

## Research at Clark Atlanta University

Clark Atlanta University has a Carnegie classification of Research University - High Research Activity and is one of only four Historically Black Colleges and Universities to earn such a classification. CAU has built a significant base of basic and applied research and development activity in a variety of areas that are of national and global importance.

"At Clark Atlanta University, we believe that research and education cannot be decoupled. Research at CAU is essential in providing a world-class educational experience for our students. We leverage the diverse skills and expertise of our faculty, researchers, staff and students to make significant discoveries and contributions to the knowledge of humankind." ~ Marcus W. Shute, P.E., Ph.D., Vice President, Research and Sponsored Programs (RSP).

STEM faculty at CAU continue to perform extensive science research, including, but not limited to:

- Molecular Approach to Cancer and Chlamydial Disease prevention
- ID4 Expression and Function in Prostate Cancer
- Elucidating Molecular mechanisms by which Snails May Enhance Prostate Cancer Progression
- New Polymer materials for Application in Biological Systems, Polymer-based Nanostructures for Therapeutics and Diagnostics
- Preparation of Titano-Zeolites for Removal of Radionuclides from Waste Water
- Discreet SIR Models for the Spread of Diseases
- Physical Processes Occurring at the Surfaces and Interfaces of Epitaxially Grown Semiconductors for Application to Microelectronic and Integrated Device Structures
- Effect of Nanostructured Fillers on Polymer Properties/Composite Fabrication and Testing

## STEM Departments

Biological Science.....	404.880.6790
Chemistry.....	404.880.6850
Computer and Info Science.....	404.880.6951
Dual-Degree Engineering.....	404.880.6940
Mathematical Science.....	404.880.8199
Physics.....	404.880.8797
Psychology.....	404.880.8236

## Application and Program Requirements

Program applications and information may be obtained at the HBCU UP Office located in the Research Center for Science and Technology, room 3013. Information will also be posted each semester at the following locations: McPheeters-Dennis Hall, and Carl and Mary Ware building, and in all STEM departments.

Applicants must meet the following criteria: 1) be enrolled full time at CAU , 2) be a U.S. citizen/permanent resident, 3) have and maintain a GPA of 3.0 or higher, 4) provide a copy of an unofficial transcript, and 5) provide two academic reference letters. Selection to the program is determined by the HBCU UP committee composed of STEM faculty coordinators from each discipline.

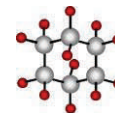
### Contact Information

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# HBCU UP



Clark Atlanta University offers undergraduates opportunities to participate in an NSF-funded HBCU UP Program designed to increase the number of minority science and technology researchers. Applicants must be enrolled as a STEM major (biology, chemistry, computer and information science, dual-degree engineering, mathematics, physics, and psychology).



## Program Overview

In August 2006, Clark Atlanta University was awarded a \$2.5 million dollar grant from the National Science Foundation (NSF) to support Historically Black Colleges and Universities Undergraduate Program (HBCU UP) *Strengthening Undergraduate STEM Research and Education*. The program seeks to enhance the quality of undergraduate science, technology, engineering and mathematics (STEM) courses as a means to broaden diversity and overall participation in the Nation's STEM workforce. The program also helps to promote reform—both regionally and within individual campuses—to provide unprecedented levels of education and opportunity for minorities underrepresented in STEM fields. Through these efforts, the program seeks to broaden the diversity of the Nation's workforce while promoting individual excellence each step of the way.

### Institutional Mission Statement and Objectives

- Offer up-to-date courses that incorporate appropriate and effective instructional methodologies that prepare students well for graduate study in the STEM fields.
- Provide superior support services and mentoring that promote retention, graduation, and lifelong learning.
- Provide STEM undergraduate students opportunities to participate in fundamental research innovation and applications that enhance their skills and thirst for knowledge and strengthen their interest in doctoral study.

Dr. Carlton E. Brown officially became the institution's third President in August 2008, and is the Principal Investigator for the HBCU UP Program. He is committed to ensuring that all of the institution's research programs



are a success and serve our students well. Dr. Marcus W. Shute, Vice President for Research and Sponsored Programs (RSP), and his support staff, Dr. Cass D. Parker, Chemistry Department Chair/Co-PI, Ms. Carolyn Taylor, Program Manager, the Internal Steering Committee (ISC)/ External Advisory Committee (EAC), and STEM faculty also have an intricate role in the daily operation and management of the HBCU UP Program.

### Academic Bridge Program

In the summer of 2008, Dr. Brown met with the HBCU UP Program Director, Dr. Cass D. Parker, and the Internal Steering Committee (ISC), to discuss the institution's financial position to fund a proposed summer Academic Bridge Program for incoming first-year STEM students. After meeting with his administration, Dr. Brown was ecstatic to report that the University could support such a program that would greatly benefit our STEM students.

The goals of the program include, but are not limited to: 1) seek first-year STEM undergraduates who have been accepted to CAU, and have completed the application process, 2) introduce participants to first-year curriculum so they are better prepared academically prior to enrollment during fall semester, and 3) ensure that student academic needs are addressed early to facilitate their transition to the HBCU UP Program.

### HBCU UP Recruitment and Outcomes

In year two (2008), a greater emphasis was placed on recruitment of a diverse set of STEM students for the undergraduate research program, and a very strong recruiting effort was undertaken. As a result, the number of



applicants significantly increased, compared to the 2007 year, with more than forty (40) students vying for what was originally proposed for only 18 slots. Thirty-eight (38) students were supported in research or related academic pursuits and twenty (20) faculty members agreed to serve as advisors/mentors. Our STEM faculty has extensive expertise and knowledge in the field of science research and technology, and with their continued effort, support, publications, and grant-writing skills in science research, students can and will benefit academically as well as

professionally, in addition to being well prepared for graduate school and/or academic professions. Science research is a valuable tool that extends to all aspects of our livelihood and the environment.

### Research Opportunities

Program participants are strongly encouraged to apply for and participate in summer research internship programs offered at various research institutions and federal laboratories that partner with Clark Atlanta University. (i.e., Center for Behavioral Neuroscience [GBN] led by Georgia State University, Center for Advanced Materials for Purification of Water with Systems [CAMPWS] led by the University of Illinois at Urbana-Champaign, the Nanobiotechnology Center [NBTC] led by Cornell University, and summer research opportunities at Forest Products Laboratories [FPL] at Madison, Wisconsin, as well as research collaborations with a host of other universities, national and federal laboratories.



### HBCU UP Student Wins 3rd Place

In March 2008, Ms. Laurisa London, a senior biology major, attended the Research Centers in Minority Institutions (RCMI) 4th Annual National Symposium on Prostate Cancer. Hosted at Clark Atlanta University.. Ms. London won 3rd place for her poster presentation titled *The Effect of Route of infection on the Pathogenesis of Chlamydia Trachomatis Infection*. She is presently a graduate student at Clark Atlanta University and is continuing her studies in biological sciences.



In the summer of 2008, four students participated in summer research activities at Forest Products Laboratories (FPL) located in Madison, Wisconsin. In November 2008, two Biological Science majors were accompanied by their research advisor, Dr. Valerie Odera-Marah, at the RCMI 11th Annual International Symposium on Health Disparities in Honolulu, Hawaii.