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Dr. Arden L. Bement, Jr. Acting Director National Science Foundation abement@nsf.gov



Dr. Donald Thompson Acting Assistant Director Directorate for Education and Human Resources thompson@nsf.gov



Dr. Bernice T. Anderson Acting Director Division of Human Resource Development banderso@nsf.gov



Dr. A. James Hicks Program Director LSAMP ahicks@nsf.gov

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President Bush Appoints Arden Bement as NSF Director



Dr. Arden L. Bement, Jr.

Arlington, Va.—President Bush on November 24, 2004, officially appointed Dr. Arden L. Bement, Jr., as the 12th Director of the National Science Foundation (NSF), the independent federal agency that supports fundamental research and education across nearly all fields of science and engineering. Bement has been NSF's Acting Director since Feb. 22, 2004. During the time he was acting NSF Director, he also held the position of Director of the National Institute of Standards and Technology (NIST) within the U.S. Department of Commerce. He was appointed NIST Director in 2001. President Bush nominated Bement in September, 2004, to become the NSF Director. The Senate confirmed Bement on November 20th. As NSF Director, Bement's term is for six years. His appointment coincides with his resignation as Director of NIST. Bement's career spans nearly 40 years in industry, government and academia. He served on the National Science Board (NSB), the 24-member policy

body for NSF and Advisor to the President and Congress on science and engineering issues, from 1989-95. As NSF Director, Bement will now serve as an ex officio member of the NSB.

"NSF will invest \$396.5 million in a range of programs with proven track records. Several highly successful programs for broadening participation-the Louis Stokes Alliances for Minority Participation (LSAMP), the Alliances for Graduate Education and the Professoriate (AGEP), the Centers for Research Excellence in Science and Technology (CREST), Robert Noyce Scholarship program, STEM Talent Expansion Program and EPSCoRjust to name a few, are secured in this request. Each of these serves as a model for integrating educational and research resources to improve recruitment and retention in science and engineering to all sectors of our diverse population."

Arden L. Bement

Donald Thompson Appointed Acting Assistant Director for EHR

Arlington, Va. – Dr. Arden Bement, Director of the National Science Foundation (NSF) has appointed Dr. Donald E. Thompson as Acting Assistant Director for Education and Human Resources. The Assistant Director provides leadership and direction to the National Science Foundation aimed at improving education in science, technology, engineering and mathematics (STEM). Thompson has been serving as NSF's Deputy Assistant Director for Education and Human Resources since 2003, where he was responsible for providing leadership and direction to the staff and activities of the directorate. Prior to this position, he served as Director of the Division of Human Resource Development, the focal point for NSF's agency-wide commitment to enhancing the quality and excellence of (STEM) education and research through broadening participation by underrepresented groups and institutions. Thompson's career spans nearly 30 years in education and government service in positions ranging from a faculty member to a vice president in academe and a director of a division to an



Dr. Donald E. Thompson

acting assistant director of a directorate in government. He came to NSF from Western Michigan University, where he was serving as Vice President for Research and Dean of the Graduate College.

LSAMP: Over 90% Student Satisfaction

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



Dr. A. James Hicks

The third and final year of the three-year external evaluation of the LSAMP Program by the Urban Institute (UI) concluded in an exciting and monumental manner! A team of nationally recognized professionals, led by Drs. Beatriz Chu Clewell and Lisa Tsui at the UI, conducted a detailed and thorough evaluation of the LSAMP Program. The evaluation included site visits, interviews and surveys with a goal to learn about graduates' experiences after completing the program. Other features of the evaluation included whether LSAMP graduates matriculated through graduate school or immediately joined the STEM workforce. The authors reported, that *"over* 90% (LSAMP students) said they had either recommended or would recommend LSAMP to others." You are strongly encouraged to read the executive summary of the evaluation results on pages 4-5 in this edition of the AMP Magazine. The full report is in final preparation for release to the NSF. The Urban Institute is a nonprofit, nonpar-

tisan policy research and educational organization that examines the social, economic and governance problems facing the nation.

Last year, we reported that creating opportunities through broadening participation continues as a focal point of LSAMP. All projects, again, are emphasizing quality performances from college through post-baccalaureate engagement for all participants. Last year, we also incorrectly reported surpassing 25,000 graduates for LSAMP. However, a corrected tally, mainly by one alliance, brings the national total to approximately 23,000 baccalaureate recipients in 2004. A table showing the current total, by discipline, exceeding 24,000 is on page 3.

Your review of the Urban Institute's performance review provides additional evidence that LSAMP activities are making important differences for the nation and the larger world. The Bridge to the Doctorate Initiative (BD) is yet another testimony to the success of LSAMP. Currently, 322 BD graduate students are matriculating at top universities in America with an additional 200 scheduled to enroll in the Fall of 2005. Indeed, you are invited to stay tuned and await future editions of this magazine for reports on the Bridge to the Doctorate.

Recently, during the budget testimony on Capitol Hill before the House Science Committee, NSF Director Ardent Bement made the following statement: "NSF will invest \$396.5 million in a range of programs with_proven track records. Several highly successful programs for broadening participation—the Louis Stokes Alliances for Minority Participation (LSAMP), Alliances for Graduate Education and the Professoriate (AGEP), the Centers for Research Excellence in Science and Technology (CREST), Robert Noyce Scholarship Program, STEM Talent Expansion Program and EPSCoR, just to name a few, are secured in the request. Each of these serves as a model for integrating education and research resources to improve recruitment in science and engineering to all sectors of our diverse population."

A hardy welcome is extended to three new alliance projects in the LSAMP portfolio: Michigan, the Peach State and Wisconsin. These alliances are scheduled to initiate strategic activities in the fall, for broadening participation in STEM disciplines.

Research involvement by LSAMP students and other academic activities, coupled with a bevy of individual project performance successes and the Urban Institute evaluation, highlighted in this publication gives us reason to celebrate the achievements of LSAMP!

UREP/STEM, Bachelor's Degrees Report Disciplines by Race/Ethnicity Academic Year 2003-2004/ Reporting Year 2004

Discipline	African American	Hispanic or Latino	Native American	Native Hawaiian or Other Pacific Islander	Minority ²	Total
Agricultural Science	273	363	85	26	13	760
Chemistry	512	541	37	20	5	1115
Computer Science	2746	1778	220	236	51	5031
Engineering	2889	4006	426	244	33	7598
Environmental Science	80	178	54	7	0	319
Geosciences	38	107	20	1	1	167
Life/Biological Sciences	3154	3764	401	230	30	7579
Mathematics	582	510	62	45	6	1205
Physics/Astronomy	115	251	25	10	1	402
Total	10389	11498	1330	819	140	24176

1 The Native American category includes American Indians and Alaskan Natives.

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

UREP/STEM, Bachelor's Degrees Report Gender by Race/Ethnicity Academic Year 2003-2004/ Reporting Year 2004

Gender	African American	Hispanic or Latino	Native American	Native Hawaiian or Other Pacific Islander	Minority ²	Total
Male	4793	6467	771	467	74	12572
Female	5336	4920	553	351	66	11226
Not Reported or Unknown	260	111	6	1	0	378
Total	10389	11498	1330	819	140	24176

1 The Native American category includes American Indians and Alaskan Natives.

2 The Minority Category comprises individuals reporting a) two or more race/ethnicity categories and b) one or more of the reported categories includes: American Indian, Alaskan Native, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander.

Where Are They Now? 5-10 Years After LSAMP

The Paths of LSAMP Graduates After Earning a Bachelor's Degree in STEM by Nicole Deterding, The Urban Institute¹

About the Evaluation

The information presented in this article was collected during a multi-year evaluation of the Louis Stokes Alliances for Minority Participation Program (LSAMP) conducted by the Urban Institute¹. As part of this evaluation, in 2002 the team conducted a retrospective survey of LSAMP participants who graduated with a bachelor's degree in a science, technology, engineering and mathematics (STEM) field between 1992 and 1997. The goal of the survey was to learn about graduates' experiences after completing the program, including whether they enrolled in graduate school and whether they joined the STEM workforce.

Survey results indicate that LSAMP graduates enroll and complete graduate school at higher rates than the national average, and are members of the STEM workforce at similar rates as national comparison groups². Here are some highlights from our findings.

Undergraduate GPA

In preparation for their future studies and careers, LSAMP participants achieved success in their undergraduate coursework. Slightly more than half of program graduates earned a high undergraduate GPA (3.25 or above). Only a small percentage (approximately 10%) graduated with a GPA lower than 2.75. Importantly, there was no meaningful difference between the final GPAs of men and women who participated in the program.

Post-Bachelor's Coursework

The vast majority of LSAMP graduates sought additional education after LSAMP. Nearly 80 percent of LSAMP graduates reported having taken coursework since receiving their bachelor's degree. Only a small percentage of program graduates (5%) pursued coursework toward no specific degree or certificate, while most reported working towards a graduate degree.

Enrollment in Graduate School

At the time of the survey, two-thirds of LSAMP graduates had enrolled in graduate school—working towards a Master's, PhD, or Professional degree. The majority of these were studying in STEM fields (58%). In terms of broad field of study, engineering was most common, making up one-quarter of graduate degrees pursued. Other popular fields were the health professions, life sciences, business, and physical sciences.



¹The Urban Institute is a nonprofit, nonpartisan policy research and educational organization that examines the social, economic, and governance problems facing the nation. Web site, <u>http://www.urban.org</u>. The National Science Foundation funded this Urban Institute study under contract REC-9912176. Any opinions, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the United States Government.

² The UI Evaluation team was: Dr. Beatriz Chu Clewell, Dr. Lisa Tsui, Clemencia Cosentino de Cohen, Laurie Forcier, Nicole Young, Ella Gao and Nicole Deterding.

³ The final count of eligible returned surveys was 830, representing a response rate of 60.2%. For analysis, data was weighted to represent the full 1992-1997 LSAMP graduate population.



STEM Graduate Degrees

One of the goals of the LSAMP program is to encourage students to pursue advanced degrees in STEM fields. At the time of the survey, 40% of all LSAMP participants had worked towards or completed a graduate degree in a STEM field. One in four LSAMP graduates had completed a STEM graduate degree during this time—between 5 and 7 years since undergraduate graduation for the majority of survey respondents. These numbers are expected to rise in the future, as the majority of those who had not completed the highest degree they sought reported that they continued to work towards this goal.

STEM Workforce Participation

Finally, we were interested in employment of LSAMP participants, as a major goal of the program is to ultimately diversify the STEM workforce. To that end, did program graduates end up in jobs in STEM? Indeed, nearly half of LSAMP program graduates who held a job were working in STEM fields at the time of the survey. They worked as engineers, computer and math scientists, life scientists, and physical scientists. An additional 15% of former LSAMP students used their STEM backgrounds while working in the health professions. In total, those working in either STEM or medicine represented the majority of LSAMP graduates.

Satisfaction with LSAMP

Another important indicator of LSAMP's success is its participants' satisfaction, and here again, the program receives high marks. Nearly 70% of graduates reported that LSAMP was "extremely" or "very helpful" to them in earning a bachelor's degree in STEM. Half expressed LSAMP's positive impact on their decision to attend graduate school. Finally, over 90% reported that they either had recommended or would recommend LSAMP to others.

The data reported here indicate that participation in the LSAMP program has a positive influence on undergraduate students. This influence is seen in terms of academic achievement (undergraduate GPAs), enrollment in graduate school, completion of advanced degrees in STEM, and participation in the STEM workforce, and is also supported by students' overall satisfaction with the LSAMP experience.

Three New Awardees Join LSAMP Efforts

Three new LSAMP awardees, two in the north and one in the south, join in efforts to increase minority participation. They are as follows:

Michigan Louis Stokes Alliance for Minority Participation (MI-LSAMP) - The University of Michigan, Western Michigan University, Michigan State University and Wayne State University will establish the MI-LSAMP in order to significantly increase the quantity and improve the quality of students earning science, technology, engineering and mathematics (STEM) baccalaureate degrees from our institutions, and increase the number of under-represented minority (URM) students interested in, academically qualified for and matriculated into graduate study programs. The MI-LSAMP partners are recognized as "flag-ship" institutions in the State of Michigan and represent the diversity of public Doctoral Research Extensive institutions in the nation. The mission of the MI-LSAMP not only supports the National Science Foundation's strategic goal to help create "a diverse, competitive and globally-engaged U.S. workforce of scientists, engineers, technologists and well-prepared citizens," it supports goals set forth by the Michigan's "Cherry Commission on Higher Education and Economic Growth". The MI-LSAMP will expand outreach to the pre-college community, increase the persistence of STEM majors, increase faculty involvement in mentoring URM students, promote collaboration among faculty at Michigan institutions of higher education and increase the diversity of our communities and workforce.

Peach State Louis Stokes Alliance for Minority Participation - A collaborative effort sustained by eight universities in Georgia: the University of Georgia (in close collaboration with Bainbridge College); Clayton College; Fort Valley State University; Georgia Perimeter College; Macon State College; Savannah State University and Southern Polytechnic University, to increase the number of underrepresented minority students statewide who complete undergraduate degrees in science, technology, engineering and mathematics (STEM) fields. Georgia is experiencing explosive population growth while embracing policies that favor economic development in strategic, technology-oriented fields. There is a compelling need for college graduates with strong technical skills. There is also wide recognition that underrepresented minorities must participate significantly in meeting this need.

The primary impacts of the alliance will be to enhance the recruitment and retention of minority students and double the number of such students at participating universities overall who earn bachelor's degrees in STEM disciplines. The University of Georgia will serve as the lead institution and fiduciary agent on behalf of the Peach State Alliance.

