-41, November 2004; The document is available electronically at (<http://www.nsf.gov/pubs/2004/nsb0441/nsb0441.pdf>)
- 6) <http://www.nsf/cgi-bin/getpub?nsb0472>
- 7) Westat Report, 2000, Sharp, Laure, Brian Kleiner, and Joy Frechtling. *A Description and Analysis of Best Practice Findings of Programs Promoting Participation of Underrepresented Undergraduate Students in Science, Mathematics, Engineering and Technology Fields*. NSF publication #01-31.
- 8) *Where are they now? 5-10 Years after LSAMP*, by Nicole Detering, page 4 – 5, *National Science Foundation, LSAMP Celebrating Achievement through Performance Indicators*, Edited by Louis Dale, publisher - University of Alabama - Birmingham.

ALLIANCE ACCOMPLISHMENTS AND HIGHLIGHTS

Alabama

The Bridge to the Doctorate (BD) program supported ten first-year graduate students for the program year 2003-2004 at Auburn University. BD students received full-tuition, medical insurance, transportation to national and local conferences and training. Additional funding was awarded for Cohort II, in program year 2004-2005, enrolling fourteen first-year graduate students at The University of Alabama in Huntsville (UAH). As evidence of UAH's commitment to the BD initiative, the institution's budget included additional funds to support two students. Cohort III was funded and implemented at The University of Alabama at Birmingham supporting twelve graduate students for program year 2005-2006.

Alabama EPSCoR received NSF support for a summer residential student research program involving Auburn University, Tuskegee University, The University of Alabama in Huntsville and lead institution, The University of Alabama at Birmingham. Twelve students participated in sponsored EPSCoR summer research with mentors, completed projects and presented their findings at an EPSCoR/LSAMP research conference held on The University of Alabama at Birmingham campus.

All Nations

ANLSAMP, in conjunction with AIHEC, is working to develop a portal which will serve all of our tribal college institutions as well as our non-tribal college partners. AIHEC has implemented several project related collaboration sites using the Microsoft SharePoint Portal Server system. These sites provide a secure repository for the storage, development, and distribution of project related documents, contacts, Internet links, calendars, databases and other related materials.

Engineering Collaboration at Tribal Colleges. ANLSAMP continues its partnership with NASA Johnson Space Center to bring engineering studies to tribal colleges and universities. In March 2004, eleven tribal colleges formed a working group dedicated to developing, implementing and sustaining curricula that would permit American Indian students to work from pre-curriculum preparation to completion of a Bachelors degree in engineering completely within the tribal college system. The Working Group continues to seek funding and assistance to implement it programs.

California

Bridge to Doctorate funding for Cohort III, hosted by UC San Diego, expanded LSAMP-supported graduate students to a total of 34, with ten students in Cohort I at UCLA, and twelve at UCI. The BD program significantly advances in diversifying STEM graduate programs and eventually, it is hoped, the university's faculty. Host sites provide infrastructure and resources, and enlist support from the academic units, contributing to a robust commitment to the graduate fellows and their continued support beyond the first two years. Additionally, collaboration with AGEP is an alliance achievement that has facilitated implementation of our BD Cohorts I, II, and III.

2005 UC Systemwide LSAMP undergraduate research symposium, with representation from the eight UC campus partners, for a total of 150 faculty, students and program staff. Excellence in faculty mentored research was recognized with Special Merit in Research awards presented to sixteen students in various categories. Seventy-two minority STEM majors presented summer and academic year research to UC faculty and their peers. The symposium represents collaboration and value added synergy between programs of affinity to LSAMP, creating a systemwide network of leveraging human as well as fiscal resources.

California State University

In 2004-2005, CSU-LSAMP implemented a new Alliance-wide undergraduate CSU-LSAMP Scholar's Program. In this activity, the Alliance's governing board selected up to 3 exceptionally promising upper division students per campus for recognition, including stipend student support for the student's individual plan of preparation for STEM graduate study. Fifteen of the 19 campuses participated in this new Alliance-wide activity and a total of 26 CSU students were selected for participation in this activity. This new activity has also brought greater campus and public recognition of the accomplishments of CSU-LSAMP students. For example, one of the scholars at CSU Monterey Bay was featured in "The Santa Cruz Sentinel", a local newspaper.

In 2004-2005, CSU-LSAMP completed its first Bridge to the Doctorate supplemental activity at San Francisco State University and established a second Bridge to the Doctorate graduate institutional site at California State University, Los Angeles. Of the 28 students admitted to CSU-LSAMP's Bridge to the Doctorate programs, 26 are continuing in STEM graduate study with the goal of earning the Ph.D.

Colorado

Retention and Enrollment of UREP STEM Students

Retention: The rate of increase in UREP STEM degrees awarded is 85.1% from 215 (1995-1996) to 398 (2004-2005).

Enrollment: Comparing enrollment for the 9 LS CO-AMP B.S. Degree Granting Institutions from academic years 1995/1996 to 2004/2005, UREP STEM enrollment has increased 70.1% (1,736 to 2,953) versus ALL STEM enrollment, which has only increased 50.5% (16,552 to 24,908).

Summer Research Programs

During the Summer of 2005, CO-AMP continued to support research programs for UREP undergraduate and K-12 students, including:

PEAKS/AGEP (Alliance for Graduate Education and the Professoriate) Summer Research Internships for undergraduate students to conduct hands-on research with faculty mentors.

JETS-UNITE (Junior Engineering Technical Society – The

Uninitiates' Introduction to Engineering) Program for high school students, which is an introduction to the Engineering Summer Bridge Program.

RM-MSMSP (Rocky Mountain – Middle School Math Science Partnership) is a new program with Colorado State University, as a partner with the University of Colorado-Denver (the lead institution), conducting a 2-week, residential, Middle School Math Science Summer Camp. The RM-MSMSP Program is supporting new K-12 summer outreach programs at the partner institutions of Fort Lewis College, Metropolitan State College of Denver, University of Colorado-Denver, and Colorado State University.

Florida-Georgia

The FGLSAMP Bridge to the Doctorate program at the University of South Florida has raised funds to establish an endowment within the College of Marine Science. This endowment is a critical component of FGLSAMP's effort to increase the number of FGLSAMP B.S. recipients to pursue graduate degrees in geo-science disciplines.

FGLSAMP @ Tallahassee Community College has partnered with the HP-MESA program that supports efforts to increase participation in Mathematics and Science. This partnership will significantly increase the number of students seeking B.S. degrees in STEM disciplines. Hewlett Packard provides computers and technology support along with funding for academic enhancement efforts.

Houston

The University of Houston-Downtown currently has a research participation rate of 70% for their H-LSAMP students. This is not only significant for the H-LSAMP program as a whole, but the University of Houston-Downtown is recognized as a Hispanic Serving Institution. Their efforts have allowed them to send numerous students to national conferences in which they often win national recognition for their research.

At Texas Southern University, H-LSAMP's only HBCU, 63% of the LSAMP scholars graduate with honors. With outstanding work in the classroom, TSU hopes to see tremendous rewards in generating top faculty candidates. Currently 50% of their LSAMP graduates have now entered graduate school.

Illinois

Awarded a supplement by NSF to support the research experiences of 20 Illinois LSAMP participants at Argonne National Laboratory during the summer 2005. The research fellows consisted of: 6 Faculty, 3 Community College Students, and 11 Undergraduates from Alliance institutions. The 20 program participants obtained research experiences as a direct result of the interagency Cooperative Agreement between DOE and NSF. The DOE programs utilized to implement the Agreement included: The Faculty and Student Teams (FaST) Program, Community College Institute (CCI) Program, and the Student Undergraduate Laboratory Internship (SULI) Program.

Awarded a 2005 "Bridge to the Doctorate" supplement by the NSF. Southern Illinois University at Carbondale was chosen

as the program site. Co-Directors are Dr. Karen Renzaglia, Director of SIUC McNair Program and Research Professor, and Ms. Patricia McNeil, Assistant Dean of Graduate School and Director of Underrepresented Fellowship Office. In addition to the twelve recipients of the 2004 "Bridge to the Doctorate" supplement, twelve new SIUC graduates student were selected to participate.

Indiana

Several LSAMP Indiana students and their faculty mentors met on the Indiana University - Purdue University Indianapolis campus in January to attend an activity planned to engage our participants in a group research activity. The event was sponsored by the Indiana Space Grant Consortium and the Indiana Pacer Foundation. Dr. Barrett Caldwell, Director of the Indiana Space Grant Consortium prepared research assignments for the students that involved the game of basketball. Dr. Caldwell also attended the activity. Our students were very excited to attend the game and as an added treat, several of our LSAMP Indiana students were ecstatic to meet R&B vocalist/actress "Brandy" who was also in attendance at the game. Jonathan Summers, a sophomore in engineering was able to sneak a quick picture with the star.



LSAMP Indiana students attended a workshop entitled "Grad School 101" sponsored by the Purdue University Black Graduate Association and supported by the Midwest Crossroads AGEP program. The workshop was conducted on the Purdue University West Lafayette campus. There were over 80 undergraduate students present for a day of activities focused on graduate school admissions, graduate fellowships, and graduate research. Keynote speaker for the activity was Dr. Mark J. Smith, Department Head for Electrical and Computer Engineering at Purdue University West Lafayette.

Louisiana

AWARDS: Based on the LS-LAMP Phase I and Phase II accomplishments, LS-LAMP has been awarded Phase III funding by the National Science Foundation and the Louisiana Board Regents in the amount of \$5 million for five years. The National Science Foundation also awarded the Bridge to the Doctorate to LS-LAMP based on its accomplishments. Louisiana State University is the bridge institution for the LS-LAMP-BDP.

CONFERENCE: LS-LAMP recently held the LS-LAMP and CCZARS Louisiana Research Conference, "STEM Research and Training: From Theory to Practice" in New Orleans, Louisiana, October 29-October 31, 2004. The NASA Center for Coastal Zone Assessment and Remote Sensing joined the conference as a co-sponsor and Southern University at New

Orleans as co-host. Three hundred and ninety two (392) participants attended the conference, of which 233 were students. One hundred and nineteen (119) presentations were made by student researchers.

Mid-Eastern

MEAMP partner institutions significantly impact first year STEM retention. Studies are underway to determine longer-term retention.

MEAMP research investigation reinforces theory that minority attraction and identification with “science and technology career options” must include multi-sensory stimulation with STEM related ethnocentric materials at the earliest grade levels.

Mississippi

LSMAMP held its first Statewide Research Symposium in October, 2004. The Symposium attracted over 250 students and faculty members from across the state and highlighted student research through both oral and poster presentations.

The LSMAMP Bridge to the Doctorate Program’s first cohort of ten students completed the program and 100% were accepted into doctoral programs.

Missouri

LS MoAMP was the recipient of the 2004 Missouri Governor’s Award for Performance Excellence in Education. The Missouri Alliance was the initial awardee in recognition of ten years of increasing the quantity and quality of under-represented students who receive baccalaureate and graduate degrees in life and physical sciences including mathematics and engineering.

A number of individual campus initiatives including the “Writing Across the Sciences” course, a one-hour, 16-week course in academic writing designed to cover elements of effective composition appropriate to natural, physical and computer sciences offered by Central Missouri State University.

New Mexico

Bridge to the Doctorate III funded: New Mexico AMP received funding to support a third cohort of Bridge to the Doctorate students. These students will follow the first two cohorts in preparation for their Ph.D. Collectively, the three cohorts are represented by 23 males, 12 females, and 12 different graduate majors including 23 students in Engineering, 4 in Physics, 3 in Chemistry, 2 in Math, and 1 each in Computer Science, Soil Science, and Geology.

Summer Community College Opportunities for Research Experience (SCCORE): The Summer Community College Opportunities for Research Experience (SCCORE) program was successfully piloted and enthusiastically received by participating community college students and their university faculty mentors. Built on New Mexico AMP’s ATE Minority Engineering Transfer and Articulation (META) program model, SCCORE is designed to support 20-25 students from across the state each summer. The program gives students

access to activities on the New Mexico State University campus including a credit-bearing seminar, research projects with assigned mentors, and research presentations experience at a mini-symposium and the annual student conference.

New York City

The Alliance Course Restructuring for gatekeeper calculus, chemistry, and physics courses include an emphasis on collaborative learning, a non-competitive approach to problem solving, and workshops conducted by specially trained peer tutors and faculty members. For the academic year 2004-2005, CUNY enrolled 20,588 students in NYC LSAMP institutionalized or restructured courses.

The LSAMP CUNY Summer Research component drew participation from 50 LSAMP Scholars, with an additional 38 obtaining internship opportunities at non-CUNY training sites. Over 100 CUNY faculty mentors participate in LSAMP activities. For the 2004-2005 academic year, 211 LSAMP research scholarships were offered via CUNY institutional support. From inception, over 383 LSAMP Scholars have earned BA or BS degrees. Ten Bridge Scholars (from Cohorts I and II) are now pursuing doctoral degrees.

North Carolina

A one-day seminar entitled, “Graduate Symposium—Demystifying the Ph.D.” was held at North Carolina A&T State University on October 15, 2004. The symposium was a collaborative effort between the Bridge to the Doctorate and Student Transfer and Retention (STAR/AGEP) programs on the NC A&T campus. Workshop topics included “A Career in the Professoriate ~ More Than Teaching”, “Demystifying the Ph.D. ~ Managing the Process”, “I Can’t Afford it Right Now ~ Myths and Realities About Graduate School Funding”, and “Selecting a Ph.D. Program.” In addition, Dr. Ashanti Pyrtle, Assistant Professor in the College of Marine Science at the University of South Florida presented the keynote address. Students from both Cohorts of the Bridge to the Doctorate program attended, as well as undergraduate students from other partner institutions.

Through an NSF-funded supplemental proposal to the existing NC-LSAMP grant provided support to a Biology professor from North Carolina A&T State University to participate in a Faculty-student (FaST) research project at Brookhaven National Laboratory in Upton, New York. The ten-week research-intensive activity focused on electron transfer between metals and molecules. At the end of the summer, the FaST team submitted an abstract, a paper and made a presentation. This project was funded in collaboration with the Department of Energy’s Workforce Development for Teachers and Scientists.

Northeast

The diversity of the Northeast Alliance is a challenge and a richness; with this in mind, our accomplishments during the past year include:

Successful competition based on the merits of our Phase I Alliance program, for our Phase II program.

First annual Student Leadership Conference for Northeast LSAMP participants.

Ohio

Two dissertations were completed by the graduate student members of the OSEA evaluation team — “Effects of Multiple Group Involvement on Identifying and Interpreting Perceived Needs” by Yi-Fang Lee and “Persistence of Interest in STEM: An Analysis of Persisting and Non-Persisting Students” by Jeffrey White.

The first professional development workshop for faculty and staff was hosted by Ohio State University. The workshop, “Summer Bridge Programs – Best Practices,” featured four exemplary programs. Several campuses have already adapted and implemented the ideas they learned from their colleagues.

Oklahoma

Increased participation and quality of presentations at annual research symposium. The involvement of scholars in summer research experiences at corporations, medical centers, space centers, and a large number of higher education institutions has heightened research interest and generated an admirable eagerness to exchange information. It is evident that research experiences not only fine-tune research capabilities, but also broaden networking opportunities, build self-confidence, generate enthusiasm, and greatly impact the decision to pursue STEM graduate programs.

Implementation of graduate school preparation program.

GRE preparation modules were developed at the Lead Institution (Oklahoma State University) and are utilized across the alliance. Modules emphasize the following: what is the GRE, format and contents, why it should be taken, when and where to take the GRE, cost, how to prepare, test-taking skills relevant to computer aided tests, practice tests, scoring, and average score requirements for specific fields of study. Throughout Phase II, regular meetings and workshops with Graduate College representatives and OKAMP staff were scheduled for juniors and seniors (as well as underclassmen desiring to attend) with even a remote interest in graduate training. Students are required to complete and submit at least two graduate school applications to institutions of their choice.

Pacific

The Pacific Alliance has doubled the LSAMP baseline graduation rate in less than 5 years. Our Alliance is opening the door to STEM career paths for Indigenous People around the Pacific Rim by creating a safe environment within each Alliance institution that is respectful of the Indigenous worldview. There are now more than 700 Indigenous students involved in Alliance Universities and another 250 Indigenous high school students. In addition the Pacific Alliance has also doubled the enrollment rate for Indigenous students in science and engineering.

The Pacific Alliance received a 1.7 million commitment from Siemens Building Technologies to support the Alliance through our High School Outreach, Summer Bridging, and Retention programs. Through their support, the Alliance will be able to recruit and retain more Indigenous Students.

Peach State

The Peach State Louis Stokes Alliance for Minority Participation consortium developed a website (www.pslsamps.org) for communication about the grant activities. The participating institutions are developing their respective websites and publications. The lead institution's office is currently being housed at the Office of Institutional Diversity at the University of Georgia. UGA is constructing a new office, with a move in date in mid-March 2006.

The Peach State Louis Stokes Alliance for Minority Participation (PSLSAMP) Scholars Kickoff Event was held for GPC LSAMP Scholars at Georgia Perimeter College on October 26, 2005. Attendees included the first group of LSAMP Scholars at GPC as well as members of the faculty and staff on the “Campus Team”. The program included an overview of the PSLSAMP initiative and the role of the colleges that are part of this collaboration.

Philadelphia

Community College of Philadelphia (CCP): The CCP AMP was highlighted in the Renewal and Change 2000 Conference held on Oct. 22, 2004 at Community College of Philadelphia. This conference was for Community College Presidents from around the U.S., as well as community college presidents from the United Kingdom, etc. A PowerPoint presentation was given on the topic “How Data Analysis Drives the Decision Process,” which addressed the issue of how data tracking AMP students over a 10-year period helped to modify the services offered over time.

Drexel University: As a result of re-structuring the undergraduate and graduate curricula, Drexel moved up 17 places (from 123rd to 106th position) in doctoral universities in “America's Best Colleges in 2005. The U.S. & World Report ranked Drexel's College of Engineering's undergraduate program 50th among engineering schools that award doctoral degrees. Drexel has been ranked 22nd nationally on Intel Corporation's “Most Wired Campuses” survey.

Puerto Rico

The third Cohort of twelve Bridge-to-the-Doctorate Fellows (2005) increased the total of BDP fellowships awarded by PR-LSAMP to thirty-four. All ten BDP Fellows from Cohort 1 (2003) were awarded fellowships after completion of their two years as BDP Fellows, and all ten are expected to obtain a PhD degree by 2007. The twelve BDP Fellows from Cohort #2 (2004) are now in their second year of studies, are working in their area of research interest, and all have the goal of having their thesis proposal approved by the Summer of 2006.



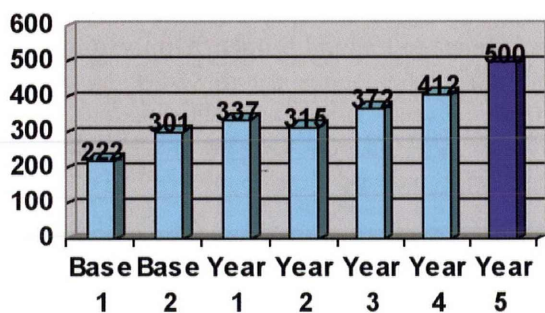
PR-LSAMP BDP Fellows at the 2005 Annual PR-EPSCoR Conference

In academic year 2004-05, PR-LSAMP institutions awarded 3,106 BS degrees in STEM fields, bringing to 38,949 the total of BS degrees awarded in these disciplines since 1991. PR-LSAMP institutions account for 27% of the BS degrees awarded to Hispanics nationwide (URP/STEM BS Degrees Report), contributing significantly to the national STEM workforce. At the PhD level, in the field of science, PR-LSAMP institutions have contributed a constant 17% during the past five years to the national pool of Hispanic PhDs. In the case of Engineering, the percent has increased from 12.5% to 14.7% (NORC data). At the University of Puerto Rico, the lead institution in the PR-LSAMP Alliance, the number of PhD degrees awarded in STEM fields has increased from 9 in 1991 to 31 in 2005, more than a threefold increase.

State University of New York

SUNY LSAMP continues to make significant progress towards enrollment and bachelor degree production goals. This year SUNY LSAMP had an increase of 11% in bachelor's degree production with individual campuses showing increases as great as 68% from the previous year. This is an increase of 86% from program inception. In addition, there has been an increase of 25% in UREP STEM enrollment this year with an increase of 266% from program inception.

SUNY LSAMP Degree Production



Base 1, Base II, Years 1, 2, 3 and 4 are actual figures. Year 5 is projected.

SUNY LSAMP has made a high priority of increasing scholarship about UREP STEM issues. This year, SUNY LSAMP put into place a research group that will provide needed scholarship about UREP STEM best practices through collaboration with the National Academy CASEE program, the SUNY LSAMP evaluator and a key researcher about STEM issues. In addition, SUNY LSAMP Directors have made these presentations this year about these issues.

Tennessee

The Tennessee Louis Stokes Alliance for Minority Participation Summer Bridge Program is an alliance-wide activity that involves all participating institutions. This year, the program was hosted on the campus of Vanderbilt University to prepare the incoming students academically for the freshman year. The 2005 TLSAMP Summer Bridge program was very successful. Program participants strengthened

their individual academic skills in mathematics and science by 31% and 77%, respectively, based on pre-test and post-test data.

The University of Memphis and LeMoyne-Owen College co-hosted the second annual TLSAMP Research Symposium entitled "Developing the Next Generation of Leaders in STEM." Approximately 200 STEM students, faculty, staff and administrators attended the symposium to view 40 oral and poster presentations. Held in historic Memphis, attendees not only received enrichment in the areas of science and engineering, but encouragement from the achievements of the preceding generations through invited guest speakers and guided tours.



Participants in the 2005 Summer Bridge Program

Texas

TAMUS LSAMP Undergraduate Research Program: During year 2, the three principal partner institutions of TAMUS LSAMP continued to encourage and support undergraduate research during the academic year. TAMU faculty and LSAMP Central collaborated in linking PVAMU and TAMU in cross-campus undergraduate research projects. Several Computer Science students from PVAMU are participating in Interdisciplinary Engineering Design project with Computer Science, Electrical Engineering, Mechanical Engineering, and Aerospace Engineering students at Texas A&M College Station, in a rocket-building project funded by Boeing. Dr. Christopher Quick, TAMU College of Veterinary Medicine and Biomedical Sciences, has initiated cross-institutional undergraduate research between students at PVAMU and TAMU. The project uses Pallid bats to investigate the cardio-vascular system. PVAMU has doubled the number of undergraduate students engaged in research over the last year. Texas A&M - Corpus Christi has placed all its LSAMP graduates on successful trajectories. Majority have been accepted to graduate programs. Others have found employment in science related fields.

Bridge to the Doctorate-III: Starting the Bridge to the Doctorate Program (BTD) at Prairie View A&M University was one of the highlights of the year. The program attracted excellent students to graduate studies at a school that has traditionally had a small post-graduate program. 11 students are part of the program in the departments of mechanical engi-

neering, civil engineering, electrical engineering and mathematics. One of the added benefits of the program has been the positive impact this cohort has had on the undergraduate LSAMP researchers. The BTDF fellows have served as role models to the undergraduates and have taken an active part in mentoring the students considering going to graduate school. The seminars organized for the BTDF fellows, which was subsequently opened to all students, provided an ideal platform for exchange of ideas, relationship building, cross-institutional community-building and networking.

University of Texas System

Smooth transition for the alliance from the previous principal investigator and coordinator to the newly appointed principal investigator and coordinator. The newly appointed individuals began work with the UT System LSAMP program in January 2005.

Successful Summer Research Academy (SRA) experiences for 45 undergraduates attending each of the nine UT System institutions. The greatest feature of the 2005 SRA was the UT system-wide videoconferences presented each week, which allowed the students to preview graduate programs at every UT System Institution.

University System of Maryland

\$30 Million Clark Endowment Revolutionizes Undergraduate Education at the Clark School-A.

James Clark, '50, Chairman and CEO of national construction firm Clark Enterprises and the man for whom the Clark School is named, established a new \$30 million A. James Clark Scholarship Endowment to provide financial support for Clark School undergraduate engineering students. The endowment will provide Clark School students specific scholarships based on merit, need and diversity. These scholarships will enormously enhance the academic standing and expand the cultural perspectives of the Clark School student body and thus further enrich the highly regarded undergraduate experience here. The new endowment is the single largest gift in the school's history-doubling Mr. Clark's 1994 endowment, which had been the largest until now.

In 2005, *Black Issues in Higher Education* ranked USM LSAMP institutions among the top 100 producers of undergraduate degrees to minority students in STEM fields. The following rankings were reported.

- Agriculture, Agriculture Operations and Related Sciences - UMCP ranked 17th for total minority baccalaureate degrees; UMES and UMCP ranked 18th and 30th, respectively, for African American baccalaureate degrees.
- Biological and Biomedical Sciences -UMCP and UMBC ranked 13th and 29th, respectively, for total minority baccalaureate degrees.
- Computer and Information Sciences and Support Service - UMBC and UMCP ranked 13th and 46th, respectively, for

African American baccalaureate degrees.

- Engineering - UMCP ranked 23rd for total minority baccalaureate degrees; UMCP ranked 11th for African American baccalaureate degrees.
- Mathematics and Statistics - UMCP ranked 32nd for total minority baccalaureate degrees; UMES and UMBC ranked 27th and 37th respectively, for African American baccalaureate degrees.

Washington/Baltimore/Hampton Roads

The WBHR-LSAMP worked collectively with seven partners on a common mission of increasing the number of B.S. degrees in the sciences. This collaboration has led to the institutionalization of several key components such as the program in Atmospheric Sciences at Howard University.

The establishment of a new engineering program at Norfolk State University was led by the WBHR-LSAMP program. We have also facilitated the transfer of community college students into STEM Programs at WBHR institutions.

A second major accomplishment has been the graduation of a large number of students at the B.S. level and the subsequent enrollment of these students into a graduate program leading to the Ph.D. degree. The percentage of students going to graduate schools exceeded the expectation of 30% for Phase II.

