



# Peach State

## *Louis Stokes Alliance for Minority Participation*

### **Peach State LSAMP Impact Report 2011: *Strengthening the STEM Pipeline in Georgia***

(Second Edition including an Expanded Student Impact Section)

#### **Alliance Institutions**

**University of Georgia (Lead)**

**Fort Valley State University**

**Georgia Perimeter College**

**Savannah State University**

**Southern Polytechnic State University**

#### **New Institutions**

(as of September 2011)

**Georgia Institute of Technology**

**Kennesaw State University**





# Peach State LSAMP Impact Report 2011: *Strengthening the STEM Pipeline in Georgia*

## Contents

Peach State LSAMP History.....	3
Activities, Collaborations and Best Practices .....	5
Outcomes and Results .....	10
Peach State LSAMP Impact .....	12
Economic Impact in the State of Georgia .....	12
Impact on Enrollment and Degree Production in the State of Georgia .....	15
Impact on Students .....	15
Closing Remarks .....	25
References.....	26





## Peach State LSAMP History

The Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) is one of the “Baby AMPs” and was originally funded in 2005 with the mission to significantly increase the number of underrepresented minorities (URMs) completing baccalaureate degrees in science, technology, engineering, and math (STEM) programs disciplines. Originally composed of six University System of Georgia institutions, the Alliance included The University of Georgia (the oldest comprehensive sea- and land-grant institution in the University System of Georgia and the Peach State LSAMP lead institution), Fort Valley State University (state and land grant historically black college or university), Georgia Perimeter College (the largest two-year college in Georgia), Savannah State University (oldest historically black college or university in Georgia), Southern Polytechnic State University (one of the first colleges in the nation to offer the bachelor of Engineering Technology degree), and Bainbridge College (a two-year institution that left the Alliance in 2007). The remaining five institutions are educating a mix of urban, suburban, and rural populations, with a large portion of its student-population from the state of Georgia. Each has been successful in providing quality education to students, forming productive community relationships and creating partnerships to further their mission. Through their collaborative Peach State LSAMP efforts, they significantly advanced their academic objectives and collectively achieved greater outcomes than would have been achieved through their individual efforts.

In the last six years, Peach State LSAMP goals have focused on four major areas: 1) **recruitment** of students into STEM majors;

2) **retention** of STEM majors until graduation; 3) **enrollment** of students into graduate school; and 4) **professional development** for students, faculty and staff. The Alliance institutions have made significant progress in broadening the participation of minorities in STEM education and research. Each institution customizes activities to address the needs of their student populations and to build upon their institutional strengths and resources. With an aggregate of 1211 directly-funded Peach State LSAMP scholars, the Peach State LSAMP institutions have worked to “Build Bridges to Opportunities in STEM.”

**Recruitment** has been a major area of concentration because many of the URMs attending the Alliance institutions are first generation college students coming from low-income families. Most have also attended inner city urban or rural high schools whose academic records include high drop-out and low academic achievement rates. Even though many arrive with high GPAs, the faculty recognizes that the students often did not receive a rigorous STEM education in high school, which can definitely impact their success and potential graduation in STEM disciplines. This has been a challenging yet positive group of students with much potential, and **the Alliance has successfully begun the process of building a systematic pipeline of STEM majors among URM students at the member institutions.** Key methodologies for recruiting new students included summer high school and transfer bridge programs for students transitioning from high schools and the two-year institution.

**Retention** and persistence of students until graduation is the cornerstone of increasing





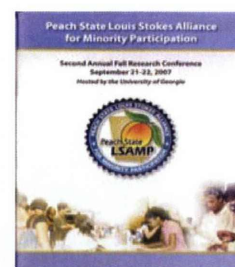
STEM graduates. The programs include tutoring, drop-in centers and peer/faculty mentoring, workshops to address a variety of academic support and resources, the Annual Fall Symposium and Research Conference and LSAMP Research Conferences, student research including some study abroad opportunities, and synergistic partnerships with other STEM initiatives on Alliance campuses as part of a systematic strategy to provide students with the academic support and opportunities to insure their success. Creating a **community** of Peach State LSAMP scholars has helped build a sense of shared success and therefore shared accountability among students. This has been accomplished via year-round programming across the Alliance. Providing research opportunities, has kept Peach State LSAMP students plugged into the campus STEM community. During the summer of 2010, the Alliance piloted a summer study abroad research program as a component of its international STEM research initiative of preparing Peach State LSAMP scholars for the global workforce. The study abroad pilot provided benchmark data and anecdotal evidence that it is a key contributor in retaining URMs in STEM majors.

**Graduate school enrollment** has increased as the Alliance institutions provided support not only for the process of applying to graduate programs, but also for the academic, research and mentoring background that a student needs to be competitive and prepared for graduate study. Approximately 28% of Peach State LSAMP scholars participated in research. More students are participating in research in National Laboratories, Science and Technology Centers (STCs), and Research Experiences for Undergraduates (REUs) programs.

**Professional development** across the Alliance has been realized primarily through the Peach State LSAMP Annual Fall Symposium & Research Conference. This event brings together students, faculty, and staff from the Peach State LSAMP institutions for two days each year. The event gives Peach State LSAMP and other LSAMP students an opportunity to showcase their research through oral and poster presentations, and expand their contacts with students from other institutions who share common interests. Conference participants may also network at the Graduate and Career Fair with graduate school representatives, faculty, staff, and special guests. Each year the event is planned by the Alliance Steering Committee and is hosted by a different Peach State LSAMP campus. The highly successful conference has grown significantly over the last five years. There were **more than 340 registered participants (students, faculty and guests)** in attendance with **more than 80 oral and poster research presentations given by LSAMP students** in each of the **last three years**. See covers from the five Annual Fall Conference brochures below.

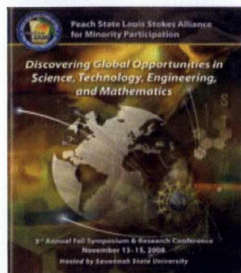


1<sup>st</sup> Annual Peach State LSAMP Conference at SPSU

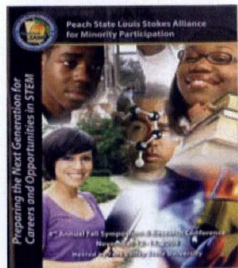


2<sup>nd</sup> Annual Peach State LSAMP Conference at UGA

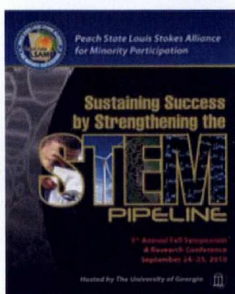




3<sup>rd</sup> Annual Peach State LSAMP Conference at SSU



4<sup>th</sup> Annual Peach State LSAMP Conference at FVSVU



5<sup>th</sup> Annual Peach State LSAMP Conference at UGA

## Activities, Collaborations and Best Practices

The Peach State LSAMP student activities are built upon well-established programs and strategies that focus on three key areas: **recruitment**, **retention** and **research**. The most effective programs and strategies implemented by Peach State LSAMP institutions include faculty and peer mentoring with LSAMP Scholars, summer bridge programs, undergraduate research opportunities, research conferences, and drop-in centers that promote learning communities among Peach State LSAMP scholars and member students and that serve as learning enrichment and resource centers. Some key student activities are highlighted below.

**High School Bridge Program:** The high school bridge program has been very successful in promoting recruitment and persistence among Peach State LSAMP freshmen. Each year Peach State LSAMP offers a three-week summer bridge program at one or more of the partner institutions. Underrepresented minority high school seniors statewide who have been admitted into a Peach State LSAMP institution are recruited to participate. The program combines academic coursework with an introduction to the campus community. The program features regular workshops and seminars on the nature of academic life, test preparation, writing and research skills, and STEM careers. Students take fieldtrips (on- and off-campus) to introduce them to career and research opportunities.



