ALLIANCE PARTNERS: Clark Atlanta University (Lead Institution); Atlanta Metropolitan State College; Georgia State University; J. F. Drake State Community and Technical College; Lawson State Community College; Morehouse College; Paine College; Spelman College; and University of West Georgia.
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EXECUTIVE SUMMARY
As the nation seeks to secure its place as the global leader in science and technology, President Barack Obama has articulated a clear priority for STEM education: within a decade, American students must "move from the middle to the top of the pack in science and math." President Obama also stated, "Reaffirming and strengthening America's role as the world's engine of scientific discovery and technological innovation is essential to meeting the challenges of this century. That's why I am committed to making the improvement of STEM education over the next decade a national priority." As we mobilize for the future, the Georgia Alabama Louis Stokes Alliance for Minority Participation (GA AL LSAMP) program, led by Clark Atlanta University (CAU), has been serving effectively as premier program to address this challenge. The GA AL LSAMP program is focused on student retention, development, research exposure and graduation, since its inception in 1997. In addition to this focus, the Georgia Alliance cultivates faculty development and curriculum improvement. Since its inception there have been nearly 1600 scholar awards granted by the GA AL LSAMP program. The scholars have been actively engaged in STEM research at the community college, undergraduate, graduate, doctoral, and research career level. The nine partner institutions in the Alliance have been highly committed to the LSAMP mission and continue to work toward the institutionalization of the LSAMP model on each partner campus. Our Alliance partners are cognizant that now more than ever, it is crucial that we continue to mobilize all resources available to increase the quality and quantity of underrepresented minorities in the pipeline who will augment the STEM workforce of the future.

Our scholars approach their career and research opportunities with greater confidence as a result of the presence of the LSAMP program on their campuses. In addition to participating in LSAMP activities during the academic year and external internships in the summer, our scholars have also benefited from the Summer Research Explorer Program (SREP). This program was created during the restructuring of the GA LSAMP in 2009. The Georgia Alabama Alliance is strengthened by the fact that each of the Presidents/Provosts in the GA AL LSAMP Governing Board includes student-centered academic and career readiness in their institution's strategic plan. The LSAMP campus coordinators know they have the Governing Board's continued support as the team advances forward in stimulating the minds of the next generation of the nations' leaders in STEM research. Because of this support, they have enthusiastically invested quality time beyond their normal duties. The time and effort put in by all involved in the program is indeed yielding high dividends. In a sample of 450 students surveyed recently, it was found that over 62% of the scholars who have completed a STEM baccalaureate degree are currently attending STEM graduate programs, professional schools or are working in STEM fields.

The GA AL LSAMP model continues to be one of the most effective programs for increasing the quality and quantity of underrepresented minorities in STEM fields in Georgia, the Southeast, and around the country. Our students have shown that they can produce and compete at the highest level of excellence in the country.

INTRODUCTION
The GA AL LSAMP program is one of several LSAMP projects in the United States and its possessions. Each of these individual projects is managed by the national LSAMP program that is headquartered in Washington, DC. The national LSAMP program exists to assist undergraduate science, technology, engineering and mathematics (STEM) students to succeed in their undergraduate education, gain acceptance into a quality STEM graduate program and maintain contact after entering their working careers. Individual LSAMP projects are organized according to the LSAMP model. The LSAMP model is based on Tinto’s philosophy of advancement through faculty mentoring, research exposure, peer study groups, conferences, career awareness, tutoring and summer academic enrichment.

GA AL LSAMP student participants who receive financial support from the project are known as LSAMP level I students. Level II students are those who are impacted by the project but do not receive direct financial support. Level I scholars participate in summer and academic-year research projects, tutor their peers, mentor and serve as role models for middle school and high school students, prepare for the GRE
HISTORY
The GA AL LSAMP program, formerly known as the Georgia-United Negro College Fund Alliance for Minority Participation (GA-UNCF AMP), began in 1997 with a focus on promoting student-centered STEM instruction among its members. The Alliance was initially established with seven partner institutions: Atlanta Metropolitan State College (AMSC, community college), Clark Atlanta University (CAU - Lead institution/HBCU), Georgia State University (GSU), Morehouse College (MC, predominantly male/HBCU), Morris Brown College (HBCU), Paine College (PC, HBCU), and Spelman College (SC, predominantly female/HBCU). In 2001 and 2009, the Alliance underwent restructuring, after losing two of its partner institutions. To strategically position itself to extend its impact, the Alliance underwent further restructuring in 2013 during which it regained one and also added three partners, namely Spelman College (rejoined), J. F. Drake State Community and Technical College (JFDSC, Alabama), Lawson State Community College (LSCC, Alabama), and University of West Georgia (UWG). As a result, the Alliance continues to strongly impact the nation’s minority STEM pool despite a struggling U.S. economy. New strategies included the implementation of workshops on teaching and learning for LSAMP faculty, revision of curricula in undergraduate STEM courses, and faculty instruction in specialized pedagogical skills such as classroom multimedia presentations and expanded usage of computers in the classroom and laboratories.

The second phase of the project began in 2005 as the GA LSAMP, and the current phase commenced in 2013 as the GA AL LSAMP which included the expansion to nine institutions, including two community colleges in the state of Alabama. Project emphasis shifted from instruction and faculty development to individual scholar progression towards graduation with a STEM baccalaureate degree. Faculty workshops and curriculum revisions continued during this phase, but greater emphasis was placed on scholar career development, integration into the scientific research community, participation in faculty research activities, summer research experiences, and presentation of research results at professional conferences and the GA AL LSAMP bi-annual scholar workshop and research symposium.

Since its beginning 18 years ago, the Georgia Alliance has undergone some changes but has never wavered from its goal to increase the number of minorities in the area of STEM research. The quality of research development within the Georgia Alliance has been superb, as shown by the number of students who have won awards for their research at both internal symposia and conferences external to the LSAMP community. Our Alliance students have won first and second place STEM awards at the GA AL LSAMP Annual Research Symposium and other conferences, such as the Annual Biomedical Research Conference for Minority Students and the Annual Emerging Researchers National Conference. They have published their research (including featured cover articles) in top international scientific journals.

The GA AL Alliance has supported over 800 STEM scholars during the last 18 years. The majority of these students participated for multiple years, so the sum of the number of scholars supported year-by-year (a total of approximately 1600, approximately 88 per year) exceeds this value. The Alliance has impacted multiple thousands of STEM majors through curriculum revisions in undergraduate STEM and general education science courses. The GA AL LSAMP, made up of nine institutions, boasts of having three of the strongest HBCUs in the country, and has been able to produce some of our country's leading scientists.
ACTIVITIES OVERVIEW

Although the GA AL LSAMP program is active in all aspects of the LSAMP model, it stands apart from other alliances in three areas: (1) Annual Scholar Research Symposium, (2) annual scholar professional development workshops and successful summer bridge/research training programs, and (3) scientific field trips. The Annual Scholar Research Symposium takes place in spring semester and brings together LSAMP scholars and faculty from the GA AL LSAMP and Atlanta University Center. Each symposium allows scholars to present their research, and receive awards for outstanding work. The professional development workshop allows scholars to participate in a wide range of career development activities. The Summer Research Explorer Program (SREP) recruits students from the GA AL LSAMP Alliance and local high schools. The recruited scholars enter the program either to prepare for research during the academic year or to enhance their research abilities. The five-week program serves as a bridge to the four-year partner institutions by integrating the scholars with their four-year counterparts and challenging them with projects designed to prepare them for success in university-level research laboratories. The scientific field trips are conducted in collaboration with students from freshmen and graduate level geoscience courses taught at the lead institution. The scholars serve as mentors for the undergraduate students and as colleagues for the teachers who are enrolled in the graduate Earth System Science course. The field trips serve as a less formal way to integrate scholars into both the STEM academic and research communities. The focus of these trips is earth, space, and atmospheric sciences. SREP scholars network during the summer field trips with undergraduate and high school students from other STEM programs, such as Clark Atlanta University's PACE (Post-Freshman Academic Consolidation and Enhancement Project, sponsored by the National Science Foundation's HBCU-UP Program), Summer High School Academic Bridge, and the U.S. Department of Transportation's Summer Transportation Institute, as well as students and teachers from community activities such as Atlanta's SMART (Science, Mathematics, and Research Training) Academy are also mentored by the SRE scholars.

BEST PRACTICES

The GA AL LSAMP project operates through five unifying themes: (1) recruitment; (2) progression to the STEM baccalaureate; (3) scholar research; (4) placement in STEM graduate programs or the STEM workforce; and (5) professional development of students, faculty and staff. The recruitment activities include high school students and STEM students enrolled at participating LSAMP institutions. LSAMP faculty and scholars visit local high schools to offer scientific demonstrations, conduct classroom experiments, tutor, and collect contact information from students who would like to receive literature about STEM programs at Alliance institutions. Faculty, staff and scholars also participate in local science fairs, high school bridge programs and outreach activities at local centers of informal learning. Progression to the baccalaureate incorporates intervention, advisement, mentoring, workshops, field trips, and other activities designed to increase STEM student retention. Among these activities is the Summer Research Explorer program that provides research training opportunities for community college and four-year college students.

Scholar research takes place during the academic year when students collaborate with faculty mentors in funded and non-funded research projects. The GA AL LSAMP assists these scholars to secure summer internships off campus, on campus, or in the Summer Research Explorer program. For reporting year 2014, a total of 143 scholars were involved in research or research training, and over 70 GA AL LSAMP scholars took advantage of summer research internships or research training experiences. The numbers were to 157 and 63 respectively for reporting year 2015. All LSAMP scholars either participate in research projects or receive research exposure in other ways.

Graduate placement offices on each of the four-year campuses, faculty networking, and LSAMP mentors work together to place graduates in STEM graduate programs. Career centers help other graduates find professional STEM employment. Professional development for students, faculty, and staff is available at annual conferences, meetings, workshops, and seminars. Faculty mentors often accompany their scholars to these activities. The GA AL LSAMP schedules a research symposium every spring semester. More than
143 scholars participated in each symposium in 2013 and 2014. Scholars also travel to neighboring LSAMP conferences to network and present their research.

ALLIANCE OUTCOMES AND IMPACT

Leveraging

The presence of the GA AL LSAMP program on the campuses of our original Alliance partners (prior to 2013) have had significant direct and indirect impact on attracting millions in additional funding to further STEM initiatives for minority students, several examples of which are highlighted below.

For FY 2014, the University System of Georgia awarded Georgia State University $321,378, while GSU added $51,964, totaling $373,702 to enhance its undergraduate students STEM programs. Further, GSU has been awarded the following external grants to strengthen its STEM programs for underrepresented students: The GSU SSS-STEM (Science, Technology, Engineering, and Mathematics) Center for Excellence (Department of Education; $1.1 M; 9/1/2010–8/31/2015) supports STEM majors who are first-generation college students who demonstrate financial need and/or have documented disabilities; BP-ENDURE-Atlanta: Engaging Undergraduates in Neuroscience Research project (NIH 1R25GM097636-01: $1.7 M; 2011–2016) forms a new Neuroscience Education and Training program (NET/work) for undergraduate students from groups currently underrepresented in the sciences. The program is led by Georgia State University in partnership with Agnes Scott College, Emory University, and Spelman College. In an effort to institutionalize the LSAMP and other STEM programs, Clark Atlanta University has acquired other funding as follows. In 2013, Clark Atlanta University acquired funds ($1.5 M, DOE Title III) to establish the Center for Innovation and Entrepreneurship and a planning grant ($100,000, Mellon Foundation) to establish the Center for Undergraduate Research and Creativity. Both centers, while targeting the entire student body, have a high concentration of STEM students involved. Additionally, the receipt of $494,000 from the Andrew W. Mellon Foundation was awarded to fund strategic activities in support of the University’s focus on undergraduate research, a key aspect in the University's efforts to implement comprehensive curricular reform. In recent years, Clark Atlanta University was also awarded NSF HBCU-UP and NIH RISE grants to expand its STEM initiatives.

In 2001, Spelman College completed construction of the $34 million Albro-Falconer-Manley Science Center, a 154,000 square foot training facility equipped with state-of-the-art equipment and facilities to support comprehensive STEM research and training. Through the LSAMP Program, Spelman College established the STEM Ambassadors Program to play a critical role in identifying and creating special research projects geared towards exposing K-12 students to the breadth and depth of STEM fields and careers, while simultaneously solidifying the LSAMP Scholars’ STEM interests and academic success. Sixteen (16) recent Spelman LSAMP Scholars from the seven STEM disciplines (biology, chemistry, CIS, dual degree engineering, environmental science and studies, mathematics, and physics) are the core of the STEM Ambassadors Program. Their research and outcomes have been used to establish: i) a STEM outreach curriculum which other student ambassadors and volunteers will utilize in partnering K-12 schools and ii) a model for student mentoring and volunteerism which addresses the nation's STEM deficit.