Western Alliance to Expand Student Opportunities

Our alliance reports an annual rate of 2,081 minority STEM baccalaureates at year 4 of Phase III showing that we exceeded our 4th year goal for Phase III goal of 1,921 and our overall annual rate has increased by 986 minority STEM baccalaureates.

In Years 1-4, we had 1,653 underrepresented minority student participations in our Phase III activities, on average, about 19% of our underrepresented minority students participate in two or more activities. As an added benefit, our underrepresented minority-centered programs have, as an economy of scale, also directly benefited 120 non-underrepresented students.

Wisconsin

The Wisconsin Alliance for Minority Participation (WiscAMP) was divided into four Regional Working Groups that meet biannually to discuss and coordinate WiscAMP activities at respective campuses. We have found that this structure leads to cooperative relationships as three of these regions now have region-wide research opportunities for WiscAMP students.

Two small grants award cycles spawned ten projects across the alliance, all devoted to accomplishing WiscAMP goals.

Alabama

The University of Alabama at Birmingham student Lonnie Hannon received a Minority Access Role Model Award at its annual meeting in Las Vegas, Nevada.

California

UC DAVIS CAMP students Joseph Bahlman, Ryan Grant, Selena Martinez and Tanya Mendez presented their research at the 2005 National Conferences on Undergraduate Research (NCUR). They were among 1,769 presenters from all over the U.S. Among student success stories is that of Lorena Moreno, a new graduate student at Stanford pursuing a Ph.D. in aeronautics and astronautics. Lorena graduated in June 2005 with an engineering degree and a 3.94 GPA. She conducted research at Sandia National Labs in Livermore, CA in summer 2005.

UC IRVINE CAMP students attended the Aero Design West 2005 competition. Anwar Torres, Jezabel Cruz, Jerry Lee Reed, Jr., Martin Garibay, Alejandro Puga, and Ryan Wallace traveled to Dallas, Texas in April 2005 for this national design competition. UCI students also attended the 2005 SACNAS conference in a "critical mass" and several took home awards for their posters. Other success was seen at the 2005 EMERGE Consortium: Three UC Irvine undergraduates were honored for research presented in Atlanta at the 2005 EMERGE Consortium, Top honors went to Alejandro Puga, a fourth-year aerospace engineering student, Taking second place was Alfred Anguiano, a fourth-year information and computer science major. In third was Omar Moreno, a third-year physics major.

UC SAN DIEGO CAMP students made a substantial showing at the annual UCSD Summer Research Conference, with eighteen students presenting their projects. Additionally, six AMP students, Yonas Alemu, Nelson Bravo, Laura Flores, Manuel Ponce, and Tyheshia Smith-Kruck presented their work at the 2005 Historically Black Colleges and Universities Undergraduate Program, National Research Conference, "Science on the Bayou." Nelson Bravo, a senior, was honored for robot design analysis, receiving a cash prize and plaque. In other news, a tour of Pfizer's Global Research & Development campus in La Jolla, one of the world's largest biomedical research organizations, showed students the types and intensity of the research that takes place in a professional setting.

Colorado

Vanessa Aponte, Aerospace Engineering, UC-B, HENAAC 2005 Student Leadership "Graduate Student" \$5,000 Scholarship Award

Bret Harper, Environmental Engineering, UC-B, First Place Award in the AISES 2004 Oral Presentation Competition for his research as a SOARS protégé at the National Center for Atmospheric Research (NCAR)

Ian Her Many Horses, Computer Science, UC-B, First Place Award in the AISES 2004 Research Poster Competition for his work in the CU-Boulder Summer Multicultural Access to Research and Training

Lance Whitehair, Biology & Chemistry, MSCD, First Place Award for Poster on "Identification of EGFR Mutations in Squamous Cell Carcinoma of the Head & Neck" at 34th Annual Meeting of the Association of American Indian Physicians

Lance Whitehair, Biology & Chemistry, MSCD, First Place Award for Poster on "Identification of EGFR Mutations in Squamous Cell Carcinoma of the Head & Neck" at the Society for Advancement of Chicanos & Native Americans (SACNAS) National Conference

***Key (Institutions):**

CSU = Colorado State University
MSCD = Metropolitan State College of Denver
UC-B = University of Colorado – Boulder

Florida-Georgia

Deborah Bryan and Lindsey Carter, both Chemistry majors at Florida A&M University, received honors respectively at the 2004

Annual Biomedical Research Conference held in Dallas, Texas for their research presentations.

Houston

Two scholars from The University of Houston, Adham Bear and Jose Figueroa, received awards for outstanding undergraduate poster presentations at the 2004 ABRCMS national conference, held in Dallas, TX in the fall.

Dr. Richard Aló, CCSDS Director, accompanied students to the Society for Advancement of Chicanos and Native Americans in Science National Conference where Emily DeLaGarza won a poster presentation award for her research.

The 4th Annual Houston Louis Stokes Alliance for Minority Participation Conference October 1-3, 2004. Three of TSU's LSAMP scholars placed in the competition: Alicia Martin placed 1st in the Mathematics Division; Kevin McDaniels placed 1st in the Chemistry Division; Joseph Randle placed 2nd in the Computer Science Division.

November 20, 2004, six students from the Texas Southern University Student Chapter of The National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) attended the NOBCChE Southwest Regional Conference in New Orleans. Kevin McDaniels placed 1st with Dvesharronne Moore placing 2nd.

Jesus Rodriquez, Hispanic LSAMP Scholar, received an award in 2005 by McNair Conference Organization for "Most likely to receive a Ph.D. in Mathematics."

Mid-Eastern

Shauna Rone-VUU AMP Participant-Sophomore accepted to Boston Medical School EMSST Program for M.D.; Ph.D. with Doctoral Component in Department of Biochemistry, Yale University Fall 2005.

Mississippi

In 2005, Tonya Stone, MSU BSME in 1995 and currently a PhD student, received a National Science Foundation (NSF) Graduate Research Fellowship.

Bridge to the Doctorate Student Cohort One, Charity Mosley, received an Honorable Mention National Science Foundation Graduate Fellowship 2005.

Bridge to the Doctorate Student Cohort One, Cornelius Toole, Jr., received an Honorable Mention from the National Science Foundation Graduate Fellowship 2005 and an Honorable Mention from the Ford Foundation Fellowship 2005.

New Mexico

Felicia Guerrero, (Mechanical Engineering/New Mexico State University), was one of eight students nationwide selected by General Motors to participate in the summer 2005 Sullivan Fellowship Program designed to foster social responsibility in the workplace.

Cipriano Duran, (Mechanical Engineering/New Mexico State University), spent the summer of 2005 as a research intern at the National Renewable Energy Laboratories (NREL) at the invitation of the NREL Director whom he met during Engineer's Week activities at NMSU.

Tiffany Lovato, (Environmental Science/New Mexico State University), has been a Gates Millennium Scholar (GMS) since 2000. Lovato has received other national and international awards and recognition, and participated in a cultural exchange visit to the Khanty indigenous people of Siberia, Russia in November 2004 where she visited with native reindeer herders, hunters, and fisherman on the issues of economic development, acculturation, and loss of land and heritage.

New York City

Terry Cook has his own unique recipe for success, which involves the challenging and ever-bur-geoning field of computer science. As an undergraduate majoring in computer science at Lehman College, he graduated Magna Cum Laude and received departmental honors. Aside from understanding the value of academic excellence, Terry Cook has always understood the value of community service. In May of 2000, he received the "Volunteer of the Year" award for his two years of devoted service - as a literacy volun-

teer - to the women of the Taconic Correctional Facility: Recently, he has donated some of his time to tutoring students in mathematics at the High School of American Studies, which is located on the Lehman College campus.

North Carolina

Jamil Grant, a junior Mechanical Engineering major at North Carolina A&T State University was a co-author on a published research paper entitled, "Fatigue Properties of Electro-Active Papers for Biomimetic Actuators. The paper was published in the Proceedings of International Mechanical Engineering Congress and Exposition (IMECE), and published by the American Society of Mechanical Engineers.

Cavell Jenkins, a former NC-LSAMP participant at the University of North Carolina at Charlotte had an article featured in the April 2005 edition of *Graduating Engineer and Computer Science Magazine*.

Three students, Tiffany Buchanan, Candice Morrison, Joseph, Estevez, won first or second place at the 9th Annual LSAMP Undergraduate Research Conference in Fayetteville, NC and received monetary awards.

Ohio

Congratulations to Franklin Warren, a Summer 2004 and Spring 2005 Glenn-Stokes Scholar, for publishing his first article in a referred scientific journal. Warren is a senior at Bowling Green State University majoring in biology with a chemistry and philosophy minor. Warren is a co-author of a paper titled "Heterologous expression of a pleiotropic drug resistance transporter from *Phytophthora sojae* in yeast transporter mutants" which was published in the July 2005 issue of *Current Genetics*.

Asia D. Johnson is a co-author on the paper entitled "Social Behavior Development of Young Rats whose Mothers Consumed Small Amounts of Polychlorinated Biphenyl (PCB)." The abstract was published in the *Ohio Journal of Science*, Volume 105, Number 1, April 2005. Asia is a senior at Bowling Green State University majoring in Biology and will graduate May 2006.

Philadelphia

Delaware State University: Renee Pollard, AMP student received the national "*Alonzo Crim Student Award for Excellence in Mathematics and Science*" from QEM/MSE Network. The award was presented to her at the *Fourteenth Annual National Conference of the QEM Mathematics, Science, and Engineering Network* held in Washington, D.C. on 2/22/2005.

Puerto Rico

In 2004-05 Emma Torres and Fernando Gutman, from UPR-Mayaguez, recieved the First Prize in the poster session competition of the American Institute of Chemical Engineers. Verónica Rodríguez received the Second Prize. Also, José R. McFaline received the Outstanding Student Award by the Puerto Rico Chapter of the American Chemical Society.

South Carolina

Chanda Rogers, a junior SCAMP chemistry major at Benedict College, has been offered an appointment with the US Department of Energy Student Undergraduate Laboratory Internships with Argonne National Laboratory from January 16 - April 28, 2006. Her research area will be in materials science and quantum computing.

Brandon Tompkins earned his BS in Mechanical Engineering in May '05 from Clemson University and was chosen as a GEM Fellow by the Ford Motor Company. He began a Master of Science in Mechanical Engineering at Texas A&M fall 2005.

Kristie Quarles, a College of Charleston senior, received a National Institutes of Health Minority Supplement award to study the influence of low birth weight on the future development of Systemic Lupus Erythematosus and lupus nephritis.

State University of New York

Eduardo Sosa, Biochemistry/Molecular Biology Major, University at Albany; Barry Goldwater Scholarship

Tracey Evans, Chemistry Major at SUNY College at Old Westbury; Honors at MBRS Conference

Alicia Handy, Geosciences Major at Stony Brook University; Intern at Congressional Budget Office

Tennessee

Award Winners at the Second Annual TLSAMP Research Symposium

George Branch and Sanchez G. Harley, II, tied with Chelsea Bond for first place in the Oral Presentation. George and Sanchez are senior Mechanical and Manufacturing Engineering majors at Tennessee State University. Their presentation was on *Design of a System to Determine the Quality of Automobile Engine Oil*. Chelsea is a Biology major at Middle Tennessee State University. Her oral presentation was on *Two-Photon Photopolymerization*.

James Davis, III won first place in the Poster Presentation. James is a senior Civil and Environmental Engineering major at Tennessee State University. His presentation was on *The Design of a Numerical Model to Predict Sediment Flux of Fecal Bacteria and Subsequent Transport of the Sediment-bacteria in a River*.

Texas

LSAMP undergraduate researcher Chris Romero, a student at Texas A&M – Corpus Christi published his research in Journal of Ethnopharmacology.

University of Texas System

Mrs. Diana Kretzer (UT El Paso) was admitted into the M.D./Ph.D. program at the University of North Texas Health Science Center. She began her studies in August, 2005.

Mr. Benjamin Rodriguez (San Antonio College) was recognized as student of the month for the Alamo Community College District during the month of September, 2005.

University System of Maryland

Two University of Maryland Baltimore County undergraduates, Michael Aaron a junior Mechanical Engineering major and Stephanie Nunez a sophomore Biochemistry major, were National Winners of the Goldwater Scholarship this year.

A 2005 Ford Pre-Doctoral Fellowship was awarded to Oni Mapp, a senior Biochemistry major from the University of Maryland, Baltimore County.

A 2005 NSF Pre-Doctoral Fellowship was awarded to Olusegun Williams, a senior Biochemistry major from the University of Maryland, Baltimore County.

Washington/Baltimore/Hampton Roads

Dr. Rachid Bendidi, and former WBHR-LSAMP student from the University of the District of Columbia who received his PhD. From Howard University was named Dean, Voorhees College, Denmark, SC in June, 2005.

Norfolk State University Students won five prizes at the National HBCU-UP Research Conference at Southern University in New Orleans, Louisiana.

- Mayen Udoetuk (WBHR-LSAMP) won First Place for Chemistry Oral Presentation;
- Taina Cleveland (WBHR-LSAMP) won Second Place Chemistry Oral Presentation;
- Kevin Reynolds won First Place Physics and Engineering Oral Presentation;
- Sherket Peterson won First Place Chemistry Poster Presentation;
- Ebony Hill (WBHR-LSAMP) won Fourth Place Chemistry Poster Presentation.
- Timothy Jones and Olivia Penrose received great accolades regarding their research in Thermal Diffusivity and Conductivity Testing and Characterization of Molybdenum Trioxide (MoO₃) Species using the Molybdenum (VI)-2, 6-Pyridinedicarboxylic Acid, 4-hydroxy-2, 6-Pyridinedicarboxylic Acid, and Nitrilotriacetic Acid Complexes.

Ravindra Gopaul, a current AMP student and Thomas Hardy, 2004/2005 AMP student and current a Bridge to the Doctorate student spent six months in the spring and semesters 2005 as participants in the Duke/OTS Costa Rica Semester Abroad program. As a result this internship, they have been invited to present their data at several national meetings. Several publications have been prepared for submission to national journals.

CONFERENCES AND SPECIAL EVENTS



Alabama Louis Stokes Alliance for Minority Participation (ALSAMP) Scholars/Bridge to the Doctorate Conference/Executive Meeting



The First Annual joint ALSAMP Scholars/Bridge to the Doctorate Conference and ALSAMP/AAGEP Executive Committee Meeting was held at Auburn University in Auburn, Alabama on March 13-14, 2005. In addition to the Alliance's Principal Investigators' Meeting, the two day event showcased research conducted by students from each program as well as the program activities being implemented on the twelve institutions' campuses. Over 100 students, faculty and administrators from the twelve institution Alabama Alliance attended the conference. Students from alliance institutions submitted posters and abstracts in the areas of chemistry, computer science, engineering, life sciences and mathematics. This year's conference also featured student oral presentations on program activities and institutional displays.

Undergraduate students were provided the opportunity to interact and discuss the graduate school experience with the graduate students from universities within the alliance.

The conference concluded with an awards luncheon for students, faculty, administrators and guests. Receiving awards were:

ALSAMP Scholar Project Winners

Chemistry

First Place - Sheritta Cooks, Tuskegee
Second Place - Crystal Brown, Tougaloo
Third Place - Marshala Lee, Tougaloo

Computer Science

First Place - Charles Simmons, Alabama State
Second Place - Tarrell Ezell, Alabama A&M

Engineering

First Place - Darcia Crutch, University of Alabama in Huntsville (UAH)
Second Place - Errol Reid, UAH
Third Place - Cynthia Wilson, UAH

Life Sciences

First Place - Sharina Richard, Tuskegee
Second Place - Sophia Hightower, UAH
Third Place - Francesca Duncan, Tuskegee

Mathematics

First Place - Ajai Cribbs, UAH
Second Place - Christopher Conaway, UAB
Third Place - Lacedric Tolliver, Auburn

Institutional Display

First Place - UAH
Second Place - University of Alabama at B'ham (UAB)
Third Place - Miles College

Oral Presentation

First Place - Justin Lewis, UAB
Second Place - Joseph Williams, Miles College
Third Place - Genola Burke, Stillman College

Bridge to the Doctorate Project Winners

Chemistry

Carma Cook, Auburn

Computer Science

Justin Kelly, UAH

Engineering

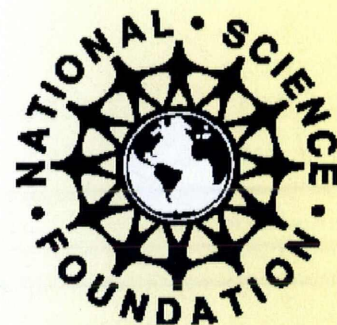
Nicole Harris, Auburn

Life Sciences

Kimberly Green, UAH

Mathematics

Kimberly Kendricks, Auburn



ALSAMP Scholars/Bridge to the Doctorate Conference/ALSAMP/AAGEP Executive Committee Meeting Participants.

**2005 SPECIAL
MERIT IN RESEARCH:
Award Winning
Undergraduate
Presenters**

Yasaman Alagband

UC Los Angeles
Biological/Life Sciences

Yanina Barrera

UC Irvine
Physical Sciences/
Engineering

Miguel Buenrostro

UC Santa Barbara
Physical Sciences/
Engineering

Andrew Cardes

UC Berkeley
Physical Sciences/
Engineering

Cynthia Carter

UC Riverside
Physical Sciences/
Engineering

Franklin Dollar

UC Berkeley
Physical Sciences/
Engineering

Johnny Garcia

UC Los Angeles
Biological/Life
Sciences

Armando Hernandez

UC Santa Cruz
Physical Sciences/
Engineering

Patricia Iluore

UC Irvine
Biological/Life Sciences

William Muiru

UC Davis
Physical Sciences/
Engineering

Rachel Najera

UC Davis
Biological/Life Sciences

Elliot Olaniyan

UC Los Angeles
Biological/Life Sciences

Cecilia Osorio

UC Riverside
Biological/Life Sciences

Cesar Rivadeneyra

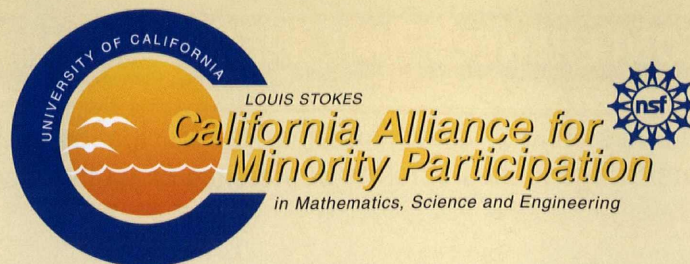
UC Irvine
Physical Sciences/
Engineering

Marlena Ruberte

UC Santa Barbara
Biological/Life Sciences

Tyheshia Smith-Kruck

UC San Diego
Biological/Life Sciences



16 Undergrads Earn Special Merit in Research Awards at CAMP Symposium

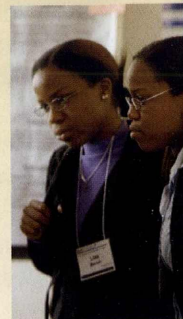
Something very special comes from bringing undergraduate researchers together from across the University of California. The exchange of ideas, experiences, and perspectives is rich and rewarding. Congratulations to all the presenters who joined us for our annual symposium at the Beckman Center of the National Academies of Sciences and Engineering, adjacent to UC Irvine. Sixteen undergraduates representing eight UC campuses took home awards for Special Merit in Research. The award-winning abstracts showcased varied and creative topics that inspired us all.

Role of the Faculty Mentor

- Provide supervision and support for the CAMP undergraduate researcher by introducing him or her to the culture of the laboratory, and assisting him or her to explore and become proficient in research methodologies and in the research tools of the discipline.
- Support the student in transitioning his/her role in the research team, formulating a research question, drafting project goals, and a timeline with specific benchmarks.
- Advise the student in establishing realistic parameters and objectives for their part in a team research or individual project.
- Guide the preparation of a research proposal tailored to the student's particular field of interest and the focus of inquiry.
- Supervise or facilitate undergraduate student research projects in the laboratory and, if appropriate, provide guidance for writing an abstract or preparing a poster or oral presentation; assist in submission of the abstract for presentation at a scientific or professional symposium.
- For a long-term project, where feasible, direct the student in the technical writing process, preparing notes as a writing resource and eventually, if compelling, a polished manuscript for possible co-authorship and publication in a professional journal.

The CAMP Symposium Aims To:

- Support undergraduate research with a faculty member;
- Develop student written and oral communication skills;
- Provide a UC systemwide forum for faculty and students;
- Foster interest in graduate education, particularly for the Ph.D.;
- Set national standards for undergraduate research.



I SAMP

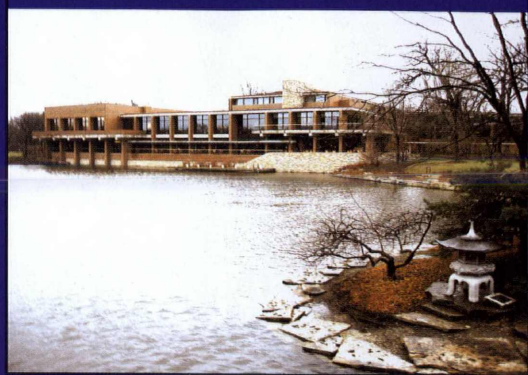
CALIFORNIA

email: camp@uci.edu • www.california-lsamp.uci.edu

8th Annual Student Research Symposium

The Hyatt Lodge at McDonald's Campus
Oak Brook, IL

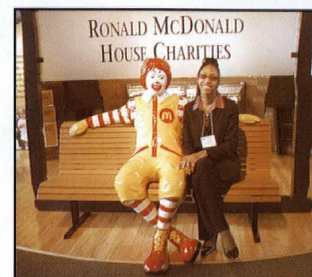
"Building Bridges to S/J/F/M Careers"



Dr. Elnora D. Daniel (right), President of Chicago State University, and Dr. Woodrow Whitlow, Jr., Director of Research and Technology at the NASA Glenn Research Center in Brook Park, Ohio



Dr. Julian M. Earls (right), Director of the NASA Glenn Research Center in Cleveland, Ohio, talking with a student after his keynote address



ILSAMP Scholar takes a break from the conference to pose with a statue of Ronald McDonald at Hamburger University



The Bridge to the Doctorate Plenary Session featured a graduate student moderator, graduate student panelists and facilitators from Southern Illinois University at Carbondale (SIUC)

Over 200 students, faculty and staff participated in the Eight Annual Illinois LSAMP Student Research Conference on March 18th & 19th 2005. The conference, which included workshops, poster and oral presentations, university/college display tables, luncheon and dinner banquets, provided participants from the Alliance institutions an opportunity to come together in camaraderie to share results of research, compare notes, relate experiences, and to develop closer relationships. Dr. Julian M. Earls, Director of the National Aeronautics and Space Administration's Glenn Research Center in Cleveland, Ohio, and Dr. Sylvester James Gates, Jr., John S. Toll Professor of Physics, University of Maryland, were the keynote speakers.



