DIVISION OF SCIENCE AND MATHEMATICS
MOREHOUSE COLLEGE
OUR SCIENCE BUILDING IS NAMED FOR THREE AMAZING MEN.

Dr. Samuel M. Nabrit, the first Morehouse graduate to earn a doctoral degree and the first African American to earn a doctoral degree from Brown University, became chair of the Department of Biology at Morehouse in 1932. Dr. Frederick E. Mapp, beloved biology professor, was a faculty member at the College for 47 years and inspired the annual Mapp Science Symposium. Dr. Henry C. McBay, named chair of the Department of Chemistry in 1956, is credited with creating a department that provided excellent training for graduate school. During his time, 10 percent of African Americans holding doctorates in chemistry completed their undergraduate work in chemistry at Morehouse.
Surprise is a common reaction when I tell people that 30 percent of Morehouse students major in science and math, particularly considering that the national average is 15 percent. That response is most often followed by the obvious question: Why?

The answer is equally obvious. Our science and math students relish the liberal arts energy that defines a Morehouse education—superior creative-thinking skills, problem-solving skills, communication skills and the recognition that learning is a lifetime joy.

In step with our vision for the Division, we actively promote close interaction between students and faculty across the academic spectrum. Increasingly, we hear from graduate and professional school recruiters and industry that they are looking for students who have broad interdisciplinary knowledge, because the problems to be addressed in the future — e.g. developing clean and renewable energy sources — are inherently interdisciplinary.

Our Division majors know they will graduate fully prepared. They will have experienced the scholarly and research rigor required to excel as they join the workforce, pursue graduate degrees in their subjects (many earn the Ph.D.), pursue advanced degrees in other areas (we count lawyers, corporate leaders and education administrators among our alumni) or follow a path into healthcare. We are celebrated for giving a remarkable number of African American physicians their early foundation.

We have a strong history behind us. Morehouse Men, from U.S. Surgeon General David Satcher to physicist and Morehouse’s ninth president Walter Massey, have made impressive contributions to healthcare, scientific advancements and mathematics. Our legacy of producing great leaders is matched only by our exciting future ahead as we continue to inspire graduates to serve the common good at home and around the globe.

Sincerely,

J.K. Haynes
David Packard Professor and
Dean of Science and Mathematics
Our options are expansive

The Division of Science and Mathematics is a solid cornerstone of one of the finest liberal arts institutions in the nation: Morehouse College. The College provides intellectual and moral leadership for a 21st-century Renaissance of character, civility and community. Here at Morehouse, the sciences are viewed as collaborative disciplines – not residing in a vacuum. The study and practice of science and math are influenced by – and, in turn, influence – all aspects of the world. It is our experience that actively engaging diverse disciplines spurs creativity and expands possibilities.

Budding researchers share their talents and interests on collaborative projects.
DEPARTMENT OF BIOLOGY
The department's mission is to prepare students for graduate and professional school and the workforce. The department trains students to think and communicate in a scientific manner — expecting them to become self-disciplined, focused scholars by graduation. This is facilitated through formal courses, laboratories and seminars in a broad range of subjects that present principles, facts and concepts of biology.

DEPARTMENT OF CHEMISTRY
The depth of this department allows majors, without limitation, to pursue graduate studies or begin careers as professional chemists. The objective is to develop the ability and desire of students to apply the techniques of sustained and objective critical analysis to solving problems.

DEPARTMENT OF COMPUTER SCIENCE
The study of computer science is, at its essence, interdisciplinary. It is a discipline that influences all others. As a result, our students select course sequences that allow them to combine studies in computer science with their interests in other areas, from chemistry to psychology. Just as important, the program is fluid and flexible — responding quickly to rapidly changing developments in the field.

DEPARTMENT OF MATHEMATICS
The department, using a wide and balanced curriculum, gives students the reasoning skills to succeed in graduate work or in private industry or government careers. The goal is to mold graduates who are capable of thinking abstractly and logically, and are able to use technologies to solve real-world problems.

DEPARTMENT OF PHYSICS AND DUAL-DEGREE ENGINEERING PROGRAM
The department teaches the integral character of physics in the liberal arts curriculum and its essential role in engineering and technology. The dual-degree option combines a liberal arts education and a professional engineering education. Students complete their engineering studies at one of fourteen nationally ranked engineering schools (see sidebar).

DEPARTMENT OF PSYCHOLOGY
The department provides a strong foundation in the basic principles of research in the behavioral sciences; prepares students for advanced graduate training; and fosters self-understanding, self-improvement and insight into others’ behavior. Students are given the tools, academically and personally, to pursue careers in professional psychology, business, law, medicine and related fields.