2010 Peach State LSAMP summer bridge students at UGA participating in the Ropes Course

In addition, students participate in social activities to enhance their involvement and connection to the institution and they are placed in learning communities where they are able to receive more personalized attention. High school bridge students are assigned mentors (peer and faculty) and advised about academic opportunities.





**Transfer Bridge Program:** The Peach State LSAMP facilitates a two- or three-week summer bridge program targeting students at two-year institutions planning to transfer to four-year institutions. Two-year college students who are admitted **and** plan to enroll in a four-year alliance institutions participate in a supportive learning community cohort during the summer prior to their enrollment at a four-year institution. They are assigned a faculty mentor/advisor. Two-year college students are given the opportunity to participate in research opportunities at one of the Alliance four-year institutions or at another institution conducting research of interest to them. Upon completion of the transfer bridge program, students are better prepared for the curriculum at four-year institutions.



Cassandre Sylvain and Eyoel Woldeargay, 2010 transfer bridge students at GPC, analyzing water samples

**Workshops and Training Sessions:** Attendance at workshops and training is mandatory for Peach State LSAMP scholars. Sessions including, but not limited to, preparation for graduate school and GRE training, career and job-seeking preparation skills, developing academic plans, leadership skill development, financial management skills, applying for graduate admission and obtaining financial support, and introductions to various research and research training are provided alliance-wide. In addition to traditional workshops, alliance-wide webinars are offered. Professional development for students and faculty is provided

during the Fall Symposium and Research Conference and by leveraging various institutional opportunities to provide professional development for the STEM community.



Professional Development Workshop for Peach State LSAMP students, staff and faculty.

**Learning Communities:** Peach State LSAMP administrators promote activities (such as break-out sessions and study groups) that encourage the students to become a part of a learning community when they first arrive on campus at participating Peach State LSAMP institutions. As part of the learning community, each student has the opportunity to form strong and possibly lifelong bonds with other students who have similar academic interests and with the faculty who teach those courses within the learning community. Research has indicated that students who participate in a learning community during their first semester have a higher retention rate as well as higher success rate in courses (Shapiro and Levine, 1999). Also, anecdotal experience of Peach State LSAMP administrators confirms that building a “family” among the STEM students has been beneficial.

**Mentoring (peer, graduate student, and faculty):** Alliance students typically have at least two mentors: an upperclassman (peer mentor) and one from the graduate student body (if graduate programs are offered on





campus), faculty (research- participating faculty) or alumni and industry. These mentors meet with students regularly to monitor progress, and they provide advice and support. They are available to answer questions and address concerns. Cohorts of Alliance scholars will form small study groups (especially for “gateway” courses), and in some cases upperclassmen who have had the course can provide information sessions or peer tutoring. They have a regular time for meeting and studying together to ensure their success.



Peach State LSAMP students studying together

**Outreach and Service Learning:** These activities ensure practical application of learned skills and concepts, it is mandatory that students participate in service learning and apply for internships, as appropriate. Each semester, the scholars are required to have at least five service learning hours and research and research training counts as service learning hours. A coordinator for service and internships identifies businesses and agencies in the area and helps connect interested students with opportunities to volunteer or work in areas related to their chosen careers. Volunteerism and community outreach is encouraged in the Peach State LSAMP program. The students are providing mentoring as well as math and science tutoring to local school students, girl scouts, boy scouts, boys and girls clubs. Outreach, internship and service-learning programs offer students opportunities to

learn more about their chosen majors and allow students to apply what they are learning in the classroom.



Peach State LSAMP students volunteering at a celebration festival for a local Boys and Girls club

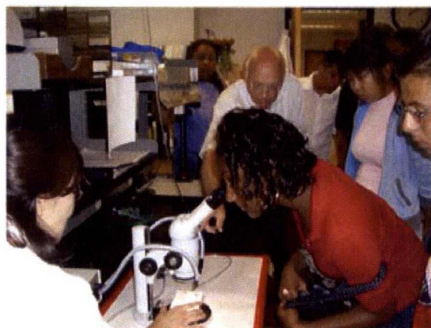
**Drop-In Centers:** Each Alliance institution provides dedicated space with resource materials and information about instructional support services, including cost-free opportunities to meet with tutors on campus, academic course resources, and other Peach State LSAMP programs and activities. Academic advisement and career counseling is available. STEM students are encouraged to take advantage of these services, interact with faculty and alumni and share best practices across disciplines.

**Undergraduate Research Training and Experiences:** Semester Undergraduate Research Training (SURT): The SURT program provides the foundational research training for freshmen/sophomores to participate in STEM research with faculty mentors. New scholars are required to participate in the SURT program. This is intended to excite and interest the new students in STEM majors and to encourage them to persist in their fields. These students attend a bi-monthly seminar series conducted by the participating faculty on: a) how to conduct a literature search and develop a hypothesis, b) how to conduct research design and statistical/analytical





methods, c) how to present data in oral and written formats, d) what are laboratory safety and ethical issues in science, e) how to find a graduate mentor and choose a graduate program, and f) how to apply to graduate school. The faculty mentors assist the students in applying for summer internships at major research universities.



Peach State LSAMP students participating in Summer Undergraduate Research Training

*Semester and Summer Undergraduate Research Experience (S-SURP):* The S-SURP program assists Peach State LSAMP scholars in obtaining research experiences, particularly those that are funded by NSF Research Educational Units, at the alliance 4-year and research institutions. The S-SURP program support scholars who are conducting research with a faculty mentor during the fall, spring or summer semester. It is essential that the students who participate in the research training, SURT, have an opportunity to participate in the S-SURP at universities, national laboratories, or in industry so that their options for graduate school and future STEM employment are expanded. Also students are expected to present their findings at appropriate regional and national conferences.



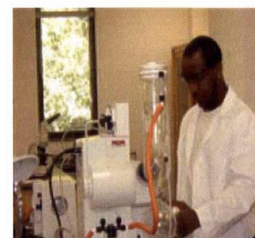
Nekeshia Griffin, Senior at SPSU, gathering fish for the Redbreast Sunfish Project, summer 2011



Amber Crawford, sophomore (left), Margaret Major, Associate Professor of Biology (center), and Olawumi Opanuga, sophomore (right) at GPC working on the transformation of *E. coli* with pGLO



Shanquia Smith, junior at UGA, in the Kente Village of Bonwire, Ghana while studying abroad summer 2010



Andrew Morrison, a junior at SSU, using a Buchi Rotary Evaporator in the Chemistry Laboratory

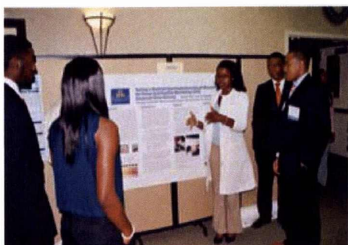




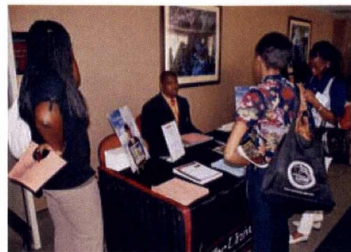


## Fall Symposium and Research Conference:

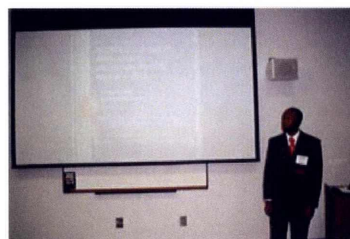
This annual two-day research conference for students, faculty, scientists and staff is a flagship event for the Peach State LSAMP. Attendance is **mandatory** at the research conference for all Peach State LSAMP who are research scholars and they are required to give a research presentation. Each year the conference is hosted by one of the Alliance institutions. The conference is structured to maximize networking interactions, to facilitate the development of the LSAMP community of scholars, and to reinforce the commitment of students to earning a bachelor's degree and pursuing graduate study or employment in STEM related fields. The program features plenary workshops and training sessions, poster sessions and oral presentations of Peach State LSAMP student research, and discussion panels with participating graduate students, faculty members, and representatives from government and industry. The judges for the oral and poster research are the STEM research faculty at the Alliance and other institutions. Students have an opportunity to talk with representatives from graduate schools (specifically those with Bridge to the Doctorate, AGEP and other NSF supported graduate programs), corporations, and government agencies at the recruitment/career fair. Students meet other peers interested in STEM careers and reinforce one another's commitment to stay the course.