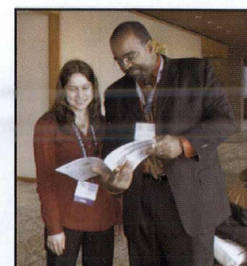
Chicago State University graduating senior (Spring 2005), Sonia Greer (right), discusses her poster with a spectator



ILSAMP students had the opportunity to talk about their research findings during the oral presentation sessions



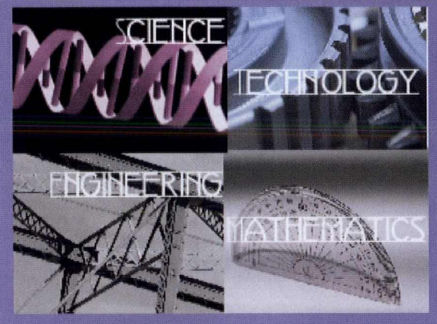
Dr. Sylvester J. Gates, Jr. (rear 2nd from the right), John S. Toll Professor of Physics at the University of Maryland, poses with students and faculty after his keynote address



Dr. LeRoy Jones II, ILSAMP Project Director, and SIUC Bridge to the Doctorate student, Yoana Rosales

Sponsored in part by the National Science Foundation

Louis Stokes Mississippi Alliance for
 Minority Participation's
 2005 National Research Symposium
 October 20-22, 2005

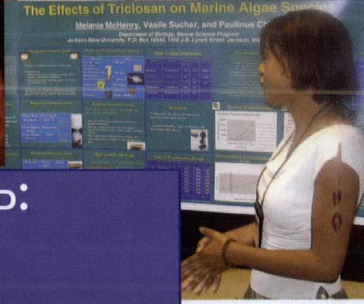
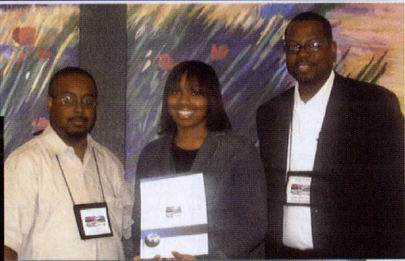
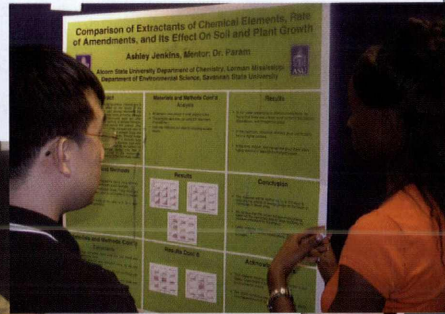
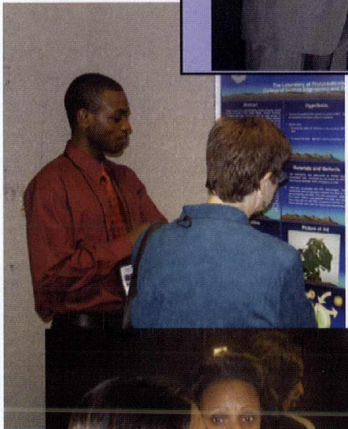
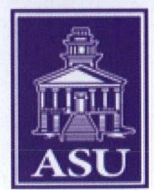


Workshops and Seminars
 Keynote Speakers
 Student Oral and Poster Presentations and Awards
 Networking Opportunities

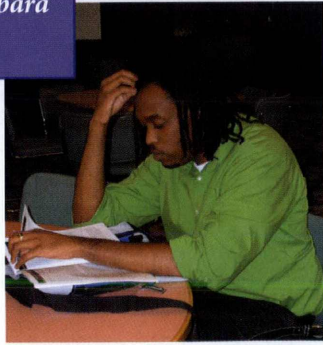
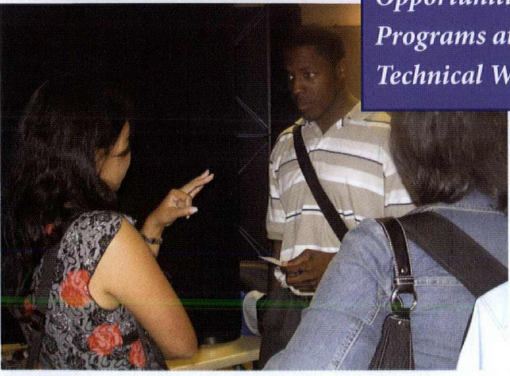


KEYNOTE SPEAKERS:
Matthew Tirrell, Ph.D.
 Richard A. Auahl Professor and Dean
 College of Engineering
 University of California, Santa Barbara

Sheila McClure, Ph.D.
 Health Science Administrator (HSA)
 Division of Research Infrastructure
 National Center for Research Resources (NCRR),
 National Institutes of Health (NIH)



WORKSHOPS PRESENTED:
 Fellowship Opportunities with NSF
 Fellowship Opportunities with EPA
 Opportunities with NSF Science Technology Centers
 Programs at University of California Santa Barbara
 Technical Writing Workshop



New Mexico AMP

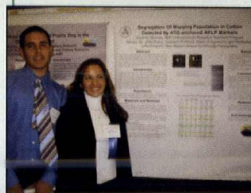
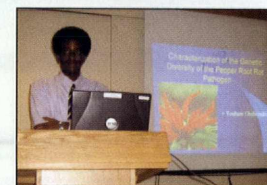
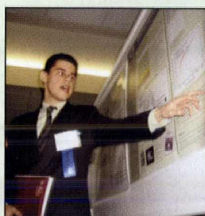
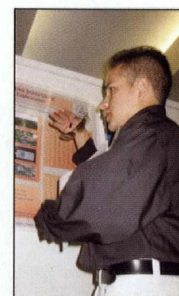
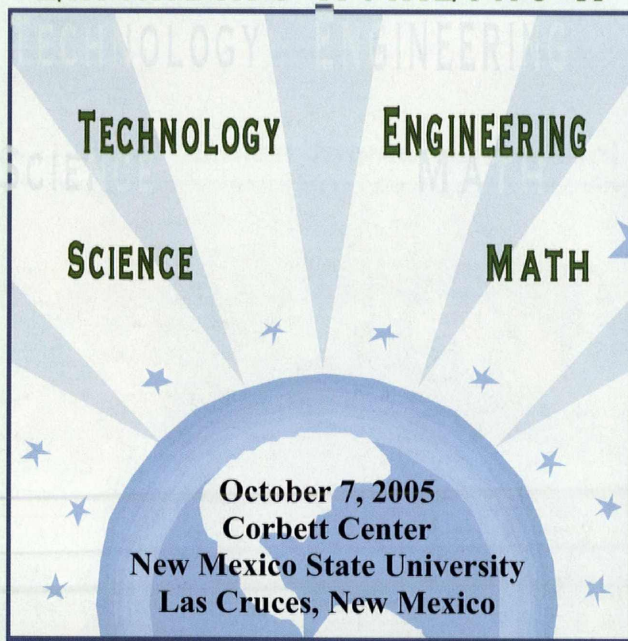
2005 Student Research Conference

New Mexico AMP welcomed students and faculty from twelve New Mexico AMP universities and community colleges, LSAMP programs in New York, Connecticut, California, Missouri, and Oklahoma, and high school juniors, seniors, and advisors from the New Mexico Math, Engineering, Science Achievement (NM MESA) program for a total of 361 conference participants.

Sixty-nine community college and university students did presentations of their faculty-mentored research projects. Oral competition winners were: First place: Ernesto Santillano and Jose Solis, Civil Engineering (team presentation, NMSU); Second place: Henry Jauregui, Physics, (New Mexico Institute of Mining and Technology); and Third place (tied): Yessenia Ibarra, Biology (San Diego State University), and Elaine Manzanilla, Biological Sciences (California State University, Sacramento).

Poster competition winners were: First place (tied): Nathan Padilla, Biology (ENMU) and Samy Saker, Biochemistry (College of Staten Island); Second place: Jeremy Pena, Mechanical Engineering, (NMSU); and Third Place: Maria Jacob, Biological Sciences, (University of Connecticut).

EXPANDING HORIZONS II



NYC LSAMP Conferences:

Held annually since 1998, the Urban University Conference Series is organized by the New York City Louis Stokes Alliance for Minority Participation in Science, Technology, Engineering and Mathematics and has attracted over 500 participants each year since 1999. The Urban University Series highlights the research work done by faculty and CUNY students involved in undergraduate and graduate research at the City University of New York, and serves as a networking event for minority scientists and engineers.

The Eighth Annual Urban University Conference Series consisted of three major events in 2005. 'A Gathering of Science Scholars' and the 'Einsteins in the City' conferences, held at SUNY Stony Brook March 10-11, 2005 and the City College April 11-12, 2005, respectively, were held in collaboration with the Urban University Conference Series. The third component of the Urban University Series - 'Transitions 2005' was held at the City College April 15-16, 2005, and was an event exclusively for the NSF sponsored Louis Stokes Alliance Bridge to the Doctorate Scholars.

'Summer Research Internship Summit' held at Stevens Institute of Technology



SUNY Stony Brook: 'A Gathering of Scholars'



North Carolina Louis Stokes Alliance for Minority Participation

Dr. Carolyn W. Meyers, Principal Investigator

Dr. Joseph Monroe, Co-Principal Investigator

9th Annual NCLSAMP Undergraduate Research Conference

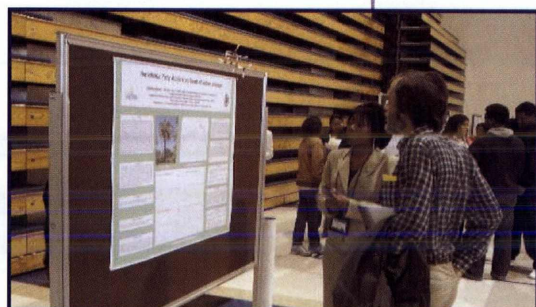
3rd Annual FSU RISE Research Colloquium

March 18, 2005, Fayetteville State University

On March 18, 2005, the Ninth Annual NC-LSAMP Undergraduate Research Conference was held at Fayetteville State University in Fayetteville, North Carolina. This year, NC-LSAMP collaborated with the NIH-funded Research Initiative for Scientific Enhancement (RISE) program in hosting a joint conference to showcase research conducted by students from each program. The 2005 theme for the conference was "Meeting Tomorrow's Challenges Through Partnerships in Research."



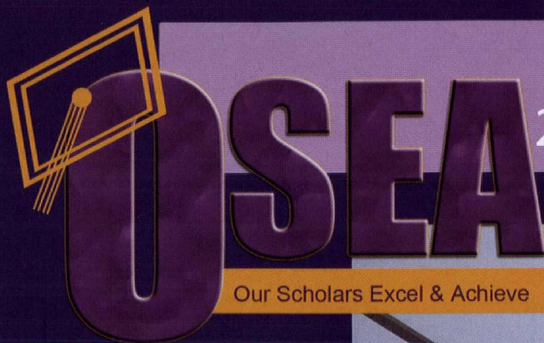
Over 400 students, faculty and administrators from the eight-institution Alliance attended the 2004-2005 Conference. Students from Alliance institutions submitted seventy-three abstracts for oral and poster presentations. In addition, this year's conference featured a plenary lecture by Dr. George Langford, the Ernest Everett Just Professor of Natural Sciences and Professor of Biological Sciences at Dartmouth College. Other speakers for the included Dr. Carolyn Meyers (Provost and Vice Chancellor for Academic Affairs, NC A&T SU, and project PI), Dr. Marian Gillis-Olion (Provost and Vice Chancellor for Academic Affairs, Fayetteville State University), and Dr. Juliette Bell (Dean of the College of Arts and Sciences, Fayetteville State University).



Conference attendees also attended a panel discussion entitled, "Preparing for Graduate School—Survival Techniques". Panelists were Dr. David Shafer, Assistant Dean of the Graduate School at North Carolina State University (Raleigh, NC) and Dr. Henry Frierson, Director of the Alliance for Graduate Education and the Professoriate at the University of North Carolina at Chapel Hill. In addition, the "Lunch and Learn" session in which undergraduate students were provided the opportunity to have lunch, interact and discuss the graduate school experience with current graduate students from universities through out the Alliance was repeated this year. The conference concluded with a Graduate School/Career Fair and

reception for student presenters, faculty and guests. Universities represented and other vendors and recruiters included North Carolina A&T State University, North Carolina State University, the University of Iowa, VWR International, Inc.

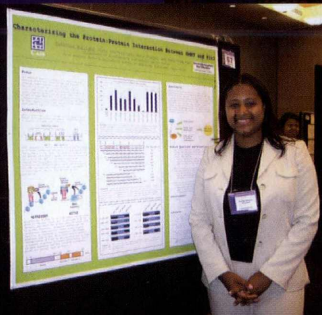
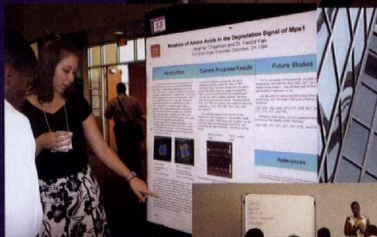
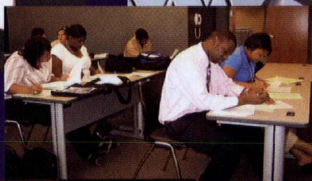
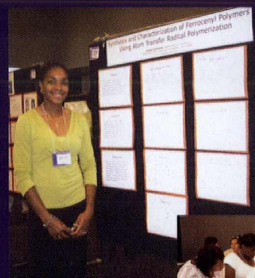




Our Scholars Excel & Achieve

2005 Ohio Student Research Forum

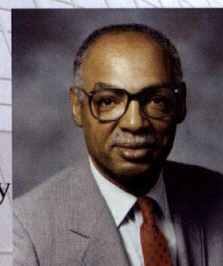
www.OhioSEA.org



The Ohio Science and Engineering Alliance held its 2005 Ohio Student Research Forum at the University of Akron on August 10 and 11, 2005.

The Forum is structured to introduce students to a professional scientific meeting, to maximize networking interactions, to create a sense of community among STEM students and faculty across the state, and to reinforce student's commitment to earn bachelor's degrees and to pursue graduate study or employment in STEM related fields. Over one hundred fifty undergraduate and graduate students, faculty and staff participated in the 2005 Forum.

Dr. Lonnie Reid, keynote speaker, addressed the Forum with a highly motivational speech entitled "Your Attitude Determines Your Altitude". Dr. Reid is an alumnus of the University of Toledo and former head of the Internal Fluid Mechanics department at NASA Glenn Research Center.



Dr. Lonnie Reid

Seventy students reported on the results of their research at the poster session. Participants also gave oral presentations, attended panel discussions and participated in professional development workshops facilitated by faculty and staff. The graduate school and corporate recruitment fair gave students an opportunity to explore their future careers.

The Ohio Science and Engineering Alliance

Ohio State University
247 University Hall, 230 N. Oval Mall
Columbus, OH 43210, 614.247.7267

Oklahoma 2004-2005 Research Symposium Highlights

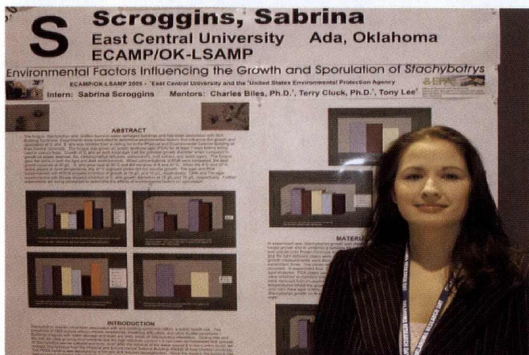
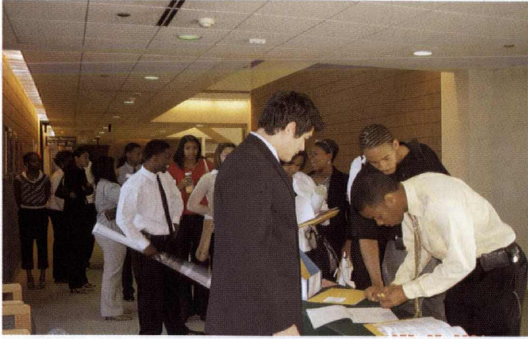


Photo 1 (Left): Gerardo Myrin, Oklahoma State scholar and symposium host, directs the registration of Langston University scholars for the 10th Annual Research Symposium held at Oklahoma State University on Saturday, September 25, 2004. Students, faculty, and staff from Langston totaled 45, comprising the largest delegation from a Partner Institution.

Photo 2 (Left): Sabrina Scroggins, East Central University, makes oral and poster presentation on *Environmental Factors Influencing the Growth and Sporulation of Stachybotrys Atra*.

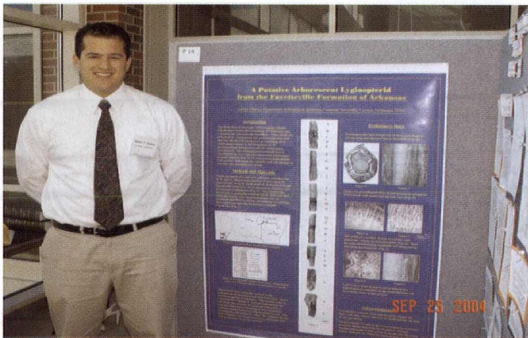


Photo 3 (Left): Adrian Chavez, Cameron University, presents research entitled: *A Putative Arborescent Lyginopterid from the Fayetteville Formation (Upper Mississippian) of Arkansas*.

Photo 4 (Left): Argenia Doss, Langston University, receives participation certificate from Dr. Carl Rutledge, East Central University Campus Coordinator and Head of Physics Department. Presentation title: *Effects of Upper Cervical Spinal Stimulation on Cardiovascular Response to Esophageal Distension*.



Photo 5 (Above): Keith Larsen, OSU, demonstrates project consisting of 4 robots with different abilities using bi-directional communication. Title: *Board-level robotics design*.



Alliance Meeting
Held at Oklahoma Regents for Higher Education
Office Building in Oklahoma City

Philadelphia AMP

Philadelphia AMP

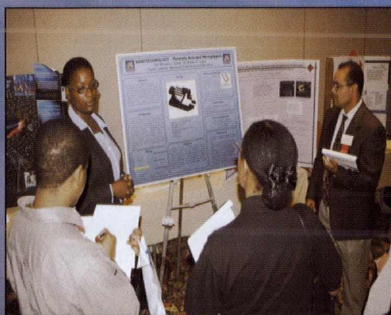
Over a Decade of Excellence

... The Best is Yet to Come !!!



From left, Stephen R. Cox and Veniece Keene of Philadelphia AMP, present a Lifetime Service Award to Dr. Joseph Bordogna, former Deputy Director and Chief Operating Officer, National Science Foundation. PHOTO/RON ALLEN

More than one hundred STEM professionals celebrated Philadelphia AMP's tenth year anniversary during an evening gala on Friday and research and mentoring conference on Saturday, October 8 - 9, 2004.



Marcella Stokes, former Community College of Philadelphia (CCP) / Drexel University student presents her engineering project to research judges Gossett Campbell, Drexel University, Dr. Linda Powell, CCP, and Dr. Fred Allen, Drexel University during the research competition. PHOTO/RON ALLEN

In the last twelve years, the Alliance has graduated 5,178 African - American, Native American and Hispanic / Latino students receiving B.S. degrees in STEM disciplines.



Stephen R. Cox, Project Director, Philadelphia AMP with 1st place research award winners: Delaware State students Kenneth Formulu, Patricia Nugent and Jingsi Gao, and Kiandra Lewis, New Jersey Institute of Technology. PHOTO/RON ALLEN

Over the life of the Alliance fourteen (14) AMP graduates have also received Ph.D. degrees as of June 2005. In addition, as of Fall 2005, two hundred twenty-six (226) AMP graduates are currently enrolled in graduate school at both the masters and doctorate levels in STEM fields of study.



From left, Cora Ingram, AMP Co-PI, Director, Multicultural Programs, SEAS, University of Pennsylvania and Dr. Fred Allen, Assistant Professor, Biomedical Engineering, Drexel University reminisce during gala celebration. PHOTO/RON ALLEN

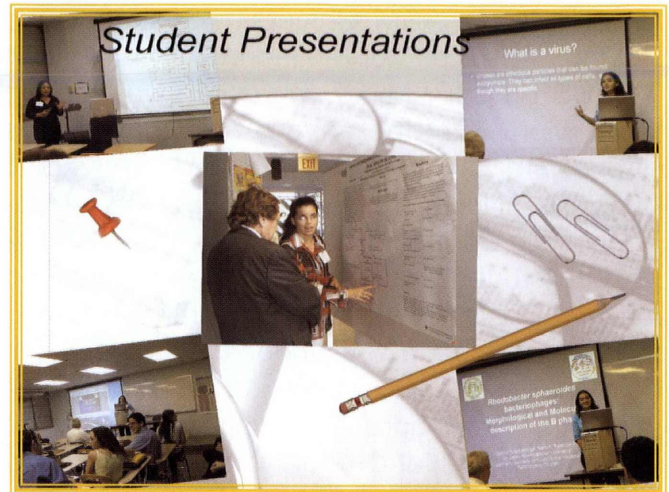
Thirty-two AMP graduates are pursuing M.S. degrees in STEM in our Bridge to the Doctorate programs hosted by the University of Delaware, the New Jersey Institute of Technology, and Drexel University.



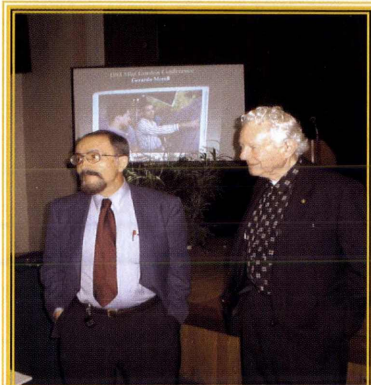
From left, Stephen R. Cox, Project Director, Philadelphia AMP, and Bridge to the Doctorate Program Directors, Tony Howell, New Jersey Institute of Technology and Michael Vaughan, University of Delaware take a moment to strategize during the research conference. PHOTO/RON ALLEN



The 2005 Puerto Rico Interdisciplinary Scientific Meeting (PRISM)

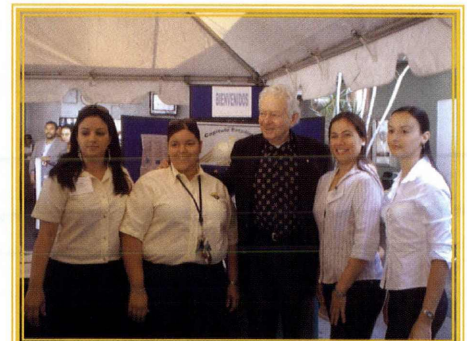


On March 12, 2005, Puerto Rico LSAMP celebrated the 25th Puerto Rico Interdisciplinary Scientific Meeting. The activity was held at UPR-Mayaguez, the site of the first PRISM 25 years ago. A total of **840** STEM students and faculty members from PR-LSAMP institutions attended the activity. PRISM is the largest local annual scientific forum where science, technology, engineering and mathematics students present their research projects to faculty and peers.



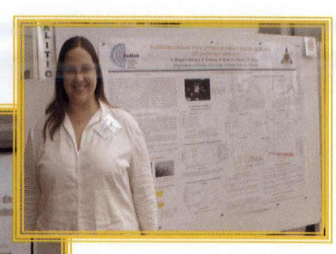
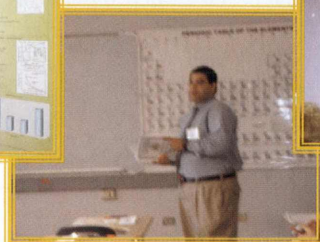
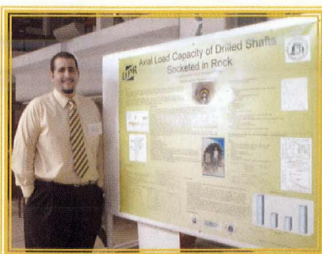
Dr. Lederman and Dr. Manuel Gomez, PI, PR-LSAMP

Dr. Leon M. Lederman, an internationally renowned high-energy physicist, and the 1988 Nobel Prize in Physics, was the plenary speaker. The topic of his conference was “*Science, Education, and Science Education*”. Dr. Lederman addressed the need for scientists to get actively involved in the process of improving science education at all levels.



Dr. Lederman and a group of students

Two hundred and forty-seven (247) undergraduate STEM students presented their research projects. For the first time this year, PRISM included a poster session for STEM graduate students to present their projects. One hundred and two (102) graduate students, including PR-LSAMP Bridge-to-the Doctorate Fellows, participated in the activity, for a total of **349 presentations**.



Second Annual TAMUS LSAMP Mini-Symposium

The 2nd Texas A&M University System Louis Stokes Alliance for Minority Participation (TAMUS LSAMP) Mini-Symposium was held in conjunction with the third Annual Pathways Symposium at Texas A&M University Kingsville, November 4-5, 2005. The Mini-Symposium provided a forum for TAMUS LSAMP students to make oral presentations and participate in a poster presentation based on research conducted under the guidance of their professors. The exercise was aimed at enhancing retention, enabling transition to graduate school and enhancing the graduate experience by contributing to the confidence and self-assurance of students. Several TAMUS LSAMP students presented their posters during the conference.



Photograph 1: Some of the participants at the seminar.

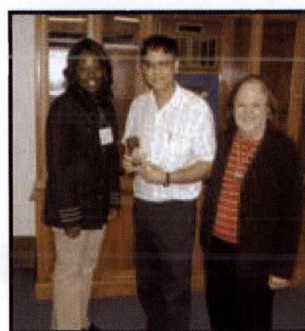
The symposium drew greater student participation. Student participation increased by about 50% over the 1st TAMUS LSAMP symposium. Overall the goals of the TAMUS LSAMP Mini Symposium were to stimulate an interest in Science, Technology, Engineering and mathematics (STEM) research; to encourage interaction among the attendees from various TAMUS campuses; to encourage supportive exchanges about under represented

minority (URM) STEM educational concerns; to stimulate interest in STEM teaching and in possible careers in research. Peer-to-peer relationship building occurred during the mini symposium and cross-institutional community-building and networking was fostered among the students. Participation in the Mini-Symposium and in the closely related TAMUS Pathways Research Symposium was expected to improve retention by motivating URM STEM students to remain in their chosen STEM fields.



Photograph 2: A workshop in process at the Symposium

Presentations were made by TAMUS faculty who participated and by invited speakers. Symposium activities allowed students to practice communication skills, goal setting, time management, team building, and critical appreciation.



Photograph 3: From left to right, Ms. Shantuan Coleman, Dr. Apurba Bhattacharya and Dr. Diana Marinez



FIFTH ANNUAL • STUDENT RESEARCH CONFERENCE

Monday, April 18, 2005 • Arizona State University



LSAMP Award History

1991

Alabama



Dr. Louis Dale
The University of
Alabama at
Birmingham

California



Dr. Ralph J. Cicerone
University of California,
Irvine

Mississippi



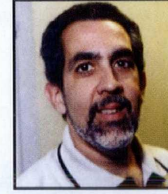
Dr. James Perkins
Jackson State University

Puerto Rico



Dr. Manuel Gomez
University of Puerto Rico

WAESO



Dr. Antonio Garcia
Arizona State University

Texas



Dr. Karan Watson
Texas A&M University

1992

Florida-
Georgia



Dr. Ralph W. Turner
Florida A&M
University

New York City



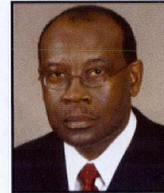
Dr. Nevill A. Parker
City College

North Carolina



Dr. Carolyn W. Meyers
North Carolina A&T State
University

South Carolina



Dr. Andrew Hugine, Jr.
South Carolina State
University

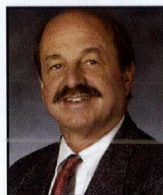
University of
Texas System



Dr. Benjamin Flores
The University of Texas
at El Paso

1993

California
State



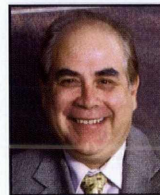
Dr. Richard Brown
California State
University,
Sacramento

Illinois



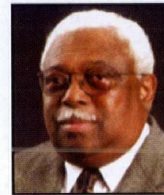
Dr. Marian Wilson-Comer
Chicago State University

New Mexico



Dr. William V. Flores
New Mexico State
University

Washington/Baltimore/
Hampton Roads



Dr. Richard A. English
Howard University

1994

All Nations



Dr. Joseph F. McDonald
Salish Kootenai College

Oklahoma State



Dr. Earl Mitchell
Oklahoma State University

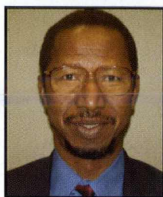
Greater
Philadelphia Region



Dr. Ali Houshmand
Drexel University

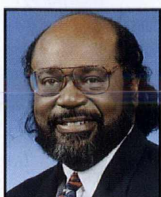
1995

Louisiana



Dr. Diola Bagayoko
Southern University
and A&M College

Missouri



Dr. Charles Sampson
University of Missouri-
Columbia

**University System
of Maryland**



Dr. Freeman Hrabowski
University of Maryland
Baltimore County

Tennessee



Dr. James A. Hefner
Tennessee State University

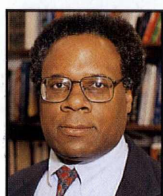
1996

Colorado



Dr. Omnia El-Hakim
Colorado State University

SUNY



Dr. David Ferguson
State University of
New York-Stony Brook

1997

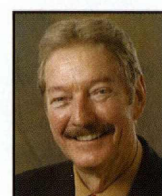
Georgia



Dr. Walter D. Broadnax
Clark Atlanta University

1998

Houston



Dr. John Bear
University of
Houston

2001

Mid-Eastern



Dr. Belinda Anderson
Virginia Union University

Northeast



Dr. John Cunningham
The University of
Massachusetts Amherst

Pacific



Dr. Herb Schroeder
University of
Alaska Anchorage

2002

Indiana



Dr. Sally K. Mason
Purdue University

2003

Ohio



Dr. Karen Halbrook
Ohio State University

2004

Michigan



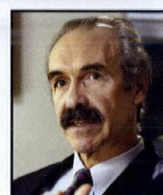
Dr. Mary Sue Coleman
University of Michigan

Peach State



Dr. Michael Adams
The University of Georgia

Wisconsin



Dr. Peter D. Spear
University of
Wisconsin-Madison

ALSAMP

*Alabama Louis Stokes Alliance for
Minority Participation*



The Alabama Louis Stokes Alliance for Minority Participation (ALSAMP) strives through its eleven member institutions to increase the quality and quantity of underrepresented minority students completing baccalaureate degrees in science, technology, engineering and mathematics (STEM) fields. Seven of the institutions have doctoral programs in STEM fields. The interaction of ALSAMP students and faculty, and the facilities on these eleven campuses are advantageous for all. The undergraduate institutions benefit from having their students participate in research experiences with research faculty while the research institutions have the opportunity to work with, identify and recruit highly qualified minority students seeking to attend graduate school. The diversity of the Alliance: Historically Black Colleges and Universities and majority institutions, public and private institutions and research and teaching institutions boost a new era of cooperation as the Alliance seeks to maximize learning opportunities and heighten achievement for all ALSAMP students in the fulfillment of LSAMP goals.