Spelman College also leveraged LSAMP funding to acquire three additional awards from Hyundai Motor America, Lockheed Martin, and Georgia Space Grant Consortium, totaling $22,500 for the 2014-15 academic year.
Between 2012 and 2015, Spelman College has further acquired over $6.8 million in funding to support and expand its STEM programs. Among these programs are the following: Applying a Flipped Classroom Model in Introductory Biology; Boeing 2015 Scholarships & Spelbots; Broadening Participation in Data Mining; STEM Scholarship Program; HHMI Program; Clare Booth Luce; The N.O.W. Project: Novel Opportunities for Women in the Field of Behavioral Health; Georgia Space Grant STEM Scholarship; Spelman RISE: The Next Generation of Black Women Scientists; The Leadership Alliance Innovative Programs to Enhance Research Training (TLA-IPERT); Subcontract: Coalition for Research and Education Enhancement in Materials (CREEM); Enhancing Global Research and Teaching in STEM at Spelman College (G-STEM); TUES: Long Term Transdisciplinary Project-Based Instruction in Biology and Physics; HBCU-UP (TIP): Targeting Success Among First and Second Year Chemistry Majors; S-STEM: Women in Science and Engineering Undergraduate Scholars Program (WiSE UP); HBCU-UP: Course-based Undergraduate Research as a Mechanism of Student Engagement and Retention (CURE); Noyce: Capacity Building: Spelman’s STEM Teacher Education Pipeline (SSTEP); Problem-based Learning Modules for Systems Biology; HBCU-UP: TIP: Genes and Genealogy in the Introductory Biology Curriculum; Improving Undergraduate Retention in Science via Personalization and Interdisciplinary, conferences: A Strategic Planning Workshop to Explore Quantitative Biology as a Vehicle for Broadening Participation to be held at Spelman College; and Spelman Summer Undergraduate Research Program.

In 2011, Atlanta Metropolitan State College launched a new Academic Science Building to serve the increasing number of STEM majors. The state-of-the-art facility has nearly 17,000 square feet of general classroom space, 15,000 square feet of laboratory space, 8,000 square feet of general purpose/assembly space, and 10,000 square feet of administrative space. The $12 million facility was funded by the Board of Regents of the University System of Georgia.

In 2014 through 2015, Paine College received a $60,000 sub-award from Savannah River Nuclear Solutions (SRNS) through FIU for STEM students to be trained in the science of high level nuclear waste management. Paine was awarded a $200,000 grant from The National Nuclear Security Administration Consortium towards “K-20 s in Cybersecurity for STEM Workforce Pipeline Development”. Paine was also awarded the NSF HBCU-UP Research Initiation Award ($400,000) and NSF Broader Impacts Supplemental Award ($180,000) for STEM student research and training initiatives. The primary objectives of these awards include strengthening student test scores (i.e., GRE, MCAT, and overall GPA) and providing the resources (speakers, workshops, visits) to increase and ease the transition from undergraduate to graduate/professional school. PPSP also functions to support student research by using funds to obtain supplies and enhance research infrastructure.

In 2014, Morehouse College was awarded $447,000, a two–year grant by the Department of Energy for “STEM Scholastic and Research Support for a 21st Century Workforce”. In 2015, they were awarded ($250,000) a three-year grant from NSF for Freshman Intention and Retention in STEM through Scientific Literacy (FIRST SL). In 2015, they were awarded another grant ($1.2 million) for Innovative Science Technology Engineering and Mathematics Strategic Project (ITEST) for STEM majors.
**Economic Impact Locally and Across North Georgia**

The GA AL LSAMP institutions have made a significant impact on their local and state economies. The impact is felt not only by the income and sales produced, but also from contributions made by graduates who secure STEM employment in Atlanta and Augusta (Georgia) and Birmingham and Huntsville (Alabama). The Alliance creates national economic impact through graduates employed in the U.S. outside of Georgia and Alabama. Based on internal analysis and data from the University System of Georgia Institutions Economic Impact Report for FY 2014, and using the model therein, for the other institutions, the impact of Georgia Alabama Alliance institutions were measured in terms of output, value added, labor income, and employment. The combined impact of Alliance institutions in FY 2014 is detailed in Table 1 and amounts to a total monetary value of $6,381,409,023 as well as an employment value of 28108 full and part-time jobs. The breakdown of this impact on the local and state economies amounts to almost $2.9 billion in output (sales), more than $2.0 billion in value added (gross regional product), and more than $1.4 billion in labor income.

Based on the similar multipliers utilized above, the $9 million of funding received by the GA AL LSAMP since inception in 1997 through reporting year 2015, resulted in $12.6 million in output impact, 8.8 million in value added and 6.2 million in labor income across both states of Georgia and Alabama, but predominantly in Georgia, the state of the initial partner institutions.

**Table 1. Economic Impact of GA AL LSAMP Institutions**

<table>
<thead>
<tr>
<th>Alliance Institutions</th>
<th>Output Impact</th>
<th>Value Added</th>
<th>Labor Income</th>
<th>Full and Part-time Jobs</th>
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<tr>
<td>Atlanta Metropolitan State College</td>
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<td>Clark Atlanta University</td>
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<td>$127,708,507</td>
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<td>$1,649,342,111</td>
<td>$1,136,721,146</td>
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<td>J.F. Drake State Community &amp; Technical College</td>
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<td>Lawson State Community College</td>
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<td>Morehouse College</td>
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<td>Paine College</td>
<td>$48,943,630</td>
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<td>Spelman College</td>
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<td>University of West Georgia</td>
<td>$463,152,034</td>
<td>$312,554,435</td>
<td>$215,453,195</td>
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<tr>
<td><strong>Total</strong></td>
<td>$2,902,106,436</td>
<td>$1,998,069,297</td>
<td>$1,400,904,672</td>
<td>28108</td>
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Source: 1University System of Georgia 2014 information: Selig Center for Economic Growth, Terry College of Business, University of Georgia (www.selig.uga.edu), March 2015 for state institutions, and 2Integrated Postsecondary Education Data System - IPEDS, nces.ed.gov/ipeds.

**Enrollment**

As can be seen in Figure 1, the GA-AL LSAMP program has maintained a fairly constant undergraduate enrollment since its first year in 1998. The approximately 1.5 fold increase in total enrollment from reporting year 2013 to reporting year 2014 reflects the expansion of the Alliance from five to nine institutions.

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**Georgia Alabama LSAMP Impact Report**
Figure 2 shows that prior to expanding the Alliance, the minority undergraduate enrollment increased from 14,716 to 18,899 in 2010, thereafter averaging about 17,350 up to 2013, a 15% increase. The vast increase to 28,628 in 2014 is reflective not only of the expanded Alliance but also due to an increase in minority enrollment at some institutions, such as Georgia State University.

Figure 3 shows the Alliance STEM enrollment during Phases I, II, and III of the GA AL LSAMP program, and Figure 4 shows the Alliance minority STEM enrollment during these phases. The overall trend in Alliance minority STEM enrollment correlated with that of Alliance STEM enrollment. STEM students enrollment increased between 1998 and 2002 from 5,064 to 8,577. The decrease after 2002 is attributed to a reduction in the number of Alliance partners. A recent resurgence in STEM enrollment (from 4,847 to 5,905) with the smaller number of Alliance partners occurred between 2011 and 2013, prior to the expansion of the Alliance. The large increase in 2014 is reflective mainly of the expansion of the Alliance.

Alliance minority STEM enrollment grew from 3,205 to 5,691 during the period 1999 to 2002 (Figure 4). The reasons for the drop in STEM minority enrollment in 2010 and 2011 were attributed mainly to a weak national economy and high unemployment rate in Georgia. The Alliance draws students from across the United States, with the larger fraction originating in Georgia. A gradual recovery in STEM minority enrollment can be observed beyond 2011, with the number restoring in 2013 to its pre-Alliance expansion peak of 3,654. Further, the significant increase in 2014 and 2015 to 5,474 was due not only to an expansion in the number of schools, but also to a gradual increase in STEM enrollment at some of the institutions.
The annual number of Alliance scholars supported by the GA AL LSAMP project is shown in Figure 5 to average 85 for the period 1998 to 2010. The number of Alliance scholars has increased from 62 at inception (1997) to greater than 122 in 2013-2014 reporting year, a 60% overall increase and an average increase of 3.3% per year (Figure 5). The GA AL LSAMP scholars’ enrollment has fluctuated over the period for various reasons. A decrease occurred in 2005 when Phase II of the program began and the number of the GA AL LSAMP supported positions was reduced from Phase I value. A second decrease occurred in 2009 when the Alliance underwent a temporary funding lapse and was reorganized to provide enhanced opportunities for scholars. The program recovered in 2010 and further expanded its scope in 2014 reporting year.

**Graduation Rate**

As shown in Figure 6, GA AL LSAMP scholars are awarded B.S. degrees at a rate averaging 27% and peaking at 47% of their enrollment in the program, compared to Alliance minority STEM students who earn B.S. degrees at an average rate of approximately 8% of their enrollment. Though the number of annual STEM graduates has fluctuated with time (Figure 7), over 14,954 STEM bachelor degrees were awarded by Alliance partner institutions since inception to reporting year 2014.
Since inception to 2013, over 6,988 minority STEM bachelor degrees were awarded by Alliance partner institutions and this amount increased to 7,537 by 2014, the first reporting year of the expanded Alliance (Figure 8). With the new Alliance in place, the number of STEM minority degrees awarded over two years of reporting (2014 and 2015) have increased by 22%. Underlying this data is a nationally significant milestone. As of reporting year 2014, our Alliance partner, Georgia State University, ranks 1st in the United States among not-for-profit institutions in awarding bachelor’s degrees to African-American students. Georgia State University ranks 1st in graduating African American students in the Biological and Biomedical Sciences and 3rd in graduation of African American students in the Physical Sciences (Diverse: Issues in Higher Education, 2014).

Figure 7. Alliance STEM B.S. Degrees Awarded.

Figure 8. Minority STEM B.S. Degrees Awarded by Alliance Partner Institutions.
The GA AL LSAMP program scholars were awarded 48 STEM bachelor degrees in 2015 compared to 4 in 1998, a twelve-fold increase (Figure 9). Though the number of GA AL LSAMP scholar degrees awarded has fluctuated over time, in correlation with the total STEM bachelor degrees, a cumulative total of 400 STEM bachelor degrees were awarded to our scholars.

**Retention**

The retention rate for GA AL LSAMP Alliance STEM scholars outpaces that of the general undergraduate STEM student population (Figure 10). During fall 2009 to fall 2010, the Alliance retention rate was 74% while the retention rate for Alliance STEM majors was 66%. A significant increase in Alliance STEM scholars’ retention rate was achieved for the period fall 2013 to fall 2014, during which the rate was 85%, compared to 68% for Alliance STEM majors. The retention rate is the percentage of (fall enrolled) first year students who return the following fall semester.

**Figure 9. GA AL LSAMP Program Scholars STEM B. S. Degrees Awarded.**

**Figure 10. Retention Rate of Alliance LSAMP STEM Scholars vs. Alliance STEM Majors.**
**After Graduation**

In 2011 and 2015 the GA AL LSAMP conducted surveys of 483 from 800 past and current LSAMP scholars. This included 333 of the 556 scholars in 2011 and later 150 of the more recent 244 scholars in 2015. Since program inception, more than 400 B.S. STEM degrees have been earned by GA AL LSAMP scholars (Figure 9). Among the survey respondents, more than 256 have completed STEM baccalaureate degrees and more than 93% either completed the same or actively pursuing a B.S. More than 63% of those who have completed STEM baccalaureate degrees have attended STEM graduate programs, professional schools or joined the STEM workforce. The breakdown is shown in Table 2. The survey indicates that 42% of scholars who completed a STEM baccalaureate degree have either completed a STEM graduate program or are making progress towards completion of a STEM graduate degree. The survey indicated that of the 58 (two-year to four-year colleges) transfer scholar respondents, approximately 30% (17) transferred to institutions of the Georgia Alabama Alliance to pursue B.S. degrees.

In 2008, Spelman College was ranked by the NSF as the No. 2 undergraduate institution from which Black Ph.Ds. in STEM disciplines originate.

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<tr>
<th>TABLE 2. POSTBACCALAUREATE STATUS OF ALLIANCE SCHOLARS</th>
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<td>Post Baccalaureate</td>
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<tr>
<td>Completed STEM M.S. Degree</td>
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<tr>
<td>B.S. Graduates who have Entered STEM workforce</td>
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<td>M.S. Graduates who entered STEM Workforce</td>
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<td>Ph.D. Graduates who have Entered STEM workforce</td>
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<tr>
<td>Professional School Graduated who have Entered STEM Workforce</td>
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**DISSEMINATION AND SCHOLAR DEVELOPMENT**

The GA AL LSAMP makes great effort to disseminate its mission, activities, and successes to its stakeholders. GA AL LSAMP coordinators, faculty members, LSAMP alumni, scholars, and administrators work as a team to communicate events and opportunities within the Alliance community. The GA AL LSAMP utilizes Facebook the GA AL LSAMP URL, clubs, meetings, email, and voicemail to disseminate information on upcoming symposia, workshops, seminars, training and research opportunities, and special events.
In general, announcements are made across the campuses of all of the Alliance institutions regarding the fall workshop, Annual Spring Research Symposium, and the Summer Research Explorer Program. Our GA-AL LSAMP website (http://www.cau.edu/research-sponsored-programs/ga-al-lsamp/index.html) provides an overview of the Alliance research activities, presentations, and abstracts of presentations. Our scholars are the most effective ambassadors for these dissemination activities, and we encourage them to attend professional and academic development seminars, workshops, and conferences. LSAMP scholars have made several oral and poster presentations at regional and national scientific meetings. Brochures about the LSAMP program are distributed to students during career and recruiting fairs, and during registration at all institutions.

Spelman’s “STEM Outreach Activity Guide: 2014-2015 Academic Year” document, with the K-12 demonstration activities developed by the LSAMP scholars (as members of the Spelman STEM Ambassadors group) has been uploaded to the STEM Education Outreach website (http://www.spelmanstem.org). In addition, Spelman LSAMP scholars hosted science fair exhibits and demonstrations at the Atlanta Science Fair in March 2015, Atlanta, GA.