Wisconsin Alliance for Minority Participation (WiscAMP) - The University of Wisconsin-Madison will lead an alliance of 21 state colleges and universities that aims to increase the number of underrepresented minorities who receive bachelor's degrees in the STEM (science, technology, engineering and math) disciplines. Alliance members include the UW System's other four-year universities: (UW-Eau Claire; UW-Green Bay; UW-La Crosse; UW-Milwaukee; UW-Oshkosh; UW-Parkside; UW-Platteville; UW-River Falls; UW-Stevens Point; UW-Stout; UW-Superior and UW-Whitewater); Alverno College; Beloit College; Lawrence University; Marquette University; Madison Area Technical College; Milwaukee Area Technical College; Nicolet Area Technical College; and the College of the Menominee Nation. In addition to increasing the number of graduates, WiscAMP is committed to the more fundamental goal of transforming the culture of institutions to support and sustain diversity at all levels. WiscAMP will address retention and persistence of underrepresented minorities in science or engineering majors by expanding and improving on successful models already in place and fostering and sustaining an alliance among partner institutions.

LSAMP Students Receiving STEM Ph.D. Degrees 2003-2004

ALABAMA (2)

Karen Cheeseboro, Ph.D. - Chemistry, Florida A&M Horizon Briggs, Ph.D. - Mechanical Engineering, University

Stephanie Kine, Ph.D. - Biology, University of Missouri

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CALIFORNIA (10)

Ruben Alarcon, Ph.D. - Biology, University of California, Riverside

John T. Donald, Ph.D. - Applied Mathematics, University of California Los Angeles

Javier Garay, Ph.D. - Materials Science, University of California, Davis

Anthu Huong, Ph.D. - Ecology and Evolutionary Biology, University of Washington

Kamisha Johnson-Davis, Ph.D. - Pharmacology and Toxicology, University of Utah

Jose Ospina, Ph.D. - Pharmacology and Toxicology, University of California, Irvine

Hugo B. Sanchez, Ph.D. - Biomedical Sciences, University of California, Irvine

Javier Santillan, Ph.D. - Geophysics, UC Santa

Cruz

Daniel Smith, Ph.D. - Microbiology, University of California, Riverside

Jorge Torres, Ph.D. - Molecular Biology, Princeton University

FLORIDA-GEORGIA (11)

Charmane Caldwell, Ph.D. - Electrical Engineering, Florida State University

Mercedes Carbrerizo, Ph.D. - Computer Engineering, Florida International University

Elio Espino, Ph.D. - Civil Engineering, Florida International University

Javier Gonzalez, Ph.D. - Civil Engineering, Florida International University

Li Guangyi, Ph.D. - Engineering, Florida International University

Edward Lule, Ph.D. - Electrical Engineering, Florida International University

Michael Sadeghinia, Ph.D. - Civil Engineering, Florida International University

Louis Santiago, Ph.D. - Botany, University of Florida

Qiong Shen, Ph.D. - Transportation Engineering, Florida International University

Timothy Simmons, Ph.D. - Mechanical Engineering, University of Florida

Richard Zavaleta, Ph.D. - Electrical Engineering, Florida International University

COLORADO (5)

Colorado State University

Sara Fletcher, Ph.D. - Chemistry, University of Colorado-Boulder

Kevin McLin, Ph.D. - Atmos. and Planetary Science, University of Colorado-Boulder

Cristina Perez, Ph.D. - Mathematics, University of Colorado-Boulder

Joseph Hagerty, Ph.D. - Electrical and Computer Engineering, University of Colorado-Boulder

LOUISIANA (10)

Jeremiah Abiade, Ph.D. - Materials Science, University of Florida, Gainesville

Robert Crosby, Ph.D. - Materials Science, University of Florida, Gainesville

Angela Douglas, Ph.D. - Chemistry, Louisiana State Universitv

Anthony Ford, Ph.D. - Computer Science Network System, Stevens Institute of Technology

Michelle Galloway, Ph.D. - Chemistry, Louisiana State University

Kimberly Hamilton, Ph.D. - Analytical Chemistry, Louisiana State University

Rolanda Johnson, Ph.D. - Analytical Chemistry, Louisiana State University

Kim Lewis, Ph.D. - Applied Physics, University of Michigan

Sandra Richardson, Ph.D. - Curriculum and Instruction Specialization in Mathematics, University of Purdue

Nadia St. Luke, Ph.D. - Chemistry, Louisiana State University

MISSOURI (2)

Ricardo Romero-Rameriz, Ph.D. - Civil Engineering, Missouri University

Leyland Gregory Young, Ph.D. - Mechanical Engineering, Missouri University

> **NEW MEXICO (4)**

Nikki Jernigan, Ph.D. - Biomedical Sciences, University of New Mexico

Jonathan Lucero, Ph.D. - Civil Engineering, University of New Mexico

Ramona Parra, Ph.D. - Environmental Chemistry, New Mexico State University

Anibal Quintana, Ph.D. - Chemistry, New Mexico State University

NEW YORK CITY (6)

Nora Barboza, Ph.D. - Biology-Plant Sciences, The Graduate Center-Lehman College

John Hagen Brown, Ph.D. - Biology-Plant Sciences, The Graduate Center-Lehman College

Nicolas Corrasco, Ph.D. - Biochemistry, The Graduate Center-Brooklyn College

Sharon Lall, Ph.D. - Chemistry, The Graduate Center-Queens College

Michael Samms, Ph.D. - Biology, The Graduate Center-City College

Sophia Gustave Suarez, Ph.D. - Physics, The Graduate Center - Hunter College

PHILADELPHIA (4)

Alfred Haynes, Ph.D. - Medicinal Chemistry, Florida A&M University

Carmilia Jimenez-Ramirez, Ph.D. - Microbiology Temple University

Rahil Rahim, Ph.D. - Microbiology, Temple University Wanda Lynn West, Ph.D. - Neuroscience, Temple University

PUERTO RICO (2)

Jose Gonzalez, Ph.D. - Biology, UPR-Rio Piedras Jose Mojica Perez, Ph.D. - Biology, UPR-Rio Piedras

TENNESSEE (4)

Edward Earl Brown, Jr., Ph.D. - Electrical Engineering, Vanderbilt University

Marco A. De Jesus, Ph.D. - Chemistry, University of Tennessee, Knoxville

Tamara Rogers, Ph.D. - Electrical Engineering, Vanderbilt University

Melissa C. Smith, Ph.D. - Electrical Engineering, University of Tennessee, Knoxville

> UNIVERSITY SYSTEM OF MARYLAND (12)

Sydney L. Cousin, Ph.D. - Molecular and Cellular Biology, University of Washington

Adetokunbo O. Eniola, Ph.D. - Chemical Engineering, University of Pennsylvania

Heather P. Green, Ph.D. - Biomedical Science, New York University

Dinari A. Harris, Ph.D. - Pharmacology, University of Michigan

Edward W. Horsey, Jr., Ph.D. - Biology, Carnegie Mellon University

Lekelia D. Jenkins, Ph.D. - Environmental Science, Duke University

Darniet K. Jennings, Ph.D. - Information Systems

University of Maryland, Baltimore County

Eric A. Muller, II, Ph.D. - Biochemistry, Emory University Camelia L. Owens, Ph.D. - Chemical Engineering,

University of Delaware

Rachelle Salomon, Ph.D. - Pathobiology, Brown University Charles P. Shelton, Ph.D. - Electrical Engineering, Carnegie Mellon University

Joseph D. Towles, Ph.D. - Biomedical Engineering, Stanford University

WASHINGTON/BALTIMORE/ HAMPTON ROADS (27)

Alan Anderson, Ph.D. - Chemistry, Howard University Wondwossen Arasho, Ph.D. - Chemistry, Howard University

Christine Barrow, Ph.D. - Biology, Howard University Lynette Berkeley, Ph.D. - Microbiology,

Howard University

Augustus Billy, Ph.D. - Biology, Howard University Arthur Davy, Ph.D. - Civil Engineering, Morgan State University

Bassirou Ditta, Ph.D. - Mathematics, Howard University Beverly Duncan, Ph.D. - Genetics, Howard University Saddah Eshki, Ph.D. - Nutritional Sciences, Howard University

Ayele Gugssa, Ph.D. - Biology, Howard University Jerry Jaboin, Ph.D. - Genetics, Howard University

Yassin Jeilani, Ph.D. - Chemistry, Howard University

Lisa Kinnard, Ph.D. - Electrical Engineering, Howard University

Yun Lui, Ph.D. - Industrial Engineering, Morgan State University

Ava P. Morrow, Ph.D. - Biology, Howard University Oyonumo Ntekim, Ph.D. - Nutritional Sciences, Howard

University

Choice Nwachuku, Ph.D. - Biology, Howard University **Kofi Nyarko**, Ph.D. - Electrical Engineering, Morgan State University

Michael Perkins, Ph.D. - Biology, Howard University

Zhuanhong Qiao, Ph.D. - Chemistry, Howard University

Adrienne Raglin, Ph.D. - Electrical Engineering, Howard University

Cynthia Tucker, Ph.D. - Nutritional Sciences, Howard University

David Wang, Ph.D. - Civil Engineering, Morgan State University

James Wanga, Ph.D. - Biology, Howard University

Damian Watkins, Ph.D. - Electrical Engineering, Howard University

Tyisha Williams, Ph.D. - Genetics, Howard University Desta Yebassa, Ph.D. - Chemistry, Howard University

Alliance Accomplishments and Highlights

Alabama

Bridge to the Doctorate Program - Alabama LSAMP implemented the second cohort of "NSF Bridge to the Doctorate (BD)" students at the University of Alabama in Huntsville. The second cohort included a total of fourteen (14): twelve (12) supported by NSF and two (2) supported by the university, as evidence of it's commitment to the BD initiative. The first cohort of ten (10) students is enrolled at Auburn University; bringing the total number of BD students to 24. Many of these students have enrolled in doctoral programs in STEM disciplines.

Collaboration with AGEP - Alabama LSAMP collaborated with the Alliance for Graduate Education and the Professoriate (AGEP) during the year on two initiatives.



ALSAMP Scholars at the Seventh Annual AAGEP Graduate School Fair

The first initiative was the Alabama Graduate School Fair hosted by The University of Alabama at Birmingham. LSAMP and AGEP funds were used to support this project which brought over three hundred (300) representatives from the twelve ALSAMP partners institutions to the fair to review graduate programs at Alabama and other universities, speak with graduate program directors and establish networks with other LSAMP students. The second initiative was the Weekend Research Project with students and teachers in the Birmingham City Schools. This project involved teams of students and teachers from the Birmingham City Schools working with university faculty and graduate students on ongoing research activities.

Expansion of Summer Bridge Programs - Alabama LSAMP has expanded its successful summer bridge program to four partner institutions; Alabama A&M University, Alabama State University, Auburn University, and The University of Alabama at Birmingham. The

summer bridge program is one of the Louis Stokes Alliances for Minority Participation indicators of success. During the summer of 2004 over one hundred students participated in this program at these four LSAMP institutions.



In the 2003-2004 year the All Nations Louis Stokes Alliance for Minority Participation (ANLSAMP) included the following new activities that greatly enhance the effectiveness of our program.

Evaluation and Dissemination. ANLSAMP staff reviewed the many projects completed by partner institutions through phase I and II and selected ten of them for further investigation. The goal was to review the activities, interview the individuals associated with the projects, and report on any successes and lessons learned. The product of these efforts would be disseminated to stakeholders and generate new ideas and collaborations amongst them. The ANLSAMP Review was compiled, edited, and published.

Engineering Collaboration at Tribal Colleges. Since October 2002, ANLSAMP has collaborated with NASA's Johnson Space Center to bring a program of engineering studies to the tribal colleges and universities In March 2004, eleven TCUs formed a (TCUs). Working Group dedicated to developing, implementing, and sustaining curricula that would permit a qualified Native American student to proceed from pre-curriculum preparation entirely through an accredited Bachelor of Science degree in engineering completely within the tribal college system. In May 2004 the Working Group formalized its relationship and intentions in a Management Plan. In July 2004 the Working Group Chair presented the program to several Washington, DC, organizations, including the White House Initiative on the Tribal Colleges and Universities (WHITCU). The group obtained funding to conduct a workshop at the National Academy of Engineering.

JSC Excess Equipment Program. A collaboration with Jerry Elliot, NASA engineer at the Johnson Space Center (JSC), has yielded the NASA equipment giveaway program. This program, which began in June 2004, gives tribal colleges precedence in receiving excess equipment from JSC.. Interested Tribal Colleges can request the equipment for student use in labs and classrooms. ANLSAMP serves as the facilitator and coordinator of these requests, and seeks out alternate sources of funding for shipping costs. As of December 2004, College of Menominee Nation and Blackfeet Community College have received equipment through this program.

California

2004 UC Systemwide LSAMP undergraduate research symposium, with representation from the eight UC campus partners; excellence in faculty mentored research was recognized with Special Merit in Research awards made to sixteen students in various categories. Fifty STEM majors presented summer and academic year research to UC faculty and staff and to their peers. Special guests were from New Mexico LSAMP, AGEP, and the UCLA freshman PEERS program.

Bridge to Doctorate funding for Cohort II, hosted by UC Irvine, expanded LSAMP-supported graduate students to 22, with ten students in Cohort I at UCLA, and twelve at UCI. The BD program is a major step forward in diversifying STEM graduate programs and eventually, it is hoped, the university's faculty.

Expanded undergraduate research experiences through collaboration with two programs in particular, UC LEADS (a two-year program focused on research and graduate school preparation, supported by the university in agreement with the graduate deans), and McNair Scholars (a one-year program focused as well on research and graduate school preparation). In addition, funding from the National Laboratories expanded support to LSAMP students for summer research and professional development.

