

## **UMCP LSAMP: 15 Years of Successful Retention and Graduation of Underrepresented Minority Students**

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*Abstract: In 2009, the University of Maryland, College Park (UMCP) was ranked sixth by Diverse Issues in Higher Education for awarding bachelor's degrees to African American students. The Louis Stokes Alliances for Minority Participation (LSAMP) Program is one strategy used by UMCP to accomplish this outcome. LSAMP, funded by the National Science Foundation (NSF), is a comprehensive multi-disciplinary undergraduate and graduate program designed to increase the quantity and quality of students, including underrepresented minorities (URM), receiving baccalaureate degrees in science, technology, engineering, and mathematics (STEM), and pursuing graduate education. In 1995, UMCP joined in a partnership with the University of Maryland, Baltimore County (UMBC) and the University of Maryland, Eastern Shore (UMES) to form the University System of Maryland (USM) LSAMP Program. Since 1995, the program at College Park has served approximately 100 students each year through academic seminars, a Bridge Program, undergraduate research stipends, and attendance at professional conferences. This paper will present the history and progression of the program from its inception in 1995 to the current time period. The paper will also discuss the goals and objectives of each program and any significant successes. Goals of the program are assessed using University and NSF data on degrees awarded, enrollment, grade point averages, and retention rates. To receive funding from NSF, alliances are annually evaluated based on the total number of bachelor's degrees awarded in STEM. The USM LSAMP Alliance is required to award at least 500 degrees annually to URM students.*

**Keywords:** Retention, Underrepresented Students, Minority Students, Bridge Programs, Research Programs

### **Introduction**

Launched in November 1995, with a grant from the National Science Foundation (NSF), the University System of Maryland Louis Stokes Alliances for Minority Participation (USM LSAMP) is a comprehensive program designed to extend and enhance the impact of initiatives to increase substantially the quantity and quality of underrepresented minority (URM) students receiving baccalaureate degrees in science, technology, engineering, and mathematics (STEM). The USM alliance partners are: The University of Maryland, Baltimore County (UMBC), The University of Maryland, College Park (UMCP) and The University of Maryland, Eastern Shore (UMES). Dr. Freeman Hrabowski, President of UMBC, is the principal investigator for the USM LSAMP. Since the inception of the LSAMP Programs by NSF, alliances have been established in states such as Michigan, Ohio, California, New York, Texas, and the territory of Puerto Rico. Even though, the USM LSAMP is one of the smallest of the 41 alliances currently being funded by NSF, the alliance ranks 12<sup>th</sup> in the nation for awarding STEM bachelor's degrees to URM students.

Since 1995, the USM LSAMP has received NSF funding in three phases: Phase I (1995 - 2000); Phase II (2000-2005); and Phase III (2005-2010). In October 2009, the alliance applied for Phase IV (2010-2015). The amount of funding received from NSF over the past 15 years has totaled over \$12 million. This paper will focus on the UMCP component of the USM LSAMP by presenting the organizational structure of the program, current and past initiatives, results, and future plans. This paper will also discuss relevant literature on the persistence of URM college students. The literature presented in this paper is used to guide the program activities of UMCP LSAMP. The “best practices” shared in this paper are intended for use by postsecondary institutions as they plan retention efforts for URM students.

## **Literature Review**

The initiatives and activities of the UMCP LSAMP are heavily grounded in student retention and persistence theory. Early research identified academic and social interactions with faculty and peers, college climate, psychological attitudes and goal commitment as some of the factors associated with persistence of students (Astin, 1993; Tinto, 1993). Tinto (1993), building on his earlier research, developed a model for student departure to examine various avenues that can be used by stakeholders as they seek to increase student retention in higher education. Astin’s (1993) multi-institutional longitudinal study was created, in the same year as Tinto, to enhance stakeholders’ understanding of how undergraduate students are affected by their college experiences. Both authors strongly emphasized how social and academic college experiences impacted persistence. As a way to address the need for research which analyzes race/ethnicity, scholars began to develop, in recent years, studies specifically focused on URM populations. Factors such as pre-college characteristics, formal and informal interactions during college, heuristic knowledge, and feelings of isolation are listed as influences on the persistence of URM students (D’Augelli and Hersberger, 1993; Fries-Britt, 1998; Hurtado and Carter, 1997; Padilla, Treviño, Gonzalez, and Treviño, 1997).