The 2015 Annual GA AL LSAMP Symposium was profiled by University of West Georgia at http://www.uwgperspective.com/cosm/stories/lsamp.html. Lawson State Community College results have been shared via world wide web, (www.lawsonstate.edu/stem/ga-al_lsamp.aspx) and as inter department and college updates (newsletter and flyers), conference presentations (Alabama Community College Association, Emerging Researchers Conference, HBCU-UP/CREST PI/PD Meeting (Poster Session) and National Conference on Race and Ethnicity (Presentation), GA-AL LSAMP Fall 2015 Workshop, GA AL LSAMP Spring Symposium, SACSCOC Small College Initiative 2015 (Presentation and Panel Discussion). JF Drake promotes the LSAMP program on its social media sites (Facebook and Instagram), students’ emails, campus media screens, and at College Transfer Fairs. Participation of Alliance scholars in these career enhancing activities is nearly 100 % which indicates recognition of the value of the LSAMP mentoring model.

Scholars, faculty mentors, and staff members of the U.S. House of Representatives attended a showcase on the July 22, 2010, entitled "Poster Session on the Hill". The poster session took place in the Rayburn House Office Building. Representatives from all of the then 41 LSAMP alliances were invited to present their achievements to members of the U.S. House of Representatives and their staff. Georgia Alliance and their faculty mentors presented their summer research to invited faculty and congressional staff.
GA AL LSAMP scholars and advisors benefit from collaborations with laboratories and academic institutions, both national and international. Funding for scholar and advisor/mentor activities comes from institutions and programs which include: Pace University, NASA CREST-ME, NASA, the University System of Georgia, the National Science Foundation, the National Institutes of Health, Howard Hughes Medical Institute (HHMI Biotech Scholars Program), the Department of Defense, the Department of Energy, HBCU-UP, MBRS-Rise, Hopps Research Scholars Program (DOD), and the Naval Research Laboratory.

Research collaborators and trainers include, National Science Foundation, National Institutes of Health, Georgia Institute of Technology, Harvard University, Louisiana State University, Emory University, Morehouse School of Medicine, Morehouse Research Institute, Universidad de Federal de Sao Carlos in Brazil, Texas A&M University, UC-Berkley, the University of Louisville, Indiana University, University of Maryland, University of Iowa, Budapest Semester in Mathematics (Hungary), Reed College, Brown University, Georgia Health Science University, Department of Energy, University of Alabama (Birmingham), University of Nebraska, and the Savannah River Site. Recruitment and development collaborations took place with the Educational Advancement Alliance, Inc; Florida A&M University; and the Florida-Georgia and Peach State LSAMP projects.

LSAMP scholars also publish their research in leading international scientific journals. For example LSAMP scholar and chemistry major, Esmeralda Castaneda, a 2014 graduate of Clark Atlanta University, coauthored an article entitled “Complex three-dimensional lanthanide metal–organic frameworks with variable coordination spheres based on pyrazine-2,3,5,6-tetracarboxylate” that was published as a featured front cover in the August 2015 issue of the high impact factor, Royal society of Chemistry Journal, CrystEngCommun.

INSTITUTION HIGHLIGHTS AND SCHOLAR PROFILES

Clark Atlanta University is a private co-educational institution of predominately Black American heritage, formed in July 1, 1888 by the consolidation of Atlanta University (founded in 1865) and Clark College (founded in 1869). CAU offers undergraduate, graduate, and professional degrees, as well as non-degree programs to students of diverse racial, ethnic, and socioeconomic backgrounds. The current undergraduate enrollment is approximately 99% Black. CAU is one of only two private historically Black comprehensive universities in this country that awards the doctorate degree in four or more disciplines. In the sciences, the doctorate is offered in Biology and Chemistry.
As an Alliance leader, CAU has developed a substantial number of activities for the development of curriculum, students, faculty, and outreach that involves all the Alliance partners. Activities which cross over Alliance boundaries include pre-college STEM programs, summer bridge and research programs, and science symposia that position LSAMP students from within and outside the Alliance an opportunity to present papers and posters that are based on their academic-year and summer research experiences. Students at CAU conduct research in biology, chemistry, computational science, engineering, physics, mathematics, and geosciences disciplines. In 2004, construction was completed on a $6 million, 13,000 square-feet, three-level Environmental Science Research and Technology Center Annex. This provided additional space for research labs in biology, chemistry, physics, computer science, and environmental science.

**Vanessa Adams** is a CAU graduate who earned her B.S. degree in Biological Sciences and is currently in a MPH program at Argosy University. She is employed in the STEM workforce as a Research Technician. She is also a Tom Joyner scholarship recipient and volunteer for Habitat for Humanity International (2008-2010); Her past research experience included conducting various tests, gathering, interpreting, and recording research data, operating and maintaining computer and lab equipment, analyzing specific substances, research, quality control, ordering inventory, and shipping samples.

**Latayia Aaron** is a CAU graduate who is currently enrolled in a Ph.D. program at Meharry Medical College. As an LSAMP scholar, Latayia studied the Localization of the Aryl Hydrocarbon Receptor in LNCaP and C4-2 Prostate Cancer Cell Lines after Exposure to Dioxin. She was also an REU intern at the University of Nebraska Medical Center where she studied the Effects of TGFbeta and PGE2 on Cell Signaling in Bovine Corpus Luteal Fibroblasts.

**Lynnise Bagley** is a CAU graduate who earned her B.S. degree in Biological Sciences. She previously worked under a professional Microbiologist where she planned and conducted various research projects and assisted in training new lab assistants. After graduation, Lynnise entered the STEM workforce (2013) as a Clinical Allergy Specialist through United Allergy Services. She has recently applied to a Physician Assistant Master’s program.

**Summer Branch** is a Biological Sciences major and research trainee studying Ahr for Anti-apoptotic Effects of Curcumin in the Center for Cancer Research and Therapeutic Development. Summer plans to attend graduate school after earning her B.S. degree.

**Brianna Brantley** is a graduating Biological Sciences major and LSAMP research trainee who analyzes Non-synonymous Single Nucleotide Polymorphisms in and around the ID4 Gene Locus. Brianna was also a participant in the 2014

**Cyerra Byse** is a Biological Sciences major and 2015 Summer Research Explorer participant. As a research trainee, she analyzes Snail-expressing Prostate Cancer Cells Attracted to Higher Bone Density in vitro in the Center for Cancer Research and Therapeutic Development.
Summer Research Explorer Program. She plans to attend graduate school to major in Physical Therapy. Brianna has presented research at the Annual Biomedical Research Conference for Minority Students (ABRCMS) and was accepted as a returning summer intern at Clark Atlanta University’s Center for Cancer Research and Therapeutic Development.

**Esmeralda Castaneda** is a Chemistry graduate who earned her B.S. degree in 2014. She plans to enroll in graduate school in 2016. As a research trainee, she studied Synthesis and Applications of Mesoporous Materials and Metal Organic Framework Structures. Esmeralda was a co-author and her research (Complex Three-dimensional Lanthanide Metal Organic Frameworks with Variable Coordination Spheres Based on Pyrazine-2,3,5,6-tetracarboxylate) was published in the August 2015 issue of the Royal Society of Chemistry Journal, CrystEngComm. She has also made oral presentations at scientific research conferences and placed 1st in the Chemistry oral competition at the 2014 GA AL LSAMP Annual Symposium. She is a member of Alpha Kappa Mu Honor Society and Phi Eta Sigma National Honor Society. Esmeralda plans to enroll in graduate program in fall 2016.

**Alvin Evans** is a graduate and past LSAMP research trainee who earned his B.S degree in Chemistry (2014). Alvin is currently employed at Coca Cola in Atlanta, GA. as a Quality Assurance Laboratory Technician. Alvin’s research involved Modifications of Carbon Nanotubes.

**Kirstie Grant** is a Biological Sciences graduate who earned her B.S. degree in 2015 and she is currently enrolled at Howard University in a Master’s program. She was a research trainee and studied Curcumin Induced Apoptosis in Prostate Cancer Cells.

**Cassandra Campbell** is a first year sophomore and Computer and Information Science major who studied Exponential Functions in the Department of Mathematics.

**Charisma D. Edwards** received her Ph.D. in Electrical Engineering from Louisiana State University in Baton Rouge, Louisiana. She studied Digital Signal Processing with a focus in Neurological Signal Classification which was inspired by her work in Neuroimaging at Emory University in Atlanta, Georgia. Dr. Edwards has gained recognition as a leader of the Black Graduate and Professional Student Association at LSU and was recently nominated for Graduate Student Leader of the Year. This former GA AL LSAMP scholar earned her B.S. degree in Engineering from Clark Atlanta University in 2004 and her M.S. degree in Electrical Engineering from LSU in 2007. She is currently a Delivery Consultant, Microsoft - Americas Cloud Services.

**Yanique Givans** is a Biological Sciences graduate who earned her B.S. degree in 2015. She was an LSAMP research trainee and studied Cellular Localization of ZIC Family Member 2 (ZIC2) in the Center for Cancer Research and Therapeutic Development.

**Rochester Gray** earned his B.S. degree in Chemistry (2012). This former GA AL LSAMP scholar, now a Ph.D. candidate in the Department of Chemistry and Biochemistry at Florida State University, is currently studying “The Synthesis of Panchromatic Dye Solar-Cell Sensitizers”.
Janice Grier is a 2014 Summer Research Explorer and Chemistry major who studies Synthesis of Novel Chelating Complexes with N’N-Bidentate Ligands for Carbon Nanotube Modification. During the academic year, she researched the Development of New Metal Complexes for Antitumor Applications.

Joshua Hartshorn is a graduate and Computer Information Science major who earned his B.S. degree in 2015. He was an LSAMP research trainee and studied E-Healthcare in-service Oriented Architecture. He is presently in training at IBM and will later attend graduate school.

Dinushka Herath is a sophomore Chemistry and Chemical Engineering major. He is currently an LSAMP research trainee studying Computational Modeling and was a summer intern in the Blue Waters Student program. His extracurricular activities include Sargent at Arms - Toastmasters International National Society of Black Engineers Dual-Degree Engineering Program.

Kymberli Hill is a senior Chemistry major studying Synthesis of Inorganic-Organic Sorbents for the Removal of Heavy Metals and Organics from Water. Kymberli also mentors middle school participants in the NSF funded HBCU CARES Mentoring program. Her expected graduation date is spring 2016.

Lishann Ingram is a graduate and Biological Sciences major who earned her B.S. degree in May 2013. Her research involved the study of TGF-β1 and TGF-β3 Enhancing the Secretion of Active Forms of Matrix Metalloproteinase-2 and -9 in Human Prostate Cancer Cells in the Center for Cancer Research and Therapeutic Development. After graduating, Lishann was employed as a Research Assistant Lab Tech in the Biological Sciences Department at Clark Atlanta University. She is currently a 2nd year graduate student at the University of Georgia in the Department of Pharmaceutical and Biomedical Sciences. After graduate school, she plans to work in the government sector such as the FDA and/or seek a faculty position at a research university where her work will focus on pre-clinical or clinical trials for cancer drug discovery.

Ogechi Irondi is an LSAMP Chemistry and Chemical Engineering junior who has plans to attend Georgia Institute of Technology to complete her Ph.D. degree in Chemical/Biomolecular Engineering. In 2015, Ogechi was selected as our LSAMP Scholar Champion and has maintained a 4.00 GPA. She was a returning summer intern at Chevron Oil Corporation as a Process Engineer (June 2015). Ogechi’s research activities includes the Environmental Protection Agency (Wright Patterson Air Force Base), research in the fate of organophosphate chemical warfare agents that can be biodegraded by microorganisms, Uptake and Absorption of Dyes in pHEMA Hydrogels, and she is actively involved in the Engineering Response Organization, National Society of Black Engineers, Chattahoochee Riverkeeper Riverwatch Committee, NOBCChE, Energy Club, and the National Council of Negro Women. Ogechi was also a mentor at Engineering for Kids, John Kennedy Middle School and a volunteer at the YMCA, Trees Atlanta.
Zhané Jackson is a senior Biological Sciences major and LSAMP research trainee studying Carbon Metabolism in Neurospora Crassa. She also mentors middle school participants in the NSF funded HBCU CARES Mentoring program and plans to attend graduate school after earning her B.S. degree (expected graduation spring 2016).

Aujualeek Johnson is a graduate who earned her B.S. degree in Chemistry and plans to enroll at GA Tech University for her LEAN Six Sigma green, yellow and black belts. She entered the STEM workforce at Kemira Chemicals, an international billion dollar water chemistry company based out of Finland, a GHS (Global Harmonization System) Classifier, and a Regulatory Data Specialist, using her chemistry background in chemical nomenclature to develop a global raw material harmonization project for the company where she is still employed.

James Jones was a Chemistry major and LSAMP research trainee (2014). Unfortunately, he was the victim of a senseless homicide and he is remembered not only as an LSAMP scholar but also a devoted mentor to middle school students in the NSF funded HBCU CARES program, the Boys and Girls Club and other programs.

Jasmine Jones is a Biological Sciences major and graduate who earned her B.S. degree in 2015. She is currently enrolled in the M.S. Forensic Medicine program at the Philadelphia College of Osteopathic Medicine. Jasmine’s past research experience includes “Western blot Analysis and Zymography” and “The Role of Transforming Growth Factor Beta 1 and Epidermal Growth Factor (EGF) in Regulation of Cathepsin L Activity in human Prostate Cancer”. Jasmine presented research findings at weekly lab meetings and performed migration and invasion assays. She presented research data at Annual GA-AL LSAMP Scholar Symposia and at 2014 ABRCMS conference.