California State University

During 2003-2004, the first year of Phase III, CSU-LSAMP campuses reported engaging a total of 3,395 URM-STEM undergraduates in one or more activities supported by the project. This represents an increase of 667 students over the 2751 students reported as being served by the Alliance in 2002-2003, the ending year of Phase II.

The new emphasis in Phase III on activities designed to enhance student interest in and preparation for graduate school with the goal of improving aggregate student progression to STEM graduate programs has begun to foster development or expansion of campus activities relating to this goal. For Example, CSU Los Angeles reported that their CSU-LSAMP program focused this year on enhancing program components that will enhance the goal of increasing the number of URM students who go on to pursue advanced degrees in STEM. The success of their efforts is evidenced by the fact that 28 of the LSAMP students who graduated in 2003 were admitted to Ph.D. programs, 25 into Master's degree programs, and 3 to M.D./Ph.D. programs.

In Fall 2003, 10 former LSAMP students were admitted to the first cohort of CSU-LSAMP Bridge to the Doctorate Program at San Francisco State University. Five of these students were entering the second year of the Master's program and five were entering the first year of graduate study. Four of the five second-year students completed Master's degree requirements in spring or summer 2004 and were admitted to Ph.D. programs for fall 2004. The fifth second-year student decided to forego completion of the Master's degree in favor of accepting admission to a Ph.D. program in Fall 2004. Hence 100% of the second-year students (5/5) applied to and were accepted to STEM Ph.D. Four of the five first-year students have continued in a second year as Bridges Scholars, and six additional former LSAMP students have been selected to join the first cohort of Bridges Scholars at SFSU. Bridge to the Doctorate activities have been expanded to include a second cohort at California State University, Los Angeles which began during the Fall of 2004.



B.S. Degrees:

Rate of increase in degrees awarded was 83% (from 215 to 394 degrees). Considering CO-AMP's original initial baseline was 186, in the 8th year CO-AMP has increased the number of B.S. degrees awarded by 112% (186 to 394).

STEM Enrollment:

Increase in STEM enrollment of underrepresented minority students of approximately 68% (1,922 to 3,230).

Summer Programs:

During summer 2004, COAMP supported two new research programs, including one for high school students (Junior Engineering Technical Society– Uninitiates' Introduction to Engineering Summer Bridge Program) and one for STEM undergraduate students (Colorado Institute of Technology Summer Bridge Program). Building on COAMP's success and track record, Colorado State University, as a partner with CU-Denver (lead institution), has been granted the NSF Math and Science Partnership Award, where the grant will support a new summer program for students K-12.

Houston

The number one highlight was the Fourth Annual Undergraduate Research Conference of the Houston-Louis Stokes Alliance for Minority Participation which was held on October 1-3, 2004. More than 400 AMP students from twenty-two institutions, representing more than one-half of the active AMP's in the United States, participated in this conference. There were 27 Poster Presentations as well as 23 Oral Research Presentations made by students. In addition, concurrent workshops were given for students by faculty members, financial experts, and industry leaders on topics ranging from Financing Graduate School to Personal Time management. Moreover, there were 21 exhibitors from graduate schools, professional schools, and professional organizations. Keynote speakers included Mr. Jaime Borras, VP and Technology Director for Motorola, and Dr. Guadalupe Quintanilla, Assoc. Prof. at UH. The H-LSAMP scholars received seven of the twelve awards presented to outstanding student for poster and oral presentation.

The second accomplishment of the fifth year of the LSAMP is the fact that our scholars were selected for various honors and awards or have gone on to the PhD program in the STEM field. UH-Victoria Amanda Ryan, an AMP scholar, enrolled in the UHV master degree program. TSU's Aisha Hunte is one of our first scholar to be accepted to go abroad on an internship in Particle Physics from the CERN organization in Geneva, Switzerland. She was awarded a 10-week paid summer internship. At Texas State University, Lupe Delgado received a scholarship from Boeing and was also offered employment by a leading technology firm in California.

The third accomplishment of the fifth year of the LSAMP program is that the alliance has been awarded funds from NSF for a phase 11 of the program. In Phase II the H-LSAMP consortium will reinforce its comprehensive and effective strategy to eliminate two well-documented causes of attrition in STEM fields at the university level: financial need and academic support. We will continue to provide a challenging learning environment in which students who work hard will have every opportunity to succeed.

Illinois

Awarded a supplement by NSF to support the research experiences of 22 Illinois LSAMP participants at Argonne National Laboratory during the summer 2004. The research fellows consisted of: 4 Faculty, 9 Community College Students, and 9 Undergraduates from Alliance institutions. The 22 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.



Seventh Annual Illinois LSAMP Student Research Symposium was held at the Hyatt Lodge on McDonald's Campus in Oakbrook, Illinois, with over 200 students, faculty and staff participants. The conference, which included work-

shops, 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. Herman B. White, Jr., Physicist, Fermi National Accelerator Laboratory, gave the keynote address.

Awarded a 2004 "Bridge to the Doctorate" supplement by 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. Twelve new SIUC graduates students were selected to participate.

Indiana

A "Mentoring Diversity" handbook was published for faculty working with minority students in research. A student handbook was also drafted. This handbook will be later published to assist student with university life and STEM career success.

Grant collaboration with the Indiana Space Grant Consortium (INSGC) resulted in an additional \$17,000 (\$3400 for each campus) for the alliance.

LSAMP Indiana alliance held its first statewide conference on the Purdue University campus. Over 75 students, faculty, administrators, and stakeholders were present. Thirteen students presented their research papers and the day ended with sessions on graduate research and alliance enrichment.

Louisiana



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 31-November 1, 2004. The NASA Center for Coastal Zone Assessment and Remote Sensing (CCZARS) joined the conference as a co-spon-

sor and Southern University at New Orleans as co-host. Three hundred and ninety two participants attended the conference, of which 233 were students. One hundred and nineteen (119) presentations were made by student researchers. The University of Arkansas, Wake Forest University, and the Iowa AGEP sponsored undergraduate oral and poster competition awards.

The recruitment, retention, and curriculum development efforts of the Louisiana AMP have produced a 29% increase in minority STEM enrollment since 1995. The ratio of the number of minority STEM to non-STEM BS degree graduates from LS-LAMP campuses is twice that from non-LAMP institutions.

Mississippi

The Louis Stokes Mississippi Alliance for Minority Participation (LSMAMP) was awarded their second NSF Bridge to the Doctorate Supplemental Grant. Twelve new graduate students joined ten fellows from the first year in this exciting program.

The first annual LSMAMP Statewide Research Symposium was held with LSAMP National Director, Dr. A. James Hicks, as Key Note Speaker and over 42 oral and poster presentations. Over 150 students were in attendance.

New recruitment efforts and program restructuring resulted in an overall increase, from the previous year, in LSMAMP

Missouri

- Development of a Strategic Plan
- Development of a Desk Manual
- Closer working with Institutional research
- Proactive oversight by the Board Of Governors
- Increased degree production

New Mexico

New Mexico AMP institutions awarded 510 minority STEM degrees 2003-04, doubling its baseline of 253 in 1992-93.

New Mexico AMP has received funding for a second NSF Bridge to the Doctorate Program. New Mexico State University is the program site. The first cohort had a 100% retention rate at the end of the first year and all students are on track for completion of their M.S. degrees in 2005.

Sixty New Mexico AMP undergraduate and graduate students were supported for travel to professional conferences across the country. Most presented their research, and all had the opportunity to expand their professional and academic networks.

Mid-Eastern

MEAMP undergraduate students complete summer national and international research experiences.

MEAMP partner institutions are highly successful in obtaining external private funds to support STEM matriculation.

MEAMP partners established outreach communitybased science enrichment programs that influence youth perspective of science.

North Carolina

On March 18, 2004, the University of North Carolina at Charlotte hosted the Eighth Annual NC-LSAMP Research Conference. The theme for the conference was: Phase III: Charting the Course from Undergraduate Education to the Professoriate and Careers in Science, Technology, Engineering and Mathematics". Approximately 200 students, faculty and administrators from the eight-institution Alliance attended. Seventy (70) students from Alliance institutions presented research projects in oral and poster sessions. Speakers for the Opening Session of the conference included Dr. A. James Hicks (National Program Director for the Louis Stokes Alliances for Minority Participation), Dr. Carolyn Meyers (Provost and Vice Chancellor for Academic Affairs, NC A&T SU, and project PI), Dr. Wayne Walcott (Senior Associate Provost, UNCC) and Dr. Joseph Monroe (Dean, College of Engineering, NC A&T SU).

Through an NSF-funded supplemental proposal to the existing NC-LSAMP grant provided support to a Physics 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.

The Bridge to the Doctorate program supported ten (10) first-year Masters Students for program year 2003-2004 at North Carolina A&T State University. Students received full tuition, medical insurance, transportation to national and local conferences and training, and mentoring by second year Masters students and Ph.D. candidates through collaborative meetings with the Student Transition and Retention program at North Carolina A&T State University. In addition, the Alliance received funding for Cohort 2, enrolling twelve first-year Masters Students at the University of North Carolina at Charlotte.

Northeast

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

Development of the LSAMP Scholars program and initiation of similar programs on various Alliance campuses.

All Northeast Alliance institutions now have robust programs for undergraduate research.

The redesign of the Northeast LSAMP website addresses constituent needs and is an example of our collaboration and coordination.

Philadelphia

Philadelphia AMP has developed a 25 minute film to document the 10th Anniversary of The Greater Philadelphia Region Louis Stokes Alliance for Minority Participation in Phase II, Year 5. The film identifies the commitment and focus of the Alliance and the institutions that made it happen. Presidents, Co-PIs, and students contributed to the success of the 10 year voyage. The film is a synopsis of a much greater story.

This year, with considerable support of the STEM faculty, Philadelphia AMP has established a Center for Undergraduate Research Excellence (CURE). During this period students were involved in research in mechanical, chemical, and bioengineering departments, as well as chemistry, biology and physics at Drexel University. Other research sites included, the Wistar Institute at the University of Pennsylvania, Pennsylvania State University's Nanotechnology Laboratory, and the Drexel University's Medical School.

Philadelphia AMP, in collaboration with Drexel University and Rohm and Haas initiated the Rohm and Haas Minority Scholars Program in May 2003. The first cohort of the Rohm and Haas Scholars matriculate in the fall of 2004. The goal of the program at Drexel University is to increase the number of minority employee candidates graduating from Drexel University with degrees in mechanical and chemical engineering. Scholarships will be awarded to a maximum of one student per class per year. The scholarship is for a total of \$10,000 not including co-op payments, over a student's five-year college career at Drexel. Rohm and Haas will also pair each recipient with an engineering mentor, facilitate co-op placement and also assist in application for employment after graduation.

South Carolina

The Legislature of the state of South Carolina continues to show unprecedented support for SCAMP programs.

Since 1994, \$5.5 million has been appropriated in state matching funds through the SC Commission on Higher Education. The Governing Board of SCAMP selected the SC Commission on Higher Education as the 2004 recipient of the Louis Stokes Service Award.



President Andrew Hugine, Jr., SCAMP PI (right center) and the SCAMP Governing Board presented Ms. Karen Woodfaulk, (left center) representing the SC Commission on Higher Education, the Louis Stokes Service Award for unprecedented funding support.

LS-SCAMP Alliance institutions produced 76.7% of the state of South Carolina's minority STEM Bachelor of Science degrees. The growth in minority STEM degrees continues to out pace the growth in minority STEM degrees nationwide.

The South Carolina Commission on Higher Education and LS-SCAMP received funding totaling \$45K through a grant from the Department of Education. The proposal entitled: "GEAR UP/SCAMP" will pair seventh grade GEAR-UP students with SCAMP undergraduate research interns to conduct faculty mentored research at SCAMP institutions during the summer.

Tennessee

A major accomplishment for 2004 was the increase of undergraduate degrees granted to under-represented minority students in STEM majors from 362 to 383, representing a ten percent increase from our inception.

Another accomplishment was the high level of organization, enthusiasm and commitment exhibited by the institutions in the Alliance. The Alliance is now beginning to function as a team. Three alliance activities were planned and implemented for 2004. They were the Summer Bridge Program, the Summer Research Program and the Research Symposium, with 32, 6, and 83 students, respectively.

Another significant accomplishment was that a greater number of minority students are taking interest in graduate and professional schools and in professional development opportunities through on-campus research and internships.



TLSAMP First Annual Research Conference

Texas

The launch of a centrally coordinated system wide initiative for the recruitment, development and engagement of underrepresented minority STEM students into LSAMP program activities. Strategic and programmatic mechanisms have been under development throughout the year to support the initiative. One of these is the VALUE, a centrally-coordinated, system wide, online student development program delivered through WebCT, cross-campus group projects, and video conferencing, punctuated by strategic face to face meetings, national and regional conference travel, and the annual TAMUS LSAMP mini-symposium. Community development has focused upon providing Bridge to the Doctorate Students and LSAMP undergraduate students with opportunities for interaction through shared activities.

New and increased collaboration between the TAMUS LSAMP Program, the College of Science and the College of Agriculture and Life Sciences, and the College of Engineering at Texas A&M University. This collaboration produced a Pan-disciplinary, Bridge to the Doctorate Program for students of all three colleges, and inspired the inception, of a university-wide Leadership "Academy" for underrepresented minority students out of the Office for Special Programs in the Agriculture Program, of the Texas A&M University System.