Padilla et al.’s (1997) study explored the specific knowledge and actions that successful minority students employed to overcome barriers to academic success. The authors’ model displayed four main groups of barriers that ethnic minority students must overcome to persist: 1) discontinuity; 2) lack of nurturing; 3) lack of presence; and 4) resources. Each barrier contained specific obstacles that students faced to influence the university’s retention policy and practice. The authors named their first hurdle “discontinuity”, which encompasses the pre-college experiences of students. To get beyond this barrier, the authors suggested that students build a support base, promote independence, and be an informed consumer. The second obstacle, “lack of nurturing”, is defined as a lack of family support and understanding, lower expectations of students by faculty and staff, and lack of minority role models. The authors argued that heuristic knowledge, which is the practical knowledge passed along informally from experienced students to new students by student organizations or mentors could assist students with knowing the ins and outs of college life.

The third barrier Padilla et al. presented was “lack of presence”. This obstacle, defined as cultural isolation, is the lack of minority issues or materials in the curriculum, visibility of minority support programs, and minority role models or mentors. Suggestions for overcoming this barrier were participating in activities that support diversity issues and drawing other African

Americans into these activities to increase attendance. The final obstacle in Padilla et al.'s model was financial resources. Students, in this study, recognized limitations in the availability of funds and misconceptions about the financial aid systems as two of the greatest challenges that they faced. Padilla et al. suggested that for students to overcome these obstacles they must plan ahead for paying the costs of attending college, apply for all possible sources of aid, and perform well in school to obtain additional opportunities.

Hurtado and Carter (1997), in their study, analyzed data from the National Survey of Hispanic Students (NSHS), a national longitudinal survey of Latino college students who were among the top PSAT achievers, were semifinalists for a national scholarship award, and began college in fall 1990, to further the research on persistence. The authors sought to test a conceptual model of the antecedents of "sense of belonging" to examine the extent to which students' background characteristics and college experiences in the first and second years contribute to their "sense of belonging" in the third year. Hurtado and Carter found a strong relationship between students' "sense of belonging" in college and reports of frequent discussions of course content with faculty and other students outside class. Hurtado and Carter also found that students' grade point averages in both the second and third years of college were not significantly associated with students' "sense of belonging". This finding suggested that academic performance did not necessarily enhance or diminish Latino students' "sense of belonging". After analyzing data on participation in student organizations, Hurtado and Carter found that students who belonged to religious organizations and to sororities and fraternities had a significantly stronger "sense of belonging" than did nonmembers in the second year. The results of Hurtado and Carter's research on Latino students' "sense of belonging" and connections with the campus community showed that Latino students have similar experiences of isolation as African American students. Increased participation in the social and academic campus community can aid in all URM students' persistence regardless of race/ethnicity.

D'Augelli and Hershberger (1993) used Tinto's (1975) framework as a guide to explore noncognitive dimensions that influenced African American students' lives on a predominately White campus. The authors explored the differences between African American and White students on campus by using carefully matched groups of students. D'Augelli and Hershberger hypothesized that one factor that might differentiate White and African American students' persistence, even with similar scholastic profiles, were the experience of racial discrimination on campus faced by African American students. D'Augelli and Hershberger noted that African American students have a higher probability of leaving after the first year compared to White students. The authors' stated that those who stayed may have had greater support on campus and been socially and academically integrated similar to White students. Even though African American students knew fewer students when they began at the institution, they tended to form connections with other African American students such as living in the dormitory together; hence, race-specific programs or groups may have assisted them in meeting other African American students.

Fries-Britt (1998) examined, through extensive interviews, the academic, social, and racial experiences of high-achieving African American students enrolled in the Meyerhoff Program at the University of Maryland, Baltimore County. Interview questions in the study focused on academic experiences in and outside the classroom, social interactions and

relationships with peers/faculty, and experiences in, and perceptions of, a “race-specific” program. Twelve students were interviewed in their senior year who participated in the Meyerhoff program. Fries-Britt modeled the interview questions after Tinto’s (1987) academic and social integration model. While interviewing students in the Meyerhoff Scholarship Program, Fries-Britt found that gifted African American students did not just experience isolation from attending a predominately White institution, but these students also experienced isolation in high school from the African American community as well. Once in college, the Meyerhoff Program contributed to the success of the students academically and socially by helping to establish peer networks to diminish the feeling of isolation, building a community of high-ability African American students, and engaging in formal interactions with faculty. Interviewees stated that participating in the Meyerhoff program was important in persisting, however, 67 percent of Meyerhoff interviewees expressed that it was more significant for them to be around other high-achieving students than simply students of a similar race.