Kwameka Jones is an LSAMP graduate in Computer and Information Science. Her current status is unavailable.
Ayanna Jones is a Chemistry major (senior) and LSAMP research trainee. Her research study is in Catalysis with PETI 298. After earning her B.S. degree (2016), she plans to attend the Massachusetts Institute of Technology. She was also a summer research intern at Stanford University. Ayanna participates in numerous activities including being an executive board member of the Living Green Club holding the title of Vice President. She is also, a member of the Clark Atlanta University Chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers and the Chemistry Graduate School Prep Club at Spelman College.

Lauchon Lewis is a graduate and Biological Sciences major with a minor in Chemistry. She was an LSAMP research trainee and peer tutor and is presently employed in the STEM field at East Orange General Hospital and Trinitas Regional as a medical technologist. Her tentative start date for graduate school at Rutgers University in MD/Ph.D. program is fall 2017. Lauchon’s past research training was in Attachment of Iron Oxide Nanoparticles to Graphene Nanoribbons.

Vanessa McBride is a Biological Sciences major and LSAMP research trainee studying Vegetable Diets (Phytochemicals) in Cancer Prevention: Effective Targeted Delivery Systems. After earning her B.S. degree, she plans to attend the Morehouse School of Medicine.

Alexandria Lauray is a Biological Sciences major (junior) and LSAMP research trainee. She began her research in August 2014 to study Methods to Decrease Proliferation and Metastasis in Prostate Cancer Cells. Alexandria has presented her research at the GA AL LSAMP Annual Spring Symposium, Peach State LSAMP, ABRCMS, and the University of Nebraska-Lincoln MRSEC Conference for Undergraduate Women in Physical Science. She recently received a travel award to present her research entitled, “The Precise Location of DJ1C in Plant Chloroplast” at the 2016 Emerging Researchers National Conference. After earning her B.S. degree, she plans to apply to the Morehouse School of Medicine.

Laurisa London is a graduate and Biological Sciences major who earned her B.S. degree and Ph.D. (2008). She is presently a Senior Chemist employed at L’Oreal USA. Her extracurricular activities include tutoring pre K-8th graders.

Henry Patterson was an LSAMP research trainee and Physics major who studied Case Studies of Western-Hemisphere Earthquakes. His current status is unavailable.

Ronald McCullough is a Biological Sciences major and LSAMP research trainee in the Center for Cancer Research and Therapeutic Development. Ronald plans to attend graduate school after earning his B.S. degree.
Tony Price, Ph.D. earned his B.S. in Electrical Engineering from Clark Atlanta University in 2004. Dr. Price later earned his Ph.D. Degree and his M.S. degrees both in Electrical Engineering in January 2012 and 2006 respectively from University of South Florida. Dr. Price is currently working at Qorvo. The Detroit native, MI area, where he attended high school and participated in the Project Upward Bound prior to enrolling at Clark Atlanta University. This former GA AL LSAMP scholar was also the recipient of several prestigious fellowship awards, including the NSF Florida-Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP) Bridge to the Doctorate Fellowship, NSF GRFP Fellowship, NSF S-STEM Fellowship, Sloan Minority Graduate Fellowship, and McKnight Doctoral Fellowship. Mr. Price’s research interests are in the area of microwave/RF devices and materials. He was awarded a best student poster award during the 10th Annual IEEE Wireless and Microwave Technology (WAMICON) conference in Clearwater, FL (April 2009). In 2006, he completed an industry research internship with the Aerospace Corporation in El Segundo, California. He has served at USF as a student ambassador, panelist, and mentor during various outreach activities (Young Scholars High School Research Program, NSF HBCU-UP Conference, NSF FGLSAMP, NSF REU Research Day, Project Upward, etc.).

Darkeyah Reuven is a Clark Atlanta University graduate who received his B.S. degree in Chemistry from GSU in 1999 and his M.S. degree in Health Care Management from Mercer University. He received his doctorate in Chemistry from Clark Atlanta University 2009, with a research focus in Synthesis, Modification and Characterization of Electro-conductive Polymers for Bio-sensor Applications. Dr. Reuven was an NSF-CREST Post-Doctoral Fellow in the Center for Functional Nanoscale Materials and was also a Fellow in the Center for Partnership for Research and Education in Materials (PREM) while studying Graphene-based Electrochemical Sensors and Biosensors for Direct use in Enzyme Electrochemistry.

Raven Riley is a Biological Sciences major (junior) and LSAMP scholar who also mentors middle school participants in the NSF funded HBCU CARES Mentoring program.
Sederra Ross is a senior Chemistry major and past LSAMP research trainee studying the “Characterization and Fabrication of Biodegradable Polymers Integrated with Cellulose Nanocrystals.” Sederra received summer internships at Forest Products Laboratory, SROP at the University of Wisconsin, Geoscience and Engineering (SURGE) at Stanford University, and EPA Greater Research Opportunity (GRO) program. After graduation (spring 2016), she plans to enroll in graduate school.

Harvey S. Salley, Jr. is a senior Biological Sciences major and LSAMP research trainee studying “Risk Alleles for Prostate Cancer in African American Men through Admixture Mapping.” He also enjoys football. After graduation (2016), he plans to attend medical school.

Joshua Tate is a senior Biological Sciences major and LSAMP research trainee. He also enjoys football. After earning his B.S. degree (2016), he plans to attend Meharry Medical College to become a dental surgeon. He received a summer internship at the University of Georgia Fungal Genomics & Computational REU Program and also participated in a summer internship at Clark Atlanta University, Center for Cancer Research and Therapeutic Development.

Rashaad Robinson is a recent addition to the program and is a Dual-Degree Engineering/Physics major who is studying the “Relationship/Connection between Mathematics and Science”.

Jazmine Sutton is a 2015 graduate and past LSAMP research trainee who is currently employed as an IT Application Analyst at Principal Financial Group. Jazmine’s past research was in “Mobile Development Programming using Geolocation and Google Map API’s-Panther Prowl Mobile Application” and she presented her research at GA-AL LSAMP 2014 Spring Research Symposium.

Danielle Taylor is a Biological Sciences graduate who earned her B.S. degree in spring 2015. As an LSAMP research trainee, she participated in various research projects and was also a peer tutor in Biological Sciences, Pre-calculus, and Calculus. She conducted research in “Screening for CRISPR/Cas9 Gene Editing of Zic Family Member 2 (ZIC2) by Polymerase Chain Reaction” and she is currently employed in Ophthalmology as an office manager, but soon plans to enroll in pharmacy school.
and presented her research at several annual LSAMP research symposia and national conferences.

**Kyarra Thompson** is a Clark Atlanta University graduate and LSAMP research trainee who majored in Chemistry. Kyarra studied “Adsorption of Proteins on Mesoporous Inorganic-organic Hybrid Materials” and presented her research at several annual LSAMP research symposia and national conferences.

**Raheem Wint** earned his B.S. degree in Chemistry (2014). As an LSAMP scholar, Raheem studied “Catalysis of PETI 298 Polymer Composite Material by Aluminum Chloride”, and presented his research at the GA-AL LSAMP 2014 Spring Research Symposium.

**Chloe Williams** is a graduate and earned her B.S. degree (spring 2015) in Computer and Information Science. She is currently a first year graduate student at Belhaven University in a general MBA program and is employed as ETL Developer.

**Casside Woods** earned her B.S. degree in spring 2015. She is currently employed at General Motors, Business Intelligence Developer & Data Analyst.

**DeAdra Zachery** is a Biological Sciences major and 2015 Summer Research Explorer who studied the Negative Regulators of the TGF-β Signaling Pathway in Prostate Cancer Cells REP participant.

**Atlanta Metropolitan State College** is a coeducational two-year non-residential unit of the University System of Georgia. Authorization by the Board of Regents of the University System of Georgia in June 1965 made Atlanta Metropolitan State College the thirty-first institution of the University System. Classes at AMSC began in September 1974, and the College has become accredited by the Southern Association of Colleges and Schools. Approximately 97% of the students enrolled at the two-year institution are of African descent. The college was recently authorized by the Board of Regents to offer a B.S. degree in biology. Although this second phase of its expansion commenced in the fall of 2012, the college remains a predominantly two-year institution. The GA ALLSAMP program at AMSC has been a critical component in increasing the number of STEM students engaged in laboratory projects. The areas of investigation for LSAMP students at AMSC are primarily focused on the identification and detection of micro-organisms, personal care...
products, endocrine disrupters, and prescription and abused drug metabolites in wastewater samples from local wastewater facilities. An increase in the scope of laboratory research conducted at the college has generated a need for additional laboratory space and facilities. A new Academic Science Building now serves the increased number of math and science majors. The building includes 17,000 square feet of general classroom space, 15,000 square feet of laboratory space, 8,000 square feet of general purpose/assembly space, and 10,000 square feet of administrative space. The facility was funded by the Board of Regents at an estimated cost of $12,000,000. The GA AL LSAMP has had a major economic impact on the AMSC campus in this respect.

**Tanaka Benton** is a sophomore Pre-engineering and Applied Mathematics major. She participated in research in NASA Agricultural UAV design competition, NSF funded undergraduate research at Howard University and studied "Growth of Graphene by Silicon Carbide Sublimation", with final presentation at NNIN Symposium, Cornell University, NASA Aerospace Scholar Mars’ Rover Design and Engineering competition at Stennis Space Center in MS-IESENIG; a Nano Ambassador with GA Tech’s Nanotechnology Outreach Program, and tutor in Mathematics Engineering Science Achievement. Her expected graduation date is spring 2016.

**Valentina Brittain** is a 2014-2015 LSAMP research trainee and studies “Effects of High Temperature on the Activity of the Freshwater South American Crab, Neostrengeria Macropa”. She is scheduled to take the dental administration test for July 2015 and will apply to several dental schools. In the meantime, she will be involved in community service as a dental assistant trainee. Her expected graduation date is spring 2016.

**April Brown** is a 2014-2015 LSAMP research trainee and senior majoring in Biology. Her goal is to earn her Ph.D. in Virology and Immunology or Epidemiology and work at the Center for Disease Control (CDC). She is an LSAMP research trainee studying “N-acetyl Glucosamine and Streptozotocin in C. Elegans” and also served as a middle school science fair judge, as well as facilitated research demonstrations for students. April’s expected graduation date is spring 2016.

**Cedrick M. Daphney**, is a faculty member at AMSC, He began his academic career at AMSC and received two associate degrees; Psychology (2001) and Biology (2002). He gained research experience while completing the Biology A.S., and he later enrolled at Georgia State University as an undergraduate chemistry major from where he earned an M.S., degree Analytical Chemistry in 2008. He participated in the Ronald A McNair Scholars' Program. Mr. Daphney then returned to AMSC. While at AMC, Mr. Daphney has mentored LSAMP scholars and attended the Emerging Researchers National 2010 conference with two AMC scholars. In August 2014, Mr. Daphney enrolled as a doctoral student of pharmacology at Mercer University School of Pharmacy Division of Pharmaceutical Sciences investigating novel ways to combat Alzheimer’s disease using a state of the art mouse model.

**Dennett Everett** is a 2014 LSAMP Summer Research Explorer and Biology major who studied Cell Culture and Lab Techniques over the summer. During the academic year, her research was in Zebrafish Breeding for Research Skill Training. She is also a participant in the MESA Club.
Malcolm Frank is an LSAMP research trainee and Computer Science major studying Graphene Synthesis by Chemical Vapor Deposition and transfer by a roll-to-roll process. His anticipated graduation date is spring 2016. Thereafter, he plans to apply to graduate school at Kennesaw State University. He was employed in the STEM field as a supplemental instructor for principles of biology and a Director of Education/program facilitator for Infinitely Deep Research Group, LLC. Research presentations and experience include Regional Undergraduate Research Symposium at Albany State University (2015), Summer Research Explorer Program (2015) at Clark Atlanta University, and DNA Extraction Lab and Lecture for middle school students.

Maria Muradas-Lopez is a 2012-2014 LSAMP research trainee and studies water samples to measure chemicals such as ammonium, nitrate, etc in invertebrates. She also volunteers as a Gwinnett County Police interpreter. She has definite plans to attend graduate school.

Akilah Mateen is an LSAMP scholar who has studied “The Simulation of Cubesat Orbital Motion and its Powersubsystem at AMSC and published her research in a 2015 issue of the Georgia Journal of Science and Technology. Akilah also studied “The Synthesis of Porphyrin–Graphene Oxide Field Effect Transistor Biosensor” and presented her research at the 2015 GA AL LSAMP Symposium, April 2015.

Deon O’Bryant, Jr. graduated in May 2014 with a B.S. in Biology and in fall 2014 he enrolled in the graduate program at Clark Atlanta University where he is pursuing his Ph.D. in Biology, investigating “The Mechanisms of Age-Related Prostate Growth and Tumorigenesis.” His extracurricular activities include Mathematics Engineering, Science Achievement Club, as well as being a NASA Scholar. As GA AL LSAMP scholar between Fall 2012 and Spring 2014, he was actively engaged in academic year undergraduate research and summer internship activities at Clark Atlanta University. He presented his research at the GA AL LSAMP Annual Research Symposium. While at AMSC, he was also a NASA Scholar and member of the Mathematics Engineering and Science Achievement.