ACTIVITIES, SERVICES AND PROGRAMS

- Bridge to the Doctorate Programs at Auburn University,
- Summer Bridge Program for Graduating High School Seniors
- Summer Institutes for Juniors and Seniors
- Faculty Mentored Research
- Career Fairs and Advisement
- Peer Study Groups
- Summer Research Programs
- Graduate School Preparation
- Participation in Professional Conference and Seminars
- Peer and Faculty Mentoring

PARTNERS

Lead Institution: The University of Alabama at Birmingham

Partners: Alabama A&M University, Alabama State University, Auburn University, Miles College, Oakwood College, Stillman College, Talladega College, Tuskegee University, The University of Alabama and The University of Alabama in Huntsville

MISSION STATEMENT

To provide academic and financial support programs designed to significantly increase the quality and quantity of underrepresented minority students completing baccalaureate degrees in science, technology, engineering and mathematics (STEM) fields.



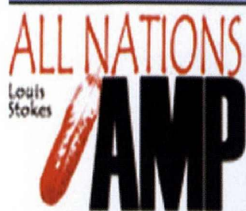
The University of Alabama at Birmingham
Summer Bridge Students



ALSAMP/AAGEP Annual Graduate School Fair



ALSAMP Bridge to the Doctorate and Scholars
Conference



All Nations Louis Stokes Alliance for Minority Participation



Indigenous Math and Science Institute at Salish Kootenai College, Pablo Montana 59855



Co-PI Zetra Wheeler awards Erica Scott of Harvard College First Prize in the ANLSAMP Poster and Oral Competition at the AISES National Convention

Dr. Joseph F. McDonald
Principal Investigator
All Nations LSAMP
Salish Kootenai College
PO Box 70
52000 Highway 93
Pablo, Montana 59855
Phone: (406) 275-4959
Fax: (406) 275-4801
www.anamp.org

The All Nations Louis Stokes Alliance for Minority Participation (ANLSAMP) is working to achieve parity with other minority groups to meet the needs of the tribal communities we serve. ANLSAMP has 52 alliance partners. Our partners consist of 25 universities and four-year colleges and 27 tribal colleges offering two-year degrees.

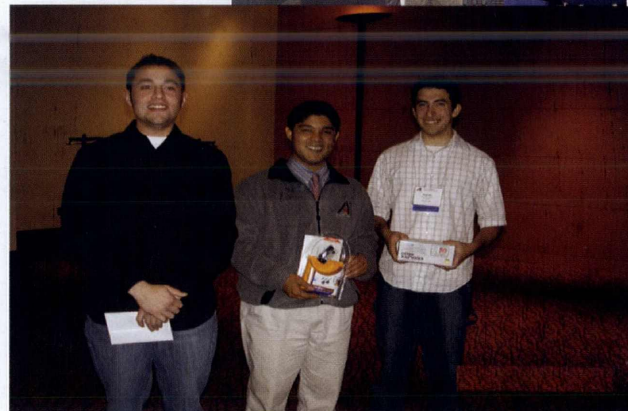
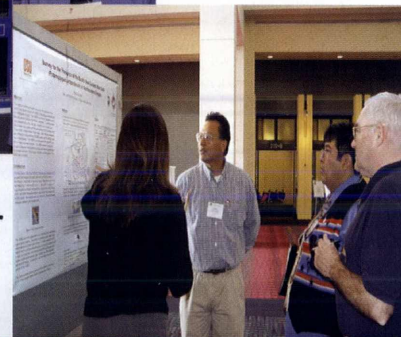
The ANLSAMP Phase II is building the capacity of the Tribal Colleges and Universities (TCUs) to address the disparity of Native Americans. Native Americans are the least represented minority group in the Science, Technology, Engineering, and Mathematics (STEM) fields. Student focused activities play an integral part in increasing student successes and are incorporated into the overall program activities.

Four Year Alliance Partners

- Central Michigan University
- Haskell Indian Nations University
- Heritage University
- Institute of American Indian Arts
- Lake Superior State College
- Montana State University - Bozeman
- Montana State University - Northern
- North Dakota State University
- Oglala Lakota College
- Rocky Mountain College
- Salish Kootenai College
- Sinte Gleska University
- South Dakota School of Mines & Technology
- South Dakota State University
- The Evergreen State College
- University of Kansas
- University of Minnesota - Duluth
- University of Minnesota - Twin Cities
- University of Montana
- University of North Dakota
- University of South Dakota
- University of Washington
- University of Wisconsin
- Washington State University
- Western Washington University



National AISES Conference Poster Presentations 2005



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CALIFORNIA LSAMP PARTNERS

UC BERKELEY

MARK A. RICHARDS, PH.D.
FACULTY DIRECTOR
Dean of Physical Sciences and
Professor of Earth and Planetary
Science
College of Letters and Science
markr@seismo.berkeley.edu
COLETTE PATT, PH.D.
COORDINATOR
Student Diversity Programs
College of Letters & Science
colette_patt@ls.berkeley.edu

UC DAVIS

GARY E. FORD, PH.D.
FACULTY DIRECTOR
Associate Dean and Professor
College of Engineering
ford@ece.ucdavis.edu
RENEE MALDONADO
COORDINATOR
UC Davis MESA Center
College of Engineering Dean's Office
rjmalonado@ucdavis.edu

UC LOS ANGELES

RICHARD L. WEISS, PH.D.
FACULTY DIRECTOR
Department of Chemistry and
Biochemistry
weiss@chem.ucla.edu
LAINA LONG
COORDINATOR
CARE Center
lainal@lifesci.ucla.edu

UC SANTA CRUZ

A. RUSSELL FLEGAL, PH.D.
FACULTY DIRECTOR
Division of Physical and Biological
Sciences
flegal@etox.ucsc.edu
MARLENE ROBINSON
COORDINATOR
Division of Physical and Biological
Sciences
marobins@ucsc.edu

UC IRVINE

DEREK DUNN-RANKIN, PH.D.
FACULTY DIRECTOR
Department of Mechanical and
Aerospace Engineering
ddunnran@uci.edu
KIKI FRIEND
COORDINATOR
107 Rockwell Engineering Center
kika@uci.edu

UC RIVERSIDE

MICHAEL MARSELLA, PH.D.
FACULTY DIRECTOR
Department of Chemistry
michael.marsella@ucr.edu
TERESA COFIELD
COORDINATOR
The Learning Center
tcofield@pop.ucr.edu

UC SANTA BARBARA

GLENN EL BELTZ, PH.D.
FACULTY DIRECTOR
College of Engineering
beltz@engineering.ucsb.edu
BOB COTA
COORDINATOR
College of Engineering
bcota@engineering.ucsb.edu

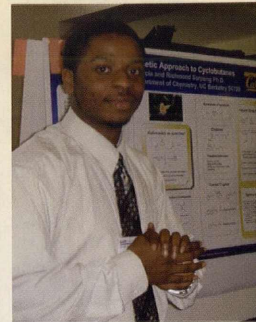
UC SAN DIEGO

DAVID M. ARTIS, PH.D.
PROGRAM DIRECTOR
Academic Enrichment Programs
dartis@ucsd.edu
JACQUIE AZIZE-BREWER, PH.D.
COORDINATOR
Academic Enrichment Programs
jazize@ucsd.edu

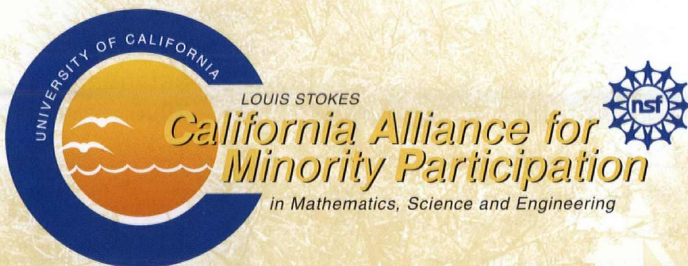
CALIFORNIA LSAMP

The University of California Irvine, Lead Campus

UC systemwide has achieved a 96% increase in minority STEM enrollment and an 84% increase in minority B.S. degrees granted since base year, with 1,133 B.S. degrees granted in 2004.



The Annual Undergraduate Research Symposium convenes 150 UC STEM faculty and students from our 8 partner UC campuses. Special Merit in Research Awards are made by UC faculty for poster and oral presentations. Criteria includes: 1) Originality; 2) Depth of understanding and clarity; 3) Likelihood of sparking further research. The undergraduate research experience provides important professional development for graduate school preparation and career pathways.



UC San Diego is proud to host Bridge to the Doctorate, Cohort III, supporting 12 minority fellows in STEM graduate programs. UCLA is host of Cohort I. UC Irvine is host of Cohort II.

email: camp@uci.edu • www.california-lsamp.uci.edu

CAMP STATEWIDE LEADERSHIP

Michael V. Drake, M.D., Chancellor, P.I.
Debra J. Richardson, Dean, Bren School of Information and Computer Science, Co-P.I.
Nicolaos Alexopoulos, Dean, Henry Samueli School of Engineering, Co-P.I.
Juan Francisco Lara, Assistant Vice Chancellor, Executive Director
Marjorie DeMartino, Associate Executive Director, dmartino@uci.edu

CALIFORNIA STATE UNIVERSITY LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION PROGRAM



CSU-LSAMP Alliance Campus Coordinators

CSU Bakersfield - Javier Trigos-Arrieta
(661) 664-2031 • jtrigos@csub.edu

CSU Chico - Lori Holcombe
(530) 898-4175 • lholcombe@csuchico.edu

CSU Dominguez Hills - Serban Raianu
(310) 243-3139 • sraianu@csudh.edu

CSU East Bay - Julia Norton
(510) 885-3431 • julia.norton@csueastbay.edu

CSU Fresno - Lilia de la Cerda
(559) 278-4748 • liliad@csufresno.edu

CSU Fullerton - Ernie Solheid
(714) 278-7023 • esolheid@fullerton.edu

Humboldt State - Jacob Varkey
(707) 826-4164 • jpv1@humboldt.edu

CSU Long Beach - Ronnie Damico-Cole
(562) 985-8061 • rdamico@csulb.edu

Cal State Los Angeles - Margaret Jefferson
(323) 343-2059 • mjjeffer@exchange.calstatela.edu

CSU Monterey Bay - William Head
(831) 582-3576 • william_head@csUMB.edu

CSU Northridge - Karla Johnson-Majedi
(818) 677-2191 • kjm@csun.edu

Cal Poly Pomona - Edward Hohmann
(909) 869-2472 • echohmann@csupomona.edu

CSU Sacramento - Juanita Barrena
(916) 278-6519 • jbarrena@csus.edu

CSU San Bernardino - Belisario Ventura
(909) 537-5406 • bventura@csusb.edu

San Diego State - Thelma Chavez
(619) 594-7195 • tchavez@sunstroke.sdsu.edu

San Francisco State - David Ellis
(415) 338-1026 • dellis@math.sfsu.edu

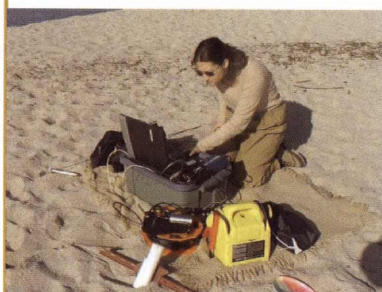
San Jose State - Karen Singmaster
(408) 924-4980 • singmast@aol.com

Sonoma State - Samuel Brannen
(707) 664-2591 • brannen@sonoma.edu

CSU Stanislaus - Louis Feldman
(209) 667-3597 • lfeldman@csustan.edu

Initiated in 1994, with support from the National Science Foundation, the California State University-Louis Stokes Alliance for Minority Participation (CSU-LSAMP) Program is a comprehensive state-wide project dedicated to increasing the number of students from underrepresented minority groups (URM) graduating from campuses of the California State University with baccalaureate degrees in science, technology, engineering, and mathematics (STEM) disciplines.

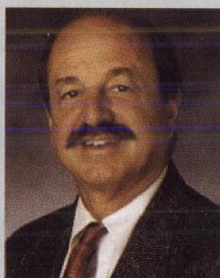
The CSU-LSAMP Alliance consists of 19 campuses of the California State University (CSU), each of which is partnered with at least one California Community College (CCC).



Margarita Watts— CSU, Monterey Bay
2004-2005 CSU-LSAMP Student Scholar

In 2004-2005, CSU-LSAMP supported a new alliance-wide activity called the "CSU-LSAMP Student Scholars Program". In this activity, the alliance's Program Committee (the project's governing group) selected up to 3 exceptionally promising upper division students from each participating CSU campus for recognition. CSU-LSAMP provided financial assistance to support the student's individual plan of preparation for STEM graduate study. Fifteen of the 19 campuses participated in this new alliance-wide activity and a total of 26 CSU students were selected for participation in this activity. This new activity has brought greater campus and public recognition of the accomplishments of CSU-LSAMP students.

CSU-LSAMP Phase III



Ric Brown, Ed.D., PI
Provost and Vice President for
Academic Affairs
California State University, Sacramento



Juanita Barrena, Ph.D., Co-PI
Professor of Biological Sciences
California State University, Sacramento



Nicole Campos, Project Manager
CSU-LSAMP Program
California State University, Sacramento

CSU-LSAMP Statewide Office
California State University, Sacramento

6000 J Street, Sequoia Hall 534
Sacramento, CA 95819-6124

Phone: (916) 278-3838 Fax: (916) 278-3854
www.csus.edu/csul-samp

CSU-LSAMP is funded by the National Science Foundation (HRD #0331537)
and the CSU Chancellor's Office.

LOUIS STOKES COLORADO-AMP

linking diverse students to educational opportunities in science, technology, engineering, and mathematics

LS CO-AMP SERVES STUDENTS IN---

Colorado and the Four Corners Region. Our goal is to substantially increase the quantity and the quality of education for African American, Hispanic, Native American, and Pacific Islander students receiving baccalaureate degrees in Science, Technology, Engineering, and Mathematics (STEM). LS CO-AMP Phase II undertakes comprehensive efforts to place emphasis in the following areas:

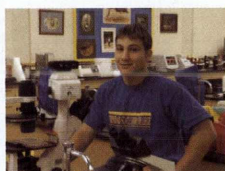
- Recruitment
- Summer Bridge Programs
- Leadership/Retention
- Graduation of LS CO-AMP Seniors
- K-12 Outreach
- Tracking
- Graduate School Placement
- National Conferences

LS CO-AMP PARTNER INSTITUTIONS & SITE COORDINATORS

- ♦ **Adams State College**
Mike Garcia, 719/587-7865
dmgarci@adams.edu
- ♦ **AIMS Community College**
Howard Major, 970/339-6300
howard.major@aims.edu
- ♦ **Colorado State University**
Deanna Durnford, 970/491-1625
durnford@engr.colostate.edu
- ♦ **Colorado State University - Pueblo**
Dr. Jane Fraser, 719/549-2036
jane.fraser@colostate-pueblo.edu
- ♦ **Colorado School of Mines**
Judi Diaz-Bonacquisti, 303/273-3021
jdiaz@mines.edu
- ♦ **Diné College**
Clarissa Bowman, 505/368-3555
cnbowman@dinecollege.edu
- ♦ **Fort Lewis College**
Dr. Don May, 970/247-7545
may_d@fortlewis.edu
- ♦ **Front Range Community College**
Shashi Unnithan, 970/204-8607
shashi.unnithan@frontrange.edu
- ♦ **Metropolitan State College**
Dr. Larry Johnson, 303/556-5106
johnsonl@mscd.edu
- ♦ **Pueblo Community College**
Carol Montoya, 719/549-3365
carol.montoya@pueblocc.edu
- ♦ **Trinidad State Junior College**
Carol Rankin, 719/846-5670
Carol.Rankin@trinidadstate.edu
- ♦ **University of Colorado - Boulder**
David Aragon, 303/492-2944
aragond@spot.colorado.edu
- ♦ **University of Colorado - Colorado Springs**
Tina Moore, 719/262-3347
tmoore@eas.uccs.edu
- ♦ **University of Colorado - Denver**
Dr. Paul Encinias, 303/556-2777
pencinias@carbon.cudenver.edu



Colorado State University
Outreach to K-12
RM-MSMSP Summer
Camp



Trinidad State Junior College
Community College Research

Louis Stokes Colorado Alliance for Minority Participation
Serving Colorado and the Four Corners Region



LS CO-AMP KEY PERSONNEL

Omnia El-Hakim, Ph.D.
Principal Investigator & Project Dir.
Asst. Dean for Diversity
College of Engineering
Colorado State University
(970) 491-2656 (CSU); Fax 491-3421
(970) 222-1043 (Cellular)
omnia@engr.colostate.edu

Gary Metzger, Project Coordinator
Phone: (970) 491-2898
gmetzger@engr.colostate.edu

Cheri Christensen, Office Manager
Phone: (970) 491-2978
Fax: (970) 491-3421
chrich@engr.colostate.edu

GOVERNING BOARD CHAIR

Larry Edward Penley
President, Colorado State University
Chancellor, Colorado State University
Systems

CO-PIs/MANAGEMENT TEAM

David Aragon
Director, Multicultural Engineering Prog.
University of Colorado-Boulder
aragond@spot.colorado.edu

Hector Carrasco, Ph.D.
Dean, College of Education, Engineering
& Professional Studies
Colorado State University-Pueblo
hector.carrasco@colostate-pueblo.edu

Larry Johnson, Ph.D.
Director, Ctr. for Sci, Math & Envir. Educ.
Metropolitan State College of Denver
johnsonl@mscd.edu

Patrick Pellicane, Ph.D.
Professor, College of Natural Resources
Colorado State University
patrick.pellicane@colostate.edu

TRIBAL PARTNERS

Jicarilla Apache Tribe - Stanford Salazar
Navajo Nation - Leland Leonard
Southern Ute Tribe - LaTitia Taylor
Ute Mountain Ute Tribe - Yolanda Rossi



University of Colorado - Boulder
Multicultural Engineering Program
2005 Freshman Summer Bridge Program



Dr. Omnia El-Hakim
Principal Investigator
& Director



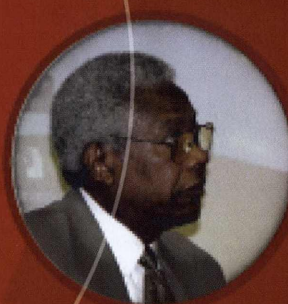
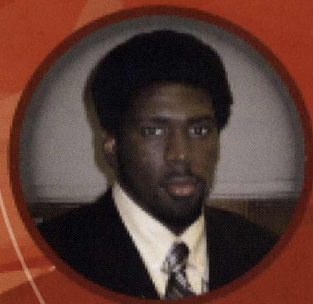
Dr. Larry E. Penley
CO-AMP Governing
Board Chair

<http://www.engr.colostate.edu/coamp>



FGLSAMP

FLORIDA GEORGIA
LOUIS STOKES ALLIANCE



Increasing undergraduate
and graduate degree production
in STEM areas

Academic
Enhancement

Professional
Development

Undergraduate
Research

Bridge to the
Doctorate Program

Mentoring

FGLSAMP Institutions: Florida A&M University (Host Institution)

Alabany State University
Florida International University
Miami-Dade College
University of Miami

Bethune-Cookman College
Florida Memorial College
University of Cental Florida
University of South Florida

Tallahassee Community College
Florida State University
University of Florida
Florida Community College

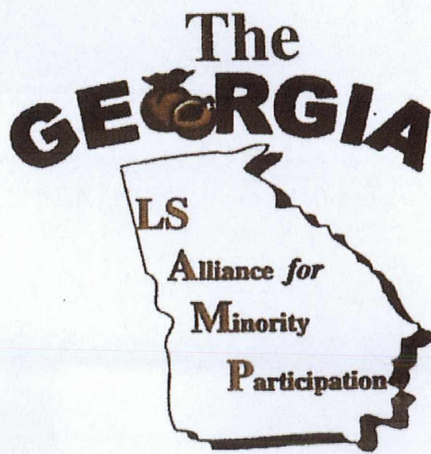
Ralph Turner, Project Director
Byron Greene, Manager

FGLSAMP Central Office
1540 S. Adams Street, Suite A
Tallahassee, FL 32307
(850) 561-2467
www.fglsamp.com

Designed By: RDMS 850.509.3516

FGLSAMP





GA LSAMP PARTNERS

Dr. Melvin R. Webb, Project Director
 Clark Atlanta University
 404-880-6868
mwebb@cau.edu

Dr. Barbara Morgan
 404-756-4025
bmorgan@amcmail.atml.peachnet.edu

Clark Atlanta University
 Dr. Isabella Finkelstein
 404-880-8131
ifinkels@cau.edu

Georgia State University
 Dr. Alfonso Baumstark
 404-651-1716
chealb@panter.gsu.edu

Morehouse College
 Dr. J. K. Haynes
 Packard Professor and
 Dean of Science and Mathematics
 404-215-2610
jhaynes@morehouse.edu

Paine College
 Dr. Reuben Kesler, Jr.
 706-821-9335
rkesler@painte.edu

Spelman College
 Dr. Rena Jones
 404-225-7636
rjones1@spelman.edu

The Georgia LSAMP Program enters Phase II designed to accomplish the following goals:

- Increase STEM graduates to 765 by 2010
- Impact more than 15,000 undergrads by 2010
- Increase graduate/professional school enrollees by 10 percent per year
- Increase retention by 10 percent per year
- Increase the transfer of STEM Associate Degree recipients by 50 percent

To assist in the accomplishment of its goals, the Georgia LSAMP has adopted the following unifying themes:

- Focused Recruitment and Retention
- Required Research Participation
- Financial Support
- Graduate School Enrollment

The GA LSAMP Activities

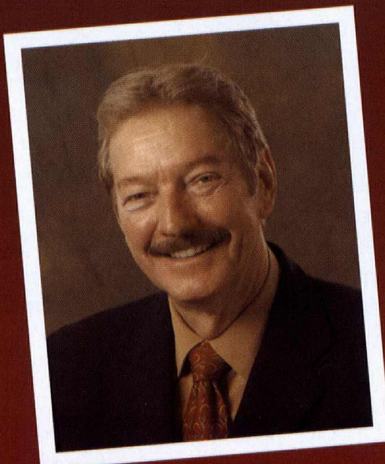
- Pre-freshmen Summer Bridge Programs
- Systemic Reform of Entry Level STEM Courses
- Faculty workshops on Teaching & Learning
- Financial support through scholarships and research stipends
- Office of Research Careers
- Tutorials and Peer Mentoring
- Undergraduate Research Participation

Impact and Systemic Change

- Enrollment has grown 172 percent since the AMP inception
- Degrees have increased more than 150 percent
- Partner institutions are listed as best institutions for African Americans
- Partners are listed among the top 20 institutions serving as the baccalaureate origin of recent STEM doctorate recipients

the HOUSTON LSAMP

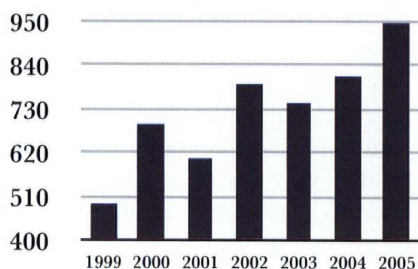
INCREASING DIVERSITY IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH



Dr. John L. Bear

Currently Dean of the College of Natural Sciences and Mathematics, Professor of Chemistry at the University of Houston, and PI of the H-LSAMP. Dr. Bear joined the faculty at University of Houston in September 1963. He was Chairman of the Chemistry department from 1975 to 1992 when he became Dean of the College in 1992.

✕ UREP/STEM DEGREES ✕



Since its inception, the Houston Alliance has seen steady growth in the number of degrees granted in STEM fields. This is largely attributed to our Collaborative Learning Community. H-LSAMP has seen an increase from 494 to nearly 950 UREP/STEM baccalaureate degrees.