After an extensive review of the literature on students’ persisting in college, factors such as pre-college characteristics, formal and informal interactions during college, heuristic knowledge, and “sense of belonging” are listed as influences on the persistence of URM students (D’Augelli and Hershberger, 1993; Fries-Britt, 1998; Hurtado and Carter, 1997; Padilla, Treviño, Gonzalez, and Treviño, 1997). LSAMP initiatives such as supporting student organizations, bridge/transition programs, undergraduate research, social community activities, and study groups were established to acknowledge the findings in the research on persistence. All of these factors work together to increase the retention and graduation rates of URM students.

## **History of the UMCP LSAMP Program**

Beginning in 1995, the mission of the UMCP LSAMP program is to design initiatives that will assist URM students in developing the skills and learning the strategies to facilitate their success in STEM fields. On the UMCP campus, funds to support LSAMP are a combination of support from NSF, various campus units including the Provost’s Office, industry partners, and participant program fees. As a result of this funding, students who attend UMCP benefit from a unique combination of academic, financial, and social support systems. Each Phase of LSAMP is guided by the overall mission of the national program. Below are the objectives of each Phase and its’ impact on the programs offered by UMCP:

- **Phase I (1995-2000):** The LSAMP program’s mission focused on increasing the baccalaureate production of historically URM students in STEM fields. Funds from LSAMP supported the Bridge Program for Scientists and Engineers summer and academic year components, as well as provided scholarships to participants in Bridge. The Bridge Program originally began in 1984 as a one-week summer program. The addition of LSAMP support allowed Bridge to be expanded into a six-week residential, credit-bearing program.
- **Phase II (2000-2005):** In addition to the Phase I mission, Phase II objectives included the creation of effective pathways to STEM graduate study and careers for baccalaureate recipients at participating institutions. To meet this goal, UMCP LSAMP expanded its’ work with students by creating a Math Bridge Program to prepare first-year students for advanced math courses, expanding the LSAMP Scholarship Program to include greater numbers of

URM students in STEM, establishing the LSAMP End of the Year Student Awards Dinner, the Bridge Student of the Year Award, and the Summer Bridge Undergraduate Mentor Program. The Bridge Program for Scientists and Engineers still thrived in Phase II with new components being added. Additionally in Phase II, there was an increase in the number of students attending professional conferences, participating in research, and enrolling in graduate education.

- **Phase III (2005-2010):** The mission of Phase III is the institutionalization of LSAMP retention strategies by Universities making a significant financial commitment to the program. During Phase III, UMCP expanded its' work with students by creating the LSAMP Undergraduate Research Program where students participate in research with faculty and LSAMP staff provide assistance with the graduate school preparation process, expanding the LSAMP Student Travel Program to provide more URM students the opportunity to participate in professional conferences and graduate school visits. The Bridge Program continues to support student retention and graduation through close contact during the first year of college. Additionally in Phase III, USM LSAMP was awarded funding to support the Bridge to the Doctorate Graduate Fellowship program. In 2006 and 2008, UMCP was awarded \$1.9 million to support two cohorts of new masters and doctoral students. Lastly in Phase III, efforts were enhanced to increase the number of URM enrolling in graduate school and to track LSAMP alumni after graduation. Continued as in Phases I and II, is the University's commitment to earmarking funds to support LSAMP staff and retention programs.

On the UMCP campus, the Principal Investigator of LSAMP is the Director of the Center for Minorities in Science and Engineering in the A. James Clark School of Engineering. The Co-Principal Investigator is the Assistant Director of the Center. Outside of the PI and Co-PI, LSAMP supports 10-11 staff members; 2 twelve-month graduate assistants, 2-3 summer math instructors, and 5 summer undergraduate students (1 full-time and 4 part-time). The Assistant Director of CMSE is responsible for managing the day-to-day operations of the LSAMP Program and supervising, training and evaluating all staff.