Sheriff Seedy Phaal is a senior Biological Sciences major and LSAMP research trainee. His research activities include hands-on research demonstrations for grade school students and volunteer as a science fair judge. After earning his B.S. degree, he plans to attend medical school.
**Ishmael Rogers** is a junior LSAMP Physics and Chemistry major and SGA President. He studied Nanotechnology and Biomedicine and plans to enroll in a graduate Engineering program at Kennesaw State University after earning his B.S. degree. He is the only Georgia resident among 40 college students to be selected by the National Aeronautics and Space Administration (NASA) for this year’s National Community College Aerospace Scholars (NACS) program. Rogers was also selected to visit the NASA Marshall Space Flight Center in December 2014 where he worked on projects and shared ideas with NASA engineers and scientists. He participated in interactive web-based activities including: twenty hours of online research; online interaction with participants across the country; webinars with NASA engineers/scientists; designing a 3D rover model using programs such as Sketch-Up or Autodesk123d; and planning a mission to Mars.

**Quanda Smith** is a senior Biology major who volunteers at the United States Fish & Wildlife Service, Southeast Region, EPA Soil Analysis at Atlanta Proctor Creek, and participates in the annual National Oceanic Science Bowl (Savannah State University). Quanda is also a member of the Society of Integrative Comparative Biology, and the Crustacean Society. She presented her research at the EPA’s International Youth Symposium and plans to enroll in graduate school to obtain a Master’s and Ph.D. in Marine Science or Environmental Science with an emphasis in Sediment Chemistry. Her expected graduation is fall 2016.
Georgia State University, located in downtown Atlanta, is the designated urban university in the University of Georgia System of 34 institutions. Classified as a Research Intensive University, GSU has an enrollment of nearly 40,000 students, of which approximately 25,000 are undergraduates. It is considered one of the country’s leading urban research universities. Students come from every county in Georgia, every state in the country, and, additionally, from over 160 countries around the world. The diversity of the University has been basically stable during the past five years with 50% being white, 32% Black, 3% Hispanic/Latino, 11% Asian, 0.2% Native American, and about 4% mixed. Georgia State University ranks 1st in graduating African American students in the Biological and Biomedical Sciences and 3rd in graduation of African American students in the Physical Sciences. The goal of the University is to provide access to quality education for diverse groups of students and to prepare citizens for lifelong learning in a global society. At GSU all the GA AL SAMP scholars engage in the research fields of biology, chemistry, geosciences, neurobiology, mathematics, physics, or astronomy. GSU LSAMP scholars usually attend the Howard Hughes Medication Institute Biotech Scholars meetings during the fall or spring terms in order to be engaged in scientific discussions and presentations.

The greatest economic impact of the LSAMP project at our partner institutions can be seen at GSU. Not only has the enrollment of STEM students increased during the past several years, but programs such as the GA AL SAMP have contributed greatly to the retention and graduation of a larger number of students than in the past. This has required new additions to existing math and science buildings such as construction of the Parker H. Petit Science Center at GSU, a 150 million project built in 2010. This center was recently named one of the best new facilities by Southeast Construction magazine. The 350,000 square-foot facility houses research and education programs in biology, chemistry, nursing, nutrition, physical and respiratory therapies, public health, and the Neuroscience Institute. The Center is home to scientists from the University’s Center for Diagnostics and Therapeutics, who are working on treatments and diagnostics for diseases and home to the new Center for Inflammation, Immunity and Infection, which will investigate treatments for infectious diseases and inflammation. The building also houses a large, 200-million pixel array of computer screens called a “visualization wall,” where scientists and faculty are viewing vast amounts of data in large-scale research projects, from public health to geography.
Charles Adeniran is a Chemistry graduate student who is currently enrolled at Georgia State University in a Master’s program.

Brandford Adobaw is a junior and LSAMP fellow with a passion for Mathematics and Chemistry. He spent the last several months studying “Uptake in Pathogenic Bacteria” and participated in the Life Science Summer Undergraduate Research Program at the University of Minnesota where his research involved “Characterizing an Interacting Protein of Dux4.” This semester, he continued research in “Synthesizing NIR Dyes for Bioimaging Applications.” He has definite plans to earn a Ph.D. in Medicinal Chemistry or a combined MD/Ph.D.

Gustavo del Aguila II is a Physics major and LSAMP fellow who challenged himself by taking graduate level coursework as an undergraduate in areas such as Quantum Mechanics and Teaching Lab Practicums, all while working two jobs at Georgia State University and Delta Air Lines, Inc. He has been recognized as a Berkeley Edge participant from the University of California, Berkeley, Sigma Pi Sigma member, and other academic honor societies. His research interests include theoretical cosmology, string theory, quantum gravity, general relativity, theoretical graphene research, and physics education research to name a few. In 2014, he was accepted as a summer intern at the University of Chicago and Massachusetts Institute of Technology.

Christopher Aguillon is a senior Chemistry major and LSAMP fellow. At GSU, he serves as a peer tutor for Organic Chemistry. Upon his graduation in 2017, Christopher plans to attend the Laney Graduate School at Emory University to earn a medical degree.

Ashley Asaibor graduated from Georgia State University (May 2015) with a B.S. degree in Biology and Advanced Honors Distinction. She is currently completing a Postbac CRTA Fellowship at the National Institutes of Health at the National Cancer Institute (NCI) and plans to apply to medical school next semester. Ashley was a volunteer at Grady Memorial Hospital in Labor and Delivery and Surgery. Her leadership roles include Honors College Ambassador (2013-2014), Vice President of the American Medical Student Association (AMSA) (2013-2014), Historian of the American Medical Student Association (2012-2013), Treasurer of Beta Beta Beta Biological Honors Society (2012-2013), and Treasurer of Minority Association of Pre-Health Students (MAPS) (2012-2013).

Deeyaa Blessing is an alumna of GSU and completed both her B.S. and M.S. degrees in Chemistry with a concentration in Biotechnology. Ms. Blessing was accepted at the University of Maryland Ph.D. program in Chemistry (fall of 2011). As a first year student, Ms. Blessing was awarded a Dolphus E. Milligan Fellowship which allowed her to participate in a summer internship at the National Institute of Standards and Technology. Ms. Blessing is grateful for the opportunities afforded to her through the LSAMP program. She was a Level I LSAMP research scholar and presented research posters at national conferences.
Gabrielle Ernesto Beltran is a senior and LSAMP Biology research trainee studying the Role of IL-36g in Intestinal Inflammation. He is also a tutor in college-level Education Science and English/Spanish translator. He is a recipient of the Thomas A. Netzel Scholarship and presented his research at ASE ASAP District 3 conference and the 2015 Annual GA-AL LSAMP Symposium. His extracurricular activities include being a member of the American Medical School Association, Alpha Chapter Golden Key, National Society of Collegiate Scholars, and Hispanic Scholarship Fund.

Elias Flores is a senior and Chemistry major. After earning his B.S. degree, he plans to attend Pennsylvania State University, University of Colorado, or Duke University for Bioengineering /Biochemistry program.

Hector Argueta-Gonzalez is a senior and Chemistry LSAMP fellow and plans to continue his studies at Georgia State University after he earns his B.S. degree. He is currently studying Fluorescent Dyes.

Ashlea Gordon is a senior and a Chemistry LSAMP fellow who has plans to attend Graduate School.

Travon Haynes earned his B.S. in Chemistry at GSU. He is currently enrolled at Georgia State in the Organic Chemistry Master’s program. He plans obtain employment in the pharmaceutical industry.

Ijeoma Chukwukere conducts research on “Synthesis of Fluorinated Pentamethine Cyanine Dyes with Increasing Hydrophobicity” at GSU and presented her research at the 2015 Annual GA AL LSAMP symposium. She also conducted summer research at the GA AL LSAMP summer research explorers program in 2014 at CAU.

Marquis Griffin is an LSAMP senior and Chemistry major who aspires to be an MD/Ph.D. He is studying how to synthesize small compounds that are tested in inhibitory activity against hypoxia inducible factors. Marquis is interested in not only treating diseases, but also contributing to the advancement of knowledge in the medical field. His expected graduation is spring 2016.

Alessandrio Gutzmore is a 2014 LSAMP fellow and senior majoring in Neuroscience. After earning his B.S. degree, he plans to attend Emory University to earn a Master’s/Ph.D.

Arielle Hackel is an LSAMP Chemistry fellow who is studying “Quantum Mechanics/Molecular Mechanics Hybrid Calculations” which involves Pin1-catalyzed cistrans isomerization. Arielle received internships at the Center for Aerosol Impact on Climate and the Environment (CAICE), University of California, San Diego, U.S. Department of Energy’s Pacific Northwest National Laboratory, and University of Mississippi. She presented research at Undergraduate Research Symposium, Atlanta, GA (September 2015), 250th American Chemical Society National
Jennifer Hernandez is a senior Biology/Chemistry double major who is studying Mechanistic Flavin Dependent Enzymes. Her goal is to attend medical school and work with minority populations in underserved communities.

Victor Hudson is an LSAMP fellow and senior majoring in Chemistry. After graduation, he plans to continue his education at Georgia State University in a Master’s program.

Fatimah Ishmael is a Chemistry major and recent LSAMP fellow who will be conducting research in Synthetic Organic Chemistry. The research group focuses on the Synthesis of Endocrine Specific near-Infrared Fluophores for the Development of Cancer-imaging Dyes. After graduation, Fatima plans to pursue her M.S. degree in chemistry at Georgia State University. Upon completion of her Master’s, Fatima will apply to pharmacy schools such as Northeastern University and the University of Georgia.

Bianca N. Islam earned her B.S. degree in Biological Sciences in 2011 and graduated Magna Cum Laude and Advanced Research honors. Ms. Islam participated in the Ronald E. McNair Program and a Biotech Program funded by the Howard Hughes Medical Institute. She is currently enrolled in a MD/Ph.D. program studying Biochemistry and Cancer Biology in at the Medical College of Georgia (Georgia Regents University). Her career goal is to pursue an MD/Ph.D. in Internal Medicine and Infectious Diseases.

Cyrianne Keutch is a junior and Chemistry major who plans to attend the University of San Francisco. Currently, she is studying the “HmuT Protein in the Heme Uptake Pathway of Corynebacterium Diphtheriae.”

Bao Chau Ly is a GSU alumna and Biology Neuroscience major. Her research activities were done at Georgia Perimeter College STEP summer Bridge II. She has volunteered at Grady Memorial Hospital ICU and Immunology (2013-2014), Thien Vien Truc Lam (June 2012), Instructor at GSU Bio-Bus program and Emergency Department Scribe at Rockdale Medical Center. Bao has plans to attend medical school.

Shian Mcleish is currently a junior and LSAMP fellow pursuing a degree in Biological Sciences. She anticipates graduating in spring 2015 and thereafter plans to advance her studies to receive an MD/PhD in Neuroscience.
Countiss Miller is a senior and Biology major who has a strong interest in research. Her anticipated graduation is spring 2015 and then she will go on to graduate school to study cancer research. Her dreams are to one day “change the world through science.”

Hao Nguyen is a first year Computer Science major. After graduation, she plans to remain at Georgia State University to complete her Master’s with a concentration in hardware and human interaction in the medical robotic field.

Martine Policard senior and Biology major with serious plans to attend a graduate school.

Khoa Nguyen is a Chemistry major who has been engaged in research in Polyamine-anthracene Conjugates’ DNA Binding Affinity. He has been a research trainee for a year. The LSAMP program has allowed Khoa to present research and participate in seminars which help to improve presentations and networking skills. After graduation, Khoa plans to pursue a Ph.D. in Biochemistry at Emory or Georgia State University.

Juan Perez is Biology major and LSAMP research trainee with an anticipated graduation date of spring 2015. He is very interested in going to graduate school to obtain a Ph.D. in the Biomedical field. He believes it would be a great service to do research that provides patients with the means to sustain normal and adequate lives if they receive an organ transplant. His schools of choice include GA Tech, John Hopkins University, Michigan State University, and Duke University.

Andre Kenneth Chase Randall is an Honors College senior majoring in Computer Science with a concentration in Database & Knowledge Discovery Systems and a minor in Mathematics. After graduation, he plans to attend graduate school. Recently, Purdue University invited him on a scholarship in the 2015 Multicultural-HBI Visitation program, November 4th – 6th.
Fardowsa Robow is a junior Neuroscience major. After graduation, she plans to attend Morehouse School of Medicine Clinical Research Program to receive an M.S. degree in Neuroscience and then apply for medical school or a Ph.D. program. Stephanie Ross is a senior Neuroscience major who plans to continue her education at Georgia State University to receive her M.S. degree in Neuroscience. She is currently an LSAMP fellow.

Casey Seldon is a senior Biology major and member of the Honors College. She was designated as student ambassador as well as an officer of the TriBeta Biological Honors Society. She studied Antibiotic Resistance of Biofilms and the Effects of using a combination of escapin intermediate product and hydrogen peroxide to breakdown P. aeruginosa biofilms. Casey plans after graduation to pursue her doctorate.

Crystal Seldon is a graduate student and currently enrolled at the Morehouse School of Medicine. Crystal conducted summer research in Molecular Basis of Disease at Georgia State University (Summer 2012) and Student Health Enrichment Program at the University of Alabama School of Medicine (Summer 2013). She volunteered at Grady Memorial Hospital (2012- present). Awards/Scholarships include the Thomas A. Netzel Scholarship (2010-2014), Zell Miller Scholarship (2010-2014); second place award in the poster competition at the Georgia Alabama Louis Stokes Alliance for Minority Participation Symposium 2015; She attended research conferences (SERMACS (2012). Extracurricular Activities: Member of the American Medical School Association, American Physician Scientist Association, TriBeta Biological Honors Society, Undergraduate STEM Research Society, National Society of Collegiate Scholars, and Honors College Ambassador.