The H-LSAMP is currently entering its second year in Phase II. Along with recruiting top students, there has been an increased focus on the transfer of students from community colleges and the retention of students at each site. H-LSAMP scholars have the opportunity to conduct research, peer tutor, lead interactive workshops, and travel to national conferences.

H-LSAMP scholars not only take, but also teach workshops. These workshops allow for group interaction, instructional reinforcement, and have allowed us to form a real community.



Partner Institutions:

PI: Dr. John L. Bear
jbear@uh.edu

Co-PI: Dr. Bobby Wilson
Wilson_bl@tsu.edu

Ex. Director: Craig Cassidy
ccassidy@uh.edu

University of Houston
Christopher Miller
cmiller4@uh.edu

Texas Southern University
Michelle Tolbert
Tolbert_ym@tsu.edu

**University of Houston-
Downtown**
Dr. Richard Aló
RAlo@uh.edu

University of Houston- Victoria
Dr. Li Chao
chaoL@uhv.edu

Texas State University
Susan Romanella
sr23@txstate.edu

Rice
Theresa Chatman
tc@rice.edu

**Houston Community College
System**
Dr. Mahmoud Shagroni
mahmoud.shagroni@hccs.edu

**San Jacinto Community
College District**
Sharon Sledge
Sharon.sledge@sjcd.edu

<http://hlsamp.uh.edu>

CSU PRESIDENT & PI



Dr. Elnora D. Daniel

EXEC. DIRECTOR & CO-PI



Dr. Marian Wilson-Comer

DIRECTOR

Dr. LeRoy Jones II

OFFICE MANAGER

Ms. Fay D. Edmond

COORDINATOR OF SPECIAL PROJECTS AND R&D

Ms. Lezlie J. Thompson

PARTNERS

Chicago State University (CSU)
DePaul University
Governors State University
Illinois Institutes of Technology
Illinois State University
Northeastern University
Southern IL Univ. - Carbondale
Southern IL Univ. - Edwardsville
University of Illinois - Chicago
Harold Washington College
Harry S. Truman College
Kennedy-King College
Malcolm X College
Olive Harvey College
Richard J. Daley College
South Suburban College
St. Augustine College
Wilbur Wright College

CONTACT INFORMATION

Illinois LSAMP
Chicago State University
9501 S. King Drive - SCI 101A
Chicago, Illinois 60628
Phone: 773-995-3296
Fax: 773-995-2966
E-mail: ilsamp@csu.edu
Website: www.csu.edu/ILSAMP



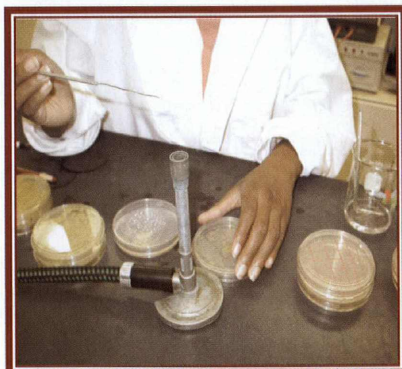
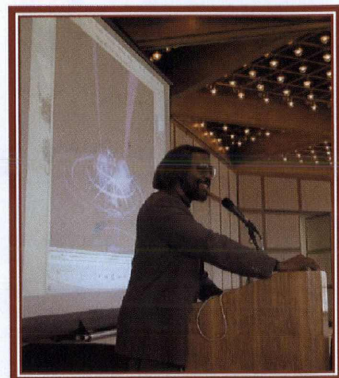
ILLINOIS LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION

OVERVIEW

The Illinois Louis Stokes Alliance for Minority Participation (ILSAMP) formally the Chicago Alliance for Minority Participation (ChAMP) was formed in 1993 in response to the National Science Foundation's (NSF) mandate to significantly increase the number of underrepresented degrees in science, technology, engineering and mathematics (STEM) disciplines.

The ILSAMP has successfully increased the number of students receiving STEM undergraduate degrees, master's degrees and has recently begun its Bridge to the Doctorate program.

The ILSAMP continues to support the overall goals by 1) providing programs to improve STEM students academic preparation, 2) continuously modify and improve gateway courses to better educate more students, and 3) provide underrepresented students with more educational options to increase opportunity and enhance performance. With continued support, this program can and will serve as a model and solid foundation for students achievement in the state of Illinois.



PROGRAMS

Illinois LSAMP provides activities that are comprehensive, multi-disciplinary and focused on enhancing scholarship for minority students. Considerable effort is expended to address transition points in a student's academic career. The transition points includes: high school to college, 2-year college to 4-year college, undergraduate study to graduate study, and academic study to careers in STEM. Other activities include: hands on research apprenticeships, scholarship programs, science conferences, facilitated study groups, faculty mentoring, professional development activities, peer mentoring, summer bridge programs and internships.

Made Possible with
the Generous
Support of the
National Science
Foundation



LSAMP

I n d i a n a



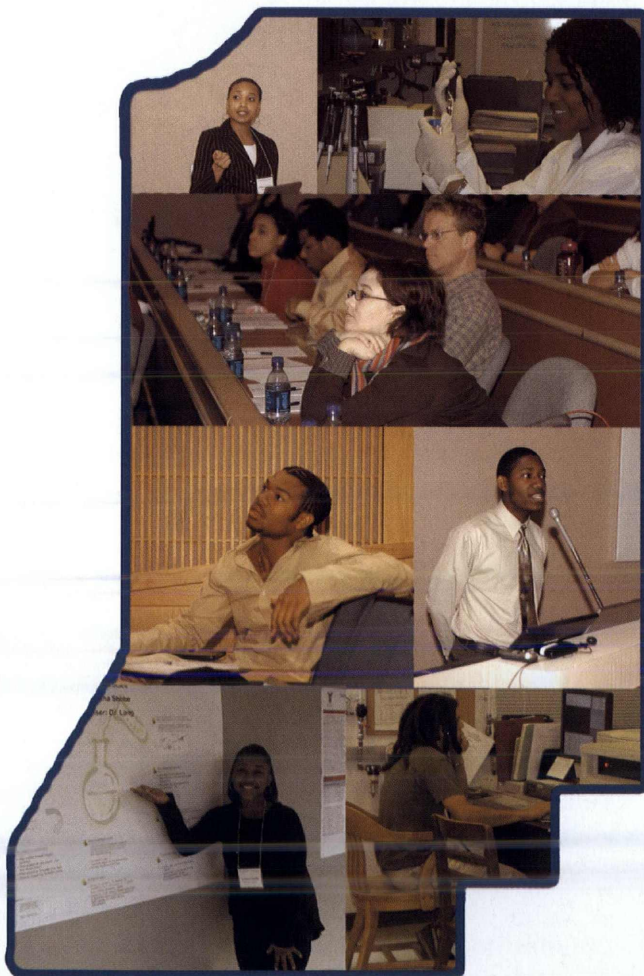
LSAMP INDIANA

Principal Investigator
Dr. Sally Mason,
Provost, Purdue University

The Louis Stokes Alliance for Minority Participation (LSAMP) Indiana project is collaboration among Ball State University, Muncie; Indiana University, Bloomington; Indiana University – Purdue University – Indianapolis; Purdue Calumet University, Hammond; and Purdue University, West Lafayette. The core programs of LSAMP Indiana are used to encourage and support students to graduate in a Science, Technology, Engineering, and Mathematics (STEM) disciplines. Our Undergraduate Research program is designed to link students with faculty and peer mentors. The students work in labs and academic research settings on challenging research projects. They also participate in research seminar discussion groups where professors and graduate students discuss current research projects. Each student prepares a research presentation and is expected to be prepared to present at our annual Research and Alliance Enrichment (RAE) Conference. The conference is also used as an opportunity for faculty and staff to share best practices in mentoring and diversity training.

Director

Pamella P. Dale Shaw, D.M.D., M.P.H.
Statewide Director, LSAMP Indiana
Director, Midwest Crossroads AGEP
Purdue University
Hovde Hall, Room 144
610 Purdue Mall
West Lafayette, IN
47907-2040
Phone: (765) 496-7967
Fax: (765) 494-2221
ppshaw@purdue.edu
<http://www.purdue.edu/lisamp/>



Purdue University
Pamella Shaw
(765) 496-7967
ppshaw@purdue.edu



IUPUI
Kim Nguyen
(317) 274-1126
knguyen@iupui.edu



Purdue Calumet University
George Z Hong
(219) 989-2925
hongg@calumet.purdue.edu



Indiana University
Chandra Dyson
(812) 855-7853
cbaskin@indiana.edu



Ball State University
Patricia Lang
(765) 285-5516
plang@bsu.edu



THE NATIONAL SCIENCE FOUNDATION
NSF sponsored undergraduate component of the
Indiana Alliance to Expand Student Opportunities.



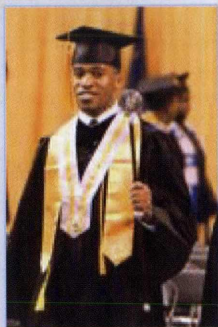
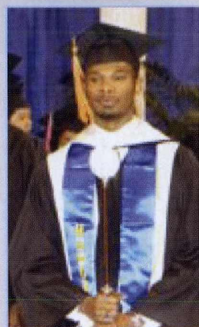
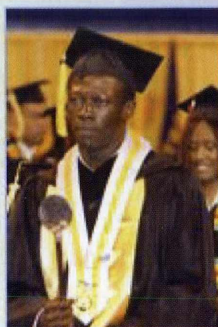
Dr. Diola Bagayoko
Southern University and A&M College
 V: (225) 771-2730 bagayoko@aol.com
 Dr. Ella Kelley 771-3990 elkchem@aol.com

Dr. Abdalla Darwish
Dillard University
 V: (504) 816-4840 adawrish@bellsouth.net;
 Adarwish@dillard.edu

Dr. Teng Zhu
Grambling State University
 V: (318) 274-2575 zhut@gram.edu
 Dr. Danny Hubbard: (318) 274-3720

Dr. Su-Seng Pang
Louisiana State University
 V: (225) 578-5892 Mepang@me.lsu.edu
 Cheryle Peters: (225) 578-6004
 Dr. Steve Watkins: (225) 578-3467

Dr. George Mead
McNeese State University
 V: (337) 475-5785 Gfmead@aol.com
 Dr. Harold Stevenson: 475-5663 / 5677



Louis Stokes

Louisiana Alliance for Minority Participation

Celebrating 10 Years of Performance

Awarded Phase III funding by the National Science Foundation (NSF) and the Louisiana Board of Regents

Awarded a Bridge to the Doctorate Program, funded by NSF



www.ls-lamp.org

Dr. Sharon Flanagan
Nunez Community College
 V: (504) 680-2311 Sflanagan1@lctcs.net

Dr. Joe Omojola
Southern University at New Orleans
 V: (504) 286-5128 jomojola@suno.edu;
 otek@cox.net

Warner Brown
Southern University Shreveport
 V: (318) 674-3409 wbrown@susla.edu

Dr. Henry Bart
Tulane University
 V: (504) 865-5191 hank.bart@gmail.com;
 Hank@plato.museum.tulane.edu

Dr. Ashok Puri
University of New Orleans
 V: (504) 280-6341 Apuri@uno.edu;
 purisadhana@yahoo.com

Dr. Vijay Raghavan
University of Louisiana-Lafayette
 V: (337) 482-6603 Raghavan@louisiana.edu
 Bobbie Decuir (337) 482-6613

Michigan Louis Stokes Alliance for Minority Participation



The **MI-LSAMP** is a comprehensive, undergraduate initiative designed to substantially increase the quantity and quality of under-represented students pursuing baccalaureate degrees and careers in science, mathematics, engineering and technology (STEM). This initiative will:

- Significantly increase the number of underrepresented minority students earning baccalaureate degrees from MI-LSAMP partner institutions;
- Institutionalize and disseminate MI-LSAMP strategies and practices;
- Contribute to a significant increase in the number of underrepresented minority students earning baccalaureate degrees in the State of Michigan; and
- Increase the number of students pursuing advanced degrees in STEM areas.

Partner Contacts:

Principal Investigator:

President Mary Sue Coleman
University of Michigan
(734) 764-6270
presoff@umich.edu

Prof. Raja Aravamathan
Western Michigan University
(269) 276-3507
raja.aravamathan@wmich.edu

Prof. Levi Thompson
University of Michigan
(734) 936-2015
lth@umich.edu

Prof. Gerald Thompkins
Wayne State University
(313) 577-3780
AssociateDean@eng.wayne.edu

Prof. Thomas Wolff
Michigan State University
(517) 355-5128
wolff@egr.msu.edu

MEAMP

“MEAMP LIGHTS THE WAY.”

www.vuu.edu/academics/meamphome.htm



(Left to right) Natashya Jackson and SheNesia Hopkins, two of Virginia Union University's 2005 Summer Bridge Students.

Program Highlights

MEAMP student research efforts are growing.

Several **MEAMP** students graduated early and are seeking STEM careers and early entry-based advanced degree programs.

STEM student-based **MEAMP** Research

Symposium I was a success.

MEAMP students excel at national laboratories.

Institutional Coordinators:

Virginia Union University

Vinod Arya, PhD
(804) 257-5662
(804) 257-5890 (Fax)
vkarya@vuu.edu
www.vuu.edu

Elizabeth City State University

Ali Khan, PhD
(252) 335-3242
(252)335-3528 (Fax)
aakhan@mail.ecsu.edu
www.ecsu.edu

Fisk University

W. Eugene Collins, PhD
(615) 329-8605
(615) 329-8634 (Fax)
ccollins@fisk.edu
www.fisk.edu

James Madison University

Daniel Wubah, PhD
(540) 568-3508
(540) 568-7209 (Fax)
wubahda@jmu.edu
www.jmu.edu

Johnson C. Smith University

Baldeo Chopra, PhD
(704) 378-1050
(704) 378-1213 Fax
bchopra@jcsu.edu
www.jcsu.edu

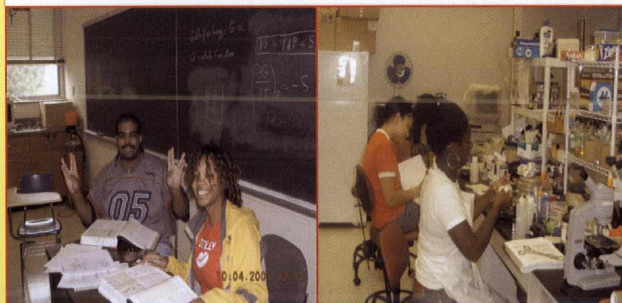
St. Augustine's College

Gloria Early Payne, PhD
(919) 516-4151
(919) 516-4465 (Fax)
gpayne@cs.st-aug.edu
www.st-aug.edu

Virginia Polytechnic Institute & State University

Nini Smiley
(540) 231-6362
(540) 231-7477 (Fax)
nsmiley@vt.edu
www.vt.edu

Students Involved with MEAMP



Aaron Sease and Brittany Tillman taking a break to smile for the camera while studying in the Safe Haven room.

Elizabeth City State University Summer Bridge Students participating in a Chemical Lab.

Activities AMP students are involved in:

Summer Bridge Program

Supplemental Instruction and Tutorial Services in the "Safe Haven"

Seminars and Conferences

Faculty and Peer Mentoring

Graduate School Preparation

Faculty Mentored Research

Dr. Belinda Anderson

Principal Investigator
(804) 257-5835
(804) 257-5833 (Fax)
banderson@vuu.edu

Dr. Prince Brown

Vice President for Institutional Advancement
(804) 257-3938
(804) 257-5868(Fax)
pbrown@vuu.edu

Mrs. Quanda Baker

Associate Vice President for Institutional Advancement
(804) 257-3935
(804) 257-5868(Fax)
qbaker@vuu.edu

Dr. Phillip Archer

Executive Director
(804) 257-5692
(804) 354-5945 (Fax)
pwarcher@vuu.edu

LSM AMP

Louis Stokes Mississippi Alliance for Minority Participation

Celebrating 14 Years of Increasing Minority Degrees
in Science, Technology, Engineering and Mathematics

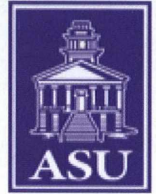


Dr. James Perkins

Project Director
Jackson State University
P.O. Box 18119, Jackson, MS 39217
601-979-2024 - james.perkins@jsums.edu



Alcorn State University
Dr. Troy Stewart, Sr.
Site Coordinator
1000 ASU Drive, #780
Alcorn State, MS 39096
601-877-6440
troy@lorman.alcorn.edu



Delta State University
Ernest L. Brothers
Site Coordinator
P.O. Box 3241
Cleveland, MS 38733
662-846-4496
ebrother@deltastate.edu



Jackson State University
Dr. Glake Hill
Site Coordinator
P.O. Box 18119
Jackson, MS 39217
601-979-1699
glakeh@ccmsi.us



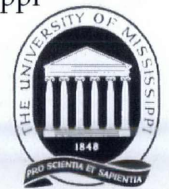
Mississippi State University
Tommy Stevenson
Site Coordinator
P.O. Box 9544
MSU, MS 39762
662-325-8449
tommy@engr.msstate.edu



Mississippi Valley State University
Dr. Joseph Wahome
Site Coordinator
14000 Hwy 82 West
Itta Bena, MS 38941
662-254-3384
wahome@mvsu.edu



University of Mississippi
Dr. Don Cole
Site Coordinator
P.O. Box 157
University, MS 38677
662-915-1379
dcole@olemiss.edu



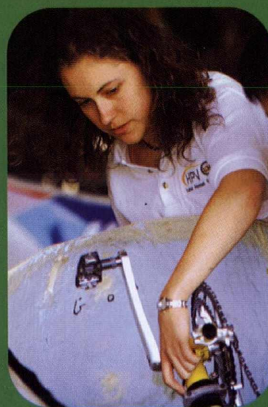
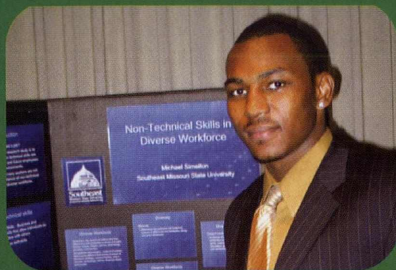
University of Southern Mississippi
Andrè Heath
Site Coordinator
P.O. Box 5137
Hattiesburg, MS 39406
601-266-6593
andre.heath@usm.edu





LS-MoAMP

Louis Stokes Missouri Alliance
for Minority Participation



LS-MoAMP is a collaborative effort of those publicly funded universities, colleges and community colleges in Missouri that offer STEM undergraduate degree programs.

Innovative programs designed in coordination with the Office of the President at the University of Missouri facilitate movement toward our overall goals.

Academic support services, including peer study groups and tutorial services, operate on individual campuses. Mentoring, monitoring and diversity workshops are provided for faculty, graduate students and staff who serve as advisers, research mentors and tutors for LS-MoAMP student participants.

Our annual activities include the student research symposium and student presentations in a national conference. Additionally, the students participate in a graduate school fair. ■

LS-MoAMP CENTRAL

University of Missouri-Columbia
Charles Sampson, Project Director
573-882-4745

Central Missouri State University

Pat Decker
660-543-4696
decker@cmsu1.cmsu.edu

Lincoln University

Michael Scott
573-681-5122
scottm@lincolnu.edu

Metropolitan Community College

Dan Justice
816-759-4458
dan.justice@kcmetro.edu

Missouri Southern State University

Loreen Huffman
417-625-9620
Huffman-L@mssu.edu

Missouri State University

Burl Self
417-836-4849
bes723f@missouristate.edu

Missouri Western State University

Martin Johnson
816-271-4510
mjohnson@missouriwestern.edu

Northwest Missouri State University

Carol Cowles
660-562-1219
CCOWLES@mail.nwmissouri.edu

St. Louis Community Colleges

Barbara Holt
314-644-9772
bholt@stlcc.edu

Southeast Missouri State University

Irene Ferguson
573-651-2264
icferguson@semo.edu

Truman State University

Maria Di Stefano
660-785-4109
mdistefa@truman.edu

University of Missouri-Columbia

Pamela Benoit
573-884-4178
BenoitP@missouri.edu

University of Missouri-Kansas City

Charles Wurrey
816-235-1325
WurreyC@missouri.edu

University of Missouri-Rolla

Harvest Collier
573-341-4390 or 6452
hcollier@umr.edu

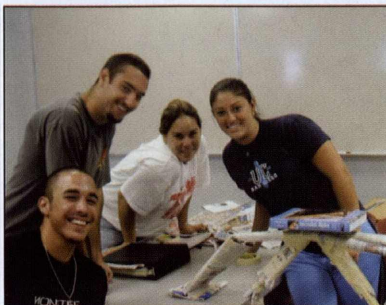
University of Missouri-St. Louis

Gwen Deloach-Packnett
314-516-6807
gwen@umsl.edu

New Mexico AMP

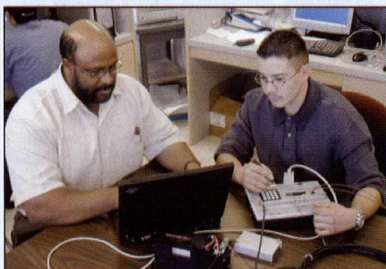
SMET 101 (Introduction to Science, Math, Engineering & Technology):

- Thinking and learning skills
- Problem solving techniques
- Career exploration skills
- Collaboration and teamwork
- Application of engineering process and scientific method



Research Assistantships:

- Cutting-edge research projects
- Technical writing & presentation skills
- Professional conference presentation opportunities
- Preparation for graduate school or employment



Student Research Conference:

- Student research presentations
- Role models for other students
- Interaction with professionals in their discipline
- Academic and professional career planning workshops
- Internship/employment options



Bridge to the Doctorate:

- Financial and academic support
- Faculty-mentored research
- STEM 501 Graduate Seminar
- Professional meeting and conference participation
- Collaborative workshops with New Mexico AGEF and other graduate programs



New Mexico AMP University Partners:

Eastern New Mexico University

Regina Aragon, Ph.D.
Assoc. Professor, Math
(505) 562-2328
regina.aragon@enmu.edu

New Mexico Highlands University

(505) 646-1847
amp@nmsu.edu

New Mexico Institute of Mining and Technology

Allison Costello
Assoc. Director, Admissions
(505) 835-5424
costello@admin.nmt.edu

New Mexico State University

A. Michele Auzenne
Program Manager,
New Mexico AMP
(505) 646-1847
mauzenne@nmsu.edu

University of New Mexico

Laura Crossey, Ph.D.
Asst. Chair, Earth and
Planetary Sciences
(505) 277-5349
lcrossey@unm.edu

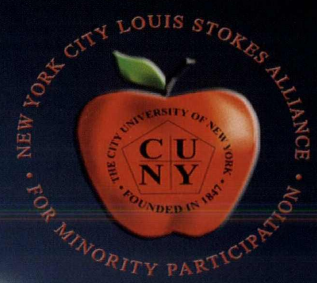
Western New Mexico University

Mary Dowse, Ph.D.
Assoc. Professor, Geology
(505) 538-6352
dowsem@silver.wnmu.edu

Ricardo B. Jacquez, Ph.D., P.E.; Director; New Mexico Alliance for Minority Participation;
MSC-3AMP; New Mexico State University; P.O. Box 30001; Las Cruces, NM 88003-8001
phone: 505/646-1847 fax: 505/646-2960 e-mail: amp@nmsu.edu web: http://www.nmsu.edu/~nmamp



NEW YORK CITY LOUIS STOKES ALLIANCE



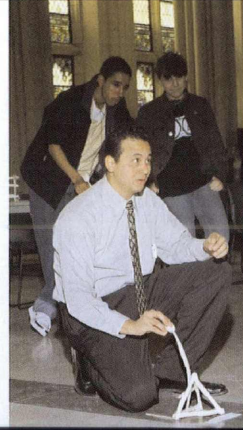
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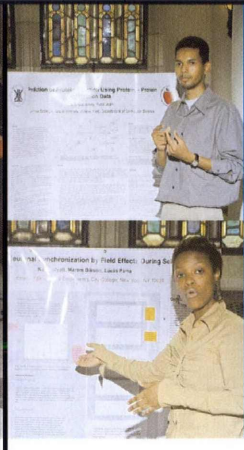
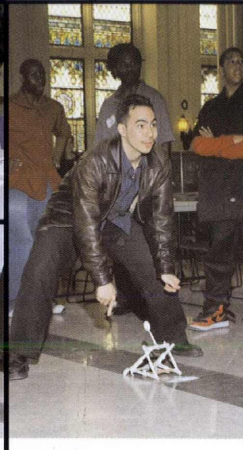
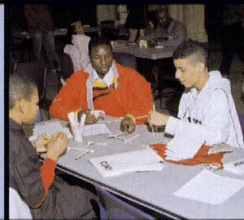
*Transitions
2005*

Alliance Members

College	Name	Tel. #	Email
Baruch College	Dennis Slavin	212-802-2805	dennis_slavin@baruch.cuny.edu
Borough of Manhattan CC	Sadie Bragg	212-220-8320	sbragg@bmcc.cuny.edu
Bronx CC	Marcia Keizs	718-289-5139	mvk@bcc.cuny.edu
Brooklyn College	Paul Shelden	718-951-5252	pshelden@brooklyn.cuny.edu
City College	Joe Barba	212-650-5435	barba@ee-mail.engr.cuny.cuny.edu
College of Staten Island	Leonard Ciaccio	718-982-2325	ciaccio@postbox.csi.cuny.edu
Hunter College	Ann Henderson	212-772-5247	henderson@genectr.hunter.cuny.edu
Hostos CC	Carlos Molina	718-518-6639	cmolina@hostos.cuny.edu
Kingsboro CC	Stuart Suss	718-368-5661	ssuss@kbcc.cuny.edu
LaGuardia CC	Marcia Caton	718-482-5642	mcaton@lagcc.cuny.edu
Lehman College	William Tramontano	718-960-8764	wtramont@lehman.cuny.edu
Medgar Evers College	Doris Withers	718-270-5020	doris@mec.cuny.edu
NYC College of Technology	Joseph Rosen	718-260-5014	jrosen@citytech.cuny.edu
Queens College	Thomas Streckas	718-997-4105	thomas_strekas@qc.edu
Queensboro CC	Arthur Corradetti	718-631-6344	acorradetti@qcc.cuny.edu
The Graduate School	Gail Smith	212-817-7540	gsmith@gc.cuny.edu
York College	Cheryl M. Smith	718-262-2783	csmith@york.cuny.edu



*High School students
participating in the
Engineering Design
Competition*



'Transitions 2005' was held at the City College April 15-16, 2005, and was an event exclusively for the NSF sponsored Louis Stokes Alliance Bridge to the Doctorate Scholars.