### **UMCP LSAMP Goals**

To remain at the same level of funding, \$500,000 annually, the USM LSAMP must award at least 500 bachelor's degrees to URM students. Each year, UMCP graduates on average 300 URM students in the majors of architecture, agriculture, life sciences, engineering, computer science, astronomy, physical sciences, geosciences, and mathematics. To assist USM LSAMP with meeting NSF's annual STEM URM graduation requirements, UMCP set the following campus-wide goals:

- To increase the number of URM first-year students earning a 3.0 or higher cumulative GPA.
- To increase the number of URM first-year students who are ready for calculus.
- To increase the first-year retention rate of URM students in STEM.
- To increase the five-year graduation rate of URM students in STEM.
- To encourage more URM students to participate in undergraduate research.
- To produce at least 200 URM graduates annually in STEM.

## UMCP LSAMP Program Components

Through LSAMP, students who attend UMCP benefit from a unique combination of academic, financial, and social support systems which facilitate achievement of the long-term goal of increasing the number of URM students who earn bachelor's and advanced degrees in STEM. Some programs created during Phases I and II were terminated to reallocate funds for new initiatives. This change was not due to programs being unsuccessful, moreover due to changing priorities at NSF. A full list of UMCP LSAMP Programs from 1995 to 2010 is listed in Appendix A. Each program works as a separate entity with set program goals and target audiences, to cohesively support the overall UMCP LSAMP goals. The Phase III LSAMP components are:

- ***Bridge Program for Scientists and Engineers:*** Bridge is a four-year retention program which includes leadership opportunities, study abroad, research, career development, and graduate school preparation. Students begin in the Bridge program the summer before they matriculate into the University. Participants continue in the program until graduation. Program staff track students' progress each semester to ensure successful progression to completing degree programs.
- ***LSAMP Undergraduate Research Program (URP):*** The LSAMP URP is aimed at broadening URM participation in STEM fields by encouraging students' participation in undergraduate research to, in turn; increase their participation in STEM graduate programs. While participating in the URP, students receive a stipend, faculty mentoring, and seminars on how to properly conduct academic research, scientific writing, and the graduate school application process.
- ***Bridge to the Doctorate Program (BD):*** The BD Program provides stipends for two years to students who are pursuing graduate degrees in STEM. While in the program, students participate in faculty mentoring and seminars on identifying additional fellowship opportunities, making a smooth transition from undergraduate to graduate programs, and publishing and presenting research.
- ***LSAMP Research Symposium:*** The Research Symposium is an annual event where students participating in research present their findings for faculty, campus administrators, and their peers. Presentations at the symposium are made by the students in the URP and BD programs.
- ***LSAMP Student Travel Program:*** The Student Travel Program provides funding for undergraduate and graduate students to attend conferences to present research, obtain internships and employment after graduation.
- ***Student Community for Outreach, Retention and Excellence (SCORE):*** SCORE is a student organization, specifically for computer science, mathematics, and physical science majors. The organization strives to inform the community of events that encourage student involvement and increase awareness of educational resources.

- **Summer Bridge Undergraduate Mentor Program:** The Undergraduate Mentor Program is designed to provide students a summer internship as supplemental instructors for the new class of Bridge students. While interning, mentors also share first-hand knowledge on successfully preparing for Math courses and STEM majors with their peers.

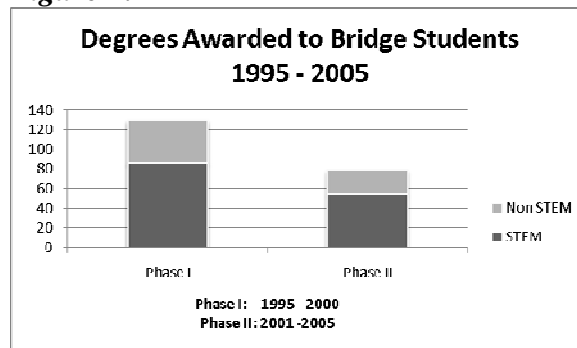
## LSAMP Accomplishments

Some accomplishments of the UMCP LSAMP program are:

### **Bridge Program for Scientists and Engineers**

Since its inception in 1984, 668 students have participated in the Bridge program. Beginning with the baseline year 1994, the number of students prepared to take calculus in the fall semester as a result of their participation in the Bridge summer program has increased from 43.3% to 90%. The percentage of students achieving a first semester GPA of 3.0 or higher has increased from 24% in 1994 to 45% in 2008. The one year campus retention rate for Bridge students has consistently remained above 90%. In Phase III, the one-year STEM retention rate for Bridge engineering students is 100%; this is higher than the one-year STEM retention rate for other engineering students. One hundred twenty-nine of the 179 Phase I students have earned bachelor degrees and 78 of the 119 Phase II students have earned bachelor's degrees. Phase III students will begin graduating in May 2010. Figure 1 shows the distribution of degrees across Phases I and II.

**Figure 1:**



Source: UMCP Institutional Research, Planning, and Assessment, <https://www.irpa.umd.edu>.

### **LSAMP Undergraduate Research Program**

Fifty-six students have participated in the research program since its inception in 2006 (Phase III). In 2009, the average GPA of students participating in the research program was 3.43. Sixty percent of the students achieved Dean's List with grade point averages of 3.5 or higher.

### **Bridge to the Doctorate Program**

Since 2006, 28 students have received fellowships from NSF to pursue graduate degrees at UMCP. By December 2009, three students had graduated with masters degrees. Twenty-one students are still enrolled in graduate degree programs at UMCP.

### ***STEM Degrees Awarded***

Since 1995, the USM Alliance has awarded 7,266 STEM bachelor degrees to URM students. Over half of those degrees were awarded by UMCP. Table 1 shows bachelor STEM degrees awarded by race/ethnicity.

***Table 1: STEM Bachelor Degrees Awarded to URM by Race/Ethnicity by Academic Year***

	Phase I					Phase II					Phase III			
Race/ Ethnicity	AY96	AY97	AY98	AY99	AY00	AY01	AY02	AY03	AY04	AY05	AY06	AY07	AY08	AY09
Black or African American	88	111	176	161	196	174	179	168	235	249	241	194	243	249
Hispanic or Latino	42	44	61	61	62	68	93	76	97	111	125	99	121	106
Native American	3	1	3	5	3	3	6	2	5	4	3	8	7	8
Total	133	156	240	227	261	245	278	246	337	364	369	301	371	363

Source: NSF LSAMP WebAMP, <https://surveys.qrc.com/lisamp/start.cfm>.

### **Conclusion**

In October 2009, the USM LSAMP submitted a proposal to NSF to continue with Phase IV (2010-2015) of the grant program. During Phase IV, the Alliance plans to introduce new programs and activities, as well as continue the successful programs that were developed over the past three LSAMP phases. In Phase IV of the grant, the LSAMP Program will support undergraduate research, high school to college transitional programs, student participation in international service projects and research, and form partnerships with local community colleges to develop a seamless transfer experience for community college students. Future assessment projects will include a longitudinal analysis of retention and graduation rates of program participants from Phases I, II, and III. More follow-up with Bridge alumni is needed, during Phase IV, to assess the long-term impact of the LSAMP program on participants' career decisions.

Since 1995, the UMCP LSAMP program has been a driving force in increasing the number of URM baccalaureate degree recipients in STEM. NSF funding has provided UMCP the opportunity to expand retention efforts prior to LSAMP, to strategically improve the success of URM students. Through the use of initiatives such as scholarships, undergraduate research, bridge/transitional programs, student organization support, and study groups, the students who participate in the UMCP LSAMP are able to benefit from a comprehensive program that facilitates their success in STEM fields.