Nateja Diaz Greene, sophomore at SSU, presenting at the Peach State LSAMP 5th Annual Fall Conference



Students participating in the Graduate and Career Exhibitor Fair at the Peach State LSAMP Conference



Jonathan Jones, junior at UGA, presenting his research at the Peach State LSAMP Conference

The Peach State Alliance institutions have been very successful in providing meaningful workshops and experiences that are well-planned and engaging for the LSAMP scholars. Partnering and collaborations have been key elements in that success. The Alliance administrators leverage both institutional and externally-provided programs, resources, and services. Peach State LSAMP institutions have established the following partnerships and collaborations to meet the measurable goals of the LSAMP program and to ensure the success of its STEM students.

- Visions for the Valley (internship assistance)
- American Chemical Society at Fort Valley (tutorial program)
- Beta Kappa Chi (travel awards)
- Hope Scholarship (financial support for scholars)



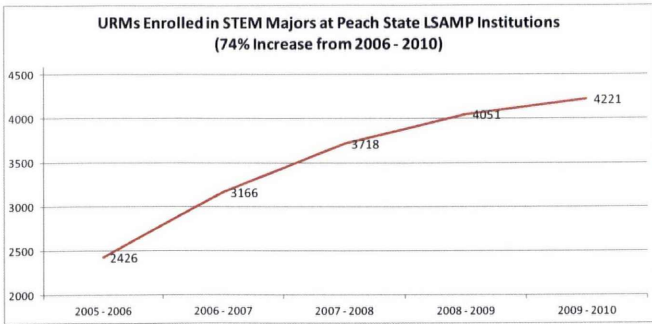


- U. S. Department of Agriculture (mentors for research at no cost)
- REUs at Alliance and other institutions (research opportunities)
- Engineering Dual Degree Programs at several institutions
- DeKalb Academy for Technology and the Environment (D.A.T.E.)
- Programs funded by the University System of Georgia such as the STEM Initiative, Black Male Initiative and the Mathematics Engineering and Science Achievement (MESA) program
- Science and Engineering Clubs at Georgia Perimeter College
- City of Savannah Housing and Urban Development grant (training and service learning)
- National Science Foundation GK12 grant (college students in K-12 classrooms and K-12 teachers in research)
- National Science Foundation PRISM at Savannah State University
- Department of Education STEM 360 (summer STEM camps for K-12 students)
- NOAA LMRCSC grant (marine science summer camp)
- US Army JETS grant (engineering technology summer camp for local high school students)
- National Science Foundation HBCU-UP (summer workshops for K-12 STEM teachers)
- National Institute of Health RIMI (faculty and student research)
- Georgia Power (supplemental funding for LSAMP summer bridge and annual conference)
- Georgia Telecommunication (scholarships)
- Institutional support for graduate assistants, faculty release time, and support staff
- U. S. Department of Energy National Laboratories (student and faculty research)
- Numerous Industry Partners (student internships and research)

## **Outcomes and Results**

The Peach State Alliance member institutions work as a team to create programming that is student-centered and promotes students successfully completing baccalaureate degrees and pursuing graduate degrees in STEM disciplines. The Alliance has effectively begun the process of building a systematic pipeline of STEM majors among URMs at the member institutions. From 2006-2010 the enrollment of URMs in STEM fields at Peach State LSAMP institutions has increased by 74%. Figure 1 demonstrates an enrollment trend that has been increasing each year since the inception of the Alliance. The greatest jump in enrollment took place between the fiscal years 2006 and 2007, where enrollment increased by 740 students among the member institutions. Having a growing enrollment is the basic foundation for the STEM pipeline and reflects a momentum that the Alliance will continue to build upon.





Source: NSF WebAMP - OMB #3145-0136 LSAMP Program

Figure 1: Enrollment of Underrepresented Minorities in STEM Majors at Peach State LSAMP Institutions

The majority of the URM's enrolled in the Alliance institutions are Black or African American (86%) and Hispanic or Latino (14%). This population trend among minorities is representative of that of the state of Georgia. Table 1 below provides enrollment disaggregated by race/ethnicity among the URM's enrolled in STEM majors at member institutions.

Table 1: Enrollment of Underrepresented Minorities in STEM Majors by Race/Ethnicity at Peach State LSAMP Institutions

URM Enrollment in STEM for Peach State LSAMP	2006	2007	2008	2009	2010
Black or African American	2177	2767	3266	3550	3615
Native American	20	32	33	27	31
Alaska Native	1	0	0	0	0
Native Hawaiian or Other Pacific Islander	0	2	0	3	0
Hispanic or Latino	228	365	419	471	575
<b>Total URM's in STEM</b>	<b>2426</b>	<b>3166</b>	<b>3718</b>	<b>4051</b>	<b>4221</b>

Source: NSF WebAMP - OMB #3145-0136 LSAMP Program

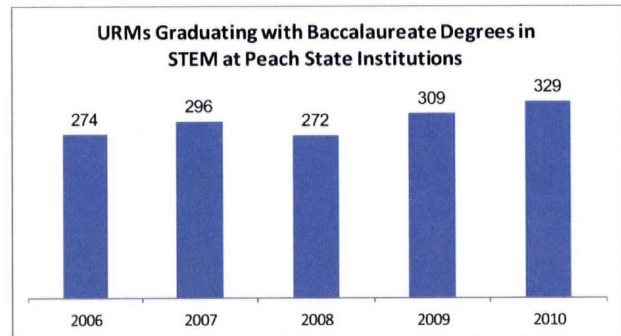
There has been a 20% increase in the percent of URM's receiving baccalaureate degrees in STEM at the Alliance institutions from 2006-2010. **The University of Georgia has more than doubled the number of URM's receiving a baccalaureate degree in STEM majors during that time period with a 121% increase.** See Table 2 below. Figure 2 indicates that each year had an increase in

baccalaureate degrees among URM's in STEM at the Alliance institutions except for in 2008.