North Carolina Louis Stokes Alliance for Minority Participation

Dr. Carolyn W. Meyers, Principal Investigator

Dr. Joseph Monroe, Co-Principal Investigator

Phase III:

The North Carolina Louis Stokes Alliance for Minority Participation (NC-LSAMP), funded by the National Science Foundation, and established in 1992, formed a partnership between eight institutions within the University of North Carolina system with the primary goal of significantly increasing the enrollment and retention of underrepresented minority students in science, technology, engineering and mathematics (STEM). Partner institutions include North Carolina A&T State University as lead campus, Fayetteville State University, North Carolina Central University, North Carolina State University, University of North Carolina at Chapel Hill, University of North Carolina at Charlotte, University of North Carolina at Pembroke and Winston-Salem State University.

During Phase III, program implementation will continue its focus on nurturing and supporting students through their undergraduate studies in STEM curriculums through the institutionalization of "best practices" learned during Phases I and II, and place new emphasis on the attainment of M.S. and Ph.D. degrees in these disciplines. Phase III priorities include expanded undergraduate laboratory research opportunities, community college recruitment and transfers, a school to college summer bridge program, science and mathematics teacher preparation for graduate students as well as preparation for graduate school through mentoring and peer group activities.

Together the Alliance institutions continue to play a significant role in producing minority research scientists and faculty to meet the needs of the country. Our partners are committed to maintaining and strengthening this successful "alliance" by embracing institutions with unique and diverse strengths and resources.



Targeted Activities, Services & Programs

- Supplemental Instruction and Tutorial Services in "Gatekeeper" Courses
- Mentoring
- Peer Study Groups
- Summer Research Programs
- Faculty Mentored Research
- Summer Bridge Programs
- Industry and National Research Laboratory Internships
- Career Advisement
- Stipend Awards
- Conferences and Seminars

Staying the course...
While Exploring
New Frontiers
in **STEM**

North Carolina Louis Stokes Alliance for Minority Participation
College of Engineering, 640 McNair Hall
North Carolina A&T State University
1601 E. Market Street
Greensboro, NC 27411
http://www.nclsamp.org

Lead Institution

North Carolina A&T State University

Mrs. Marcia Williams

NCLSAMP Alliance Coordinator

Phone: (336) 334-7589 ext. 140

Fax: (336) 334-7540

marcia@ncat.edu

Ms. Kristie Johnson

Program Assistant

Phone: (336) 334-7446

Fax: (336) 334-7540

kjohnso1@ncat.edu

Partner Institutions

Fayetteville State University

Dr. Juliette Bell

Campus Principal Investigator

Phone: (910) 672-1657

Fax: (910) 672-1083

jbell@uncfsu.edu

Veronica Mangum

Campus Coordinator

Phone: (910) 672-1081

Fax: (910) 672-1083

vmangum@uncfsu.edu

North Carolina Central University

Dr. Sandra DeLauder

Campus Principal Investigator

Phone: (919) 530-6456

Fax: (919) 530-5135

sdelaude@wpo.nccu.edu

North Carolina State University

Dr. Tony Mitchell

Campus Principal Investigator

Phone: (919) 515-3264

Fax: (919) 515-8702

tmitchel@eos.ncsu.edu

University of NC at Chapel Hill

Dr. Patricia Pukkila

Campus Principal Investigator

Phone: (919) 966-5576

Fax: (919) 962-1548

pukkila@unc.edu

Dr. Nalin Parikh

Campus Coordinator

Phone: (919) 962-7160

Fax: (919) 962-0480

nparikh@physics.unc.edu

University of NC at Charlotte

Dr. Bill Hill

Campus Principal Investigator

Phone: (704) 687-2090

Fax: (704) 687-6912

bjhill@email.uncc.edu

Mrs. Jodi Turner

Campus Coordinator

Phone: (704) 687-2065

Fax: (704) 687-3914

jodturne@email.uncc.edu

University of NC at Pembroke

Dr. Thomas Leach

Campus Principal Investigator

Phone: (910) 521-6198

Fax: (910) 521-6606

thomas.leach@uncc.edu

Dr. Velinda Woriak

Campus Coordinator

Phone: (910) 521-6567

Fax: (910) 521-6649

velinda.woriak@uncc.edu

Winston-Salem State University

Dr. Elva Jones

Campus Principal Investigator

Phone: (336) 750-2485

Fax: (336) 750-2499

jonese@wssu.edu



Northeast Louis Stokes Alliance
for Minority Participation

www.nelsamp.neu.edu



Northeastern University

Malcolm Hill & David Blackman
617.373.4741 617.688.2726
m.hill@neu.edu d.blackman@neu.edu

University of Connecticut

Damon Williams
860.486.9106
damonw@wvg.group.com

University of Massachusetts Amherst

John Cunningham & Susan Bronstein
413.545.2554 413.545.5742
jcunningham@provost.umass.edu sbronstein@acad.umass.edu

University of Rhode Island

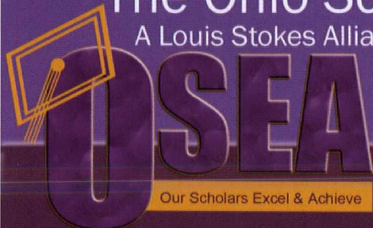
Harold Knickle
401.874.2678
knickle@egr.uri.edu

Worcester Polytechnic Institute

Lance Schacterle & Calvin Hill
508.831.5514 508.831.5796
les@wpi.edu chill@wpi.edu

The Ohio Science and Engineering Alliance

A Louis Stokes Alliance for Minority Participation



Lead Institution: The Ohio State University
PI: President Karen A. Holbrook
Co-PI: Dr. Carole Anderson
Director: Dr. Jean E. Girves
Project Coordinator: Desiree D. Crawl

The Ohio Science & Engineering Alliance
247 University Hall, 230 North Oval Mall
Columbus, OH 43210
614.247.7267
Website: www.OhioSEA.org

Bowling Green State University
T. Carter Gilmer
419.372.0471/ cgilmer@bgnet.bgsu.edu

Case Western Reserve University
Stephen Haynesworth
216.368.4413/ seh5@po.cwru.edu

James McGuffin-Cawley
216.368.6482/ jxc41@po.cwru.edu

Central State University
Robert Marcus
937.376.6357/ rmarcus@csu.ces.edu

Cleveland State University
Bahman Ghorashi
216.687.2556/ b.ghorashi@csuohio.edu

Kent State University
Geraldine Hayes Nelson
330.672.2920/ ghnelson@kent.edu

Steve O. Michael
330.672.2442/ smichael@kent.edu

Miami University
Dennis Davenport
513.529.3555/ davenpde@muohio.edu

Ohio State University
Caroline Breitenberger
614.292.6945/ caroline+@osu.edu

Andrew Heckler
614.292.2874/ heckler.6@osu.edu

Mary Juhas
614.688.8239/ juhas.1@osu.edu

Ohio University
Laquetta K. Cortner
740.593.1477/ cortner@ohio.edu

Howard D. Dewald
740.593.2979/ dewald@ohio.edu

University of Akron
Paul Lam
330.972.7817/ plam@uakron.edu

Jeffrey J. Wallace
330.972.6843/ jjw1@uakron.edu

University of Cincinnati
Cheryll A. Dunn
513.556.6561/ cheryll.dunn@uc.edu

Kenneth Simonson
513.556.1164/ kenneth.simonson@uc.edu

University of Dayton
Malcolm W. Daniels
937.229.2736/ malcolm.daniels@notes.udayton.edu

Paul Benson
937.229.2602/ paul.benson@notes.udayton.edu

University of Toledo
Constantine Theodosiou
419.530.7794/ constantine.theodosiou@utoledo.edu

Wilberforce University
Edward Asikele
937.708.5657/ easikele@wilberforce.edu

Wright State University
P. Ruby Mawasha
937.775.5001/ mawasha@cs.wright.edu

Michele Wheatly
937.775.2611/ michele.wheatly@wright.edu

Youngstown State University
Ron Chordas
330.941.4628/ rkchordas@ysu.edu

The Ohio Science and Engineering Alliance (OSEA) supports collaborative as well as campus-based initiatives among the 15 participating public and private universities within the state. The primary goal is to improve the retention of underrepresented minority students in STEM fields and to encourage more students to pursue graduate study.

Collaborative initiatives include:

- Glenn-Stokes Research Internships
- The Ohio Student Research Forum
- Professional development workshops on the first-year experience and summer bridge programs

Alliance Partners

- Battelle Memorial Institute
- COSI
- Ohio College Access Network
- Ohio Board of Regents
- Wright Patterson Air Force Base

Seed grants support individual campus-based programs, such as:

- Summer Bridge
- Living-Learning
- Supplemental Instruction
- Field Trips
- Mentoring
- Tutoring

One hundred forty seven students, faculty, staff, and corporate representatives participated in the second Ohio Student Research Forum, which was hosted by the University of Akron in August, 2005. Students reported the results of their research during the poster session and through oral presentations.





OKLAHOMA LOUIS STOKES ALLIANCE

The Oklahoma Alliance has positively impacted student achievement for eleven (11) consecutive years. Phase I began in 1994 with a baseline number of 214 STEM graduates from underrepresented populations. The baseline number for each phase increased progressively to 438 in 1999, and 676 in 2004. Among the factors that underlie the success of the Oklahoma AMP program are: supplemental financial support from the Oklahoma State Regents for Higher Education, involvement of faculty, staff, and graduate students from STEM departments in mentoring and research experiences, frequent meetings with scholars, availability of OKAMP staff, broad-based academic support, and career counseling. Major focal points in Phase III are research involvements and graduate school preparation.

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

Earl.Mitchell@biochem.okstate.edu

(405) 744-6189

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

zdrain@biochem.okstate.edu

Yousif Sherif, Ph.D., Program Data

Manager, yis@okstate.edu

Rosemary Hayes, Ph.D., Program Evaluator

rhayes@ou.edu

ALLIANCE INSTITUTIONS/COORDINATORS

Cameron University

Dr. Ted Snider, teds@cameron.edu

East Central University

Dr. Carl Rutledge, crutledge@mac.com

Langston University

Dr. Sharon Lewis, salewis@lunet.edu

Northeastern State University

Dr. Myron Cherry, cherry@nsuok.edu

Northwestern Oklahoma State University

Mr. Timothy Maharry, tjmaharry@nwsou.edu

Oklahoma State University (Lead Instit.)

Ms. Valerie Shangreaux,

shane@biochem.okstate.edu

Southeastern Oklahoma State University

Dr. Tim Patton, tpatton@sosu.edu

Southwestern Oklahoma State University

Dr. Brian Campbell, campbeb@swosu.edu

University of Central Oklahoma

Dr. John Garic, jgaric@ucok.edu

University of Oklahoma

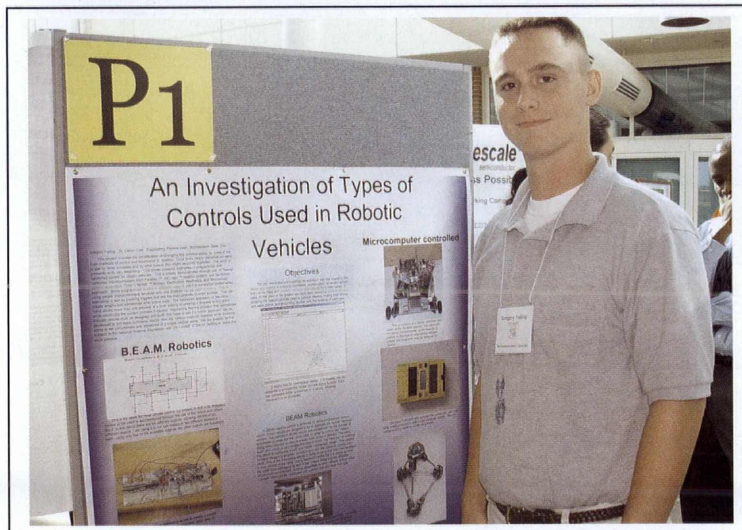
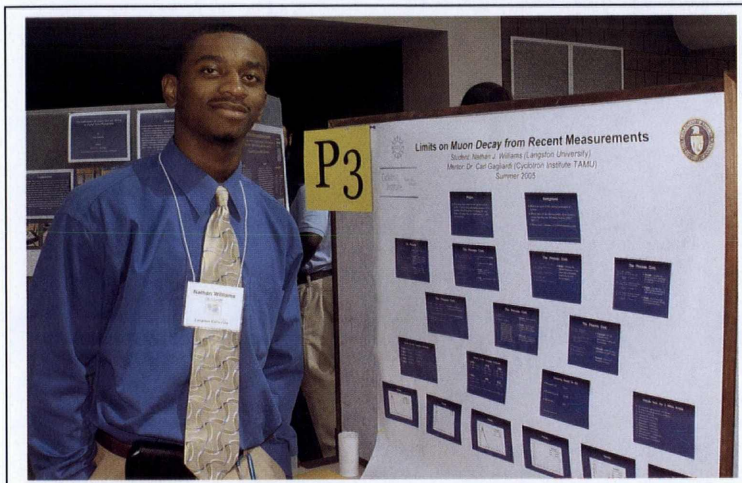
Dr. Teri Reed Rhoads, teri.rhoads@ou.edu

University of Tulsa

Dr. J.C. Diaz, diaz@utulsa.edu

Website

<http://ls-okamp.okstate.edu>



Top photo: **Nathan Williams**, Langston University, was Summer '05 intern in the Cyclotron Institute at Texas A&M University under the mentorship of Dr. Carl Gagliardi.

Bottom Photo: **Gregory Falling**, Northeastern State University, interned with Dr. Calvin Cole, Department of Physics at Northeastern State.

LSAMP Pacific Alliance

Building a National Model for Excellence in Native American Higher Education Programs

University of Alaska Anchorage
 University of Alaska Fairbanks
 University of Hawai'i Manoa
 University of Washington

Pacific Alliance Strategies

High School Outreach

- *TALPA: Technology Applications & Learning for Professional Achievement*, computer building with trig, physics & chemistry

Bridge: Summer experiences for entering freshman

- *ALVA*: Internships with Calculus Prep

Undergraduate Retention

- Learning Community
- Co-enrollment
- Team building
- Group study
- Advising
- Scholarships
- Internships
- Faculty & Peer Mentoring
- Supporting community
- Professional mentoring
- Graduate student mentoring
- Research
- Hands on research
- Service learning

Graduate School and the Professoriate (in Development)

- Peer mentoring & co-enrollment
- Workshops for presentations and technical papers
- Organized study groups
- Collaborative experiences
- Faculty cross-cultural training
- Faculty mentoring
- Advising
- Internships
- National & international conferences
- Grant writing workshops
- Graduate research and undergraduate research
- Equipment funding
- Workshop for Teaching Assistant (TA) instruction

University of Alaska Anchorage

Dr. Herb Schroeder, (907) 786-1860, herb@uaa.alaska.edu
 Tracey Mueller, (907) 786-1074, tracey@uaa.alaska.edu

University of Alaska Fairbanks

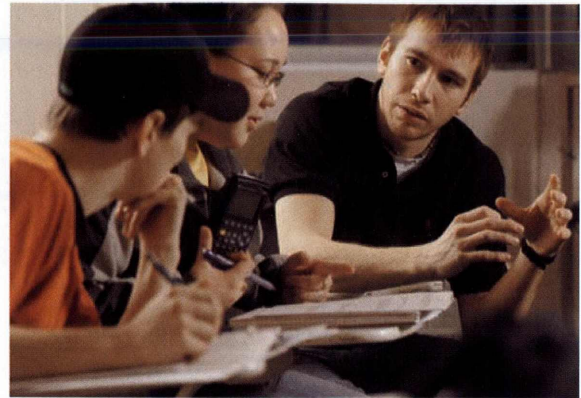
Dr. Dan Solie, (907) 474-7604, ffjds@uaf.edu

University of Hawai'i Manoa

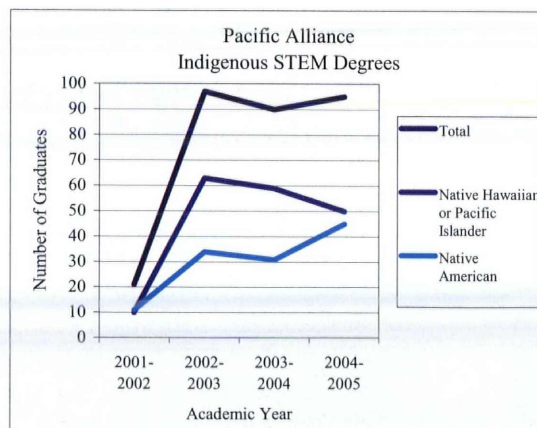
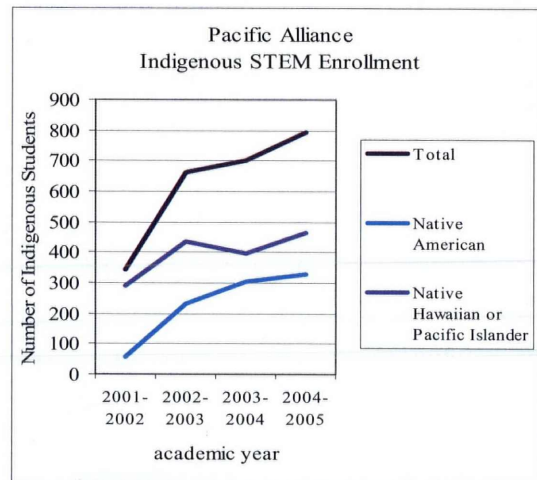
Dr. Tep Dobry, (808) 956-8404, tep@wiliki@eng.hawaii.edu
 Josh Kaakua, (808) 956.2289, kaakua@eng.hawaii.edu

University of Washington

Scott Pinkham, (206) 221-7769, spinkham@u.washington.edu



Alaska Native student Matt Calhoun, at the right graduated with a BS in Civil Engineering from the University of Alaska Anchorage (UAA) in 2002. He is now back at UAA taking prep classes for Medical School. Here he is working with first year Alliance students on a chemistry problem.





PSLSAMP

PEACH STATE LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION

Peach State Louis Stokes Alliance for Minority Participation

Lead Institution

The University of Georgia
www.uga.edu/lsamp
Curtis D. Byrd, M.Ed.
Executive Director
(706) 583-8195
cdbyrd@uga.edu

Michelle Garfield, Ph.D.
Co-Principal Investigator
(706) 542-5745
mgarfiel@uga.edu

Maureen Grasso, Ph.D.
Co-principal Investigator
(706) 542-4788
mgrasso@uga.edu

Wyatt Anderson, Ph.D.
Project Director
(706) 542-7001
wyatt@uga.edu

Partner Institutions

Bainbridge College
Horace Taylor
(229) 248-2505
htaylor@bainbridge.edu

Georgia Perimeter College
www.gpc.edu/~gpclsamp/alliance.html
Elizabeth A. Molloy, Ph.D.
(678) 891-2450
emolloy@gpc.edu

Fort Valley State University
Dwayne Daniels, Ph.D.
(478) 825-6841
daniels@fvsu.edu

Savannah State University
www.savstate.edu/scitech/ssupslsamp
Kuppuswamy Jayaraman, Ph.D.
(912) 356-2218
jayaramk@savstate.edu

Southern Polytechnic State University
<http://pslsamp.spsu.edu>
Patrick Otoo Bobbie, Ph.D.
(678) 915-4284
pbobbie@spsu.edu

In its first year of Phase I, The Peach State Louis Stokes Alliance for Minority Participation (PSLSAMP) is a collaborative effort sustained by a coalition of six colleges and universities in Georgia to significantly increase the number of underrepresented minority students statewide who complete undergraduate degrees in science, technology, engineering, and mathematics (STEM) fields. This goal will be accomplished through the implementation of a comprehensive and integrated series of recruitment and retention initiatives that address key transition points from undergraduate recruitment through preparation for graduate school.



Mission Statement:

With institutional support, the alliance's goal is to double the number of underrepresented minority students who earn bachelor's degrees in the STEM disciplines and to encourage more of our degree recipients to pursue graduate studies in these fields.

PSLSAMP Activities, Services, and Programs include:

- High School Bridge Program
- Summer Research Program and Forum
- Collaborative Research Opportunities
- Learning Communities
- Peer and Faculty Mentoring
- Drop-In Centers
- Tutoring and Advising
- Professional Development Conferences and Workshops

Peach State Louis Stokes Alliance for Minority Participation
University of Georgia
Bank of America Building, 2nd Floor
110 E. Clayton Street
Athens, GA 30602
(706) 425-3158 Office
(706) 425-3159 Fax

PEACH STATE LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION
WWW.PSLAMP.ORG

CENTRAL MANAGEMENT

Drexel University
Principal Investigator
Dr. Ali Houshmand, Provost

Co-PI, Project Director
Stephen R. Cox

Project Coordinator
Veniece Keene

Administrative Assistant
Linda Senesombath

ALLIANCE PARTNERS

Cheyney University of Pennsylvania
Dr. Sakkar A. Eva
(610) 399-2349
saeva@aol.com

Community College of Philadelphia (CCP)
Dr. Linda Powell
(215) 751-8554
lpowell@ccp.cc.pa.us

Delaware State University
Dr. Tommy Frederick
(302) 857-6500
tfrederi@desc.edu

Drexel University
Ms. Sheila Clark
(215) 895-1659
Sheila.Clark@drexel.edu

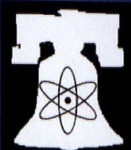
Lincoln University of Pennsylvania
Dr. Robert Langley
(610) 932-1074
langley@lu.lincoln.edu

New Jersey Institute of Technology (NJIT)
Mr. Laurence Howell
(973) 596-3690
howell@adm.njit.edu

Temple University
Dr. Bruce Conrad
(215) 204-2896
Bruce.Conrad@temple.edu

University of Delaware
Mr. Michael Vaughan
(302) 831-6315
vaughan@udel.edu

University of Pennsylvania
Ms. Cora Ingrum
(215) 898-7084
ingrum@seas.upenn.edu



Philadelphia AMP / Greater Philadelphia Region

Louis Stokes Alliance for Minority Participation
Drexel University, 3141 Chestnut Street, Bldg. 1, Room 308, Philadelphia, PA 19104
Phone: (215) 895-2203 Fax: (215) 895-2098 Web: <http://www.philadelphiaamp.org>

The Greater Philadelphia Region Louis Stokes Alliance for Minority Participation continues to fulfill its mission by utilizing the best practices and collective experiences that have evolved from institutional relationships across the Alliance during the last 12 years. Through an annual detailed analysis of the systemic issues that impact the persistence of underrepresented students in the STEM baccalaureate degree programs, the Alliance has developed the capacity to predict with some certainty, the student success, and structure an environment which prepares candidates for the graduate experience.



Graduate Mentor, Gossett Campbell, Ph.D., Chemical Engineering, Drexel University with undergraduate student, Tamika Wilson, 1st place, Engineering Category, Poster Award Recipient during the 9th Annual Philadelphia AMP Research Symposium.

Bridge to the Doctorate Program (As of Spring 2005)

Graduate School Retention:
Cohort 1: 75% (9 of 12 students)
Cohort 2: 92% (11 of 12 students)

Commitment to Ph.D. Completion:
Cohort 1: 77% (7 students)
Cohort 2: 75% (9 students)

Ph.D. Enrollment as of Fall 2005:
Cohort 3: 75% (9 of 12 students)



Dr. Teck-Kah Lim, Professor, Physics and Atmospheric Sciences, Drexel University with Bridge to Doctorate students during orientation

Significant Accomplishments

Minority STEM B.S. Degree Production: 5,178 degrees produced as of June 2005 since inception.

Graduate School Attendance and Degree Production: As of Fall 2005, 226 AMP graduates are currently enrolled in graduate school at both the masters and doctorate levels in STEM fields of study. As of June 2005, 14 AMP graduates received their Ph.D. degrees in STEM disciplines.



Keynote Speaker, Dr. Pamela McCauley-Bell, President and CEO, Tech Solutions, Inc. and Associate Professor, Industrial Engineering and Management Systems, University of Central Florida conducts book signing for AMP students after presenting a graduate school workshop during the 9th Annual Philadelphia AMP Research Symposium and Mentoring Conference.