Ronald Shanderson is an LSAMP fellow and Biology major. Ronald conducted research on “Elucidating Post-translational Interactions on the Class II Transactivator.” Ronald was also an Amgen Research fellow 2015 summer intern at the University of California, San Francisco. He serves as the vice president and president of the Undergraduate STEM Research Society. After earning his B.S., he plans to attend graduate school.

Ashley Taylor is Biology major at GSU. She conducts research on “Analysis of the activation of the NF-kB pathway by SHFV infection” and presented her research at the 2015 GA AL LSAMP Annual Symposium, April 2015.
Kenya Thrasher is a Biology major at Georgia State University and was a 2015 LSAMP Summer Research Explorer in research at CAU where she studied, “Aryl Hydrocarbon Receptor (AhR) and Transforming Growth Factor Beta (TGF-β) Crosswalk in (PC3) Prostate Cancer Cells”.

Hao Tran is currently a Biology graduate student and who is enrolled in a Master’s program at Georgia State University. As an undergraduate LSAMP fellow his research was in transcription regulation of the host immune response, Center for Inflammation, Immunity, and Infection. Hao studies the effects of the immune response on shaping our intestinal microbiota and its ability to mitigate consequence causes by intestinal diseases such as colitis and Crohn’s disease. His goal is to become a physician scientist within a research-hospital setting to further his knowledge of various internal diseases.

Johnny Truong graduated from GSU in 2014 with a B.S. degree in Chemistry and a minor in Biology. He is currently enrolled in the Chemistry Ph.D. program at the University of California, Berkeley. He was an LSAMP scholar since spring 2011. He was named a 2013 Society of Chemical Industry (SCI) Scholar through the American Chemical Society (ACS) and received a summer industrial internship at Chemtura Corporation in West Lafayette, Indiana and also participated in a Research Experience for Undergraduates (REU) program at the University of Kentucky in the summer of 2012. In addition to research, he has served as a laboratory teaching assistant for General and Organic Chemistry courses and currently serves as a Supplemental Instruction (SI) leader for General and Organic Chemistry. He has participated in oral and poster presentations at research conferences including the Southeastern Regional Meeting of the American Chemical Society (SERMACS), annual GALSAMP Symposiums, and the 3rd Annual Howard Hughes Medical Institute (HHMI) Science Education Alliance (SEA) Symposium.
J. F. Drake State Community and Technical College is a two year community college in Huntsville, Alabama. As of the fall 2013 semester, Drake State has an enrollment of 1,384 students. The college was founded in 1961 as the Huntsville State Vocational Technical College.

Drake State train students for current and future employment in technical, industrial and vocational careers. Most of the programs offer options for an associate of technology degree or a certificate program allowing for immediate entry into the workforce. The Business and Information Technology Division is comprised of those programs which prepare graduates for entry into the fields of office management, computer software systems and accounting. In the Engineering Technology Division the focus is on disciplines which are related to engineering such as mechanical or architectural drawing and design, computer hardware and microcontrollers, electricity and industrial systems as well as robotics operation and maintenance.

Terrell Banks is a sophomore Computer and Information Technology major and a member of the Cyber Security Club at Drake State. After graduation, he plans to attend Morehouse College or Alabama A&M University to pursue a B.S. degree. Terrell conducted research on "Human Genetics vs. Machine Genetics" and presentation on the subject at the at the 2015 Annual GA AL LSAMP Symposium.

Frank Burden, III is a sophomore Computer and Information Technology major and a member of the Cyber Security Club at Drake State. He conducted research on “Evolved Virtual Creatures, Ft. Android and Arm Processors”. Frank also conducted research on “Project Avatar: A Study of Focus and Execution”. After graduation, he plans to attend Clark Atlanta University.
Leo Curry is a Machine Tool Technology/CIS major at J. F. Drake Technical and Community College. He served as the SGA President at Drake State Technical College. He presented his research entitled “Advancement Of Machine To Machine (M2M) Technology” at the 2015 Annual GA AL LSAMP Symposium.

Gezelle Glasgow earned her Associate’s Degree and is currently enrolled at the University of Birmingham (UAB) majoring in Biology. As an LSAMP scholar, Gezelle conducted research on “The effectiveness of Essential Plant Oils on the K12 Escherichi Coli”, which she presented at the 2015 Annual GA AL LSAMP Symposium. She was a participant in the 2015 Summer Research Explorer Program at CAU. She is also a LSAMP research scholar at UAB.

Ajiah Graham is a sophomore and Computer and Information Technology major. She presented her research on “How the HTML Language has changed over the Years “What’s Next?” at the 2015 Annual GA AL LSAMP Symposium. After graduation, she plans to attend Clark Atlanta or Spelman College to pursue a B.S. degree.

Antoinette Jackson earned her Associate’s degree in Computer Information Technology and is currently enrolled in Alabama A&M University and continuing studying Computer Science. She is also continuing as an LSAMP research participant at the University.

Nina Johnson graduated with an Associate’s degree in Culinary Arts from Drake State and is currently enrolled in Alabama A&M University majoring in Food Science. While at Drake State, Nina conducted research on “Genetic Impact on Generational Taste Preferences: It Runs in The Family”. She plans to attend Spelman College in spring 2016.

Sean Perryman earned an Associate’s degree in Computer and Information Technology and is currently employed in as a Network Technician. Sean attended the 2015 Summer Research Explorers program at CAU and conducted research under the guidance of Dr. Nathan Bowen. He was also a 2014 summer intern at the Oakridge National Laboratory.

Miguel Powell is a sophomore majoring in Engineering Graphics. He serves as a STEM robotics tutor and He is currently a full-time Designer at Strata-G in Huntsville, AL. Miguel presented his research entitled “Designing and Fabricating Self-Leveling Quadcopter at the 2015 Annual GA AL LSAMP Symposium.

Rasanary Vongsaphay is a food science major at Drake State. She conducted research in food science and presented her research entitled "Cold" Soufflé at the national laboratory.

Georgia Alabama LSAMP Impact Report
Lawson State Community College, located in the southwestern section of Birmingham, was created in 1965 and is composed of two main divisions: an academic division and a career/technical division. In 2011, Lawson State was featured as a Top 50 Community College, making history in the state. And, in 2013, it moved from 33 out of 50 on the list (of top colleges) to #5. Lawson State has also been recognized by the White House (and celebrated by the Obama Administration) as a Champion of Change in 2011. In 2015, Lawson State received the epitome of recognition when it was selected to host a visit by President Barack Obama.

LaJasmine Andrews is an LSAMP scholar and Chemistry major with an expected graduation date of spring 2017.

Julian Dill is a Lawson State STEM Scholar (2013-2015) majoring in Biology. To date, Dill has completed two research experiences for undergraduates Clark Atlanta University Summer Research Explorers Program (SREP) - CAUSE and the University of Alabama Community Outreach Development Reynolds Summer Science Institute Blazing to Biomedical Careers and CORD SSI-III Research Interns Program (CORD), during the summers of 2014 and 2015, respectively. Dill’s research at CAUSE, led by Dr. Conrad Ingram and Charity Burgos, “The Absorptive Removal of Methylene Blue from Aqueous Solution with Nanoporous Materials.”

Justin Bryant, is a graduate of Lawson State Community College and currently attends Alabama State University in Montgomery, AL. Justin conducts research activities on “The Prevalence of Bipolar Disorder amongst African Americans”.

Juan Givan is a STEM Scholar (2013-2015), and majoring in Mathematics. He also enjoys playing basketball and held positions of short stop and captain. Juan currently attends Nicholls State University, Thibodaux, LA and is majoring in Computer Science with a minor in Mathematics.
Randall King is a STEM Scholar (2014-2015) and pre-veterinary major; served as Lawson State Community College’s Student Government President and member of the LSCC Honors College. Randall was awarded the Ethical Leader Award during Wiley College’s Student Leadership Conference in Marshall, TX. Randall also presented a research poster at the GA AL LSAMP 2015 Spring Symposium at the University of West Georgia. The poster entitled “Veterinarian Medicine: A Look into Animal Science.” Randall currently attends Tuskegee University, majoring in veterinary sciences.

Mitchell McCreary is a STEM Scholar (2014-2015), majoring in Electrical Engineering and completed a summer research experience at Clark Atlanta University in Atlanta, GA. His research was in “Constructing an Inflation Rheometer: A Novel Instrument for Testing Commercial Plastics for the Thermoforming Industry.” Mitchell is currently attending Auburn University pursuing a degree in Electrical Engineering.

Marsellis Roper is a STEM Scholar (2013-2015) majoring in Biology. Marsalis currently attends Samford University pursuing a pre-medicine degree.

Morehouse College is an independent, fully accredited, predominantly Black liberal-arts college for men. The institution has an enrollment of approximately 3,000 students and is basically a liberal arts college and HBCU where a large number (4,096) of the students major in STEM.

Dansby Hall is where the Mathematics, Physics, and Psychology Departments are located. The building was renovated in 2008 at a cost of over $2,000,000. All classrooms were upgraded with new air conditioning and heating units along with the installation of new computer equipment and projection controls for presentation activities.

Additional buildings have recently been completed, including the Leadership Center Building (2007). This building is equipped with state-of-the-art classrooms that are equipped electronically to accommodate a variety of rooms that GA AL LSAMP students use for research activities and study sessions. There are several seminar rooms that GA AL LSAMP scholars use for research activities and study sessions. The Leadership
Center has one large amphitheater used for a variety of conference sessions for large audiences. At Morehouse College the research and educational goals of the GA ALLSAMP project are to strengthen the research skills of LSAMP scholars in STEM fields, support and increase the numbers of students who major in STEM fields, develop the STEM curriculum by expanding the Peer Led Team Learning (PLTL) model, and support tutoring and mentoring programs.

Morehouse College's research objectives are to promote participation in research training programs, summer research experiences, research conferences, symposia, and seminars. The educational objectives include the deployment and implementation of the PLTL workshop model in college algebra and computer science courses, the offering of tuition support scholarships for needy LSAMP scholars to continue their studies in STEM, and the support of tutoring and mentoring in STEM fields.

Adewale Adekoya is a graduate (2014) of Morehouse College with a major in biology and is currently enrolled in a Master's program at Georgia State University.

Jesse Andrews earned his B.S. degree in Biology in 2015. While at Morehouse his research was focused on Mesoscale variations in temperature and height of the tropopause above the Mojave Desert. He also conducted research on Dissolved Oxygen, Temperature, and pH effects on benthic mobile organisms along the continental shelf in the Southern California Bight through the Summer Undergraduate Research Fellowship at Scripps Institution of Oceanography. Jesse plans to conduct further graduate level research at Scripps Institution of Oceanography in San Diego, CA.

Caleb Bugg is a junior Mathematics major and plans to attend UC Berkeley. He has conducted research in “Binomial Solutions to Smale's 17th Problem and their Application to Chemical Reaction Networks” and has also presented research at the 2015 Annual Scholar LSAMP Research symposium.

Jordan Campbell is a 2014 Morehouse graduate with a B.S degree and currently enrolled in a doctoral program in Materials Science and Engineering at UC San Diego.
Conner Carter is a 2011 graduate and was an LSAMP scholar who earned a B.S. degree in Biology. During his matriculation, he made several oral and poster presentations which included the 2010 LSAMP Symposium on Capitol Hill and the 2011 Emerging Researchers National Conference. He conducted research in the RNase J protein and was also accepted for a summer internship. After earning his B.S. degree, Conner accepted a research position at Emory University. The LSAMP program provided him with extensive research opportunities and networking skills.

Dakari Franklin is a junior majoring in Physics and after graduation plans to attend the University of San Diego. He has been conducting research on “Influence of the Interplanetary Magnetic field (IMF) on Solar Energetic Particles (SEP) as a Function of Latitude” and has presented his research at the 2015 GA AL LSAMP Annual Research Symposium at CAU April 2015.

Curtis Clark, Jr. earned his Bachelor of Science (B.S.), Mathematics, Cum Laude in 2015. He has conducted and presented his research focused on “On 2-2 Graph Achievement Games” and has presented his research at the 2015 GA AL LSAMP Annual Research Symposium at CAU April 2015. He has participated as a Summer Intern at the Summer Institute for Training in Biostatistics (S.I.B.S.) at Emory University. Curtis is now a graduate student at Wake Forest University Graduate School of Arts & Science, where he is pursuing a Master of Arts (M.A.), Mathematics.

Wayne Stevens is a Physics major and tutor for the first of three introductory courses and also involved with the robotics team, NSBE, and NSBP.

Garrett Divens is a senior mathematics major at Morehouse College. He participated in the GA AL LSAMP Summer Research Explorers Program in 2014 at CAU, and in a 2015 summer internship at Michigan State University. This LSAMP scholar is also a member of the Morehouse Math Club and has participated in the Putnam Math Competition. After graduation in 2016, Garrett plans to attend graduate school in Applied Mathematics.

Andrew Garrett is a sophomore and Computer Science major at Morehouse College. He participated in a 10 weeks REU at The University of Florida in summer 2015 summer. After graduation Andrew plans to attend Georgia Institute of Technology.

Arman Green is currently a graduate student at North Carolina State University where he is enrolled in a Ph.D. program in operations research. He is a participant in MSRI-UP at UC Berkeley.

Da’Sean Green is a 2012 graduate of Morehouse College where he obtained a B.S. in Chemistry. He is currently a 4th year grad student pursuing a Ph.D. in Organic Chemistry at The Ohio State University. While at
Leadership Alliance at Brown University, Technology and commercialization intern at Argonne National Laboratory, and two LSAMP spring symposiums. Also participated in Joint Mathematics Meetings and SACNAS. Tutored every year at Morehouse.