Integration of the TAMUS LSAMP goals of progressing undergraduate students into graduate programs, and promoting undergraduate research across the Texas A&M University System schools. The TAMUS LSAMP has joined its Co-PIs in the TAMU Office of Graduate Studies and it's Co-PI in TAMUS Vice Chancellor's Office as an integral contributor to the planning and implementation of key activities in the system wide Pathways to the Doctorate initiative. Among these are the annual Pathways Student Research Symposium in which the TAMUS LSAMP Annual Mini-symposium is designed to play an important role.

University System of Maryland USM LSAMP institutions awarded 655 bachelor's degrees to minority STEM students in 2003-2004.

Between 1996 and 2004, USM LSAMP institutions awarded 4,168 bachelor's degrees to minority students in STEM fields.

During 2003-2004, 12 program alumni earned Ph.D. degrees in STEM fields.

Washington/Baltimore/ Hampton Roads

Calculus Reform - The primary objective of the project is to offer a Harvard Calculus Reform course for students at the partner institutions using real-time interactive distance learning techniques. The project applies a mathematical approach to calculus through presentation of every topic geometrically, numerically, and algebraically, with emphasis on small-group problem solving using calculators and computers. In addition, workshops on attrition and mentoring were conducted to discuss techniques that can be used to enhance the performance of minority students in mathematics and the sciences. The following lectures were conducted during the Fall Semester, 2004: Symmetry and Integration, Number Theory, Matrix Inequalities, and Linear Algebra. Three hundred and Twenty (320) students attended the lectures.

Bridge to the Doctorate Program - In September 2004, Howard University welcomed its first class of Bridge to the Doctorate students. Thirteen students were selected, all with GPAs above 3.0. The Bridge to the Doctorate students are pursuing doctorates in chemistry, mathematics, physics, electrical engineering and various specialties of the biological sciences.

A gift of 250,000 has been designated for the WBHR-LSAMP scholarship program as a memorial to Professor Alexander B. Gardner, who served as a professor of Physics at Howard University for more than 30 years.



WBHR-LSAMP Workshop

Alabama 🦳

The Drop-In Center at Auburn University, a partner institution in Alabama LSAMP, has been moved into the new \$39 million campus science facility. The center will be housed in the Office for Diversity and Special Academic Projects in the College of Sciences and Mathematics.

Dr. Overtoun Jenda, Associate Dean and Professor of Mathematics at Auburn University and Dr. Adriel Johnson, Sr., Associate Professor, Biological Sciences at The University of Alabama in Huntsville, received the 2004 Minority Access Outstanding Mentoring Award at a special ceremony in Washington, D.C.

Dr. Adriel Johnson, Sr., Associate Professor, Biological Sciences at The University of Alabama in Huntsville, was the recipient of the Alabama LSAMP Principal Investigator of the Year Award for outstanding service to students and support of alliance activities.

Dr. Carolyn Braswell was promoted to Assistant Vice President for Equity and Diversity at The University of Alabama at Birmingham. Dr. Braswell is Project Director for ALSAMP and associate editor of the LSAMP magazine.



L to R Dr. Louis Dale, Dr. Overtoun Jenda, Ms. Andrea Mickle



Zetra Wheeler, who has been with ANLSAMP since its inception, recently became ANLSAMP Project Director as well as the Project Director of the Indigenous Math and Science Institute (IMSI), the organization which houses ANLSAMP. Under Wheeler's leadership, ANLSAMP has worked to refocus and rededicate the program to meeting the needs of American Indians in STEM programs. Through our evaluative efforts, ANLSAMP has identified several areas within the partnership needing renewed focus. ANLSAMP has made great strides in capacity building with our tribal college partners, but has refocused its efforts to increase student support through mentoring and research programs. Wheeler hopes that this will be an instrumental change in projecting ANLSAMP forward to meet its goals of dramatically increasing the number of American Indians achieving STEM degrees.



UC Irvine Chancellor Ralph J. Cicerone, California LSAMP P.I., won the Albert Einstein World Award of Science for his work on ozone depletion research. Cicerone was nominated to be the next president of the National Academy of Sciences, beginning mid-2005. Cicerone previously received the Bower Award and Prize and the Roger Revelle Medal.

UC Riverside LSAMP students Victor Vargas and Martha Salcido published an article in Organic Letters, Sept. 2003, with Ramel J. Rubio and faculty mentor, Dr. T. Keith Hollis. Vargas has completed a Master's of Science in chemistry and Salcido is applying to graduate programs in chemistry. As entering freshmen, both participated in the CAMP summer bridge program and were CAMP research scholars.

UC Irvine's Donald Blake, Professor of Chemistry and an LSAMP faculty mentor for many years, has been selected to receive the 2004 Charles R. Bennett Service Through Chemistry Award. Professor Blake has guided numerous CAMP student on their research in atmospheric chemistry, several of whom have co-authored a scientific paper. Professor Blake works on a variety of atmospheric chemistry projects, using gas chromatography as the main analytical tool.



In 2003-2004, the Alliance accomplished a major reor-

ganization of its programmatic and fiscal management of the project with the establishment of California State University, Sacramento as the new lead institution for Phase III.

Colorado

New MSP (Math and Science Partnership) Program: A summer program for K-12 students, to perform hands on activities, conduct research, and give presentations of their work.

New CSEM (Computer Science, Engineering and Mathematics) Undergraduate Scholarship Program. This program, funded by NSF, provides educational opportunities to low-income students, including women, underrepresented groups, and persons with disabilities.

COAMP now supports two new research programs, including one for high school students (Junior Engineering Technical Society– Uninitiates' Introduction to Engineering (JETS-UNITE) Summer Bridge Program) and one for STEM undergraduate students (Colorado Institute of Technology (CIT) Summer Bridge Program). Both programs provide students the opportunity for experience in research and presentations, while teaching them about undergraduate and graduate programs.



The University of Houston is accepting Applications for the position of Executive Director for the Houston Louis Stokes Alliance for Minority Participation. The position will develop, plan and coordinate activities for the HLSAMP.



The 8th Annual Illinois LSAMP Student Research Symposium featuring student research presentations in Mathematics, Engineering, Science Education, and the Biological, Computer & Physical Sciences will be held Friday, March 18th & Saturday, March 19th, 2005 at the Hyatt Lodge on McDonalds Campus in Oakbrook, Illinois. Contact the office at (773) 995-3296 for information.



Keynote speaker, Dr. Herman B. White, Jr., (2nd from right), faculty and students at the 7th Annual ILSAMP Research Symposium



LSAMP Indiana will work closely with our newly funded Midwest Crossroads Alliance for Graduate Education and the Professoriate (AGEP). This program includes Indiana University, Bloomington; IN, Northwestern University, Evanston, IL; and Purdue University, West Lafayette, IN campus. Purdue will serve as the lead institution for the Midwest Crossroads AGEP program.

University Place located on the IUPUI, Indianapolis, IN campus will host the 3rd Annual LSAMP Indiana and Midwest Crossroads AGEP Research and Enrichment Conference (RAE) on Friday, November 11 through Saturday, November 12, 2005.

- Louisiana -

The ninth national student research conference of LS-LAMP and co-sponsors will be held in the fall of 2005 in Baton Rouge, Louisiana. It is partly to celebrate ten years of success and to underscore the growing institutionalization. To be added to the mailing list, please email candace_semien@subr.edu. For more information please visit our interactive website <u>www.ls-lamp.org</u>.



The 2005 New Mexico AMP student research conference is scheduled for October 2005. Call

Karen at (505) 646-1847 or check the website (www.nmsu.edu/~nmamp) for dates and registration Dr. Rudi Schoenmackers, co-director of New Mexico AMP, has accepted an appointment as Associate Dean in the College of Engineering and Director of the Engineering Research Center at New Mexico State University. The primary function of the ERC is to assist engineering faculty in developing research programs and capabilities consistence with University goals and policies.

North Carolina

Dr. Juliette Bell has been named the Dean of the College of Basic and Applied Sciences and the Campus PI for the NC-LSAMP program at Fayetteville State University.

Ms. Veronica Mangum has been named the NC-LSAMP Campus Coordinator at Fayetteville State University.

Dr. Saundra DeLauder has been appointed as Interim Chairperson for the Chemistry Department at North Carolina Central University.



The first OSEA professional development workshop, "STEM Summer Bridge Programs: Best Practices in Ohio," will be held at Ohio State University on January 26, 2005.

The 2005 Ohio Student Research Forum will be held August 10-11 at the University of Akron. For more information about either event, please visit our website at <u>www.OhioSEA.org</u>.

Oklahoma 🦳



Earl Mitchell, OK-LSAMP Project Director, received the *Human Rights Award* from the Oklahoma Human Rights Commission for work in human relations and human rights in Oklahoma. Nominated by Oklahoma State University students, Dr. Mitchell received the

award on December 10, 2003.



The Pacific Alliance high school outreach component creates excitement and empowerment around careers in engineering and science. The program has grown from one school and 10 students in 2002 to 31 high schools and 200 students in 2004. High school students are provided with all of the parts for a top end computer. We



show them how to build it, teach them how to use it, have them teach another student how to build a computer, complete a project using the machine, and they get to keep it if they successfully complete physics, chemistry, and trigonometry in high school. These students are now transitioning to Alliance Universities in unprecedented numbers.

The high schools provide space, internet connections, and instruction. Our industrial and philanthropic partners provide cash for the computers.



Philadelphia AMP was awarded a Cohort II LSAMP Bridge to the Doctorate Supplemental grant. The New Jersey Institute of Technology was selected to host the students under this project.

Dr. Robert Langley, Professor and Chair, Chemistry, Lincoln University and Dr. Sakkar A. Eva, Associate Professor, Allied Health and Science, Cheyney University were the recipients of the 2004 Philadelphia AMP Excellence Award in Engineering and Science Education.



Puerto Rico _____

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PR-LSAMP awarded 12 new Bridge-to-the-Doctorate fellowships at UPR-Mayaguez, for a total of 22 fellow-ships for graduate studies in STEM fields.

The 25th Puerto Rico Interdisciplinary Scientific Meeting (PRISM) will take place on March 12, 2005 at

UPR-Mayaguez. The plenary speaker will be Dr. Leon Lederman, the 1998 Nobel Laureate in Physics, and former Director of Fermilab. Dr Lederman is actively involved in strengthening science education in American schools. The topic of his presentation will be "Engaging Scientists in Educational Reform".

The PR-LSAMP Bridge-to-the-Doctorate Program will sponsor its First Transdisciplinary Research Conference on December 10, 2004. This year's topic is Nanotechnology, and the plenary speaker is Dr. Gunther Oberdoster from the University of Rochester, with the topic "Engineered Nanoparticles: Can They be Harmful?".



Plans for the South Carolina Alliance for Minority Participation Program's Third Annual Undergraduate Science and Engineering Research Conference are underway. Please check our website <u>http://scamp.</u> <u>scsu.edu</u> for further information.



Our 2005 Summer Bridge Program will be held June 12 – July 1, 2005 and is being hosted by Vanderbilt University.



TLSAMP Summer Bridge Program Participants

University of Texas System

- New Principal Investigator: Benjamin Flores, Ph.D.
- New Program Coordinator: Ariana V. Arciero, B.S.
- New AMP office: Engineering 301

University System of Maryland



Dr. Camelia L. Owens has accepted an appointment as a Visiting Assistant Professor in the Department of Chemical Engineering and Biochemical Engineering at the University of Maryland, Baltimore County (UMBC). Dr. Owens was an LSAMP student at UMBC and graduated in 1999.

After earning her Ph.D. in chemical engineering at the University of Delaware in 2004, she immediately returned to her undergraduate alma mater to teach and help other LSAMP students through the STEM pipeline.

Black Enterprise magazine's special report: Top 50 Colleges for African Americans ranks UMCP as the 20th nationwide for the best environments for black collegians.

The 2003 *Kaplan*/Newsweek How to Get Into College guide hit the newsstands featuring UMBC as one of "America's Hot Schools." This exclusive list of a dozen schools that are among students' top picks is "dominated by some of the country's top public universities," the editors write.

Washington/ Baltimore/Hampton Roads



Dr. Richard A. English, the Principal Investigator of the WBHR-LSAMP Program, was named permanent Provost and Chief Academic Officer on November 24, 2004.

Richard A. English, Ph.D. Provost & Chief Academic Officer Howard University

LSAMP Award History

1991

Alabama

Dr. Louis Dale

The University of

Alabama at

Birmingham





Dr. Ralph J. Cicerone University of California, Irvine



Dr. James Perkins

Jackson State University



Dr. Manuel Gomez

University of Puerto Rico





Dr. Antonio Garcia Arizona State University

Texas



Dr. Karan Watson Texas A&M University

Florida-Georgia



Dr. Ralph W. Turner Florida A&M University



New York City

North Carolina

1992

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

1993

South Carolina



Dr. Andrew Hugine, Jr. South Carolina State University

University of Texas System



Dr. Benjamin Flores The University of Texas at El Paso

California State



Dr. Richard Brown California State University, Sacramenta

Illinois



Dr. Marian Wilson-Comer Chicago State University



Dr. William V. Flores

New Mexico State

University

New Mexico

Washington/Baltimore/ Hampton Roads



Dr. Richard A. English Howard University

All Nations



Dr. Joseph F. McDonald Salish Kootenai College

Oklahoma State

1994



Dr. Earl Mitchell Oklahoma State University





Dr. Ali Houshmand Drexel University



Dr. Nevill A. Parker Dr. Ca City College North C

1995 **University System** Louisiana Missouri Tennessee of Maryland Dr. Diola Bagayoko Dr. Freeman Hrabowski Dr. James A. Hefner Dr. Charles Sampson University of Maryland Southern University and A&M College Tennessee State University University of Missouri-Baltimore County Baltimore 1996 1997 1998 Colorado SUNY Georgia Houston Dr. John Bear Dr. David Ferguson Dr. Walter D. Broadnax Dr. Omnia El-Hakim Clark Atlanta University University of Colorado State University State University of New York-Stony Brook Houston 2002 2003 2001 Pacific Indiana Ohio Northeast **Mid-Eastern**



Dr. Belinda Anderson Virginia Union University



Dr. John Cunningham Northeastern University



Dr. Herb Schroeder University of Alaska Anchorage



Dr. Sally K. Mason Purdue University



Dr. Karen Halbrook Ohio State University





Dr. Mary Sue Coleman University of Michigan



2004



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 twelve 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 twelve 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/Universities and majority institutions, public and private institutions and research and teaching institutions boast 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.