**Over a Decade of Excellence
... The Best is Yet to Come**



Alliance for Minority Participation
www.prlsmp.org



University of Puerto Rico

UPR-Aguadilla

Prof. Migdalia Sotomayor
 (787)890-2681 x-226
 migsotomayor@yahoo.com

UPR-Mayaguez

Prof. Jeannette Santos
 (787)832-4040 x-2398
 jsantos@ece.uprm.edu

UPR-Arecibo

Dr. Maiella Ramos
 (787)878-2830
 maiellaramos2001@yahoo.com

UPR-Cayey

Prof. Luis Perez
 (787)738-2161 x-2166
 lperez12@hotmail.com

UPR-Humacao

Dr. Denny Fernandez
 (787)850-9388
 d_fernandez@webmail.uprh.edu

UPR-Rio Piedras

Dr. Noemi Cintron
 (787)764-0000 x-2329
 Ncintron@caribe.net

UPR-Bayamon

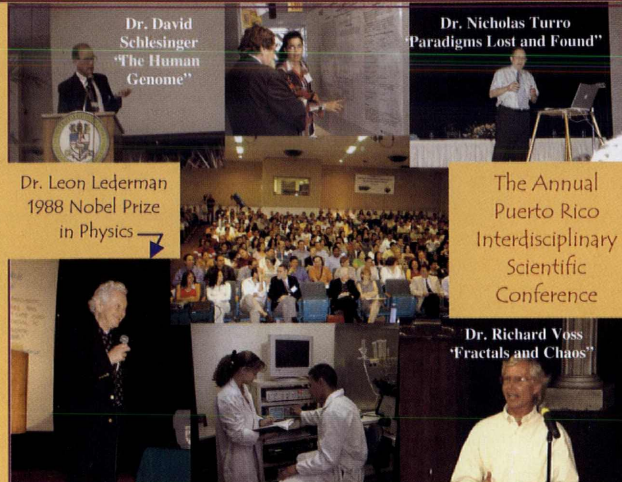
Prof. Orlando Gonzalez
 (787)786-2885
 Ogonzalez@prdigital.com

UPR-Ponce

Dr. Lizzette Roig
 (787) 844-8181 x-2335
 Quim@cutpo.upr.clu.edu

**SUSTAINED UNDERGRADUATE
 RESEARCH EXPERIENCES**

Dr. A. Hicks with BDP Fellows at 2005
 PI National Meeting



Dr. David Schlesinger
 "The Human Genome"

Dr. Nicholas Turro
 "Paradigms Lost and Found"

Dr. Leon Lederman
 1988 Nobel Prize
 in Physics

The Annual
 Puerto Rico
 Interdisciplinary
 Scientific
 Conference

Dr. Richard Voss
 "Fractals and Chaos"



Cohorts I and II
 UPR-Rio Piedras and UPR-Mayaguez

PROMOTING ACADEMIC EXCELLENCE



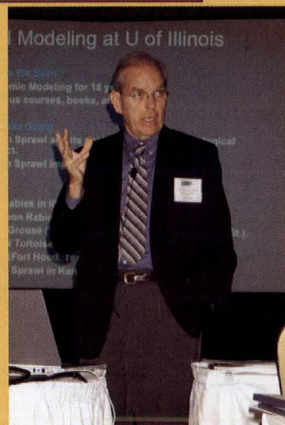
Dr. Dudley Hershbach
 1986 Nobel Prize in
 Chemistry



The Annual Best Practices Conference on
 Teaching and Learning



Workshop on the use of
 Electronic Modules and
 Assessment of
 Introductory Physics
 Course



Dr. Bruce Hannon
 Systems Dynamic Modeling

ROLE MODELING AND MENTORING BRIDGING PROGRAM



Inter American University

UIA-Bayamon

Prof. Rafael Canales
 (787)279-1912 x-2115
 rrcanales@bc.inter.edu

UIA-Metro

Prof. Gaddier de Jesus
 (787)250-1912 x-2323
 gdjesus@inter.edu



Pontifical Catholic University

Dr. Carmen Asencio
 (787)841-2000
 casencio@puopr.edu



Polytechnic University

Dr. Kay Berkling
 (787)754-8000 x-2229
 Kay@berkling.com

Coordinated by:

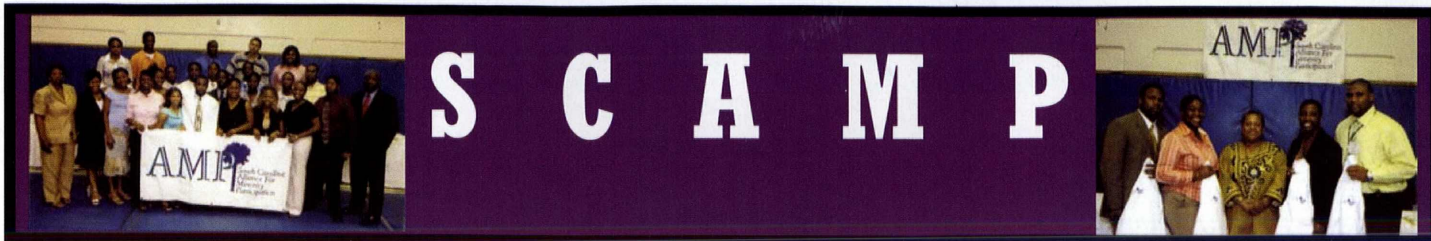


UPR-Resource Center for Science and Engineering

PI: Dr. Manuel Gomez
 Co-PI: Dr. Ana C. Piñero

(787) 764-8369
 (787) 764-8369

Email: mgomez@upr.edu
 Email: a_pinero@prlsmp.org



The Louis Stokes

South Carolina Alliance for Minority Participation Program

Dr. Andrew Hugine, Jr., Principal Investigator, South Carolina State University, (803) 536-7000 president@scsu.edu
 Dr. Judith D. Salley, Executive Director/Program Manager, South Carolina State University (803) 536-8509 djsalley@scsu.edu

Undergraduate Research:

“A Continuum Toward Excellence in STEM Education”

The Louis Stokes-South Carolina Alliance for Minority Participation Program (LS-SCAMP) was established in 1992 in the state of South Carolina as a collaborative effort between the National Science Foundation (NSF) and eight institutions of higher education. Restructured in 2002, the new SCAMP embodies all seven of the state’s HBCUs, two major research institutions and three technical colleges. The goal of AMP is to significantly increase the number of underrepresented minorities who receive baccalaureate degrees in STEM fields.



Highlights from the LS-SCAMP 2006 Undergraduate Science and Engineering Research Conference

Program Impact

LS-SCAMP Programs have had a persistent effect on STEM retention and graduation rates at SCAMP institutions.

- The growth in minority STEM degrees is 5 times the growth in non-minority STEM degrees at SCAMP institutions.
- The growth in minority STEM degrees continues to out pace the growth in minority STEM degrees nationwide. Minority STEM enrollment has grown over 30% while non-minority STEM enrollment has remained unchanged since 1992.
- SCAMP institutions produced over 70% of the state of South Carolina STEM minority BS degrees.

Program Activities

- Undergraduate Research Internship Programs
- Graduate School Preparation Workshops
- Mentoring Programs
- Summer Bridge Programs
- Annual Science and Engineering Research Conference
- Scientific Seminar and Research Courses
- Calculus Excellence Workshops
- Scholarships

Alliance Partner Institutions

Allen University Dr. Patrick Inyangetor (803) 376-5933	Benedict College Ms. Vivian Counts (803) 253-5280	Clafin University Dr. Shingara Sandhu (803) 535-5244	Clemson University Ms. Sue Lasser (803) 656-5915	Voorhees College Dr. Rachid Bendidi (803) 793-3351
College of Charleston Dr. Dinesh Sarvate (843) 953-5736	Morris College Dr. Radman Ali (803) 934-3266	South Carolina State University Mr. Nathaniel Gant (803) 536-8184	University of South Carolina Dr. Mike Perkins/Dr. John Grego (803) 777-4177/(803) 777-5110	
Denmark Technical College Dr. Ambrish Lavania (803) 793-5208	Orangeburg-Calhoun Technical College Mr. Fred Cooper (803) 535-1293	Midlands Technical College Mr. Rick Bailey (803) 738-7618		





David Ferguson, Project Director, (631) 632-9987 E-mail: David.Ferguson@stonybrook.edu

Lucy Gluck, System Coordinator, (631) 632-9988 E-mail: Lucille.Gluck@stonybrook.edu

Web Site: www.stonybrook.edu/sunylsamp

Building on Lessons Learned to Chart Our Future

Since its inception in 1996, The State University of New York Louis Stokes Alliance for Minority Participation (SUNY LSAMP) has made great strides in enrollment and degree production. It has increased under-represented minority (UREP) science, technology, engineering, and mathematics (STEM) enrollment by 266 percent and bachelor degree production by 86 percent. SUNY LSAMP has taken a leadership role in STEM curricular reform on its campuses and has acted as an agent of change on a range of issues related to the needs of UREP STEM students. This has led to the engagement of every part of our institution (faculty, staff, administrators, and department/programs), helped to create new infrastructures, and partnered in reform efforts such as learning communities and undergraduate colleges. During this period, SUNY LSAMP broadened its mission and was instrumental in the formation of the National Center for Inclusive Education to add to research and scholarship about STEM education. During Phase I, we built the Alliance infrastructure and set up activities for students. In Phase II, as a result of the infrastructure, research base, and replicable models created in Phase I, we scaled up those programs with approaches that worked and advanced new initiatives to address those areas that posed the greatest challenges during Phase I. As we complete Phase II, we will continue to



develop the processes and infrastructures that build student achievement and advancement from undergraduate to graduate study.

What are the lessons learned?

We have learned that advancement happens through interventions at critical transition points, provision of comprehensive longitudinal services, and support of activities that lead to academic excellence such as achieving excellence in introductory gatekeeper courses and a developmental series of research experiences.

How do we chart the future?

By seeing issues clearly through increased research, by making sure that institutions support these programs, and by supporting and enriching new infrastructures to make sure that

changes in STEM are enacted that will help UREP students, SUNY LSAMP will support the institutional responses to major problems that should help ALL students learn better. In some cases, SUNY LSAMP will be helping to lead the way on institutional changes. In other cases, SUNY LSAMP may benefit from institutional changes by more fully engaging UREP students in efforts to help the general student be more successful.

Services include:

- Scholarship and stipend support
- Workshops and tutoring in science, technology, engineering, and mathematics (STEM) disciplines
- Mentoring programs that link faculty and staff to students
- Paid research and internship opportunities
- Opportunities for students to attend professional conferences and present the results of their research
- Assistance to students in preparing for and applying to graduate programs
- Innovative enrichment courses and program models
- Research and scholarship about UREP STEM issues

SUNY LSAMP Institutions

Albany Region • Carson Carr, *Director* (518) 442-5180 • ccarr@uamail.albany.edu • University at Albany • Schenectady Community College

Binghamton Region • Cynthia Sedgwick, *Director* • (607) 777-6204/(607) 777-4881 • csedg@binghamton.edu

University at Binghamton • Broome Community College • Tompkins Cortland Community College **Buffalo Region** • Drexel Gidney and John Staley, *Co-Directors* (716) 645-2774/(716) 645-2549 • gidney@eng.buffalo.edu • jstaley@acsu.buffalo.edu • University at Buffalo • Buffalo State College

Hudson Valley Region • Stacie Swingle Nunes, *Director* • (845) 257-3521 • nunes@newpaltz.edu • College at New Paltz • Ulster County Community College Dutchess County Community College • Orange County Community College **Long Island Region** • David Ferguson and Henry Teoh, *Co-Directors*

(631) 632-8763/(516) 876-2753 • David.Ferguson@stonybrook.edu • htstep@aol.com • Stony Brook University • College at Old Westbury

Farmingdale State University • Nassau County Community College • Suffolk County Community College



TENNESSEE LOUIS STOKES

ALLIANCE FOR MINORITY PARTICIPATION

PRINCIPAL INVESTIGATOR
Dr. Melvin Johnson, President

EXECUTIVE DIRECTOR
Lonnie Sharpe, Jr.

ASSISTANT COORDINATOR
Shelia Maxwell

PARTNERS



Le Moyne-Owen College
Muhammad Shafi
901-942-7391
Muhammad_shafi@loc.edu



Middle Tennessee State University
Thomas Cheatham
615-898-5508
cheatham@mtsu.edu



Tennessee State University
Lonnie Sharpe, Jr.
615-963-1398
sharpe@coe.tsuniv.edu



University of Memphis
Henry Kurtz
901-678-3067
jhaddock@memphis.edu



University of Tennessee – Knoxville
Denise Jackson
865-974-0625
djackson@utk.edu



Vanderbilt University
K. Arthur Overholser
615-343-3773
k.a.overholser@vanderbilt.edu

www.tnstate.edu/tlsamp

The Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) emphasizes collaborative learning approaches, mentoring activities via faculty, staff, and upper level students, and hands-on research and internship experiences. Many students across the Alliance participate in these programs every year. However, there are three specific TLSAMP initiatives that we do Alliance-wide. These include the Summer Research, the Summer Bridge, and Research Symposium.



Burgess Mitchell, Robert Amponsah and Bridgestone/Firestone employees

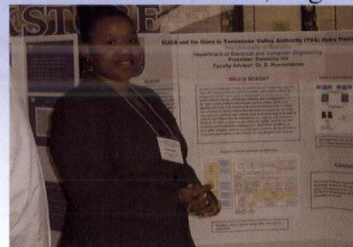
Robert Amponsah, a senior EE student at Vanderbilt was selected to work in the TLSAMP Summer Research program with Bridgestone/Firestone, a MTSU STEP^{MT} industrial partner. He has been a member of the Vanderbilt TLSAMP Program since its inception.

The Bridge Program is an outreach effort to ease the transition from high school to college. It provides the students with the tools necessary for successful completion of freshman year curriculum. Students strengthened and enhanced their analytical skills in mathematics and science and were introduced to time management and leadership skills. Twenty three students participated in the 2005 bridge program hosted by Vanderbilt University.



TLSAMP Summer Bridge Participants and Project

The Research Symposium provides an opportunity for alliance students to meet and share successes and solutions to problems encountered while pursuing STEM related careers. It is also used to showcase TLSAMP students' research and to motivate TLSAMP students to pursue graduate degrees in science, technology, engineering, and mathematics related disciplines. These students are also exposed to successful scientists, engineers, and leaders in the scientific community.



2005 TLSAMP Research Symposium Participants



TAMUS LSAMP

Texas A&M University System
Louis Stokes Alliance for Minority Participation

2004-2005 Partners: Texas A&M University, Texas A&M University -Corpus Christi, and Prairie View A&M University

Texas A&M University System Louis Stokes Alliance of Minority Participation (TAMUS LSAMP) started in 1991, as one of the first six LSAMPs funded by NSF. Since its inception the TAMUS LSAMP, formally called TX LSAMP, has functioned as a key vehicle in enhancing retention and degree completion for underrepresented minority (URM) students in science, technology, engineering and math (STEM).

Texas A&M University - Corpus Christi



Last academic year, Texas A&M University-Corpus Christi's 12 LSAMP undergraduate researchers investigated projects in life sciences, chemistry, geology and environmental sciences. LSAMP students participated in A&M-CC's Brains Rule Exposition in which faculty, students and community professionals provided interactive training activities for fifth graders to help them learn about the nervous system. LSAMP students co-authored 15 presentations delivered at regional and national meetings. Three of the five LSAMP students who graduated last year are currently in Ph.D. programs.

This academic year, there are nine LSAMP undergraduate researchers. Two of them received awards for their research presentations at the Fifth Annual Undergraduate Research Symposium at Texas A&M University-Corpus Christi. In September, Diana Martinez, Ph.D. Co-PI for the Texas A&M System LSAMP grant, received the Role Model Award from Minority Access, Inc.

Prairie View A&M University



Prairie View A&M University (PVAMU) is a comprehensive public institution of higher education. It is part of the Texas A&M University System. It is a land-grant university authorized under the Morrill Acts of 1862 and 1890.

Prairie View A&M University is the second oldest institution of higher education in the state of Texas. It had its beginnings in 1876, the first year of the Texas Constitution, of the common free school system and at the dawn of public higher education in Texas.

During the 2004/2005 academic year the PVAMU-LSAMP had several accomplishment but the most significant of these accomplishments was the fact that ten (10) of seventeen (17) PVAMU-LSAMP undergraduate students decided to continue their educational endeavors by participating in the LSAMP Bridge to the Doctorate Program.



Texas A&M University

Texas A&M University's 2005 fall enrollment includes, for the second consecutive year, double-digit gains in enrollment of minority freshmen. The number of Hispanic students in the freshman class has shown an increase of 15 % compared to last fall. African-American freshmen recorded gain of 19 % over the previous fall. Also Texas A&M University is ranked 13th in Hispanic Magazine's 2004 list of the "Top 25 Colleges for Latinos."



2005-2006

Contact Information

Leadership

Principal Investigator



Dr. Karan Watson

Associate Provost, Texas A&M University (TAMU) MS 1126
College Station, TX 77843-1126
Watson@ee.tamu.edu
(979) 862-4367

Co Principal Investigator (Co-PI)
Dr. Leo Sayavedra, Deputy Chancellor, TAMU System
L-Sayavedra@tamu.edu
(979) 458-6070

Co-PI, Dr. Milton Bryant
Dean of College of Engineering
Prairie View A&M University
M-Bryant@pvamu.edu
(936) 857-2070

Co-PI, Dr. Diana Martinez
Texas A&M-Corpus Christi
dmarinez@falcon.tamucc.edu
(361) 825-2350

Co-PI, Dr. Rick Giardino
Dean of Graduate Studies, TAMU
rickg@tamu.edu
(979) 845-3628

Project Director,
Shantuan Coleman
Director of Educational Assessment Resources,
TEES Division of Educational Development (DoED)
shantuan@tamu.edu
(979) 862-4315

TAMUS LSAMP Coordinators

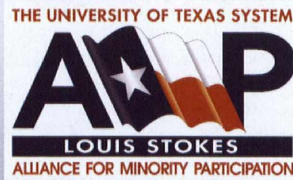
Dr. Kendell Harris, PVAMU
Dr. Suzzette Chopin, TAMUCC
Ms. Shantuan Coleman, TAMU

Website: <http://www.tamuslsamp.org>



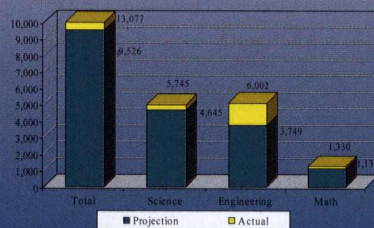
University of Texas System LSAMP

A Catalyst for Change



STEM Bachelor's Degrees Awarded to Underrepresented Minority Students
By Academic Fields
Contrasted to Expected Increases -
Based on Average UT-System STEM Performance:

Thirteen-Year Totals (1991-92 to 2004-05)



In the past year, the annual number of underrepresented minority graduates in the STEM disciplines has surpassed the projected number from baseline (1992-93) by 37%. This statistic is significant since the past several years have shown decreasing trends in both the enrollment and graduation of undergraduate STEM majors.

The University of Texas System LSAMP has brought together the nine academic components of The University of Texas System in an effort to increase the number of underrepresented minority students enrolling in and graduating from baccalaureate programs in science, technology, engineering and mathematics (STEM). An additional goal of the alliance has been to increase the number of underrepresented minority students in STEM graduate programs at UT-System institutions. Emphasis in Phase III is on increasing graduate opportunities for underrepresented minority individuals at Alliance institutions, particularly at the doctoral level.



University Partners: UT Arlington Martha Mann mann@uta.edu ♦ UT Austin Sarah Simmons and Pedro Reyes (Co-PI) simmons@mail.utexas.edu; preyes@utsystem.edu ♦ UT Brownsville Fabio Urbani furbani@utb.edu ♦ UT Dallas Gerald Burnham burnham@utdallas.edu ♦ UT El Paso Benjamin C. Flores (PI) and Ariana Arciero bflores@utep.edu; avarcier@utep.edu ♦ UT Pan American Miguel Paredes mparedes@panam.edu ♦ UT Permian Basin Doug Hale hale_d@utpb.edu ♦ UT San Antonio Inez Cruz inez.cruz@utsa.edu ♦ UT Tyler Stephen Rainwater Steve_Rainwater@mail.uttyl.edu

Community College Partners: Alamo Community College District David Chavera dchavera@accd.edu ♦ Collin County Community College District ♦ El Paso Community College Emil Michal emilm@epcc.edu ♦ Howard College Amber Buske abuske@howardcollege.edu ♦ Midland College Kay Hodge khodge@midland.edu ♦ Odessa College Shirley Payne spayne@odessa.edu ♦ Tarrant County College Larry Darlage Larry.darlage@tccd.edu

UT System LSAMP website: <http://research.utep.edu/lamp>

University System of Maryland

Louis Stokes Alliance for Minority Participation

University of Maryland, Baltimore County
University of Maryland, College Park
University of Maryland Eastern Shore

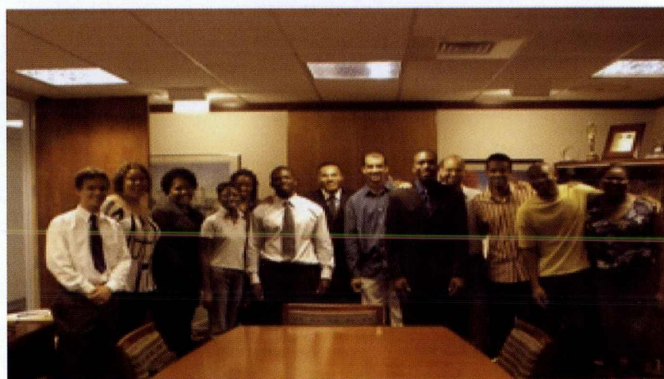


USM LSAMP is a comprehensive program that is designed to increase the quantity and quality of minority and other students receiving baccalaureate degrees in science, technology, engineering, and mathematics (STEM).

- Alliance institutions awarded 684 STEM baccalaureate degrees to minority students in 2004-05.
- Alliance institutions awarded 84 STEM master's degrees to minority students in 2004-05.
- Alliance institutions awarded 22 Ph.D. degrees to minority students in STEM fields in 2004-05.
- The University of Maryland, Baltimore County is the site for the first cohort of USM Bridge to the Doctorate Fellows.
- Many LSAMP students advance to top graduate schools including Johns Hopkins, Stanford, Carnegie Mellon, Princeton, and Brown.

Program Highlights:

- Undergraduate research
- Academic Support
- Scholarship Support
- Mentoring
- Summer Bridge
- Conference presentations
- Monitoring and Tracking
- Math Bridge
- College and lab visits
- Cultural Enrichment



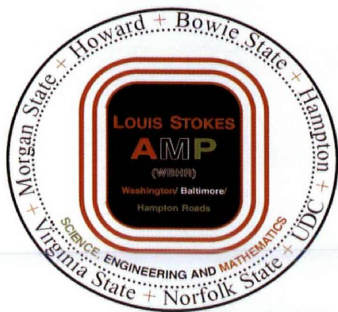
The first cohort of Bridge to the Doctorate Fellows meet with Dr. Freeman Hrabowski, III (Center) President of The University of Maryland, Baltimore County; and LSAMP Principal Investigator .

CONTACT INFORMATION:

UMBC
Cynthia M. Hill
Associate Provost
chill@umbc.edu
410-455-2445

UMCP
Tamara Hamilton
Program Coordinator
hamiltot@umd.edu
301-405-3882

UMES
Carla R. Bailey
Program Coordinator
crbailey@mail.umes.edu
410-651-7969



Washington/Baltimore/Hampton Roads- Louis Stokes Alliance for Minority Participation Program (WBHR-LSAMP)

www.howard.edu/lsamp

HISTORY And GOALS

**Principal Investigator
Provost and Chief Academic Officer
Dr. Richard A. English**

**Executive Director/Co-PI
Dr. Clarence M. Lee**

**Office Mgr/ Admin. Assistant
Ms. Reba Brewington
202-238-2512**

**Data Analyst/Spec Asst
Ms. Ella Kent
202-238-2510**

Partner Institutions

**Howard University
Alliance Coordinator
Dr. William Gordon
202-238-2511/2512
wgordon@fac.howard.edu**

**Bowie State University
Dr. Elaine Davis
301-860-3329
edavis@vowiestate.edu**

**Hampton University
Dr. Elaine Eatman
757-727-5278
Elaine.eatman@hamptonu.edu**

**Morgan State University
Dr. John Wheatland
443-885-3864
jawjr@eng.morgan.edu**

**Norfolk State University
Dr. Sandra Deloatch
757-823-8561
sdeloatch@nsu.edu**

**Virginia State University
Dr. M. Hadi Moadab
804-524-5833
mmoadab@vsu.edu**

**University of the District of Columbia
Dr. Ester Ososanya
202-274-4631
eososanya@udc.edu**

The Washington Baltimore Hampton Roads Alliance for Minority Participation (WBHR-LSAMP) Program includes Howard University as the lead institution with Morgan State University, Bowie State University, the University of the District of Columbia, Hampton University, Norfolk State University, and Virginia State University as partners. Over the past eleven years, more than 47,600 minority students have enrolled in STEM fields at this WBHR Alliance. More than 8,659 students have graduated from these institutions with B.S. degrees in STEM fields. The overall objective of this program is to ensure that the WBHR-LSAMP students are exposed to career opportunities in the science, technology, engineering and mathematics (STEM) fields. Our greatest goal is to stimulate many of these students to pursue careers at the doctorate level.

The program supports undergraduate research students. The program assures that LSAMP students have well-rounded research opportunities. Students are expected to participate in research activities during the summers and the academic year at their home institutions, at other research universities and in industrial or national laboratories. The WBHR-LSAMP program encourages students to pursue doctoral degrees in STEM fields and to become involved in research careers. WBHR-LSAMP also participates in the Bridge to the Doctorate Program. During the 2004-2005 academic years, among other efforts, the WBHR-LSAMP provided junior/senior level students with research opportunities during the first and second semesters and summer; conducted specialized classes through the Cisco Networking Academy; continued a special video-conferencing course for students in gate-keeping courses (biology, calculus, chemistry and physics); provided financial assistance to STEM students during the fall and spring semesters; and facilitated the transfer of community college students into STEM programs at WBHR institutions.