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## **Appendix A: University of Maryland, College Park LSAMP Programs 1995-2010**

### **Bridge Program for Scientists and Engineers: Phases I, II, III**

In 1984, the Bridge Program began to provide students a headstart on taking college level courses and an opportunity to become familiar with the campus, the summer before they begin their first year. Since its inception, the program has evolved into a four-year retention program for URM students which includes leadership opportunities, study abroad, research, career development, and graduate school preparation. Since 1984, 668 students have been served through Bridge. Students who participate in Summer Bridge are newly admitted first-time students in the areas of engineering, computer science, mathematics, and the physical sciences. Potential Bridge candidates return applications by the May 1<sup>st</sup> UMCP confirmation deadline. Students must confirm to attend UMCP in the following fall semester to participate in the summer program. Each year, 20 students are selected for the program. The goals of the Bridge Program are:

- To build a community of STEM majors that extends beyond the summer program.
- To have 90% of the students complete the summer program with a 3.0 or higher cumulative GPA.
- To have 90% of the students registered for Pre-Calculus or higher in the fall semester.
- To have 80% of the students registered for Calculus or higher in the fall semester.
- To have 100% of students complete the first-year in good academic standing (GPA >2.0)
- To have 100% of students retained at the University, 90% in STEM, at the beginning of the second year.
- To have 70% of students completing the first year with a 3.0 grade point average.
- To have 85% of the students retained to the third year at UMCP.
- To have 100% of the students participating in internships, undergraduate research, and scholarship opportunities before graduation.

#### *Summer Bridge Component*

During the five-week residential program, students receive four credits, consisting of a three credit math course/workshop and a one credit research course. In summer 2009, the one-credit course was a research project sponsored by Johnson and Johnson involving residual solvents and the use of soy in consumer products. Students also participated in a Matlab workshop to provide preparation with computer programming skills needed for STEM majors. Outside of the classroom, students take part in seminars on networking, interviewing, and time management facilitated by companies such as BAE Systems, Lockheed Martin, and the Central Intelligence Agency, as well as social activities that facilitate team building. On the first day of the program, Summer Bridge provides new student orientation for all participants. Due to the rigorous curriculum of the program, students are not allowed to work during the five-weeks.

#### *Academic Year Bridge Component*

To provide close contact during the first year of study, students participate in special advising sessions, career/professional development seminars, tutoring in STEM courses, and mentoring by upper-class Bridge students to assist with their retention at UMCP. Students also participate in social activities each semester to foster the community that was built during the summer program. During the second, third, and fourth years, students participate in leadership positions in student organizations, study abroad and undergraduate research. Bridge students are also active participants in the campus-wide learning communities such as the Honors and Hinman entrepreneurship programs.

### **LSAMP Undergraduate Research Programs (URP), Academic Year and Summer Components: Phase III**

In 2005, the LSAMP URP was established to broaden URM participation in STEM fields by encouraging students' participation in undergraduate research to, in turn, increase their participation in

graduate programs. Participants are at the sophomore to senior level in their coursework and submit a formal application which includes an essay, transcript, and a teacher recommendation letter to apply to the program. Prior research experience is not required. While participating in the program, students receive a stipend, faculty mentoring, and seminars on how to properly conduct academic research, scientific writing, and the graduate school application process. Additionally, students participate in individual advising sessions with LSAMP advisors and are required to submit progress reports signed by faculty mentors to ensure requirements of the program are met. At the end of the academic year/summer, students present their research findings to an audience of faculty advisors and their peers. During the 2008-09 academic year, 28 students participated in research projects. After graduation, many participants in the URP enroll in graduate school. The average GPA of students who participate in the Research Program is a 3.43. Four participants from the 2008-09 cohort enrolled in graduate programs at UMCP in fall 2009. All four students received funding for their studies from NSF or other sources. The goals of the URP are: 1) To increase the number of students who are participating in undergraduate research; 2) To increase the number of students working with faculty outside of the classroom; and 3) To increase the number of students who are applying to and enrolling in graduate school.

### **Bridge to the Doctorate Program (BD): Phase III**

The BD provides stipends for two years to students who are pursuing graduate degrees in STEM. Outside of the stipends, students participate in seminars on identifying additional fellowship opportunities and, publishing and presenting research. Each semester interviews are held with the participants to evaluate academic progress towards the doctoral degree. The students also participate in activities and mentoring sponsored by another NSF-sponsored program, Alliances for Graduate Education and the Professoriate (AGEP). AGEP activities help students build a community outside of the BD Program cohort. Students are required, as part of the fellowship, to attend the NSF Joint Annual Meeting, a professional development conference for all BD Fellows across the country. Since 2006, 28 students have participated in the BD program. Three students have graduated with master's degrees. Twenty-one students are currently enrolled in graduate programs at UMCP. The goals of the BD Program are: 1) To increase the number of URM students enrolling in graduate school; 2) To increase the number of STEM doctoral degrees awarded to URM students; and 3) To increase partnerships with faculty at UMCP.