**Ronald Hobson** is a past LSAMP scholar and transferred to Engineering school to complete a 5-year degree.

**Kazembe Kennedy** is a Morehouse graduate and currently a Ph.D. candidate in Computer Science at Clemson University.

**Tony Larkin** is a 2013 alumnus majoring in Biology and Neuroscience. After graduation, he was employed at Georgia State University as a Research Associate and Lab Technician from June 2013 to June 2015 and is presently a first year graduate student in the Neuroscience Graduate program at the University of Michigan.

Morehouse, Da’Sean was a GA AL LSAMP scholar fall 2010 to spring 2012. He also served as the vice president of the ACS Morehouse Chemistry Club, Hopps Research Scholars Program. He also participated in study abroad Study Abroad Research Internship in Sao Paulo, Brazil. He presented his undergraduate research fall 2011 LSAMP Research Symposium

**Sylvester Jackson** is a junior majoring in Applied Physics. After earning his B.S. degree, Sylvester plans to enroll at an Engineering school.

**Andrew La’Pelusa** earned his B.S. degree (2015) in Biology. He presented research in “The Perplexing Protein: Regulation of Mitochondrial Dynamics and Autophagy by MCL-1 at the Annual GA AL LSAMP Symposium. He is currently enrolled in an MD/PHD program at Wright State University Boonshoft School of Medicine.

**Austin Little** is a junior majoring in Applied Physics. After graduation, he plans to enroll in a Ph.D. program for Operations Research. This GA AL LSAMP scholar has conducted research at Cornell University (summer 2014) focused on finding magnetic materials to produce a measurable and efficient spin torque for spin torque magneto resistive random access memory (ST-MRAM). In summer 2015, he also conducted research at Georgia Institute of Technology in mathematics using finite volume methods to model pollutant flow within the Senegal River.
Jonathan Lowe is a graduate of Morehouse College (May 2012). After graduation, participated in an Americorps Program focused in STEM areas known as TEAM Americorps and as a Teaching Assistant from Fall 2012-Summer 2014. He has plans to attend graduate school focused on Actuarial Sciences or MBA (Accounting) and currently employed as a mentor/counselor for elementary and middle school students.

Malachi Morgan earned his bachelor’s degree in mathematics in 2014 and is currently a graduate student at the University of Washington majoring in Computational Finance and Risk Management. He is also currently employed as a Data Analyst at Pugh Capital Management (June 2014 to present).

Winston Odum is a sophomore Chemistry major with a minor in Mathematics. After graduation, plans to attend graduate school. The Launch and Recovery of a Dual Payload Exploration to Near Space. He presents his research at the ERN 2015 conference and at the 2015 Annual GA AL LSAMP Research Symposium, April 2015.

Tristan Pittman is a junior majoring in Computer Science. He conducted summer 2014 internship at The Genomics Institute of the Novartis Research Foundation (GNF), San Diego learning Python/Java computer languages, viewing various images of nuclei and sorting the images by class, and abnormalities. During the Fall of 2013, Tristan has conducted demonstration during AP physics class at

Elmon A. Merrimon is a graduate with a B.S. in Chemistry. After graduation he plans to attend graduate school, but is currently employed in the STEM workforce as a Field Chemist.

Jerrell Mure is a Morehouse College graduate and currently in Troy Institute Ph.D. program. While at Morehouse, this scholar was a recipient of the Achievement Reward for College Scientists (ARCS).

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Westlake High School in Atlanta. After graduation, he plans to attend graduate school as a Computer Engineering major. 

Matthew Temba is a 2010 Morehouse graduate in Mathematics and was an NSF LSAMP BD fellow at the University of Maryland (2010-2012). In 2011, he received a spring internship at Goldman Sachs and was also a Graduate Assistant (2012). Currently, he is employed as Director in Analytics at Evolent Health in Washington, DC.

Gerard Vanloo is a junior majoring in Computer Science. After graduation, he plans to attend the University of Maryland, Rensselaer Polytechnic Institute, University of Tennessee, or University of Oregon.

Mateyo Waluye is a junior majoring in Mathematics. He has been conducting research on “Modeling HIV/AIDS Transmission Through Sexual Contact and has presented a presentation on the subject at the 2015 Annual GA AL LSAMP Research Symposium, April 2015. He also participated in Summer Intern Program in Research and Learning (SPIRAL) 2014 at Howard University. After graduation, he plans to attend UCLA in pursuit of a Ph.D. in Statistics.

Bobby Wilson graduated in May 2010 with a B.S. degree in Mathematics and earned his Ph.D. (2015) from the University of Chicago. During spring 2009, Bobby spent semester in the Budapest Program in Mathematics where he took several advanced courses. He is currently a post doc in the Department of Mathematics at the University of California Berkley.

Charles Watts earned his B.S. degree in Mathematics in 2012 from Morehouse College and later receive his M.S. degree in Mathematics in May 2014 from Georgia Tech. He is currently pursuing a career as a game designer. While at Morehouse, as a GA AL LSAMP scholar, he presented his research at the 2010 SACNAS National Conference, and won a Dupont sponsored research award for his poster presentation.
GA AL LSAMP Annual Scholar Workshop (2014) hosted by Lawson State Community College

Dr. Sandra Rucker, Clark Atlanta University, Professor, Department of Mathematics and Dr. Farouk Brania, Morehouse College, Assistant Professor and Campus Coordinator volunteer as judges in scholar poster presentation session at the Annual Research Scientists of Tomorrow Symposium hosted by Clark Atlanta University, April 2014.
Paine College, founded in 1882, is a private, non-profit four-year HBCU located in Augusta, Georgia. The college is supported by the United Methodist and Christian Methodist Episcopal Churches. It is a member of the United Negro College Fund (UNCF). Paine offers baccalaureate degrees in five Divisions: Business Administration, Education, Humanities, the Natural Sciences and Mathematics, and the Social Sciences. Since 1903, Paine College has prepared primarily students of African descent and other minority students for advanced careers in the sciences. The College is historically bi-racial in its establishment and leadership but predominantly Black (97%) in enrollment. The present student body is 65.7% female and 34.3% male. More than half are first generation college students. The Division of Natural Sciences and Mathematics guides and supports students and faculty in the achievement of their academic and professional goals, including service to the community, in which the natural sciences (biology, chemistry, physics, and environmental science), mathematics, and technology are essential components. Each department in this Division allows for both a major and minor in at least one program of study, and offers B.S. degrees.

GA ALSAMP research and educational activities at Paine College are designed to engage students in areas such as developing research skills and experiences, peer-to-peer mentoring, faculty-student mentoring, and graduate school preparation initiatives for GRE and other standardized examinations. GA ALSAMP scholars at Paine College are engaged in research activities funded by NSF and the Department of Energy. Scholars also collaborate with the Georgia Health Science University.

Jameia Faith Alexander is a sophomore pre-professional Biology major. After graduation, she plans to attend Meharry Medical College in Nashville, Tennessee. She currently serves as Paine College's Sophomore Executive Board 2015-2016 Treasurer and member of Paine Playhouse. Jameia’s research in the 2014 Summer Research Explorer Program at Clarke Atlanta University was under Dr. Xiu (James) Bu in Malabite Green and Luego Malachite green, and its Effects on Prostate Cancer Cells.

DaShan Brodus is a senior Biology major and a member of the Pre-Professional Student Alliance (PPSA) as well as an LSAMP scholar. She also participated in Georgia Tech’s College of Science’s Research Bound program November, 2015. She conducted research at Savannah River Site during summer 2015. She has done an internship researching, Human Effects on biodiversity. DaShan is currently conducting research on Thiol Terminated Silicon Substrate Fabrication and Characterization. Her plans after graduation is pursue an MD/PhD.
Danielle Daniely-Wilson, Ph.D. is a 2004 graduate who received her Ph.D. from the Medical College of Georgia. She graduated from Paine College Summa Cum Laude. Danielle has also conducted extensive research at the Medical College of Georgia in Cell Biology.

Katrina Gilmore is a senior Mathematics major who plans to attend graduate school to pursue an M.S. degree. Over the past few years, Katrina has been conducting research in reference to network security. Just recently, Katrina presented her research at the NCUR 2015 conference in Spokane, Washington. This past summer, she also participated in Paine College & National Nuclear Security Administration Cyber Security Administration Cyber Security Workforce Consortium. Additionally, she interned at Sandia National Laboratories in Albuquerque, NM. Outside of her research and studying, Katrina tutors her peers and children from grades K-12 in mathematics.

Brenda Grier is a junior and first year LSAMP trainee. Brenda’s research focus is in oncology at Augusta University in conjunction with Paine College. She plans to attend nursing school after graduation to receive a Masters’ degree and work as a Nurse Practitioner.

Chimwemwe Mwase is a senior majoring in Biology at Paine College. Chimwemwe conducts Mathematical Modeling of Chlorella vulgaris and Phanerochaete chrysoporum on the Bioremediation of Hexavalent Chromium.” She presented her research at the 2015 Annual GA AL LSAMP Research Symposium, April 2015. She plans to attend Georgia Institute of Technology to earn a doctorate in Biology.

Kierra Harps is a senior Biology major. After graduation, Kierra plans to pursue a Master’s in Toxicology with an emphasis in Pharmacology and Biomedical Science. She has served as a member of the PPSA, where she was the secretary and is also a member of the Paine College SNMA-MAPS chapter. Ms. Harps is currently working on her senior research which involves analyzing soil around Paine College for the presence of metals and non-metals.

Sierra Harris is a sophomore biology major conducting research in Optical Properties of Semi-conductor Nanostructures. Sierra has also served as the Secretary on the Freshman Executive Board and is a member of the Honors Program. Upon graduation and plans to earn her Master’s degree, then attend Mercer University for medical school.
Dominique Morgan is a Paine graduate and past LSAMP scholar who earned his B.S degree (2007) and graduated Magna Cum Laude. He earned his Ph.D. in Mathematics from Clemson University (2015). Dominique is a coauthor of a recent publication entitled Bistable reactivity: A coupled oscillator circuit model of an agent organization. He was also an Instructor at Clemson through May 2015.

Jade Phelps is a senior biology major at Paine College. She conducted research on “Medial Epicondylitis: Meta-Analysis Concerning Baseball and Softball Pitcher” and presented her research at the 2015 Annual GA AL LSAMP Research Symposium, April 2015.

Mahalia Sam-Clark is a 2014 graduate in Biology and currently enrolled at Claflin University. She is also employed as a Research Assistant.

Floribith Nwokocha is a senior Biology major with plans to attend Georgia Institute of Technology. In 2013 she served in the Tutorial Enrichment Center as a peer tutor.

Tannasia Rhodes is a graduating senior of Paine College where she's majoring in Biology with a minor in Psychology. She studied research in Bioremediation of Benzo-a-Pyrene using P. Chrysosporium fungi and presented her research results at the 2014 Annual GA-AL LSAMP Spring Symposium.

Maya Stephens is a Presidential Scholar and senior Biology major. She is the current president of the Honors Program and founding president of Minority Association of Premedical Students (MAPS) at her institution. Miss Stephens has been conducting Ecology research under Dr. Swenson through funding by the United Negro College Fund Mellon Mays Undergraduate Fellowship since her freshman year. Her research is entitled “The Effects of Eutrophication on Bacterial Inhabitants in Freshwater Ecosystems”. Upon graduation of undergraduate studies, Maya plans to pursue a MD/M.P.H. She wants her research and practice of medicine to reach the underserved populations of the world.

Secret Wagner is an LSAMP scholar and Chemistry major who also serves as the Secretary for the Commuter Students Association, Vice President of Zeta Eta Chapter of Alpha Kappa Alpha Sorority Incorporated, and is a member of the servicing learning program which allows her to continuously volunteer her services in the community where she resides and attends school. She is currently studying “Light Behavior and Illumination of Compounds.”
Spelman College, founded in 1881 as the Atlanta Baptist Female School, became a college in 1924. Now, a global leader in the education of women of African descent, Spelman College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools and is a proud member of the Atlanta University Center Consortium. Spelman College is also among the top 10 'Best Women's Colleges' 2015 (http://www.bestcolleges.com). In 2001, Spelman College completed construction of the $34 million Albro-Falconer-Manley Science Center, a 154,000 square foot training facility equipped with state-of-the-art equipment and facilities to support comprehensive STEM research and training.

Audrianna Carrington is a senior at Spelman majoring in Chemistry. She has conducted a summer research at the Medical Experience Academy in Greenville, SC. Medical Experience Academy Educational Research in Chemistry. She serves as a STEM Ambassador, as an Aspire Peer Facilitated Leader (APFL) and as a Chemistry Learning Apprentice, both in the Departments of Chemistry and Biochemistry. After graduation, she plans to attend the University of South Carolina School of Medicine. Her expected date of graduation is May 2016.

Brianna Burlock is a graduate and is currently enrolled in medical school at Wright State University Boonshoft School of Medicine. While at Spelman, this GA AL LSAMP scholar conducted research on “Comparison of Functional Analysis of Regulatory B Cells in Wild-Type and CD38KO Mice”. She also participated in summer internship University of Chicago and Georgia Regents University, In summer 2014, Briana participated in an “Enhancing Global Research and Education in STEM Program (G-STEM)” in Granada, Spain. She also served as the director of Leadership and Student Engagement for the Spelman Student Government Association.
Justice Echols is a senior Biology major. She has participated in summer research at “Cornell University – Summer Travelers’ Fellow. This GA AL LSAMP scholar and Spelman STEM ambassador is determined to attend medical school.

Kristen Ezeude is a graduate student and is currently employed as a Math teacher at Houston Independent School District. While at Spelman, Kristen studied “Proteomic Induced Interaction between Serine Palmitoyltransferase-1 and SYK Genes of Proximate Cytogenetic Loci In Human Chromosome 9”. Kristen is expected to graduate in 2015.