Spotlight on WBHR-LSAMP Student

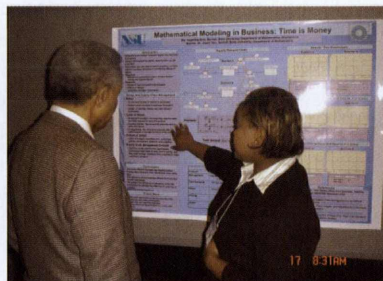
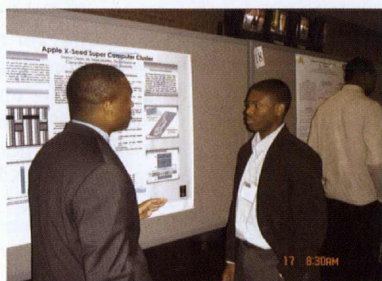
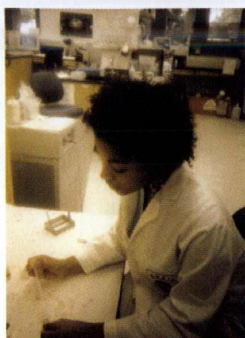
Robin Kindred, a senior undergraduate student at Howard University and an active participant in the WBHR-LSAMP program since January 2004, presented research at numerous prestigious conferences and has won awards related to her research, including the prize of "Most Outstanding Presentation in the Graduate Category" at the Revolutionary Aerospace System Concepts Academic Linkage (RASC-AL) Advanced Design Competition. In her most recent research experience at Cornell University's Nanobiotechnology Center, Ms Kindred was responsible for optimizing the enzyme-initiated surface polymerization of polyhydroxybuturate polymer to a gold surface via the use of various additives so that the polymer could be used in novel microscale devices.

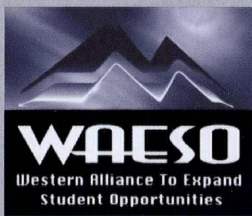


Robin Kindred performs research on the Atomic Force Microscope at Cornell University

WBHR Supports Student Research

Students conduct and present research





WESTERN ALLIANCE TO EXPAND STUDENT OPPORTUNITIES (WAESO)

<http://www.asu.edu/WAESO> Email: waeso@asu.edu

THE NATIONAL SCIENCE
FOUNDATION



WAESO is sponsored in part by
a cooperative agreement with the
National Science Foundation (NSF).

The LSAMP-Western Alliance to Expand Student Opportunities (WAESO) is now engaged in Phase III of operations. After exceeding our goals of doubling the number of baccalaureate degrees per year within the SMET disciplines during Phases I and II, our goal for Phase III is to once again, double the number of graduates within our region. WAESO will continue to increase the quality and quantity of underrepresented minority students receiving degrees in science, mathematics, engineering, and technology throughout our region which includes institutions in Arizona, Colorado, New Mexico, western Texas (El Paso Community College), Nevada and Utah.

LSAMP - WAESO activities in which students participated include:

- peer study groups (local and over the Internet)
- summer bridge programs
- faculty-directed undergraduate research projects
- graduate preparation institutes, mentoring, and research conference



MGE@MSA/WAESO students presenting their posters at the Annual Student Research Conference on April 18th, 2005 at Arizona State University

Supported in part by a grant from the Alliance for Graduate Education and the Professorate (AGEP) program of the National Science Foundation (NSF), WAESO held its joint Annual Student Research Conference in conjunction with its partner AGEP alliance, More Graduate Education at Mountain States Alliance (MGE@MSA), on April 18th, 2005 at Arizona State University. Hundreds of undergraduate and graduate students within the science, technology, engineering and mathematics (STEM) disciplines presented their research posters and participated in a series of presentations and exhibits especially designed to encourage and facilitate their pursuit of doctoral studies in STEM leading to careers in academe and government research laboratories.

WAESO Participating Institutions

Arizona:

Arizona State University
Cochise College
Maricopa Community College System
Dine (Tsaile Campus)
Pima Community College
University of Arizona

New Mexico and Western Texas:

Eastern New Mexico University
Dine College
New Mexico Highlands University
New Mexico Institute of Mining
and Technology
Northern New Mexico Community College
Santa Fe Community College
University of New Mexico
Western New Mexico University
El Paso Community College

Nevada:

Northern Nevada Community College
University of Nevada, Las Vegas
University of Nevada, Reno

Colorado:

Colorado State University
Community College of Aurora
Mesa State College
Pikes Peak Community College
Pueblo Community College
Regis University
University of Colorado at Boulder
University of Southern Colorado

Utah:

Brigham Young University
Salt Lake Community College
Southern Utah University
University of Utah
Utah State University
Utah Valley State College
Weber State University

WAESO CONTACT INFORMATION

Dr. Antonio García
Project Director and Principal Investigator /
Interim Associate Dean for Academic
Affairs Ira, A. Fulton School of Engineering/
Professor of Bioengineering,
Harrington Department of Bioengineering
Arizona State University
(480) 965 - 0840

LSAMP DIRECTORY

NATIONAL SCIENCE FOUNDATION

4201 Wilson Boulevard
Arlington, VA 22230

Dr. Arden L. Bement, Jr.
Director
(703) 292-8000 • (703) 292-9232 (Fax)
abement@nsf.gov

Dr. Donald Thompson
Acting Assistant Director
Directorate for Education and Human Resources
(703) 292-8600 • (703) 292-9179 (Fax)
dthomps@nsf.gov

Dr. Victor A. Santiago
Acting Division Director
Division of Human Resource Development
(703) 292-4673 • (703) 292-9018 (Fax)
vsantiago@nsf.gov

PROGRAM DIRECTOR

Dr. A. James Hicks
(703) 292-4668 • (703) 292-9019 (Fax)
ahicks@nsf.gov

LSAMP Lead Program Assistant
Gloria Strothers
(703) 292-4718 • (703) 292-9018 (Fax)
gstrothe@nsf.gov

PRINCIPAL INVESTIGATORS

Alabama LSAMP

Dr. Louis Dale
Vice President for Equity and Diversity
The University of Alabama at Birmingham
401 Campbell Hall • 1300 Univ. Blvd.
1530 3rd Avenue South
Birmingham, AL 35294-1170
(205) 934-8762 • (205) 934-1650 (Fax)
ldale@uab.edu

Project Manager

Dr. M. Carolyn Braswell
(205) 934-8762 • (205) 934-1650 (Fax)
cbraswel@uab.edu

All Nations LSAMP

Dr. Joseph F. McDonald
ANLSAMP
Salish Kootenai College
P.O. Box 70
Pablo, MT 59855
(406) 275-4998 • (406) 275-4807 (Fax)
joe_mcdonald@skc.edu
Project Director
Zetra Wheeler
(406) 275-4998 • (406) 275-4807 (Fax)
zetra_wheeler@skc.edu

California LSAMP

Dr. Michael V. Drake
University of California, Irvine
The Chancellor's Office
510 Administration
Irvine, CA 92697-1900
(949) 824-5111 • (949) 824-2087 (Fax)
chancellor@uci.edu
Project Manager
Marjorie DeMartino
(949) 824-4813 • (949) 824-3048 (Fax)
dmartino@uci.edu

California State University LSAMP

Dr. Richard Brown
CSU-LSAMP Statewide Office
6000 J Street, SQU 534
Sacramento, CA 95819-6124
(916) 278-3838 • (916) 278-3854 (Fax)
ricb@csus.edu

Project Director

Dr. Juanita Barrena
(916) 278-6519 • (916) 278-4640 (Fax)
jbarrena@csus.edu

Colorado LSAMP

Dr. Omnia El-Hakim
LS CO-AMP
College of Engineering, Room E118
Colorado State University
Fort Collins, CO 80523-1301
(970) 491-2656 • (970) 491-3421 (Fax)
omnia@enr.colostate.edu

Project Coordinator

Gary Metzger
(970) 491-2898 • (970) 491-3421 (Fax)
gmetzger@enr.colostate.edu

Florida-Georgia LSAMP

Dr. Ralph W. Turner
FGLSAMP Central Office
1540 South Adams Street, Suite-A
Tallahassee, FL 32307
(850) 561-2467 • (850) 561-2684 (Fax)
ralph.turner@famou.edu
Project Manager
Mr. Byron Greene
(850) 561-2467 • (850) 561-2684 (Fax)
jackson.greene@famou.edu

Georgia LSAMP

Dr. Walter D. Broadnax, President
The Office of the President
Clark Atlanta University
223 James P. Brawley Drive, SW
Atlanta, GA 30314
(404) 880-8500 • (404) 880-8995 (Fax)
wbroadnax@cau.edu
Project Director
Dr. Melvin R. Webb
(404) 880-6868 • (404) 880-6843 (Fax)
mwebb@cau.edu

Houston LSAMP

Dr. John L. Bear, Dean
University of Houston
Natural Sciences & Mathematics
214 Science & Research Bldg. 1
Houston, TX 77204-5008
(713) 743-3755 • (713) 743-8630 (Fax)
jbear@uh.edu
Executive Director
Craig Cassidy
(713) 743-9220 • (713) 743-8630 (Fax)
ccassidy@central.uh.edu

Illinois LSAMP

Dr. Marian Wilson Comer
Chicago State University
Williams Science Center
Room 101-A
9501 S. King Drive
Chicago, IL 60628
(773) 995-3296 • (773) 995-2966 (Fax)
m-comer@csu.edu
Project Director
Dr. LeRoy Jones, II
(773) 995-3296 • (773) 995-2966 (Fax)
ljones27@csu.edu

Indiana LSAMP

Dr. Sally K. Mason
Office of the Provost
Purdue University
Hovde Hall, Room 100
610 Purdue Mall
West Lafayette, IN 47907-2040
(765) 494-9709 • (765) 496-2031 (Fax)
sfmason@purdue.edu
Program Manager
Dr. Pamella P. Dale Shaw
(765) 496-7967 • (765) 494-2221 (Fax)
ppshaw@purdue.edu

Louisiana LSAMP

Dr. Diola Bagayoko
LS-LAMP Management Office
P.O. Box 9274
Baton Rouge, LA 70813
(225) 771-2777/2730 • (225) 771-2311 (Fax)
bagayoko@aol.com

Michigan LSAMP

Dr. Mary Sue Coleman, President
University of Michigan
Office of the President
2074 Fleming Administration Building
Ann Arbor, MI 48109-1340
(734) 764-6270 • (734) 936-3529 (Fax)
presoff@umich.edu
Project Director
Dr. Levi T. Thompson
(734) 936-2015 • (734) 647-7126 (Fax)
lth@umich.edu

Mid-Eastern LSAMP

Dr. Belinda C. Anderson
Virginia Union University
1500 N. Lombardy Street
Richmond, VA 23220
(804) 257-5835 • (804) 257-5833 (Fax)
bcanderson@vuu.edu
Project Director
Dr. Phillip W. Archer
(804) 257-5692 • (804) 354-5945 (Fax)
pwarcher@vuu.edu

Mississippi LSAMP

Dr. James Perkins
LSMAMP
P.O. Box 18119
Jackson, MS 39217
(601) 979-2024 • (601) 979-2025 (Fax)
james.perkins@jsums.edu
Project Manager
Joan F. Blanton
(601) 979-2024 • (601) 979-2025 (Fax)
joan.blanton@jsums.edu

Missouri LSAMP

Dr. Charles L. Sampson
University of Missouri-Columbia
513 Clark Hall
Columbia, MO 65211-4422
(573) 882-4745 • (573) 884-1439 (Fax)
SampsonC@umsystem.edu

New Mexico LSAMP

Dr. William V. Flores
Provost Office
MSC 3445
New Mexico State University
P.O. Box 30001
Las Cruces, NM 88003-8001
(505) 646-2127 • (505) 646-6334 (Fax)
provost@nmsu.edu



THE WISCONSIN ALLIANCE FOR MINORITY PARTICIPATION or WiscAMP is a consortium of 21 colleges and universities throughout Wisconsin that aims to double the number of underrepresented minorities who receive bachelor's degrees in the STEM disciplines within five years. WiscAMP will address retention and persistence of underrepresented minorities in STEM disciplines by expanding and improving on successful models already in place and fostering and sustaining an alliance among partner institutions.

Member Institutions:

College of Menominee Nation

Nicolet Area Technical College
 Milwaukee Area Technical College
 Madison Area Technical College

Alverno College
 Beloit College
 Lawrence University
 Marquette University

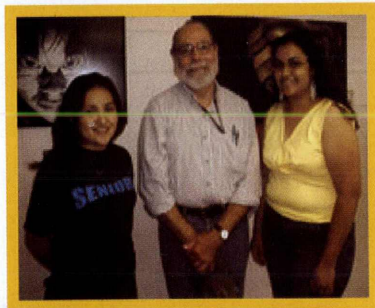
UW-Eau Claire
 UW-Green Bay
 UW-La Crosse
 UW-Madison
 UW-Milwaukee
 UW-Oshkosh
 UW-Parkside
 UW-Platteville
 UW-River Falls
 UW-Stevens Point
 UW-Stout
 UW-Superior
 UW-Whitewater

Established in 2004, the **WiscAMP** program aims to:

- Increase retention through academic enhancement programs and services that focus on tutoring, mentoring, supplemental instruction and peer support.
- Increase recruitment and retention by increasing mentoring skills of graduate students (and future faculty members) that provide oversight for undergraduates participating in the summer undergraduate research experience programs.
- Focus on faculty development and alliance-building by creating a STEM "network of champions" among faculty and administrators within the alliance. This network will share best practices for diversifying student populations and improving the institutional culture related to diversity issues.
- Focus on staff development and alliance-building by establishing regional working groups to facilitate information flow among alliance members.
- Establish enrollment and degree baseline and track these data for all institutions in the alliance.
- Increase recruitment and retention by allowing participating institutions to propose institutional or regional-based initiatives that best suit their local needs.

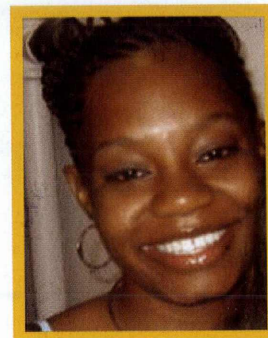
Summer Research Opportunities funded through Small Grants Program:

University of Wisconsin-Whitewater sophomores, Jazmine Castellanos-Rodriguez and Nancy Huerta, both Biological Sciences majors, are working on the research project, "Phytoremediation," under the guidance of Dr. Neil Sawyer, an Assistant Professor in Biological Sciences. It is expected that this research will lead to excellent presentations at conferences in the near future.



PI: Virginia Sapiro
 Co-PI: Molly Carnes
 Co-PI: Douglass Henderson
 Director: Manuela Romero

Entering freshman Dasheema Jarrett was given the "opportunity of my lifetime" when she was asked to be part of the summer research opportunity program at Beloit College. She was placed in Dr. David Watkin's lab at UW-Madison, which is conducting research using the simian immunodeficiency virus (SIV) in primates as an animal model for HIV in humans for vaccine development. This was an excellent introductory for a student who is anxious to return to the lab next summer!



Contact Information:
 UW - Madison
 2640 Engineering Hall
 1415 Engineering Drive
 Madison, WI 53706-1619
 Phone: (608) 262-7764
 Fax: (206) 265-5290

e-mail: wiscamp@engr.wisc.edu
<http://wiscamp.engr.wisc.edu>

Wisconsin Alliance for Minority Participation - A 21 Member Alliance

Project Director

Dr. Ricardo B. Jacquez
(505) 646-3463 • (505) 646-6049 (Fax)
rjacquez@nmsu.edu

New York City LSAMP

Dr. Neville A. Parker
City College of New York
138th Street & Convent Avenue
Marshak-Building, Room J14
New York, NY 10031
(212) 650-8854 • (212) 650-8855 (Fax)
ampcc@cunyvm.cuny.edu

Project Administrator

Dr. Claude Brathwaite
(212) 650-8854 • (212) 650-8855 (Fax)
clbcc@cunyvm.cuny.edu

North Carolina LSAMP

Dr. Carolyn W. Meyers
Provost/Vice Chancellor for Academic Affairs
North Carolina A&T State University
Dowdy Administration Building
1601 E. Market Street
Greensboro, NC 27411
(336) 334-7695 • (336) 334-7136 (Fax)
cmeyers@ncat.edu

Project Coordinator

Marcia F. Williams, MBA
(336) 334-7589 • (336) 334-7540 (Fax)
marcia@ncat.edu

Northeast LSAMP

Dr. John Cunningham
Office of the Provost
Whitmore Administration Building
University of Massachusetts Amherst
181 Presidents Way
Amherst, MA 01003
(413) 545-2554 • (413) 577-3980 (Fax)
jcunningham@provost.umass.edu

Project Director

Susan Bronstein
(413) 545-5742 • (413) 545-4576 (Fax)
sbronstein@acad.umass.edu

Ohio LSAMP

Dr. Karen Holbrook
President
Ohio State University
190 N. Oval Mall
Columbus, OH 43210
(614) 292-2424 • (614) 292-1231 (Fax)
holbrook.79@osu.edu

Project Director

Dr. Jean E. Girves
(614) 247-7267 • (614) 292-3656 (Fax)
girves.l@osu.edu

Oklahoma LSAMP

Dr. Earl D. Mitchell, Jr.
246 Noble Research Center
Oklahoma State University
Stillwater, OK 74078-3035
(405) 744-6189 • (405) 744-7799 (Fax)
earl.mitchell@biochem.okstate.edu

Project Manager

Dr. Zola J. Drain
(405) 744-7827 • (405) 744-7799 (Fax)
zdrain@biochem.okstate.edu

Pacific Alliance LSAMP

Dr. Herb Schroeder
LSAMP Pacific Alliance
University of Alaska Anchorage
School of Engineering
3211 Providence Drive
Anchorage, AK 99508
(907) 786-1860 • (907) 786-1079 (Fax)
herb@uaa.alaska.edu

Peach State LSAMP

Dr. Michael Adams
Office of the President
The University of Georgia
The Administration Building
Athens, GA 30602-1661
(706) 542-1214 • (706) 542-0995
Executive Director
Curtis D. Byrd, M.Ed.
(706) 583-8195 • (706) 583-8199 (Fax)
cdbyrd@uga.edu

Philadelphia LSAMP

Dr. Ali Houshmand, Interim Provost
Office of the Provost
Drexel University
3141 Chestnut Street
Main Building Admin. 1-1st Floor
Philadelphia, PA 19104
(215) 895-6321 • (215) 895-1056 (Fax)
ali.a.houshmand@drexel.edu

Project Director

Mr. Stephen R. Cox
(215) 895-6835 • (215) 895-2098 (Fax)
srecox@drexel.edu

Puerto Rico LSAMP

Dr. Manuel Gómez
P.O. Box 23334
UPR Station
San Juan, PR 00931
(787) 764-8369 • (787) 766-1293 (Fax)
Mgomez@upr.edu

Project Director

Dr. Ana C. Piñero
(787) 764-8369 • (787) 766-1293 (Fax)
a_pinero@prlsamp.org

South Carolina LSAMP

Dr. Andrew Hugine, Jr.
Office of the President
South Carolina State University
Campus P.O. Box 7008
Orangeburg, SC 29117-0001
(803) 536-7013 • (803) 533-3622 (Fax)
president@scsu.edu

Project Manager

Dr. Judith Salley
(803) 536-8509 • (803) 516-4685
djsalley@scsu.edu

State University of New York (SUNY) LSAMP

Dr. David L. Ferguson
Stony Brook University
Harriman Hall, Room 347
Stony Brook, NY 11794-3760
(631) 632-8763 • (631) 632-7809 (Fax)
David.Ferguson@stonybrook.edu
Project Coordinator
Lucy Gluck
(631) 632-9988 • (631) 632-7809 (Fax)
Lucille.Gluck@stonybrook.edu

Tennessee LSAMP

Dr. Melvin Johnson
Office of the President
3500 John A. Merritt Blvd.
Nashville, TN 37209
(615) 963-7401 • (615) 963-7407 (Fax)
President@tnstate.edu
Project Director
Dr. Lonnie Sharpe, Jr.
(615) 963-5501 • (615) 963-7492 (Fax)
sharpe@coe.tsuniv.edu

Texas LSAMP

Dr. Karan Watson
Office of the Dean of Faculties & Associate
Provost
104 Academic Building
1126 TAMU
College Station, TX 77843-1126
(979) 845-4274 • (979) 845-1822 (Fax)
watson@tamu.edu
Program Director
Shantuan Coleman
(979) 862-4315 • (979) 862-1940 (Fax)
shantuan@tamu.edu

University of Texas System LSAMP

Dr. Benjamin C. Flores
500 W. University Avenue
Engineering 301
El Paso, TX 79968
(915) 747-5470 • (915) 747-5243 (Fax)
bflores@utep.edu

Project Coordinator

Ariana V. Arciero, MPH
(915) 747-8725 • (915) 747-5243 (Fax)
avarcier@utep.edu

University System of Maryland LSAMP

Dr. Freeman A. Hrabowski, III
University of Maryland, Baltimore County
1000 Hilltop Circle
Baltimore, MD 21250
(410) 455-2274 • (410) 455-1210 (Fax)
hrabowski@umbc.edu

Project Director

Cynthia M. Hill
(410) 455-2445 • (410) 455-1028 (Fax)
chill@umbc.edu

Washington/Baltimore/Hampton Roads LSAMP

Dr. Richard A. English
Office of the Provost
Howard University
2400 6th Street, N.W.
Washington, DC 20059
(202) 806-2550 • (202) 806-4971 (Fax)
renglish@howard.edu
Executive Director
Dr. Clarence M. Lee
(202) 238-2511 • (202) 986-7752 (Fax)
cmlee@howard.edu

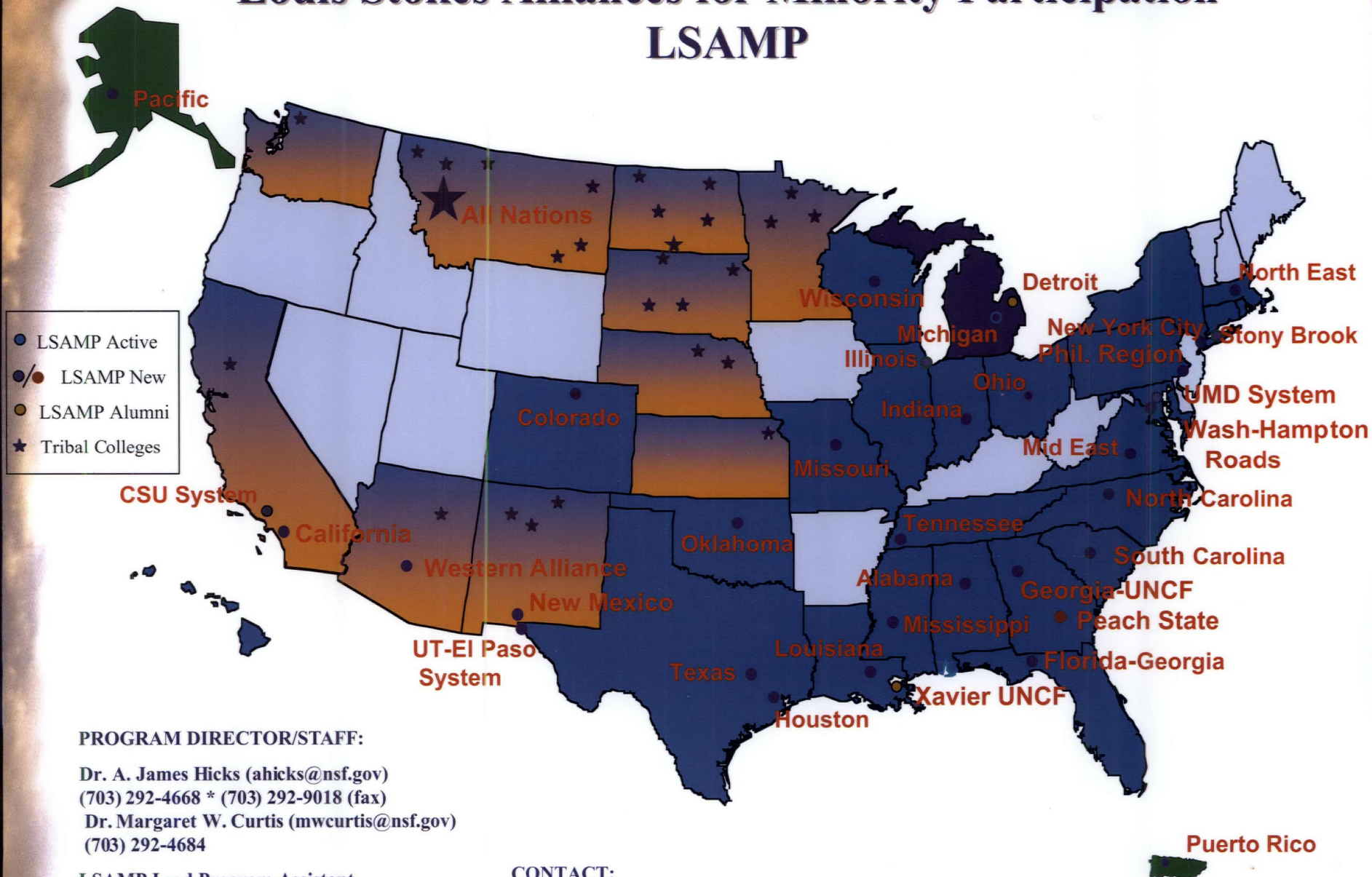
Western Alliance to Expand Student Opportunities (WAESO)

Dr. Antonio Garcia
Hispanic Research Center
Arizona State University
PO Box 875403
Tempe, AZ 85287-5403
(480) 965-0840/8798 • (480) 965-8309 (Fax)
tony.garcia@asu.edu
Project Administrator
Michael J. Sullivan
(480) 965-0840/5388 • (480) 965-8309 (Fax)
michael.sullivan@asu.edu

Wisconsin LSAMP

Dr. Virginia Sapiro
University of Wisconsin-Madison
150 Bascom Hall
500 Lincoln Drive
Madison, WI 53706
(608) 262-1304 • (608) 265-3324
vsapiro@wisc.edu
Project Director
Dr. Manuela Romero
(608) 263-1138 • (608) 265-5290
romero@engr.wisc.edu

Louis Stokes Alliances for Minority Participation LSAMP



PROGRAM DIRECTOR/STAFF:

Dr. A. James Hicks (ahicks@nsf.gov)
(703) 292-4668 * (703) 292-9018 (fax)
Dr. Margaret W. Curtis (mwcurtis@nsf.gov)
(703) 292-4684

LSAMP Lead Program Assistant
Gloria D. Strothers gstrothe@nsf.gov
(703) 292-4718

CONTACT:

Division of Human Resource Development
Louis Stokes Alliances for Minority Participation (LSAMP)
(703) 292-8632; hrdamp@nsf.gov