Alabama LSAMP Bridge to the Doctorate students with Dr. Overtoun Jenda, Auburn University (left) and Dr. Adriel D. Johnson, Sr., The University of Alabama in Huntsville (right)

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.



ALSAMP Scholars discussing graduate school



ALSAMP Scholars at the Seventh Annual AAGEP Graduate School Fair

Activities, Services and Programs

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

www.uab.edu/aamp

LEAD INSTITUTION

The University of Alabama at Birmingham Dr. Louis Dale Principal Investigator (205) 934-8762 Idale@uab.edu Dr. Carolyn Braswell Project Director (205) 934-8762 cbraswel@uab.edu

PARTNERS

Alabama A&M University Dr. Jerry Shipman (256) 372-5300 jrshipman@aamu.edu

Alabama State University Dr. Wallace Maryland, Jr. (334) 229-4464 wmaryland@alasu.edu

Auburn University Dr. Overtoun Jenda (334) 844-4663 jendaov@auburn.edu

Miles College Dr. Bernice Coar-Cobb (205) 929-1547

Oakwood College Dr. Kenneth LaiHing (256) 726-7112 laihing@oakwood.edu

Stillman College Dr. Charlotte Carter (205) 366-8928 ccarter@stillman.edu

Talladega College Dr. Leonard Cole (256) 761-6300 Icole@talladega.edu

Tougaloo College Dr. Joseph L. Russell (601) 977-7785 joemaurine@aol.com

Tuskegee University Dr. Shaik Jeelani (334) 727-8970 jeelanis@tuskegee.edu & Dr. Herman Windham (334) 727-8556 windham@tuskegee.edu

The University of Alabama Dr. Viola Acoff (205) 348-3761 vacoff@coe.eng.ua.edu

The University of Alabama in Huntsville Dr. Adriel D. Johnson, Sr. (256) 824-6235 johnsona@email.uah.edu



All Nations

Louis Stokes Alliance for Minority Participation



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

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.

Four Year Alliance Partners

Central Michigan University Haskell Indian Nations University Heritage University Insitute of American Indian Arts Lake Superior State College Montana State University - Bozeman Montana State Univeristy - 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

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.



AISES 2004

22 Louis Stokes Alliances for Minority Participation

CALIFORNIA LSAMP PARTNERS

UC BERKELEY

P. BUFORD PRICE, PH.D. FACULTY DIRECTOR Professor of Physics buford_price@ls.berkeley.edu COLETTE PATT, PH.D. COORDINATOR

Student Diversity Programs College of Letters & Science colette_patt@ls.berkeley.edu ARJA MCCRAY, PH.D.

PROGRAM DIRECTOR Physics Scholars Program amccray@uclink.berkeley.edu

UC DAVIS

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

UC LOS ANGELES

RICHARD L. WEISS, PH.D. FACULTY DIRECTOR Department of Chemistry & Biochemistry weiss@chem.ucla.edu LAINA LONG COORDINATOR CARE Center laina@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 mrobinson@natsci.ucsc.edu

UC IRVINE

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

UC RIVERSIDE

JOHN DE PILLIS, PH.D. FACULTY DIRECTOR Department of Mathematics jdp@math.ucr.edu TERESA COFIELD COORDINATOR The Learning Center toofield@pop.ucr.edu

UC SANTA BARBARA

ROBERT RINKER, PH.D. FACULTY DIRECTOR College of Engineering rinker@engineering.ucsb.edu BOB COTA COORDINATOR COORDINATOR College of Engineering bcota@engineering.ucsb.edu

UC SAN DIEGO

jazize@ucsd.edu

DAVID M. ARTIS, PH.D. FACULTY DIRECTOR Academic Enrichment Programs dartis@ucsd.edu JACQUELINE AZIZE-BREWER, PH.D. COORDINATOR Academic Enrichment Programs

CALIFORNIA LSAMP The University of California Irvine, Lead Campus

"The sense of community that CAMP fosters is one of the program's attributes that we value. For 13 years CAMP has contributed to the development of student researchers who support each other's goals for the bachelor's degree and also for graduate school as well as professional careers." —Ralph J. Cicerone, Principal Investigator, California LSAMP

Annual Undergraduate Research Symposium convenes 100 UC STEM faculty and students from our 8 partner UC campuses. Special guests for 2004 included



New Mexico LSAMP and AGEP directors. Special Merit in Research is determined by 1) Originality; 2) Clarity and depth of understanding; 3) Likelihood of sparking further research. The undergraduate research experience provides a distinctive level of professional development that supports graduate school preparation and career pathways.



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

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

CAMP STATEWIDE LEADERSHIP

Ralph J. Cicerone, 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

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

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

CSU Havward - Julia Norton (510) 885-3431 • jnorton@csuhayward.edu

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

CSU Long Beach - Morteza Ebneshahrashoob (562) 985-5625 • mortezae@csulb.edu

Cal State Los Angeles - Margaret Jefferson (323) 343-2059 • mjeffer@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 - Belinda Acuña (909) 869-2482 • baacuna@csupomona.edu

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

CSU San Bernardino - Belisario Ventura (909) 880-5406 • 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 • louis@chem.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). In Phase I (1994-1998) and Phase II (1998-2003), San Francisco State University served as the Alliance's lead institution. California State University, Sacramento is serving as lead institution for the Phase III project period (2003-2008).

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Photo courtesy of Catalina Rivas (CSUS)

In the first year of Phase III, CSU-LSAMP engaged 3,395 URM-STEM students in activities that sustained or further improved individual student retention and progression rates achieved during Phase I and Phase II. Since many of the strategies initiated in Phase I and Phase II for lower division students have already been institutionalized, CSU-LSAMP has introduced activities in Phase III that are designed to enhance graduate school preparedness of upper division students with the goal of improving aggregate student progression to STEM graduate programs. To broaden participation of LSAMP students in graduate study, CSU-LSAMP has also established Bridge to the Doctorate supplemental activities at San Francisco State University and California State University Los Angeles, two of the Alliance's member institutions.

CSU-LSAMP Phase III







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 Fax: (916) 278-3854 Phone: (916) 278-3838 www.csus.edu/lsamp (under construction)



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

K-12 Outreach

Jim Voss, 303/404-5265

johnsonl@mscd.edu

jim.voss@frontrange.edu

Metropolitan State College

Pueblo Community College

Carol Montoya, 719/549-3365

Carol.Montoya@ccpueblo.edu

Carol Rankin, 719/846-5670

anthea.johnson@colorado.edu

Tina Moore, 719/262-3347

tmoore@engineering.uccs.edu

pencinia@carbon.cudenver.edu

University of Colorado - Denver Dr. Paul Encinias, 303/556-2777

Anthea Johnson-Roen,

303/ 492-4276

Springs

RIZONA

http://lamar.colostate.edu/~coamp

Trinidad State Junior College

Carol.Rankin@trinidadstate.edu

University of Colorado - Boulder

University of Colorado - Colorado

Graduate School Placement

National Conferences

Front Range Community College

Dr. Larry Johnson, 303/556-5106

Tracking

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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:

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- Recruitment .
- Summer Bridge Programs .
- Leadership/Retention .
- Graduation of LS CO-AMP Seniors

LS CO-AMP PARTNER INSTITUTIONS & SITE COORDINATORS

- **Adams State College** Mike Garcia, 719/587-7865 dmgarcia@adams.edu
- **AIMS Community College** ٠ 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** ٠ Dr. Jane Fraser, 719/549-2036 jane.fraser@colostate-pueblo.edu
- **Colorado School of Mines** Judy 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



Colorado State University Outreach to K-12



Trinidad State Junior College Undergraduate Research



Colorado School of Mines: Profession Development

NEW MEXICO

Fort Lewis College: AISES National Conference

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

Ty Smith, MBA, Project Coordinator Phone: (970) 491-2898 smithty@engr.colostate.edu

Tricia Wright, Admin. Asst. (CSU) Phone: (970) 491-2978 Fax: (970) 491-3421 twright@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 Multi-Cultural Engr. Program University of Colorado-Boulder aragond@spot.colorado.edu

Hector Carrasco, Ph.D. Dean, College of Applied Science & Engineering Technology Colorado State University-Pueblo hector.carrasco@colostatepueblo.edu

Larry Johnson, Ph.D. Dir. Ctr. Sci. Math & Envir. Educ. **Metro State College** johnsonl@mscd.edu

TRIBAL PARTNERS

Jicarilla Apache Tribe – Iola Begay Navajo Nation – Leland Leonard Southern Ute Tribe – LaTitia Taylor Ute Mtn. Ute Tribe – Yolanda Rossi





Dr. Omnia El-Hakim Principal Investigator & Director

Dr. Larry E. Penley **COAMP** Governing **Board Chair**



Louis Stokes Alliances for Minority Participation 25



ado Springs



FGLSAMP is a coalition of 13 institutions committed to significantly increase the number of undergraduate degrees awarded in science, technology, engineering, and mathematics (STEM) areas. We have also gladly accepted the charge by the National Science Foundation (NSF) to positively influence the number of STEM B.S. degree recipients entering STEM graduate programs. FGLSAMP has established the "Bridge to the Doctorate" at Florida State University and University of South Florida through supplemental funding from the National Science Foundation and now supports 22 scholars pursuing STEM Ph.D. degrees.

FGLSAMP Pillars of Success

Structured Tutorial Programs
 Peer Mentoring
 Academic Enhancement
 Workshops
 Graduate School Preparation Seminars
 Partnerships with STEM
 Departments and Faculty
 Research Experiences for
 Undergraduate Schoolars
 Collaboration yith other
 STEM Organizations

FGLSAMP Institutions

•Albany State University •Belhune-Cookman College •Florida A&M University •Florida International University •Florida Memorial College •Florida State University •Miami-Dade College •University of Central Florida •University of Central Florida

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a Community College

University of Miam

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FGLSAMP Central Office 1540 South Adams Street, Suite A Tallahassee, FL 32307 (850) 561-2467 Ralph W. Turner, Project Director Byron Greene, Project Manager E-mail: fglsampcentral@hotmail.com Website: www.fglsamp.com



FGLSAMP at a glance:

Community College

•Undergraduate/graduate Support •Summer Research Program •Summer Bridge Program



In Science, Technology, Engineering and Mathematics

Alliance Institutions

Dr. Melvin R. Webb, Project Director Clark Atlanta University (404) 880-6978 <u>mwebb@cau.edu</u>

Atlanta Metropolitan College Dr. Barbara Morgan (404) 756-4025 bmorgan@amcmail.atml.peachnet.edu

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

Georgia State University Dr. Alfonso Baumstark (404) 651-1716 chealb@partner.gsu.edu

Morehouse College Dr. Troy Story (404) 215-2611 tstory@morehouse.edu

Paine College Dr. Reuben Kesler, Jr. (706) 821-8346 rkesler@paine.edu

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

Alliance Components

Curricular Reform Combined Degree Programs Early Identification/Recruitment Summer Bridge Programs Post-Freshman Research/Academic Support Research Internships Faculty Mentoring Tutorial Support Cooperative Study Groups

Alliance Accomplishments

This AMP continues to make significant contributions to the production of a diversified STEM workforce in the 21st century. The following are some accomplishments.

- Partner institutions are 2nd, 4th and 16th among the top 20 baccalaureate-origin institutions of Black STEM doctorate recipients for the period 1997-2001.
- One partner institution is ranked number one among non-HBCUs in awarding baccalaureate degrees to Blacks: 3rd in biology, 8th in chemistry, 9th in mathematics, and 11th in computer science.
- Three institutions are listed among the top 10 of the 50 best colleges for Blacks, including positions 1 and 2.
- This Alliance produced 506 STEM degrees.

INCREASING DIVERSITY IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

LLIANCE FOR MINORITY PARTICIPATION

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H-LSAMP

The University of Houston Christopher Miller Phone Number: 713-743-5894 Email: cmiller4@uh.edu

Texas Southern University,

Michelle Tolbert Phone Number: 713-313-4278 Email: tolbert ym@tsu.edu

Texas State University,

Barbara Pascoe Phone Number: 512-245-2052 Email: bpol@txstate.edu

Rice University,

Theresa Chatman Phone Number: 713-348-5180 Email: tlc@ricé.edu

University of Houston Downtown, Dr. Richard Alo Phone Number: 713-221-8207 Email: RAlo@uh.edu

University of Houston Victoria, Dr. Li Chao Phone Number: 281-275-3370 Email: Chaol@uhv.edu



The Houston Louis Stokes Alliance for Minority Participation (H-LSAMP) incorporates eight institutions of higher education: The University of Houston (lead institution), Texas Southern University, Southwest Texas State University, Rice University, University of Houston-Downtown, University of Houston-Victoria, San Jacinto College District, and Houston Community College System. H-LSAMP has also partnered with the Houston Independent School District to optimize the recruitment of qualified underrepresented students to LSAMP institutions.