Table 2: Underrepresented Minorities Receiving Baccalaureate Degrees in STEM Majors at Peach State LSAMP Institutions

URMs Graduating with Baccalaureate Degrees in STEM (20% Increase from 2006 - 2010)					
PSSLAMP Institutions	BS Degrees for URM's in STEM				
	2006	2007	2008	2009	2010
Fort Valley State University	58	62	54	58	61
Georgia Perimeter College	N/A	N/A	N/A	N/A	N/A
Savannah State University	78	102	73	100	92
Southern Polytechnic State University	82	72	84	73	52
University of Georgia	56	60	61	78	124
<b>Total</b>	<b>274</b>	<b>296</b>	<b>272</b>	<b>309</b>	<b>329</b>

Source: NSF WebAMP - OMB #3145-0136 LSAMP Program and NCES IPEDs Data Center



Source: NSF WebAMP - OMB #3145-0136 LSAMP Program

Figure 2: Baccalaureate Degrees for Underrepresented Minorities in STEM Majors at Peach State LSAMP Institutions

Table 3 summarizes major outcomes and accomplishments of the Peach State LSAMP program. There were 1211 Alliance scholars who were directly funded as a general or research scholar. Of those 1211 scholars, 1079 were retained, hence **89% retention rate for the Alliance** to date. The Alliance has had 449 scholars to graduate and 62 graduates to enroll in graduate or professional school. There is some data that suggest that Alliance STEM students are taking longer than five years to complete their baccalaureate degrees. Sufficient data





must be collected to study such matriculation trends. Eighty-one Peach State LSAMP scholars transferred from Georgia Perimeter College to a four-year institution, which indicates 59% transfer rate among the LSAMP scholars who attended a two-year institution. Other outcomes include 374 funded research opportunities (on-site, off-site, and international), 352 LSAMP workshops, 531 scholars have presented at conferences and 14 have published their research in the first six years of operation.

Table 3: Peach State LSAMP Outcomes

Outcomes	
# Peach State LSAMP funded scholars	1211
# conducted research – on site	260
# conducted research – off site	91
# international research	23
# workshops	352
# student presentations at conferences	531
# student publications	14
# transfers to 4-year colleges	81
# students retained	1079 (89%)
# students graduated	449
# enrolled in graduate programs	62

Source: Reported by Alliance Institutions

Another outcome and accomplishment is that the majority of Peach State LSAMP programming has been implemented alliance-wide (Table 4). The member institutions continue to work collaboratively to ensure that general programming is identified and developed as an Alliance. Because of the uniqueness of the institutions, each customizes planned activities and approaches that are suited for the needs and distinctiveness of its students and its campus culture.

Table 4: Peach State LSAMP Implementation of Programming across the original five Alliance Institutions

Programs	FVSU	GPC	SPSU	SSU	UGA
Summer Bridge Programs (freshmen and transfer)		√			√
Summer Research Program (including research internships)	√	√	√	√	√
Scholarships for STEM Bridge Programs	√	√	√	√	√
Campus meetings and workshops	√	√	√	√	√
GRE & Graduate School Preparation Workshops	√		√	√	√
Faculty Mentoring Program	√	√	√	√	√
Peer Mentoring Program	√	√	√	√	√
STEM course tutoring services	√	√	√	√	√
Advisement and academic planning	√	√			
Peer tutoring	√	√	√	√	√
Travel to professional conferences	√	√	√	√	√

Source: Reported by Alliance Institutions

## Peach State LSAMP Impact

### Economic Impact in the State of Georgia

The Peach State LSAMP institutions have a tremendous economic impact on their local communities and the state. Based on the University System of Georgia's Economic Impact report developed by the Selig Center for Economic Growth in the Terry College of Business at the University of Georgia (report released April 2011), each of the Alliance institutions creates substantial economic impacts in terms of output, value added, labor income, and employment. The combined economic impact of the Alliance institutions on their host communities in FY 2010 (July 1, 2009 – June 30, 2010) includes:

- \$3.2 billion in output (sales);
- \$2.3 billion in valued added (gross regional product);
- \$1.6 billion in labor income; and
- 32,248 full- and part-time jobs.





These economic impacts equate to jobs, higher incomes, and greater production of goods and services for local households and businesses. A summary of the economic impact contributed by each of the Alliance Institutions in FY 2010 is provided below.

Table 5: Economic Impacts of Peach State LSAMP Alliance Institutions

Alliance Institutions	Output Impact	Value Added	Labor Income	Full- and Part-time Jobs
Fort Valley State University	\$ 141,491,449.00	\$ 99,623,115.00	\$ 69,025,591.00	1,784.00
Georgia Perimeter College	\$ 691,379,412.00	\$ 470,129,286.00	\$ 291,018,343.00	6,822.00
Southern Polytechnic State University	\$ 192,180,991.00	\$ 132,963,181.00	\$ 85,170,938.00	1,813.00
Savannah State University	\$ 127,619,006.00	\$ 89,374,783.00	\$ 60,408,564.00	1,392.00
University of Georgia	\$ 2,005,335,890.00	\$ 1,489,900,769.00	\$ 1,066,425,149.00	20,437.00
<b>Totals</b>	<b>\$ 3,158,006,748.00</b>	<b>\$ 2,281,991,134.00</b>	<b>\$ 1,572,048,585.00</b>	<b>32,248.00</b>

Source: Selig Center for Economic Growth, Terry College of Business, University of Georgia (www.selig.uga.edu) April 8, 2011

**The University of Georgia (UGA)**, located northeast of Atlanta in Athens, GA, is a Research I institution offering baccalaureate, master's, doctoral, and professional degrees in STEM areas including biological sciences, physical sciences, agricultural and environmental sciences, and its Office of STEM Education is part of a statewide, systemic effort to recruit and retain students in STEM disciplines via the University System of Georgia's Presidents' STEM Initiative. UGA provides both community-based and technology-based economic development resources with the ultimate goal of creating vibrant and thriving communities to make Georgia a better place to live. **The institution provided a combined (sales, gross regional product, and labor income) economic impact of \$4.6 billion producing 20,437 full- and part-time jobs in FY 2010** (see Table 5).

Combining expertise from across its campuses, UGA provides practical, science-based multidisciplinary approaches to addressing major issues faced by society today. For example, UGA has unique strengths in agriculture, forestry, environmental science, engineering, genetics and microbiology enabling the institution to serve as a knowledge hub for bioenergy research and development in Georgia. Other thrust areas such as infectious disease, water, and applied genetic technologies make UGA a major resource for current research and information in areas of importance to the state. UGA has extensive experience with commercializing pragmatic outcomes from its research enterprise. This is done through intellectual property licensing, technology feasibility analyses, and core labs and testing facilities, among other resources.

**Fort Valley State University (FVSU)**, located in a rural region of middle Georgia has expanded its STEM offerings and majors and opened a new STEM academic building in 2010 with state-of-the-art technology and laboratories, and enrollment of URM students in STEM have increased approximately 53% from 2006 – 2010. FVSU continues to drive economic growth in their local community, according to the latest statistics. **The institution provided a combined (sales, gross regional product, and labor income) economic impact of \$310 million producing 1,784 full- and part-time jobs in FY 2010** (see Table 5). The institution provides 16 baccalaureate programs in STEM areas including animal science, biology, computer science, engineering, horticulture, chemistry, veterinary technology, food and nutrition and math with two masters-level programs in animal science and biotechnology. FVSU's acclaimed biology and chemistry





departments send more students of African descent to medical and dental programs than any other Georgia state school.

**Georgia Perimeter College (GPC)**, the two year partner, is the largest associate degree-granting institution in the state and has 5 campuses within three counties in the metro Atlanta area, and recruitment efforts are focused at over 280 high schools (public and private) in Georgia. GPC's mission is unique in that as a transfer two-year institution all STEM associate degree programs are designed so that the student moves on to the next level – baccalaureate degree program. GPC's mission centers on student success. With four institutional strategic goals, 1) strengthening student success, 2) creating and fostering a culture of teamwork, leadership, quality service and continuous improvement, 3) enhancing the social and cultural vitality of our communities, and 4) expanding access and enrollment capacity, GPC strives to provide a strong and vibrant learning environment so that students thrive in our global society. **The institution provided a combined (sales, gross regional product, and labor income) economic impact of \$1.5 billion producing 6,822 full- and part-time jobs in FY 2010** (see Table 5). Also during that year, GPC had 513 full time, first-time freshmen enrolled in STEM majors of Biology, Chemistry, Geology, Mathematics, Physics, Computer Science, and Engineering with a total of 2,721 full-time students enrolled in STEM.