Mya Havard is a Mathematics and Computer Science sophomore at Spelman College who participated in a research project entitled, “Minimizing the Wait Time at Fried Chicken Wednesday”. She also presented research at Spelman Research Day and was a participant in the summer Delaware State University OSCAR Program, where she studied “Data Mining on Classifying Laser-induced Breakdown Spectroscopy (LIBS) Data.” Her research involved using a hybridization of multi-objective evolutionary algorithms and rough sets to classify the data. The Programming language is C++ via Visual Studio and the research also required some use of MATLAB. Her expected graduation date is May 2017.

Stranjáé Ivory is a Biology major and graduating senior studying the “Detection of Epigenetic Alterations in Colon and Breast Cancer using Minimally Invasive Methods.” She presented research at ABRCMS, Morehouse School of Medicine, and Spelman College. After earning her B.S., she plans to attend Meharry Medical College in the pre-med program and Morehouse School of Medicine Masters of Public Health Program. She will also apply to medical schools.

Angelic Holston is a first year student majoring in Health Science. She has participated in the program “Community in Schools” to mentor young girls from a local high school. After graduation, she plans to attend Emory Medical School.

Kayla Jackson is a junior majoring in Mathematics. After graduation, she plans to enter a combined MD/PhD. program at UNC Chapel Hill. Kayla’s research was entitled, “Adenyl Cyclase-6, Metalloproteinases-2 and -9, and TIMP-2 Involved in Cardiac Remodeling”. She presented her research at the 2015 Annual GA AL LSAMP Research Symposium. Kayla also participated in UNC Chapel Hill 2015 Summer of Learning and Research Program. She is expected to graduate in May 2017.
Courtney Lett is a senior majoring in Mathematics. As a GA AL LSAMP scholar, her current research is investigating the network configuration on genes aging dynamics. Her expected graduation date in May 2016. After earning her B.S. degree, she plans to attend either Carnegie-Mellon University or New York University.

Eboné Monk is a senior Physics major. In summer 2014, she participated in research at the Indian Institute of Technology, Madras and her research project focused on "Graphene and an Intercalated Composite of Fe(acac)₃ Sheets Produced through Chemical Methods." In summer 2013, she participated in research at the University of Washington. The goal of this study was to electrophysiologically measure the degree of spinal cord injury in order to establish quantitative measures of neural pathway integrity. She also presented research at the Center for Sensorimotor Neural Engineering (CSNE) Research Symposium and the International Environmental Youth Symposium (2015) where she won 1st place in student poster competition for her research on urban systems.

KayCei Moton-Melancon is a sophomore majoring in Biology. KayCei Moton-Melancon is a junior Biology Major from New Orleans, LA. While at Spelman College, this GA AL LSAMP scholar has been involved in several research projects. Her first experience was through Morehouse College on the project entitled “Evaluating the Effects of Diabetes in the Distribution of Sodium Channels on the Sciatic Nerve in Rattus norvegicus”. During the summer 2015 through Spelman Colleges’ GSTEM Program, she traveled to Madrid, Spain where she worked under the mentorship of Dr. Mercedes Careche on the project entitled “Evaluating the Effects of Muscle Quality in Merluccius merluccius at Different Freezing Condition”. Currently, KayCei is working at Georgia State University where she studies Computational Neuroscience under Dr. Gennady Cymbalyuk. She is also a peer tutor in Biological Systems Form and Function course, as well as providing peer-advising through the Health Careers office. KayCei hopes to become a MD/Ph.D. where she will utilize her translational research skills to improve treatments and medicine in Neurology.
Nacarri Murphy is currently a senior majoring in both Mathematics and Mechanical Engineering. After this year, she will transfer to Purdue University at Indiana University to complete her B.S. degree in Mechanical Engineering in alignment with the Dual-Degree Engineering Program at Spelman College. After receiving both her Math and Mechanical Engineering B.S. degrees, she will continue her education to receive her Master’s in Mechanical Engineering at Purdue University. Most recently in her academic career, she was employed in the STEM field as a Research Intern for the Chemical Engineering Department at the University of Cordoba in Cordoba, Spain (Summer 2015).

Joi Officer completed requirements for her bachelor’s degree, Mathematics from Spelman College, Graduate and is now a second-year, dual-degree student at Indianapolis University-Purdue University Indianapolis (IUPUI) majoring in Electrical Engineering. After graduation, she plans to pursue her MBA with a concentration in supply chain management. She was employed STEM field as an electrical components intern with Allison Transmission, Inc. (May 2015- August 2015). She will be returning to Allison Transmission, Inc. as an intern summer 2016.

Tesia Smith is a senior majoring in Biology. After graduation, she plans to attend professional school.

Parris Washington is a junior majoring in Biology and Neuroscience. After graduation, she hopes to attend Georgetown University to pursue an MD/Ph.D. in Neuroscience.

Martine Williams is a junior majoring in Biology. Her research is entitled, “Missense Mutation in MSH2 Increases the Risk of HNPCC” and she presented research at the 2015 Annual GA-AL LSAMP Research Symposium. After graduation, she plans to attend medical school. She was a research intern (June 1, 2015- July 31, 2015).

Taylor Williams-Hamilton is a junior majoring in Biology. After graduation, she plans to attend David Geffen School of Medicine at UCLA as a MD/PhD candidate. As an LSAMP scholar, her research is in “Measuring Toxicity of Hair Relaxer on Planarian Organism.” Her summer research was in “Frontiers in Aging and Regeneration” at Marine Biological Laboratory. She is expected to graduate in 2017.
The University of West Georgia, founded in 1906, is a comprehensive doctoral-granting institution and a member of the University System of Georgia. UWG enrolls more than 12,000 students pursuing undergraduate and graduate degrees. Named by The Princeton Review as one of the Best Southeastern Colleges and one of America’s Best Value Colleges, UWG offers a wide range of programs, including 43 at the bachelor level, 29 at the master’s and specialist levels, four at the doctoral level and eight at the certificate level. UWG is home to the state's first Honors College, complete with an honors curriculum. The University's Advanced Academy of Georgia is one of only about 12 U.S. programs that allow gifted high-school-age students to earn concurrent high school and college credit while living on campus in a full-time residential program.

Melchisedec Adubah is Biology major. His goal after graduating is to be a Cardio-thoracic surgeon. His academic interest revolves around science research.

Louis Apraku-Boadi is a junior who is currently pursuing a dual degree in Chemistry and Chemical Engineering. While at GSU, this GA AL LSAMP scholar is studying “Solvent Reorganization in Super-cooled Aqueous Solutions” using photo-induced protonation of tri-aryl methane dyes. Upon graduation, he plans to attend graduate school, preferably, at Cal Tech, UC Berkley, or some other well-established STEM university.

Soyoung Alexander presented research in “Binding of Divalent cations to Valinomycin” characterized by NMR and UV-Vistitrations and X-ray crystallography at the Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2014, Nashville, TN, (October, 2014). She also presented research at the Southern Undergraduate Research Conference (SURC) in February 2015 on “Topologies and Complex Stoichiometries of Divalent Cations to Valinomycin.”

John Harrison is a junior majoring in Mathematics. After graduation, he plans to continue at the University of West Georgia. John serves as a math tutor in the African American male initiative at UWG.
Yaquesha Culbreth is a Biology major at UWG. Her research is in “Molecular Chaperone Activity of Alpha-Crystallin via Protection of Aquaporin0 (AQP0) from Thermal Stress”. She participated in scholars’ oral and poster competition at the 2015 GA AL LSAMP Annual Research Symposium.

Lequardis English, Jr. conducted research on “Investigation of Cadmium Sulfide Thin Films” prepared by spin coating, and presented his research at the Georgia Academy of Science Annual Conference March 13 - 14, 2015.

Jovantae Moore is a Biology major who studies the “Effect of TGF-β3 on the Migration of Prostate Cancer Cells” and presented her research at the 2015 GA AL LSAMP Annual Research Symposium.

M’Quita Parks is a sophomore majoring in Chemistry. As an LSAMP scholar, she has conducted research on the study of “Cadmium Selenide Quantum Dot Bimodal Distribution”, which she presented at the 2015 Annual GA AL LSAMP Symposium. After graduation, she plans to attend Georgia Institute of Technology.

Rigoberto Segovia is a senior and LSAMP scholar majoring in Chemistry. After graduation, he plans to attend the University of Georgia. Rigoberto’s research is in “Functional Genomic Characterization of a Light Sensitive Chlamydomonas reinhardtii Mutant Defective in Photosynthesis.” He made oral and poster presentations at the 2015 GA AL LSAMP Annual Research Symposium.

Onyebuchi Elegede is a junior majoring in Biology and Psychology. Her goal is to enroll in an MD/Ph.D. program after earning her B.S. degree.

Alexandra Mayes is a senior majoring in Chemistry. After graduation, she plans to attend Georgia Regents University. Her research involved “Structure Activity Relationship of Phenolic Antioxidants” which she presented at the Southern Undergraduate Research Conference 2015.


Betkens Tristan Senesca is a sophomore majoring in Biology. After graduation, he plans to attend Emory University or Medical College of Georgia.

Georgia Alabama LSAMP Impact Report
Edidiong Umoren conducted research in “Structure Activity Relationship of Phenolic Antioxidants” and presented her research at the Southern Undergraduate Research Conference (SURC) in February 2015.

STUDENT RESEARCH SYMPOSIUM
The GA-AL LSAMP Annual Research Scientists of Tomorrow Symposium was hosted at the University of West Georgia April 11, 2015. Approximately 149 participants (121 students and 28 faculty, staff and guests) were in attendance. Seventy-two (72) oral and poster research presentations were made by the scholars in STEM areas of biology, chemistry, physics, and environmental, computational and mathematical science. First, second and third place awards for outstanding research presentations were distributed to scholars who were selected by a panel of judges, comprised of campus coordinators and faculty mentors from across the Alliance.

The students also benefited from a highly empowering motivational address from guest speaker, Dr. Juana Mendenhall, Assistant Professor of Chemistry at Morehouse College, and a Ph.D. graduate of Clark Atlanta University. For the scholars, the symposium provided a great opportunity for significant intellectual and professional interactions among their peers and with faculty mentors.

In the previous year, the GA-AL LSAMP Spring Annual Research Symposium was hosted at CAU (April 2014). Approximately 124 participants (87 students and 37 faculty, staff and guests) were in attendance. Sixty oral and poster research presentations were made by the scholars in STEM areas of biology, chemistry, physics, and computational and mathematical science. First, second and third place awards for outstanding research presentations were given to scholars who were selected by a panel of judges, comprised of campus coordinators and faculty mentors from across the Alliance.

The students also heard from invited guest speaker and Paine graduate, Kristini Miles, Ph.D., DABT, and Senior Toxicologist at Kimberly Clark. Dr. Miles shared her research experience and how she began her
journey and education in research. In addition, participants were introduced to important elements of Graduate Record Examination (GRE) preparation (time line, content, etc.) by a representative from Kaplan Inc. For the scholars, the symposium provided a great opportunity for significant intellectual and professional interactions among their peers and with faculty mentors. Finally, students had an opportunity to meet with graduate school recruiters who were also in attendance to convey important information concerning graduate school and the application process.

**SUMMER RESEARCH EXPLORERS PROGRAM**

In its ongoing efforts to improve the research environment and opportunities for STEM research students, in 2010 the GA LSAMP created the Summer Research Explorer Program (SREP). The program began with two students and one teacher. The purpose of the program is to provide research training experiences for students at the community colleges, as well as students at the four-year institutions, who required additional research training in the summer. The program has served as a bridge for GA AL LSAMP community college scholars. Faculty mentors offer formal training and research guidance in computing, robotics, geoscience, and environmental science.

During the summer of 2015, ten (10) undergraduate students from eight partner institutions and two (2) high school students from the Atlanta metropolitan area high schools participated in the Annual Summer Research Explorer Program which was CAU. Students are conducting research on several different projects and are also engaged in daily hands-on group exercises in computational chemistry and biomolecular modeling, in addition to other professional development activities. Nine faculty members participated as research advisors, and they were supported by several graduate students and post-doctoral fellows. Students also meet weekly for scientific interactions with their peers who are participants in the NSF funded CAU- CREST Center for Functional Nanomaterials (CFNM), and the American Chemical Society Project SEED program. The scientific interactions involved various instrumental analytical techniques which are utilized in science, and include, X-ray diffraction, nuclear magnetic resonance, gas chromatography-mass spectrometry, liquid chromatography, and ultraviolet, visible and infrared spectroscopy. LSAMP scholars interacted with high school students who are participating in Summer Transportation Institute program that is funded the US Department of Transportation. The Summer Research Explorer Program culminated with a mini symposium at which the students made oral presentations on their research activities.

Earlier summer program had a major field trip component. Over 18 scholars from the Alliance partner institutions have participated in the 2012 SREP. Participants received intensive training in high-performance computing, field measurements of the urban forest canopy at the Fernbank Science Center, and earthquake seismology. The computational students also attended the 2012 XSEDE (Extreme Science and Engineering Discovery Environment Conference in Chicago.
GA AL LSAMP Annual Scholar Workshop (April 2014, Lawson State Community College, Huntsville, AL)

GA AL LSAMP Annual Research Scientists for Tomorrow Symposium (April 2015, University of West Georgia, Carrollton, GA)
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2. The Integrated Postsecondary Education Data System - IPEDS, nces.ed.gov/ipeds.
3. https://www.lsamp.org

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IMAGES THAT TELL OUR STORY