To meet the growing need for scientists and engineers, H-LSAMP's goal is to double the number of underrepresented minority students earning degrees in STEM fields. They plan to achieve this through aggressive recruitment, academic enrichment, financial support, peer and faculty mentoring, and increased programs for retention. The H-LSAMP offers a variety of services for participating students. Many students benefit from the Collaborative Learning Community (CLC), which allows the students in high-risk courses to reinforce classroom learning. In addition to the CLC, the H-LSAMP offers an assortment of services including peer and faculty mentoring, research and internship opportunities, and tutoring. To maximize the benefits, H-LSAMP students likewise contribute to the program's success by tutoring, recruiting, mentoring, and serving as teaching assistants in the CLC.

ADDITIONAL INFORMATION ABOUT THE HOUSTON ALLIANCE CAN BE FOUND AT HTTP://HLSAMP.UH.EDU



PRINCIPAL INVESTIGATORS Dr. Elnora D. Daniel, President Dr. Marian Wilson-Comer, Executive Director

PROJECT DIRECTOR Dr. LeRoy Jones II

SCIENCE OUTREACH COORDINATOR Mrs. Yolanda McGehee Jordan

OFFICE MANAGER Ms. Fay D. Edmond

COORDINATOR OF SPECIAL PROJECTS AND R & D Ms. Rochelle Greene

PARTNERS

Chicago State University **DePaul University** Governors State University Illinois Institute of Technology Illinois State University Northeastern Illinois University Southern IL Univ., Edwardsville Southern IL Univ., Carbondale 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) is composed of eighteen



partners striving to significantly increase the number of underrepresented scholars earning degrees in science, technology, engineering and mathematics (STEM) disciplines in the state of Illinois. In support of this goal, ILSAMP has 1) provided programs



improve STEM students to academic preparation, 2) modified or reinvented gateway courses to better educate more students and, 3) provided under-represented students with more educational options to increase opportunity and enhance performance. The synergies created objectives by these play a noteworthy role in producing future research scientists and faculty to meet the needs of our country.

PROGRAMS

Illinois LSAMP provides activities that are comprehensive, multidisciplinary, and focused on enhancing the scholarship of underrepresented students. Considerable effort is expended to address transition points in a student's academic career. The transition points include high school to college, 2-year college to 4-year college, under-graduate study to graduate study, and



academic study to careers in STEM. Other activities include: hands-on research apprenticeships, scholarship programs, science conferences, facilitated study faculty groups, mentoring, professional development activities, peer mentoring, summer bridge programs and internships.



Made Possible with the Generous Support of the National Science Foundation

Louis Stokes Alliances for Minority Participation 29



Principal Investigator Dr. Sally Mason, Provost, Purdue University

LSAMP Indiana

The Louis Stokes Alliance for Minority Participation (LSAMP) Indiana project is a 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 the (STEM) Science, Technology, Engineering, and Mathematics 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 Young Hall, Room 742 302 Wood Street West Lafayette, IN 47907-2108 765-496-7967 Fax: 765-494-2221 ppshaw@purdue.edu http://www.purdue.edu/lsamp/

Alliance Contacts:



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

Purdue Calumet University

pellicmb@calumet.purdue.edu

Beth Pellicciciotti 219-989-2376

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

IUPUI Purdue

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.





Statewide Management Office PO Box 9274 Baton Rouge, LA 70813 (225) 771-2777 ~ f: (225) 771-2311

Taking STEM Research and Training from Theory to Practice

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

Dr. Abdalla Darwish Dillard University V: (504) 816-4840 Adarwish@dillard.edu Carmelita Williams: (504)816-4877

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. Paul Sammarco LUMCON, V: (985) 851-2876 psammarco@lumcon.edu

Dr. George Mead **McNeese State University** V: (337) 475-5785 Gfmead@aol.com Dr. Harold Stevenson: 475-5663 / 5677 Dr. Sharon Flanagan Nunez Community College V: (504) 680-2311 Sflanagan@nunez.edu

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

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

Dr. Henry Bart **Tulane University** V: (504) 865-5191 Hank@plato.museum.tulane.edu Jannie Price: 504-314-7690

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

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

www.ls-lamp.org



Dr. Belinda C. Anderson Principal Investigator (804) 257-5835 (804) 257-5833 (Fax) banderson@vuu.edu

Dr. Prince Brown Vice President for Institutional Advancement (804) 342-3938 (804) 257-5868 pbrown@vuu.edu

Ms. Quanda Baker Associate Vice President for Institutional Advancement (804) 342-3935 (804) 257-5868 qbaker@vuu.edu

Dr. Phillip W. Archer Executive Director (804) 257-5692 (804) 257-5693 (Fax) pwarcher@vuu.edu

MEAMP Level 1 Student Retention by Cohort











www.vuu.edu/academics/meamphome.htm







Program Highlights

MEAMP undergraduate students complete summer national and international research experiences.

MEAMP partner institutions highly successful in obtaining external private funds to support STEM matriculation.

MEAMP partners established outreach community-based science enrichment programs that influence youth perspective of science.

I H S	TITU	T I O N	R L C	0 0 R D	IHAT	O R S
Virginia Union University Vinod Arya, Ph.D. (804) 257-5662 (804) 257-5890 (Fax) vkarya@vuu.edu www.vuu.edu	Elizabeth City State University Ali Khan, Ph.D. (252) 335-3242 (252) 335-3528 (Fax) aakhan@mail.ecsu.edu www.ecsu.edu	Fisk University W. Eugene Collins, Ph.D. (615) 329-8605 (615) 329-8634 (Fax) ccollins@fisk.edu www.fisk.edu	James Madison University Daniel Wubah, Ph.D. (540) 568-3508 (540) 568-7209 (Fax) wubahda@jmu.edu www.jmu.edu	Johnson C. Smith University Baldeo Chopra, Ph.D. (704) 378-1050 (704) 378-1213 (Fax) bchopra@jcsu.edu www.jcsu.edu	St. Augustine's College Gloria Early Payne, Ph.D. (919) 516-4151 (919) 516-4465 (Fax) gpayne@cs.st-aug.edu cs.st-aug.edu	Virginia Polytechnic Institute & State University Nini Smiley (540) 231-5023 (540) 231-2130 (Fax) nsmiley@vt.edu www.vt.edu

32 Louis Stokes Alliances for Minority Participation

Louis Stokes Mississippi **Alliance for Minority Participation**



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

troy@lorman.alcorn.edu



P.O. Box 3241 Cleveland, MS 38733 662-846-4496 ebrother@deltastate.edu

Ernest L. Brothers

Site Coordinator



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

Mississippi State University Dr. Tommy Stevenson Site Coordinator P.O. Box 9544 MSU, MS 39762 662-325-8449



Mississippi University for Women lika McQuarter Site Coordinator W-1642 Columbus, MS 39701 662-329-7352 itaylor@muw.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. Dan Cole





Site Coordinator P.O. Box 157 University, MS 38677 662-915-1379 dcole@olemiss.edu



LSMAMP Student Caronda Moore gives her poster presentation to a faculty judge at the First annual LSMAMP Statewide Research Symposium held October 22-23, 2004.

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



Dr. Art Hicks, LSAMP National Director, congratulates Alcorn State University's Dr. Troy Stewart for his years of service to the LSMAMP program.



Dr. Eloy Rodriquez, The James A. Perkins **Professor of Chemical Biology at Cornell** University, gathers with students after his lecture at the LSMAMP Statewide **Research Symposium** held October 22-23, 2004.



THE LOUIS STOKES – MISSOURI ALLIANCE FOR MINORITY PARTICIPATION (LS-MOAMP) THE UNIVERSITY OF MISSOURI 513 CLARK HALL COLUMBIA, MO 65211-4422 (573) 882-4745 HTTP://WEB.MISSOURI.EDU/~GRADSCHL/MOAMP/INDEX.HTM



WHO ARE WE?

The Louis Stokes Missouri Alliance for Minority Participation (MoAMP) program is a collaborative effort of all publicly funded universities, colleges and community colleges in Missouri to substantially increase the quality and quantity of minority students receiving baccalaureate degrees in science, technology, engineering, and mathematics (STEM); and subsequently, to increase the number of minority students pursuing graduate degrees.

WHAT ARE OUR GOALS?

We work toward two major objectives: To increase by 15 percent annually the number of minority STEM baccalaureate degree recipients and to facilitate increases in the number of minorities who earn doctorates in STEM disciplines in the state of Missouri.

This coalition is committed to improving degree production among under-represented minorities in the State of Missouri, i.e., students enrolled in regional universities in Missouri, community colleges and campuses of the University of Missouri. Innovative programs designed in coordination with the office of the President of the University of Missouri facilitate movement toward our overall goals.

FOUR TIERS TO SUCCESS: A COMPREHENSIVE PLAN FOR ACADEMIC EXCELLENCE WE SUPPORT FOUR BRIDGE PROGRAMS:

ASSOCIATE TO BACCALAUREATE

Financial, academic, and career networking support to ensure that talented minority students who enter college will continue to pursue a baccalaureate STEM degree and excel in completing their degree programs.

BACCALAUREATE TO GRADUATE

Financial, educational and career development supports designed to encourage talented minority students who are in baccalaureate degree programs to pursue a STEM graduate degree.

BACCALAUREATE TO A STEM CAREER

Internships for scholars that participate in summer or semester research internships with industry or public service partners. Professional development workshops and research experiences.

COMPLETING A DEGREE PROGRAM

Ensure that all students succeed in navigating difficult courses, completing their degree requirements and adjusting to new campus environment(s).

New Mexico AMP

SMET 101 (Intro. to Science, Math, Engineering & Technology) teaches:

- Thinking and learning skills
- Problem solving techniques
- Career exploration skills
- Collaboration and teamwork

The Undergraduate Research Assistantship helps students:

- Participate in cutting edge research projects
- · Learn technical writing/presentation skills
- Present their research at professional conferences
- Prepare for graduate school or employment

The Undergraduate Student Research Conference is an opportunity for students to:

- Gain presentation experience
- Be role models for other students
- Participate in activities to plan their academic and professional careers
- Interact with and learn from professionals in their discipline

The Bridge to the Doctorate provides students with:

- Financial and academic support
- Faculty-mentored research activities
- STEM 501 Graduate Seminar
- Collaborative workshops with NM AGEP on topics such as writing proposals, and preparing an academic CV







New Mexico AMP University Partners:

- Regina Aragon, Ph.D., Assoc. Professor, Math Eastern New Mexico University (505) 562-2328; regina.aragon@enmu.edu
- New Mexico Highlands University (505) 646-1847; amp@nmsu.edu
- Allison Costello, Assoc. Director, Admissions New Mexico Institute of Mining and Technology (505) 835-5424; costello@admin.nmt.edu
- Laura Crossey, Ph.D., Asst. Chair, Earth and Planetary Sciences University of New Mexico (505) 277-5349; lcrossey@unm.edu
- Mary Dowse, Ph.D., Assoc. Professor, Geology Western New Mexico University (505) 538-6352; dowsem@silver.wnmu.edu
- A. Michele Auzenne, Program Manager, New Mexico AMP New Mexico State University (505) 646-1847; mauzenne@nmsu.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 http://www.nmsu.edu/~nmamp

NEW YORK CITY LOUIS STOKES ALLIANCE



HTTP://NYC-AMP.CUNY.EDU



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.ccny.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 Strekas	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





NC-LSAMP

www.nclsamp.ncat.edu

North Carolina Louis Stokes Alliance for Minority Participation Dr. Carolyn W. Meyers, Principal Investigator

Dr. Joseph Monroe, Co-Principal Investigator

¹Phase III:

The North Carolina Louis Stokes Alliance for Minorty 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, echnology, 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 dontinue 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 falliance" by embracing institutions with unique and diverse strengths and resources.



Staying the course ... While Exploring New Frontiers

Targeted Activities, Services & Programs

- Supplemental Instruction and Tutorial Services in "gatekeeper"
- 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**

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.ncat.edu

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

Dr. Juliette Bell

Campus Principal Investigator Phone: (910) 672-1657 Fax: (910) 672-1083 jbell@uncfsu.edu

Dr. Mattie Moss Campus Principal Investigator Phone: (919) 530-5129 Fax: (919) 530-5361 mmoss@wpo.nccu.edu

Dr. Saundra DeLauder Campus Coordinator Phone: (919) 530-6456 Fax: (919) 530-5135 sdelaude@wpo.nccu.edu

Dr. Tony Mitchell

Campus Principal Investigator Phone: (919) 515-3264 Fax: (919) 515-8702 tmitchel@eos.ncsu.edu

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

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

Dr. Velinda Woriak

Campus Coordinator

Fax: (910) 521-6649

Phone: (910) 521-6567

velinda.woriak@uncp.edu

Dr. Thomas Leach *Campus Principal Investigator* Phone: (910) 521-6198 Fax: (910) 521-6606 thomas.leach@uncp.edu

Dr. Melvin Johnson Campus Principal Investigator Phone: (336) 750-2200 Fax: (336) 750-2202 mnj@wssu.edu

Dr. Elva Jones Campus Coordinator 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 617.373.4741 m.hill@neu.edu

David Blackman 617.688.2726 d.blackman@neu.edu

University of Connecticut

85

Damon Williams 860.486.9106

damonw@wwg.group.com

University of Massachusetts Amherst

85

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

sbronstein@acad.umass.edu

University of Rhode Island

Harold Knickle

401.874.2678

knickle@egr.uri.edu

Worcester Polytechnic Institute

Lance Schacterle 508.831.5514 les@wpi.edu

85

Calvin Hill 508.831.5796 chill@wpi.edu

Ohio Louis Stokes Alliance for Minority Participation



419.372.0471/cgilmer@bgnet.bgsu.edu

Case Western Reserve University 216.368.0850/ jej@cwru.edu

Cleveland State University

330.672.2920/ gchavez@kent.edu

Steve O. Michael 330-672-2442/ smichael@kent.edu

LISA A0rams 513.529.4036/ abramslm@muohio.edu

740.593.1477/ cortner@ohio.edu

Howard D. Dewald 740-593-2979/ dewald@ohio.edu

Paul Lam 330.972.7817/ plam@uakron.edu

Jeffrey J. Wallace 330-972-7658/ jjw1@uakron.edu

513.556.6561/ chervll.dunn@uc.edu

Edward N. Prather 513-556-1164/ Ed.Prather@uc.edu

Thomas Eggemeier 937-229-2602/ thomas.egg

University of Toledo 419.530.7794/ constantine.theodosiou@ut

Wright State University 937.775.5001/ mawasha@cs.wright.ed

Michele Wheatly 937-775-2611/ michele.wheatly@wri

State University



Karen A. Holbrook, Pl President, The Ohio State University Lead Institution: The Ohio State University PI: President Karen A. Holbrook Co-PI: Dr. Susan L. Huntington 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



Established in November 2003, 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.