**Savannah State University (SSU)**, a four-year HBCU located on the Southeastern Georgia coast has a high-tech STEM center in their College of Science and Technology, and students have been engaged in STEM research through STEM programs including NSF HBCU-UP, NSF Peach State LSAMP,

NIH RIMI, and DOE Environmental Justice. **The institution provided a combined (sales, gross regional product, and labor income) economic impact of \$277 million producing 1,392 full- and part-time jobs in FY 2010** (see Table 5). SSU offers baccalaureate degrees in biology, chemistry, mathematics, engineering technology (civil, electronics, computer), marine science, environmental science, and forensic science. In addition, they have a master's degree program in marine science.

**Southern Polytechnic State University (SPSU)** is located northwest of Atlanta in Marietta, GA, where four of its five schools are STEM-focused. **The institution provided a combined (sales, gross regional product, and labor income) economic impact of \$410 million producing 1,813 full- and part-time jobs in FY 2010** (see Table 5). SPSU offers 24 baccalaureate degree programs in STEM disciplines including architecture, chemistry, biology, computer science, computer game design, engineering (civil, electrical, construction, mechanical, mechatronics, systems, and software), engineering technology (civil, computer, industrial, and telecom), information technology, and physics. The institution provides three master's degree programs in computer science, information technology, and quality assurance.

The Peach State LSAMP member institutions have a tremendous economic impact on the state and the local communities individually. As an Alliance, the Peach State LSAMP program has a shared influence on the retention and baccalaureate degree attainment of students with STEM majors. The shared influence is evident in the enrollment and degree production increases described earlier.





These increases also translate into greater economic impact of the Peach State LSAMP Alliance.

A direct economic impact of the Alliance is demonstrated by the revenue that is contributed to member institutions' local communities as a result of the annual Symposium and Research Conference. It generates revenue to local hotels, restaurants, and overall tourism in the local community in which the conference is held. As presented in this report, the annual conference is the premier event that brings together students, faculty, and staff from the Peach State LSAMP institutions as well as other LSAMP institutions for two days each year. The event gives students an opportunity to showcase their research. In the last five years, the conference has been held at SPSU (Marietta, GA), UGA (Athens, GA), SSU (Savannah, GA) and FVSU (Fort Valley, GA). **Over the last five years the Peach State LSAMP conference has generated approximately \$375,000 in revenue to the local community of the host institution.**

### **Impact on Enrollment and Degree Production in the State of Georgia**

Peach State LSAMP has been successful in increasing URM enrollment in STEM as well as STEM degree production in the state of Georgia. Strong administrative and faculty support, partnerships, committed staff, and student-centered programming have been the foundation for the success to date.

In the state of Georgia, the college enrollment of Black and Hispanic students grew rapidly from 1997 to 2007. In Georgia, there were 57,400 more Black and Hispanic students enrolled in 2007 than in 1997. This growth represents a 63%

increase of all URM students entering college over this ten-year period in Georgia (SREB *Fact Book on Higher Education 2009*). In addition, enrollment of URMs in STEM majors in public institutions in the state of Georgia has increased significantly. However, there has been a 10% decrease in the baccalaureate degree production for URMs in STEM majors in the state of Georgia during that same time period.

As reported above in Figure 1, **enrollment of URMs in STEM among the Peach State Alliance Institutions has increased by 74% from 2006 – 2010**. Also as presented in Table 2 and Figure 2, baccalaureate degree production for URMs in STEM majors at the Alliance institutions has been experiencing a 13% increase from 2006 – 2009 and a 20% increase from 2006 - 2010. Therefore, **collectively the Peach State LSAMP institutions are outpacing the University System of Georgia's public institutions in STEM baccalaureate degree production among URMs by at least 23%.**

### **Impact on Students**

The success of the Peach State LSAMP is significant in terms of its effect on STEM graduate production in the state of Georgia, but the true impact is realized in the lives of the individual students who benefit as a result of their participation in Peach State LSAMP activities. The Peach State LSAMP has had a tremendous impact on its member students.

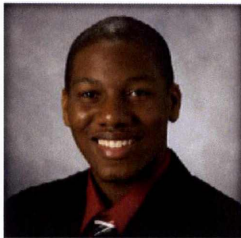
A number of scholars have participated in research as undergraduates and have been included as an author in research publications, received scholarships from notable professional organizations, and have pending patents because of their





contribution. Selected scholars from each institution are featured below.

***Selected LSAMP Scholars from the University of Georgia***



**Marcus Hines** is a first year MD/PhD student at New York University School of Medicine. He graduated magna cum laude with High Honors from UGA with a B.S.

in Cellular Biology in May 2011. While at UGA, Marcus conducted research under the guidance of Dr. Michael Tiemeyer and Dr. Lance Wells and presented his research at a number of statewide and national conferences. As a Peach State LSAMP scholar, Marcus served as a summer mentor and tutor.

**Jamaal Parker** is currently attending Saint Louis University as a Billiken Ignatian Scholarship recipient in the School of Public



Health, where he is pursuing a Masters of Public Health in Biostatistics and Epidemiology. He earned a B.S. in Statistics and a Certificate in Leadership and Service from UGA in 2010. While at UGA, he provided data analysis for a study titled, *Palm Pilots to Help People Quit Smoking* with the College of Public Health. At Saint Louis University, he is a research assistant for health literacy and smokeless tobacco projects with the School of Public Health's Behavioral Science and Biostatistics Departments. His anticipated graduation date is May 2012.



**Whitney Ingram** is a first year Ph. D Student at the University of Georgia. She obtained her B.S. in Physics at the University of Georgia 2011. During her undergraduate career,

Whitney participated as a LSAMP Research Scholar and officially worked as a mentor for African American females. She has won several awards for oral and poster presentations, and also completed a co-author publication, during her time as a LSAMP Research Scholar. Whitney interned for the US Army's Night Vision and Electronic Sensor's directorate research lab in Fort Belvoir, VA for two summers.

**Abimbola Ademola**

**Dada** is a first-year pharmacy student at the Albany College of Pharmacy and Health Science in Colchester, Vermont. She graduated from UGA with a B.S.



degree in Biological Science in May 2010. While attending the University of Georgia, Abimbola was mentored by Dr. Paige Carmichael, Associate Dean of UGA's College of Veterinary Medicine. As a Peach State LSAMP Scholar, she conducted research on CD8 T cells with Dr. Klonowski in the Cellular Biology department at UGA.

**Shelina Ramnarine** is currently in her second year at Washington University attaining a Ph.D. in Human and Statistical Genetics. She graduated with a double major in Biology and Statistics from UGA







in 2010. As a LSAMP scholar, she participated in a summer undergraduate research program at Washington University in St. Louis (Wash U) for two summers while conducting research in statistical genetics at UGA. She presented her research at five national conferences resulting in either first or second place awards in the life sciences and mathematics category. Her summer research at Wash U also resulted in co-authorship on a publication about gene-environment interactions. Since she has been at Wash U, Shelina received an honorable mention from the National Science Foundation Graduate Research Fellowship.

### *Selected LSAMP Scholars from Fort Valley State University*

#### **Noel Matthews-Gardner**

graduated from FVSU and is currently pursuing a Ph.D. in computational chemistry at Jackson State University. While at FVSU she participated in summer research experiences including computational chemistry at Jackson State University, working with strain energy of 1,2 and 1,3 thiazetadines and methylation of purine bases. She also did summer research on stereoselective hydrolysis of cyclic nucleotides at University of South Alabama. As a result of her internships, she realized her passion for working in the lab. Noel will complete her Ph.D. in the spring of 2012.