### **LSAMP Research Symposium: Phase III**

The LSAMP Research Symposium is an annual event where students participating in research present their findings for faculty, campus administrators, and their peers. Top students are recognized for poster and oral presentations. The third annual symposium included presentations from students in both the URP and the BD graduate fellowship program. Over the years, Lockheed Martin and the Central Intelligence Agency have provided financial support for the symposium. The goals of the Research Symposium are: 1) To increase the number of students presenting research at professional conferences; and 2) To increase the number of students interacting with faculty outside of the classroom.

### **Student Community for Outreach, Retention and Excellence (SCORE): Phases II and III**

SCORE is a student organization, founded in 2000, that supports students in the fields of mathematics, computer science, and the physical sciences. The organization strives to inform the student community of events that encourage student involvement and to increase awareness of the various educational opportunities at UMCP. Some of these activities are the annual Winter Leadership Retreat, Technical Bowl, and African Americans in Science and Technology panel. The goal of SCORE is to provide a community for students who are in the majors of computer science, mathematics, and the physical sciences through career/professional workshops and social networks.

### **LSAMP Student Travel Program: Phases I, II, III**

The LSAMP Program provides funding for undergraduate and graduate students to attend conferences to present research, obtain internships and employment after graduation. Conferences

sponsored in previous years are the National Society of Black Engineers, the National Association of Multicultural Engineering Program Administrators (NAMEPA) Student Symposium, the Society of Hispanic Professional Engineers, the Society of Women Engineers, the Black Engineer of the Year Conference, the National Society of Black Physicists, the EMERGE Undergraduate Research Conference and the Richard Tapia Celebration of Diversity in Computing Conference. NSF funding is also used for students to visit graduate programs. During the 2008-09 academic year, 50 students were sponsored by the LSAMP travel program. The goal of the Student Travel Program is to increase the number of students who are attending professional conferences and presenting research.

### **LSAMP Scholarship Program: Phases I and II**

During Phases I and II, UMCP LSAMP offered scholarships to students in STEM fields. In return for receiving the scholarship, recipients participated in service learning opportunities that promoted the recruitment and success of underserved populations (African American, Hispanic American, and Native American) in STEM. Many students who participated in the Bridge Program and the Math Bridge Program were also members of the LSAMP Scholarship Program, however, all current engineering, computer science, math, and physical science students were eligible to apply. Each year, participants in the LSAMP Scholarship Program completed a total of approximately 900 service learning hours while assisting with campus recruitment and outreach activities such as mentoring to high school students, making telephone calls to STEM prospective students, participating in hands-on science and math activities with pre-college students, and holding positions as officers in student organizations.

### **Math Bridge Program: Phase II**

Math Bridge was a year round program (fall and spring semester) designed to reinforce critical mathematical concepts in order for students to be successful in Calculus courses, which are the foundations for STEM disciplines. Through Math Bridge's supplemental instruction course, students worked with an instructor and undergraduate tutors to enhance their mathematical skills. Additional activities assisted students in defining their major and career interests. In addition to earning additional credits, students received textbook scholarships. Textbook scholarships were also offered for the spring semester for students who successfully completed Pre-calculus courses and registered for Calculus. Math Bridge was highly successful in recruiting past participants to work as tutors for the new students. By providing tutors who have been through the program, participants were able to receive first-hand knowledge about how to prepare for Math courses and succeed in STEM majors from their peers. In addition to course instruction, students participated in academic success workshops that helped to strengthen their study skills and provide guidance in managing their time and stress.

### **LSAMP End of the Year Student Awards Dinner: Phase II**

In 2002, the LSAMP End of the Year Student Awards Dinner was created to honor students for academic excellence and participation in undergraduate research, university special programs, leadership positions and service learning activities.

### **Summer Bridge Undergraduate Mentor Program: Phases II and III**

The Undergraduate Mentor Program is designed to provide students a summer internship as supplemental instructors for the new class of Bridge students. While interning, mentors also share first-hand knowledge on successfully preparing for Math courses and STEM majors with their peers.