OSEA Supports collaborative as well as campus-based initiatives among the fifteen Institutions.

Collaborative initiatives include:

- Glenn-Stokes Research Internships
- The Ohio Student Research Forum
- Professional development workshops for faculty and staff

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

- Summer Bridge
- Living-Learning Programs
- Supplemental Instruction
- Drop-in Centers
- Mentoring
- Tutoring

Alliance Partners

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



One hundred forty six students, faculty, staff, and corporate representatives participated in the first Ohio Student Research Forum, which was hosted by Ohio State University in August, 2004. Students reported the results of their research during the poster session and through oral presentations. The results of the evaluation indicate that this Forum has contributed significantly to the development of a community of scholars across the state.

OKLAHOMA LOUIS STOKES ALLIANCE



Earl D. Mitchell, Jr., Ph.D. Program Director Earl.Mitchell@biochem.okstate.edu Zola J. Drain, Ph.D., Program Manager <u>zdrain@biochem.okstate.edu</u> Yousif Sherif, Ph.D., Program Data Manager <u>yis@okstate.edu</u> Rosemary Hayes, Ph.D. Program Evaluator <u>rhayes@ou.edu</u>

PARTNER INSTITUTIONS/COORDINATORS **Cameron University** Dr. Ted Snider teds@cameron.edu **East Central University** Dr. Carl Rutledge crutledge@mac.com Langston University **Dr. Rosemary Harkins** rkharkins@lunet.edu **Northeastern State University** Dr. Myron Cherry cherry@nsuok.edu Northwestern Oklahoma State University Timothy J. Maharry tjmaharry@nwosu.edu **Oklahoma State University (Lead Institution)** 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 M. Garic jgaric@ucok.edu **University of Oklahoma** Dr. Teri Reed Rhoads Terrirhoads@ou.edu **University of Tulsa** Dr. J.C. Diaz diaz@utulsa.edu

http://ls-okamp.okstate.edu

In its 5th year of Phase II, the Oklahoma Alliance supported 192 scholars and continued to favorably impact the number of STEM graduates from under represented populations. Among the factors that underlie the success of the Oklahoma program are: participation and supplemental financial support from the Oklahoma State Regents for Higher Education; faculty, staff, and graduate student involvement; frequent meetings with scholars; tutoring and other academic support; career and personal counseling; organized programs within OKAMP such as the Mentoring, Research Internship, and Summer Bridge programs; and availability of program staff.





Aniemi Umana, OSU senior in EE, presents poster at annual Research Symposium; Michael Heppler (OSU Graduate College) discusses graduate school preparation with Kara Chapman, ECU senior in physics.

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 •Faculty &Peer Mentoring
- •Co-enrollment
- •Team building
- •Group study
- Advising
- Research
- ScholarshipsInternships
- Hands on researchService learning

• Supporting community

Professional mentoring

•Graduate student mentoring

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 Gene Magallanes, (206) 685-8359, eugenem@u.washington.edu





Academic Year



http://www.engr.uaa.alaska.edu/ansep/ Louis Stokes Alliances for Minority Participation 41

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, 236 Randell Hall, Philadelphia, PA 19104 Phone: (215) 895-2203 • Fax: (215) 895-2098

A Decade of Excellence

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

AMP Phase II

Focused on long-term or permanent ways to maintain the Phase I increase in the annual minority STEM degree production over time. Its purpose was to increase the retention and performance of students within the learning environment or classroom. Activities included curricular modifications, institutional reorganizations, and shifts in teaching practices, as well in operational practices which were supported by the colleges/universities as part of their general operating costs. In addition, retention and articulation, especially from the Community College of Philadelphia and other 2-year institutions, were emphasized.

AMP Phase 1

Focused on short-term or nonpermanent ways to increase the annual minority degree production quickly. It setup infrastructure to monitor and manage activities that were predominately supported by AMP funds. These activities were primarily support services and resided outside of the learning environment or classroom. In addition, recruitment at the pre-college level was emphasized.

AMP student presents

research to faculty

BTD students and staff

converse at NSF meeting



Significant Accomplishments

Minority STEM B.S. Degree Production: Increased from 201 (1993) to 592 (2004).

Learning Environment Improvements: STEM curricula in Biology, Chemistry, Computer Science, Engineering and Mathematics were enhanced with undergraduate research, the infusion of technology, and/or better pedagogical instructional practices.

Graduate School Attendance and Degree Production: As of Fall 2004, 188 AMP graduates are currently enrolled in graduate school at both the masters and doctorate levels in STEM fields of study. As of June 2004, 12 AMP graduates received their Ph.D. degrees in STEM disciplines.



Focus is on the preparation and transition to graduate education. Primary activities include undergraduate research, and graduate school awareness and preparation.

Bridge to the Doctorate (BTD) Program

Focus is on effective strategies for recruiting, retaining, educating and graduating 22 LSAMP graduates at the Masters level in STEM disciplines. Host sites are the University of Delaware and the New Jersey Institute of Technology.



Erika Rivera, BTD student Chemical Enginnering



Dr. James A. Cooper, Jr. Ph.D., Biomedical Sciences



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-4729 Ncintron@caribe.net

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

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



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

Prof. Carmen Asencio (787)841-2000 casencio@pucpr.edu



Polytechnic University

Dr. Kay Berkling (787)754-8000 x-229 Kay@berkling.com

The Puerto Rico Louis Stokes



Alliance for Minority Participation www.prlsamp.org

Sustained Research Experience







Bridge to the Doctorate



UPR-Rio Piedras

UPR-Mayaguez



2003 Enrollment 27,068 undergraduate students in STEM Fields



awarded in STEM Fields

35,843 BS Degrees

UPR-Resource Center for Science and Engineering

 PI: Dr. Manuel Gómez
 (787) 764-8369

 Co-PI: Dr. Ana C. Piñero
 (787) 764-8369

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



South Carolina Alliance for Minority Participation Program

Dr. Andrew Hugine, Jr., Principal Investigator, South Carolina State University, (803) 536-7013 president@scsu.edu Dr. Judith D. Salley, Executive Director/Program Manager, South Carolina State University (803) 536-8509 djdsalley@scsu.edu

"Providing Challenging Opportunities to Get Exceptional" Outcomes"

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. The South Carolina Alliance, through this twelve-year initiative, has seen a 57% increase in the enrollment of minority students in STEM disciplines and the minority completion rates rise over 100% from 255 to 524 degrees.







Program Impact

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

- The growth in minority STEM degrees is almost 2.5 times the growth in non-minority STEM degrees..
- The growth in minority STEM degrees continues to out pace the growth in minority STEM degrees nationwide.
- The growth in minority STEM enrollment is almost 5 times the growth in non-minority STEM enrollment
- SCAMP institutions produced 76.7% of South Carolina STEM minority BS degrees (557/776).
- Post-baccalaureate studies have significantly increased .among alliance graduates.

Program Activities

The model and cornerstone of the LS-SCAMP program is the directed research component. Major Activities include:

- 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

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4-year

Allen University Dr. Tom Crosby (803) 376-5756

College of Charleston Dr. Dinesh Sarvate (843) 953-5736

2-year

Denmark Technical College Dr. Ambrish Lavania (803) 793-5208 Benedict College Ms. Vivian Counts (803) 738-7618

Morris College Dr. Radman Ali (803) 934-3266 Claflin University Dr. Shigara Sandhu (803) 535-5244

Alliance Partner Institutions

South Carolina State University Mr. Nathaniel Gant (803) 536-8184

Orangeburg-Calhoun Technical College Mr. Walt Tobin/Mr. Fred Cooper (803) 535-1293 Clemson University Dr. Bob Snelsnire (803) 656-5915 Voorhees College Dr. Cassandra Smith (803) 793-3351

University of South Carolina Dr. Mike Perkins/Dr. John Grego (803) 777-4177/(803) 777-5110

Midlands Technical College Mr. Rick Bailey (803) 738-7618

SCAMP WEB ADDRESS http://scamp.scsu.edu



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

How Has the SUNY LSAMP Alliance Helped Us Meet Our Goals?

he State University of New York Louis Stokes Alliance for Minority Participation (SUNY LSAMP) is a coalition of 16 institutions within the SUNY system, one of the largest public college/university systems in the nation. This coalition works in collaboration with federal, state, and local government agencies; major national laboratories; industry, private foundations; and professional and community organizations.

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.

Benefits of the Alliance approach:

The great strides in enrollment, degree production, and systemic change could not have taken place without the strong SUNY LSAMP Alliance. It has:

- Helped to improve individual campus operations
- Shared resources to help students
- Planned key events across the Alliance
- Helped place SUNY LSAMP graduates in graduate schools
- Acted as advocate on key issues across the Alliance, the state, and the country
- Helped adapt best practices for use at other Alliance institutions
- Identified key issues for further study
- Developed new strategies and program models as a result of the Alliance-wide evaluation

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 • nuness@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



PRINCIPAL INVESTIGATOR Dr. James A. Hefner, President

COORDINATOR Lonnie Sharpe, Jr.

ASSISTANT COORDINATOR Latonda Knight

PARTNERS



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

MIDDLE TENNESSEE

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

Tennessee

Tennessee State University Lonnie Sharpe, Jr. 615-963-7270 sharpe@coe.tsuniv.edu

MEMPHIS

University of Memphis John Haddock 901-678-2894 jhaddock@memphis.edu



University of Tennessee – Knoxville Denise Jackson 865-974-5578 djackson@utk.edu



OVERVIEW

Tennessee State University, LeMoyne-Owen College, Middle Tennessee State University, University of Memphis, University of Tennessee at Knoxville, and Vanderbilt University partnered to form the Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP). The goal of the TLSAMP program is to increase the number of the underrepresented science, technology, engineering, and mathematics (STEM) students by at least 100% at the end of the five-year period. The objectives to support the goal of the alliance are to:

- Recruit underrepresented students to pursue science or engineering as a career.
- Improve the quality of the learning environment for underrepresented science and engineering students at all schools.
- Ensure that a larger number of undergraduate students are prepared to enter graduate programs.

ACCOMPLISHMENTS

- A major accomplishment for 2004 was the increase of undergraduate degrees granted to under-represented minority students in STEM majors from 362 to 383, representing a ten percent increase from our inception.
- Another accomplishment was the high level of organization, enthusiasm and commitment exhibited by the institutions in the Alliance. This Alliance is now beginning to function as a team. Three alliance activities were planned and implemented. They were the Summer Bridge Program, the Summer Research Program and the Research Symposium, with 326, and 83 students, respectively.
- Another significant accomplishment was that a greater number of minority students are taking interest in graduate and professional schools and in professional development opportunities through on-campus research and internships.

ANNOUNCEMENTS

- The 2nd Annual Research Symposium will be held March 17-18, 2005 at the University of Memphis.
- Our 2005 Summer Bridge Program will be held June 12 July 1, 2005 and is being hosted by Vanderbilt University



TLSAMP Information: <u>www.tnstate.edu/tlsamp</u> (615) 963-1398

TAMUS LSAMP



Texas A&M University System

Louis Stokes Alliance for Minority Participation

2003-2004 Partners: Texas A&M University (TAMU) Texas A&M University Corpus Christi (TAMUCC), and Prairie View A&M University (PVAMU)

2004–2005 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

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

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

Dr. Lenell Allen PVAMU Coordinator Prairie View A&M University Lenell.allen@pvamu.edu (936) 857-2070

Dr. Diana Marinez, Co PI Dean of Science and Technology TAMU-Corpus Christi dmarinez@falcon.tamucc.edu (361) 825-2350

Dr. Suzzette Chopin Professor of Biology TAMU-Corpus Christi schopin@falcon.tamu.edu (361) 845-475

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

Dr. Rita Caso, Project Director Deputy Director of Educational Assessment Resources, TEES Division of Educational Development (DoED) dr-rita@tamu.edu (979) 845-4375

TAMUS AMP Central

Ms. Shantuan Coleman Assistant Project Director, Associate Director, TEES DoED <u>shantuan@tamu.edu</u> (979) 862-4315

TAMUS LSAMP Coordinators

Dr. Lenell Allen, PVAMU Dr. Suzzette Chopin, TAMUCC Ms. Shantuan Coleman, TAMU

Prairie View A&M University

Prairie View A&M joins efforts to boost Engineering Education

Historically black Prairie View A&M University entered a partnership with global outsourcing giant EDS, in an effort to provide product life cycle management (PLM) technology and training to enhance engineering education at the Kwame Nkrumah University of Science and Technology, Ghana's premier engineering school.