**Derrious Lowe** is a 2007 graduate of FVSU with a B.S. in Chemistry. He is currently working on a Ph.D. in biochemistry at Clark Atlanta University. While at FVSU, he was a Presidential Scholar, a member of the Peach State LSAMP Program, and served in the legislative branch of the SGA as a senator. He was known as a leader and a scholar. His strengths include hard work, dedication and perseverance. He says, with the help of LSAMP, he has become confident and willing to face any challenges. At Clark Atlanta he is researching a TiO<sub>2</sub> compound in conjunction with light to deactivate viruses and bacteria in water – ensuring the water is clean for everyone to use.



#### **Turquoise Alexander**

is a Fort Valley State University alumnae who is currently a “Bridge to the Doctorate” scholar pursuing a Master’s degree in biology and working inside a Jackson State University medical research lab on the Mississippi Delta. She is conducting research trials on a new cancer-fighting herb that can potentially save lives. “I’m working with a plant called *ocimum gratissimum* (also known as African Basil),” says the Savannah native. It’s a Hawaiian plant, which her mentor proved inhibits the growth of prostate cancer cells. Turquoise credits her research experiences to the Peach State Louis Stokes Alliance for Minority Participation.

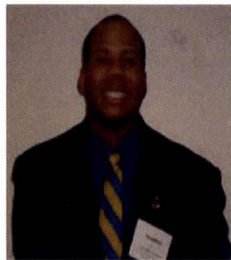




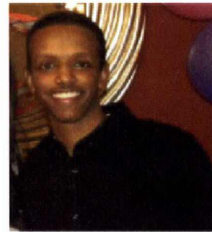
**Christopher Johnson** received a B.S. degree in biology from FVSU. He is currently working on a Master's degree in biology at Georgia State University with a concentration in neurobiology and behavior. While at FVSU, Christopher was a Presidential Scholar and a member of the Beta Kappa Chi National Honor Society and a member of FVSU marching band where he served as a section leader and as the concert band section leader. He was a member of Kappa Kappa Psi National Honorary Band Fraternity Inc., where he served as president. Christopher credits his research experiences and participation in LSAMP for preparing him for graduate school.

**Geoffrey Will-Morris**

**Turner** is a second-year pharmacy student at Mercer University's College of Pharmacy and Health Sciences in Atlanta, GA. He is a FVSU graduate who majored in Chemistry. Geoffrey was awarded the Presidential Scholarship upon entering college, which is the highest scholarship awarded by the college. While at Fort Valley State University, he was a member of the tennis team, science club, American Chemical Society, Peach State Louis Stokes Alliance for Minority Participation, and Alpha Kappa Mu Honor Society, and he received many scholarships, honors, and awards. He conducted summer research at the University of Georgia and Iowa State University. He credits the Peach State LSAMP program for keeping him grounded and allowing him to participate in research and conferences.



**Selected LSAMP Scholars from Georgia Perimeter College**



**Hamdi Ahmed** is currently majoring in Civil Engineering at Georgia Tech. The Peach State LSAMP program at GPC impacted his academic career in many ways. It provided him with academic, advising as well as financial support. Peach State LSAMP also provided countless networking opportunities throughout the years. During the summer of 2009, Hamdi was exposed to undergraduate research, as a result of the Peach State LSAMP program at GPC. He conducted research on an "Objects in Motion" project under the supervision of Mr. Jay Terry. He gained a wealth of knowledge from the research conducted during the summer; he also developed strong social, computational skills, improved his report writing skills, and enhanced his leadership skills. He will be graduating with a Bachelor's degree in civil engineering in May 2012 from Georgia Tech.



**Olawunmi Opanuga** participated in the Peach State LSAMP program at GPC. She transferred to UGA fall semester 2010 and graduated cum laude as a Biology major from UGA in the summer of 2011. During the summer of 2010 Olawunmi participated in the Transfer Summer Bridge program held at GPC. She worked on a Transformation of *E. coli* with pGLO and Purification of the Green Fluorescent Protein (GFP) research project under the supervision of Dr. Ilse Ricketts. She is currently studying to take the GRE exam, so





she can gain admission into a Masters of Physician Assistant program in 2012.



**Randy Montgomery**, a GPC Peach State LSAMP scholar, participated in the summer of 2010 Transfer Summer Bridge (TSB) program. As a part of the TSB program he worked

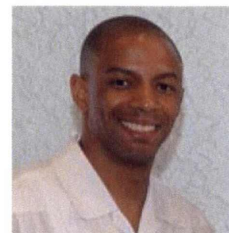
on an Engineering A.I.R Image Processing Project. Randy is currently enrolled at Georgia Tech pursuing a degree in Electrical Engineering. He plans to graduate from Georgia Tech fall 2012. Randy stated, “Peach State LSAMP taught me the benefits of networking and prioritizing task to achieve goals.” It has been a skill that has proved invaluable at Georgia Tech. To be successful you need to not just understand the text material, but to also take advantages of collaborating with like minds. Randy is now serving as a mentor for new engineering students at Georgia Tech.



**Abiti Sahlie** is currently enrolled at UGA majoring in Biochemistry. This summer he participated in the GPC Transfer Bridge

Program and had the opportunity to experience, first hand, the skills needed to complete research in the field of Organic Chemistry. Abiti stated: “If it were not for the Peach State LSAMP program at GPC, I would not have had this experience.” Over the time period of three weeks, he learned a variety of research techniques. He worked with Dr. Pamela Leggett-Robinson synthesizing chalcones. He learned a lot about synthetic sequences in chemistry, and the importance of time management when conducting a research project.

**Marshall Prude** is currently enrolled at the University of Georgia pursuing a BS degree in Microbiology. He participated in the Peach State LSAMP



CSI (Current Scholars Investigates) Summer Bridge program at GPC. Marshall said “for the first time, I had an opportunity to learn the techniques required to conduct a research project.” This Summer Bridge experience afforded Marshall the fortuity to work closely with Professors and staff at GPC. Overall, the program gave him and other Peach State LSAMP scholars the tools necessary for success in more advanced laboratory settings, and future directed research projects.



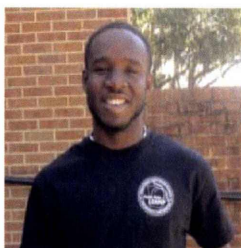
**Courtney Lemon** is currently attending Georgia Tech majoring in Biochemistry after graduating as a math major in spring 2011 from GPC. During the

summer of 2010 Courtney interned at Georgia Institute of Technology. She worked on bimodal dielectric for use in capacitors. Georgia Tech and Society for Advancement of Chicanos and Native Americans in Science (SACNAS) sponsored her to go to Anaheim, California to give an oral presentation on the research she did during the summer at Georgia Tech. During the summer of 2011, Courtney participated in an internship at Vanderbilt in Diabetes and Endocrinology.





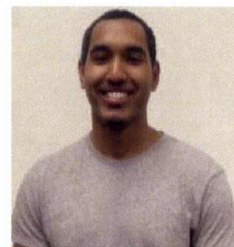
**Noor Mohamed**, a GPC LSAMP scholar and Chemistry major, transferred to UGA in the fall semester 2011. There he is majoring in Environmental Health Science. During the summer of 2010, Noor interned at Clark Atlanta University (CAU) under the guidance of Dr. Maher Atteya and Dr. Ishrat Kahn. He worked on The Effects of Electrospinning and Sonication on PEO and PS Systems. Noor gave an oral presentation at the 5th Annual Peach State LSAMP conference held at UGA and the fall 2010 GA LSAMP research symposium held at Clark Atlanta University. In addition, Noor gave a poster presentation at the 17th Annual Georgia Conference on College & University Teaching, held at Kennesaw State University. During the summer of 2011, Noor participated in an internship program at the Pharmacy Readiness and Enrichment Program sponsored by Campbell University School of Pharmacy in North Carolina.