" We are grateful to EDS and Prairie View A&M for their tremendous support of our region and students. The faculty and students are highly impressed with the software's ease of use and advanced features. "

--- Dr. Abeeku Brew-Hammond Mechanical Engineering Department head Kwame Nkrumah University of Science and Technology, Ghana



Texas A&M University



LeAnthony Holliness conducting experiments in the Undergraduate Research Chemistry Lab at Texas A&M University

Century Scholars Program

The Century Scholars Program is a successful student recruitment and retention initiative that helps Texas A&M University enroll and graduate that are underrepresented at the university.

- Provides financial aid, sponsored campus visits, and scholarship opportunities to encourage students to pursue higher education.
- The cumulative grade point average and the retention rate for Century Scholars is higher than the averages for all Texas A&M students,
- Received 2003 Retention Excellence Award (one of
- nine awards) by Noel Levitz, the nation's leading higher education consulting firm for recruiting and retention.
- Cited as a model race-neutral program by the U.S. Department of Education's Office for Civil Rights.

Texas Aggie Access Program

Texas Aggie Access is a living-learning community program that provides academic and enrichment support to freshmen with characteristics indicating with that they might not succeed at a large institution such as Texas A&M University.

- A higher percentage of Access participants maintained a 3.5 grade point ratio and persisted in higher education than nonparticipants.
- Participants also completed more semester credit hours than nonparticipants.



Texas A&M University Corpus Christi

Texas A&M Corpus Christi hosted the Second Annual Pathways to the Doctorate Conference and the First Annual Mini Symposium this year.

The AMP students participated in both the conferences and interacted with many distinguished people such as Dr. Howard Adams, motivational speaker. The one-toone interaction among LSAMP students the development "Community" boosted universities, and across among undergraduate and graduate student s and various faculty participation also resulted in increased one to one interaction among AMP students





University of Texas System LSAMP

A Catalyst for Change





The annual number of underrepresented minority graduates in the engineering disciplines has more than doubled that of the baseline year (1992-93). This is a significant increase as state and national statistics over the past several years have shown that both the enrollment and graduation of undergraduate engineering majors is declining.



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 and graduating from baccalaureate in programs in science, technology, engineering and mathematics (STEM). At the same time, the Alliance has sought to increase the enrollment 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, especially at the doctoral level.



University Partners: UT Arlington Martha Mann <u>mann@uta.edu</u> * UT Austin Sarah Simmons (CNS) <u>s.l.simmns@mail.utexas.edu</u>, Andrea Ogilvie (ENGR) <u>aogilvie@mail.utexas.edu</u>, and Pedro Reyes (Co-PI) <u>preyes@utsystem.edu</u> * UT Brownsville Fabio Urbani furbani@utb.edu</u> * UT Dallas Gerald Burnham <u>burnham@utdallas.edu</u> * UT El Paso Ben Flores (PI) <u>bflores@utep.edu</u> * UT Pan American Miguel Paredes <u>mparedes@panam.edu</u> * UT Permian Basin Doug Hale <u>hale_d@utpb.edu</u> * UT San Antonio Ricardo Gonzalez <u>mgonzalez@utsa.edu</u> * UT Tyler Stephen Rainwater <u>Steve_Rainwater@mail.uttyl.edu</u>

Community College Partners: Alamo Community College District David Chavera <u>dchavera@accd.edu</u> * Austin Community College David Fonken <u>fonken@acc.edu</u> * Collin County Community College District * El Paso Community College Emil Michal <u>emilm@epcc.edu</u> * Howard College Amy Burchett <u>burchet@howardcollege.edu</u> * Midland College Kay Hodge khodge@midland.edu * Odessa College * Tarrant County College Larry Darlage Idarlage@tcc.edu

UT System LSAMP website: http://research.utep.edu/lsamp

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 655 STEM baccalaureate degrees to minority students in 2003-04.
- Alliance institutions awarded 71 STEM master's degrees to minority students in 2003-04.
- Alliance institutions awarded 14 Ph.D. degrees to minority students in STEM fields in 2003-04.
- Many LSAMP students advance to top graduate schools including Johns Hopkins, Stanford, Carnegie Mellon, Princeton, and Brown.
- Summer 2004 student research placements included Lockheed Martin, Case Western Reserve, NIH, Yale, NASA, and Northrop Grumman.



Program Highlights:

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



CONTACT INFORMATION:

UMBC

Cynthia M. Hill Assistant Vice Provost chill@umbc.edu 410-455-2445

UMCP

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

UMES

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



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 202-238-2512

Partner Institutions Howard University Dr. William Gordon 202-238-2511/2512 wgordon@fac.howard.edu

Bowie State University Dr. Elaine Davis 301-860-3329 edavus@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. Calvin Brooks 202-274-5945 cbrooks@udc.edu



www;howard.edu/lsamp

HISTORY And GOALS

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 ten years, more than 45,000 minority students have enrolled in STEM fields at this WBHR Alliance. More than 7,500 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 WBHR-LSAMP program supports undergraduate research students. The overall objective of this program is to assure that the LSAMP student has 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 overall goal of the program is to encourage minority students to pursue doctoral degrees in STEM fields and to become involved in research careers. During the 2003-2004 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; organized a special video-conferencing course for students in gatekeeping 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.

PhysMoVan South Africa Collaboration

WBHR-LSAMP participated in the PhysMoVan project. A goal of the effort is to

develop a collaborative REU/RET project with South African scientists, high school science and mathematics teachers and undergraduate students with their counterparts in the US. The proposed REU/RET will identify American scientists and engineers to work on projects with their counterparts in South Africa that address some of the national research areas that have been defined by the National Research Foundation. A WBHR-

LSAMP student participated in the summer project.



WBHR Supports Student Research Students present research









WESTERN ALLIANCE TO EXPAND STUDENT OPPORTUNITIES (WAESO)

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



NSF sponsored undergraduate component of the Western Alliance to Expand Student Opportunities

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 Colorado State University - Pueblo

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 Garcia Project Director and Principal Investigator Professor of Bioengineering Arizona State University (480) 965-0840 Tony.Garcia@asu.edu 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 STEM disciplines during each of 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, technology, engineering, and mathematics throughout our region which includes institutions in Arizona, Colorado, New Mexico, western Texas, 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 March 29, 2004 at Arizona State University.

On March 29, 2004, WAESO, in conjunction with More Graduate Education at Mountain States Alliance (MGE@MSA), held their Annual Student Research Conference and Graduate Student Fair at Arizona State University. Undergraduate and graduate students within the STEM disciplines participated in a series of student poster presentations and exhibits especially designed to assist them in pursuing graduate studies in science, technology, egineering and mathematics.

The National Science Foundation Louis Stokes Alliances for Minority Participation (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) 292-8601 • (703) 292-9179 (Fax) dthompso@nsf.gov

Dr. Bernice T. Anderson Acting Division Director Division of Human Resource Development (703) 292-8640 • (703) 292-9018 (Fax) banderso@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 University Blvd. 1530 3rd Avenue South Birmingham, AL 35294-1170 (205) 934-8762 • (205) 934-1650 (Fax) Idale@uab.edu **Project Director** 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 52000 Highway 93 Pablo, MT 59855 (406) 275-4959 • (406) 275-4807 (Fax) Joe_mcdonald@skc.edu **Project Manager** Jaymee Johnson-White (406) 275-4997 • (406) 275-4807 (Fax) jaymee johnson-White@skc.edu

California LSAMP

Dr. Ralph J. Cicerone Chancellor University of California, Irvine 501 Administration Irvine, CA 92697 (949) 824-5111 • (949) 824-2087/3049 (Fax) camp@uci.edu Associate Director 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 Manager** Dr. Juanita Barrena (916) 278-6519 • (916) 278-4640 (Fax) jbarrena@csus.edu

Colorado LSAMP

Dr. Omnia El-Hakim LS CO-AMP Room E 116 Engineering Building Colorado State University Fort Collins, CO 80523-1301 (970) 491-2656 • (970) 491-3421 (Fax) omnia@engr.colostate.edu **Project Coordinator** Ty A. Smith, MBA (970) 491-2898 • (970) 491-3421 (Fax) smithty@engr.colostate.edu

Florida-Georgia LSAMP

Dr. Ralph W. Turner Central Administration Florida-Georgia Louis Stokes Alliance for Minority Participation 1540 South Adams Street, Suite-A Florida A&M University Tallahassee, FL 32307 (850) 561-2678 • (850) 561-2684 (Fax) ralph.turner@famu.edu **Project Manager** Byron Greene (850) 561-2679 • (850) 561-2684 (Fax) fglsampcentral@hotmail.com

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 Manager** Dr. Melvin R. Webb (404) 880-6868 • (404) 880-6843 (Fax) mwebb@cau.edu

Houston LSAMP

Dr. John Bear University of Houston 214 Science & Research Bldg. 1 Houston, TX 77204 (713) 743-2619 • (713) 743-8630 (Fax) jbear@uh.edu **Project Director** Dr. Sylvia Foster (713) 743-3680 • (713) 743-0164 (Fax) brymer@uh.edu

Illinois LSAMP

Dr. Marian Wilson-Comer Chicago State University Williams Science Center Room 310 9501 S. King Drive Chicago, IL 60628 (773) 995-2183 • (773) 995-3759 (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 610 Purdue Mall, Room 100 West Lafayette, IN 47907-2040 (765) 494-9709 • (765) 496-2031 (Fax) sfmason@purdue.edu **Project Director** Dr. Pamella P. Dale Shaw (765) 496-7967 • (765) 494-2221 (Fax) ppshaw@purdue.edu

Louisiana LSAMP

Dr. Diola Bagayoko LS-LSAMP 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) marysc@umich.edu **Project Director** Dr. Levi T. Thompson (734) 647-7150 • (734) 647-7126 (Fax) Itt@umich.edu

Mid-Eastern LSAMP

Dr. Belinda Anderson Principal Investigator, MEAMP and President of Virginia Union University 1500 N. Lombardy Street Richmond, VA 23220 (804) 257-5835 • (804) 257-5833 (Fax) bcanderson@vuu.edu **Executive Director** Dr. Phillip W. Archer (804) 257-5692 • (804) 345-5693 (Fax) pwarcher@vuu.edu

Mississippi LSAMP

Dr. James Perkins P.O. Box 18119 Jackson, MS 39217 (601) 979-2024 • (601) 979-2025 (Fax) james.perkins@jsums.edu **Project Manager** Joan F. Blanton (601) 979-2076 • (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

Project Manager 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 Office of the Provost/Vice Chancellor for Academic Affairs North Carolina A&T State University Dowdy Administration Building 1601 E. Market Street Greensboro, NC 27411 (336) 334-7965 • (336) 334-7136 (Fax) carolyn@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 Drive 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 Holbrook.79@osu.edu **Program Director** Dr. Jean Girves (614) 247-7267 • (614) 292-1231 Girves.1@osu.edu

Oklahoma LSAMP

Dr. Earl D. Mitchell, Jr. 246 Nobel Research Center Oklahoma State University Stillwater, OK 74078 (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 School of Engineering University of Alaska Anchorage 3211 Providence Drive Anchorage, AK 99508 (907) 786-1860 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 **Project Director** Dr. Keith D. Parker (706) 583-8195 • kdparker@uga.edu

Philadelphia LSAMP

Dr. Ali Houshmand 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) srcox@drexel.edu

Puerto Rico LSAMP

Dr. Manuel Gomez P.O. Box 23334 UPR Station San Juan, PR 00931 (787) 765-5170 • (787) 766-1293 (Fax) Mgomez@upr.edu **Project Manager** Dr. Ana C. Piñero (787) 765-5170 • (787) 766-1293 (Fax) a_pinero@prlsamp.org

South Carolina LSAMP

Dr. Andrew Hugine, Jr. Office of the President South Carolina State University 300 College Street Northeast 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 djdsalley@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. James A. Hefner Office of the President 3500 John A. Merritt Blvd. Nashville, TN 37209 (615) 963-7404 • (615) 963-7407 (Fax) jhefner@tnstate.edu **Project Coordinator-Interim** Dr. Lonnie Sharpe, Jr. (615) 963-7211 • (615) 963-7027 (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 Dr. Rita Caso (979) 862-4375/4315 • (979) 862-1940 (Fax) dr-rita@tamu.edu

University of Texas System LSAMP

Dr. Benjamín Flores 500 W. University Avenue Engineering 325 El Paso, TX 79968 (915) 747-6961 • (915) 747-5243 (Fax) bflores@utep.edu Project Coordinator Ariana V. Arciero (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 Sixth Street, N.W. Washington, DC 20059 (202) 806-2550 • (202) 806-4971 (Fax) renglish@howard.edu **Project Director** Dr. Clarence 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 875305 Tempe, AZ 85287-5305 (480) 965-0840/8798 • (480) 965-8309 (Fax) tony.garcia@asu.edu **Project Coordinator** Leticia L. Soto (480) 965-0840 • (480) 965-8309 (Fax) waeso@asu.edu

Wisconsin LSAMP

Dr. Peter D. Spear Provost and Vice Chancellor for Academic Affairs University of Wisconsin-Madison Room 150 Bascom Hall 500 Lincoln Drive Madison, WI 53706-1314 (608) 262-1304 • (608) 265-3324 pspear@wisc.edu **Executive Director** Dr. Manuela Romero (608) 263-1138 • (608) 265-5290 romero@engr.wisc.edu