**De Navard Antoine**, a GPC LSAMP scholar, is currently enrolled at Georgia Tech majoring in Biochemistry. During the summer of 2011, he participated in the Transfer Summer Bridge (TSB) program at GPC and worked on a research project to design and build a rocket. This project allowed him to apply physical principles learned in class to solve real life problems. Also during that summer, he participated in the summer Nanoscholars program at the Center for Nanoscale Material located on the campus of Clark Atlanta University (CAU). While at CAU he worked on Bulk Free

Radical Polymerization of Styrene. His research was supervised by Dr. Maher Atteya.

**Leland Roberts**, a Peach State LSAMP scholar, graduated from GPC and is now majoring in Engineering at SPSU. He participated in the 2009 Transfer Summer Bridge (TSB) program at GPC. During the TSB program Leland and Hamdi Ahmed conducted research on an “Objects in Motion” project under the supervision of Mr. Jay Terry. As a result of his research exposure at GPC, Leland was selected to participate in a 10 weeks internship at SPSU during the summer of 2011 under the supervision of Dr. Adeel Khalid. He presented his work at the 6th Annual Peach State LSAMP symposium. The title of his poster presentation was: “Thrust Measurement Device.”



### *Selected LSAMP Scholars from Savannah State University*

**Edwinna Patterson** graduated from Savannah State University in 2009 with a Bachelor of Science degree in Biology. She was a member of the Peach State LSAMP program from 2007-2009. In the summer of 2008 Edwinna carried out her research on “The Effect of a Halogenated Aniline Analog on Rat Erythrocyte Skeletal Membrane Proteins.” She attended a number of national conferences as a poster presenter. After graduation she enrolled into





Gwinnett Technical College's Bioscience program where she received a Bioscience Regulatory Assurance Certificate she puts to use in working in a laboratory environment making animal vaccines to help prevent Merck's Disease. She is currently pursuing her Master's in Public Health at Argosy University in Atlanta, GA as well as working at Merial Select in Gainesville, GA.



**Natasha Patterson** graduated from SSU in 2009 with a Bachelor of Science degree in Mathematics and a minor in Computer Science. She was a member of the Peach State LSAMP program from 2006-2009. She attended a number of national conferences and received 2nd place at the Annual Peach State LSAMP Conference and 2nd place at the Annual HBCU-UP Conference in 2007. Her research "Perfect Triangles" was published in 2008 in the Georgia Journal. In May 2011, Natasha received a Master's degree in Secondary Mathematics. She is currently teaching Mathematics at Towers High School in Decatur, Georgia.

**Rossmery Alva** graduated with Bachelor of Science in Civil Engineering Technology in May 2010 from SSU. She is presently pursuing graduate studies in Environmental



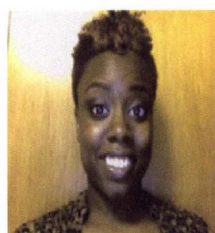
Engineering at the New Jersey Institute of Technology in Newark, NJ. The anticipated graduation date is December 2012. As a LSAMP scholar, she carried out summer research on Integration of LabVIEW Simulation in Civil Engineering, and made presentations at the Peach State LSAMP

2007 Annual Conference and placed second on the poster and oral presentations. She was also a co-author and presenter at the American Society of Engineering Education in Austin, TX (2009 Annual Conference).

**Shaleatha Holmes** graduated from SSU in May 2011 with a Bachelor of Science in Chemistry. She is currently pursuing her graduate studies in Biomedical Sciences at



the University of North Texas Health Science Center (UNTHSC). As a Peach State LSAMP scholar, she conducted research at SSU organic chemistry with Dr. Zhao in which they synthesized molecules and analyzed their activities in relation to retrovirus pathways, and developed green methods for the production of biodiesel fuel. As a result of that research, she co-authored three publications. In addition, she participated in research at Ohio State University (OSU) for two consecutive summers. While at OSU, she conducted research to understand the activation of the epidermal growth factor receptor (EGFR) after spinal cord injury through histology and fluorescence microscopy, and studied the overexpression Slit2 protein, a glycoprotein, to determine its function in relation to a retrovirus



**Ruth Tilus** graduated from SSU in May 2010 with a Bachelor of Science degree in Biology. She is currently a second year Bridges to the Doctorate and Cota Robles Fellow at University of California Santa Cruz. Her Ph.D. program is in the area of molecular, cellular and developmental





biology. While at SSU, she attended the 2009 Peach State LSAMP Annual Conference and also the 2009 ABRCMS conference. She was engaged in a 10-week research project at the Materials Science Institute at New York University in the summer of 2010.

**Christopher Jean-Louis**

graduated from SSU in May 2007 with Bachelor of Science degree in Biology. He carried out his undergraduate summer research on Photodynamic Theory and presented the same at the 2006 Peach State LSAMP Annual Conference earning an award for the 2nd place. He was also awarded for his research presentation at the 2007 ABRCMS conference in Austin, TX. He completed his Master's degree in Medical Sciences from University of North Texas in 2009 and is now a 3<sup>rd</sup>-year medical student at the Texas College of Osteopathic Medicine at the University of North Texas Health Science Center.



**Janet Cowins**, an SSU graduate, is currently a second year graduate student at Clark Atlanta University, pursuing her Ph.D. in Polymer Chemistry. Her current research involves the

study of solubilizing  $\beta$ -Cyclodextrin drug delivery vehicles via the development of an aptamer functionalized polymer for use in cancer therapeutics. While at SSU, she carried out her undergraduate summer research in the field of Organic Chemistry and she presented a poster entitled: Microwave-Assisted Esterification of N-Acetyl-L-Phenylalanine Using Modified

Mukaiyama's Reagents: A New Approach Involving Ionic Liquids in the HBCU-UP National Research Conference in the fall of 2007 in Washington DC.

**Alton Render**

graduated from SSU with a Bachelors Degree in Computer Science in December 2010. Now he is pursuing graduate studies in the Computer Science Program at the University of Texas at SanAntonio. His specialization is in Software Engineering. He participated in 2008 summer undergraduate research at SSU and presented his research at the 2008 National HBCU-UP Conference in Atlanta, GA and 2008 Peach State LSAMP National Conference in Savannah, GA. He also worked as student assistant/peer tutor for the NSF-HBCU-UP program.



**Stacy Cobb** graduated from SSU in three years and received a Bachelor of Science degree in Mathematics and a minor in Biology in May 2008. She received her Master's degree in

Statistics in May 2010 from Stony Brook University (SBU), where she was awarded a \$30,000 SBU fellowship. She then decided to work in industry for a while. She received a year contract at Harvard School of Public Health in their Epidemiology department. Stacy's research consisted of case control studies dealing with birth defects. There are papers that are in the process of being published. After a year's work of research, she decided she wanted to go back to school to obtain her Ph.D. in Statistics. Now she is at the University of Georgia as a first year





doctoral student. She plans to obtain her Ph.D. in couple of years, so that she may pursue her dream of doing statistical genetic research in the area of Autism or Cancer.



**Rowena Palko** is working as an Engineer II at Gulfstream Aerospace Corporation in Savannah, Georgia. She incorporates new test equipment, designs new rigging procedures,

performs investigation, and solves technical problems associated with the manufacture of Gulfstream aircraft. She graduated from SSU in December 2007 with a Bachelor of Science in Electronics Engineering Technology. As a LSAMP Scholar in the summer of 2007, she had an internship with Instrumentation and Control System Department at Bechtel SAIC Co. LLC in Las Vegas, Nevada.

**Tomul Howard** graduated from SSU with a Bachelor of Science degree in Biology in May 2009. He is currently working in the City of Atlanta Department of Watershed



Management, as a plant operator. As an LSAMP scholar, he has participated in summer research at SSU and attended ABRCMS conference in 2008 and also presented research paper at HBCU-UP conference and won 3rd place for poster presentation in Chemistry at the Peach State LSAMP 3rd Annual Research Conference at Savannah, GA. His summer research titled, *Fluorescence and Singlet Oxygen Quantum Yields of Sulfonated Metal-Phthalocyanines* was later published in *Journal of Undergraduate Chemistry Research* in 2009.

He was active member of Beta Beta Beta (Tri-Beta) Biological Honor Society.

**Vernecia Person** is pursuing a Doctoral Degree in Polymer Chemistry at Clark Atlanta University (CAU). Her research entails the study of the properties of polymer



nanocomposites. She has three research publications. She presented research entitled *Thermal and Electrical Properties of Nanocomposites: Simulation Study of Nano-Reinforced Epoxy Resins* at AFRL conference in May 2011 in Atlanta, GA and AFRL Annual Spring Review in Dayton, Ohio in April 2010. Vernecia graduated from SSU with an ACS certified B.S. degree in Chemistry in May 2008 (Cum Laude). During 2007 summer at Savannah State University, she participated in research project titled *The Regeneration of cellulose from ionic liquids for an accelerated enzymatic hydrolysis*. This work was published in the *Journal of Biotechnology*.

**Amanda Magabo** is working as a Field Engineer with Schlumberger Technology in Denver, CO. She started her undergraduate studies in Civil Engineering at SSU



from 2007 to 2009. As an LSAMP scholar, she participated in research entitled *Smart Cones in a Construction Zone* in the summer of 2008. She collaborated on the design and development of a physical model of smart cones in a construction zone and presented at the 3rd Annual Peach State LSAMP conference and won 3rd place. She transferred to Georgia Tech in Atlanta, Georgia and graduated with a Bachelor of





Science in Civil Engineering in May 2011. While at Georgia Tech, she was a student research assistant from August 2009 to December 2010. There she studied the relation of plant roots to building foundations from a geotechnical perspective.

### ***Selected LSAMP Scholars from Southern Polytechnic State University***



**Dontrece Smith** obtained his Bachelor of Science degree in Biology from Southern Polytechnic State University in December 2009. As an undergraduate, he served

as a Peach State LSAMP scholar and tutor. He conducted research with Dr. Peter Sakaris on the population dynamics of the snail bullhead catfish *Ameiurus brunneus*. Dontrece is currently pursuing a Master of Science degree in Marine Sciences program at SSU. He is working on his master's thesis entitled *Utilizing Geographic Information Systems (GIS) to Assess the Distribution of Coastal Shark Species in Relation to Macrohabitat Features and Spatial Variables off the Coast of Georgia and the Movement Patterns of the Bonnethead Sphyrna tiburo in Romerly Marsh Creek, Wassaw Sound, Georgia*.

**Aaron Love IV** is a senior at SPSU pursuing a dual degree in Electrical Engineering Technology and Mathematics with a minor in Nuclear Power. Aaron completed his first research project with an oral and poster presentation for the 2009 Peach State LSAMP Conference. More recently he conducted



research during the summer of 2011 in Washington, D.C. with the U.S. Department of Energy (DOE) and U.S. Environmental Protection Agency (EPA), where he was mentored by an SPSU faculty Dr. Deidra Hodges and members of the EPA's Office of Indoor Air & Radiation. His project was entitled "*On to Generation IV: Nuclear Waste and A primer on the Integral Fast Reactor.*" Aaron was recently selected to participate in the Phase I 2011-2013 Minorities Striving and Pursuing Higher Degree's mentorship program that will assist in his plans for pursuing a Master's degree in Nuclear Engineering.

**Nekeshia Griffin**, a Peach State LSAMP scholar and a young leader in the Metro Atlanta area, is a senior majoring in Biology at SPSU. As



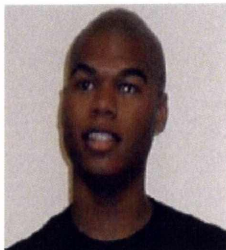
an advocate for education and protecting the environment she has interned for Keep Cobb Beautiful as an Associate Board Member for two consecutive years and was recognized as the most valuable intern during the 2010-2011 school year. Under the advisement of Dr. Peter Sakaris, Nekeshia has begun research on the human impact on local streams in Cobb County and will be presenting their results at the Southern Division of the American Fisheries Society Conference in February of 2012. Upon graduation, Nekeshia plans to attend graduate school to attain a Master's degree and Ph.D. in Wildlife and Fisheries Biology so that she can apply her skills in adaptive and watershed management.







**Joshua Gober** is a senior at SPSU. He is majoring in Chemistry and will be graduating in the spring semester of 2012. In the summer of 2011, he conducted research at Emory University in Atlanta, GA, entitled, “*Characterization of Self-Assembling Peptide Fibers Based on Coiled-Coil Structural Motifs.*” He was mentored on the project by Dr. Vincent P. Conticello. After graduation, Joshua plans to obtain a Ph.D. in Chemistry and pursue a career as a research scientist.



Commission’s Nuclear Power Generation Scholarship. Upon graduation, he plans to pursue a Ph.D. in Electrical Engineering.

## Closing Remarks

The Peach State LSAMP team is a strong partnership of diverse resources and competencies. The original five institutions have demonstrated significant strengths and capabilities as a Peach State LSAMP institutional member. As the Alliance moves forward to continue to strengthen the STEM pipeline in Georgia with a persistent focus on recruitment, retention and research, two new alliance partners, Georgia Institute of Technology (the largest nationally and internationally ranked technological institution in Georgia) and Kennesaw State University (third-largest university in Georgia), are joining the Peach State LSAMP in September 2011 (at the time of this report). In addition, the Peach State LSAMP program will collaborate more closely with the University System of Georgia’s Presidents’ STEM Initiative, a statewide focus on STEM. The STEM Initiative’s charge is to significantly increase the number of K-12 students interested in mathematics science and engineering, the number of students in college who pursue the STEM disciplines, and the number of teachers prepared who are better able to keep K-12 students in the STEM pipeline by 2013. Expansion of the Peach State LSAMP team and collaborative efforts with the University System of Georgia’s Presidents’ STEM Initiative will strengthen Peach State LSAMP’s presence in the state of Georgia.

**Rashad Tatum** is a senior at SPSU. He is pursuing a Bachelor’s degree with a dual major in Computer Science and Mathematics and will be graduating in fall 2012. He plans to pursue a Master’s degree in Software Engineering. In the summer of 2011, Rashad conducted research at Texas A&M University, in Corpus Christi, TX, where he was mentored by Dr. Dulal Kar on a project entitled, “*Identity-Based Security Protocols for Mobile Wireless Sensor Networks.*”



**Toussaint Moseley** is a senior majoring in Electrical Engineering at SPSU. For the summer of 2011, he conducted research at the Environmental Protection Agency in Washington, DC. He was mentored by Dr. Deidra Hodges from SPSU on the project entitled, “*On to Generation IV: A primer on the Integral Fast Reactor and a comparison to the back-end of the Light Water Reactor Fuel Cycle.*” He is a recipient of the Nuclear Regulatory



The Alliance institutions will continue to build inter-institutional relationships and





work together to refine student programming. Alliance members will maintain collaboration and communication at multiple levels (administrative, faculty, staff and student) within and across alliance institutions while recognizing institutional autonomy and cultural differences. The Peach State LSAMP will be a mechanism for innovation and will continue to “change the equation in STEM” for Georgia.

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# Peach State

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