MAJORS:
Bachelor of Science:
Biology
Chemistry
Computer Science
Mathematics (two tracks)
Physics
Psychology
Bachelor of Arts:
Mathematics
Psychology

INTERDISCIPLINARY MINORS:
Environmental Studies
Public Health Sciences
Neuroscience
Bioinformatics
Earth and Atmospheric Sciences
(Collaboration with Georgia Tech School of Geophysical Sciences)

Dual-Degree Engineering Program
This unique opportunity is offered in collaboration with engineering school partners, including:

Auburn University
Clarkson University
Columbia University
Dartmouth College
Georgia Institute of Technology
Indiana University–Purdue University Indianapolis
Missouri University of Science and Technology
North Carolina Agriculture and Technical Institute
Notre Dame University
Rensselaer Polytechnic Institute
Rochester Institute of Technology
University of Alabama at Huntsville
University of Michigan at Ann Arbor
University of Southern California
OUR VALUES ARE OPPORTUNITIES

RESEARCH

Research of peer-review quality is a vital component of the division's curriculum. Whether students are interested in research careers or a related path, research enhances their problem-solving and creative-thinking skills—cores of a liberal arts education. The division receives funding for undergraduate research from the National Institutes of Health, the National Science Foundation, the U.S. Department of Defense, the U.S. Department of Energy, the U.S. Department of Education, and the Howard Hughes Medical Institute.

Frank Conyers '11, biology major, attends Harvard Medical School where he is pursuing a M.D./Ph.D. toward a career in academic medicine.

“Very simply, I am where I am because of Morehouse College and the Division of Science and Mathematics. They gave me the means to follow my aspirations. First of all, as a HOPPS scholar, I received a full-tuition scholarship to work in the Morehouse-run stem cell research laboratory. But it didn’t stop there. I also participated in paid research fellowships at the University of Michigan, where I studied gastrointestinal physiology, and Harvard Medical School, where I studied molecular mechanisms of cardiac repair— all as an undergraduate!”

Christopher Copeland ’09, physics major, is pursuing dual master degrees in nuclear science and engineering (NSE) and technology and policy, along with a Ph.D. in NSE at the Massachusetts Institute of Technology.

“The career I see for myself definitely took root while I was at Morehouse. That’s where I first dove into my research interests in the application of antineutrino detection for nuclear nonproliferation and security verification applications. It’s amazing to be able to tackle that kind of research as an undergraduate. It is even more amazing that I got to expand on it through internships with the Universite Louis Pasteur in France and the Tokyo Electric Power Company in Japan—working with both scientists and policymakers.”
The Wall Street Journal named Morehouse as one of the top feeder schools for this nation’s top professional and graduate schools.

James Whitfield ‘06, chemistry and mathematics major, completed his Ph.D. in chemical physics at Harvard University and is currently a postdoctoral fellow at Columbia University and NEC Labs working on adiabatic quantum computing.

“I think success depends on two things: great opportunities and mentoring relationships. I was fortunate to have both at Morehouse. For instance, as an undergraduate, I worked on an independent study project that disproved a theorem on recurrences by Poincaré—writing and presenting a conference paper on the topic. I was also fortunate enough to be influenced by Dr. Troy Story, who helped me line up summer research at the University of California at Berkeley, where I met my current Ph.D. supervisor. It goes without saying that I was really honored to be asked to write and contribute a chapter to Dr. Story’s book, Introduction to Differential Geometry with Applications to Navier-Stokes Dynamics.”

James Hill ‘06, computer science major, completed his Ph.D. in computer science at Vanderbilt University. He is currently an assistant professor of computer science at Indiana University—Purdue University Indianapolis.

“My research focuses on three areas: (1) techniques for evaluating distributed system quality of service properties early in the software lifecycle, (2) techniques for supporting real-time instrumentation of distributed software systems, and (3) techniques for reducing model use complexity in domain-specific modeling languages.”

Luke Yancy ‘11, computer science major, graduated with summa cum laude and Phi Beta Kappa honors. As a HOPPS scholar, he completed award-winning research projects at the Broad Institute of MIT/Harvard, Stanford University and Princeton University.

“I currently attend Stanford University, where I’m pursuing a Ph.D. in biomedical informatics. My studies here are directly influenced by the undergraduate research work I did at Morehouse as a HOPPS scholar. It was an opportunity that helped me discover and define my concentration on the study of diseases that adversely affect minority populations—including diabetes, high cholesterol and heart disease. My ultimate goal is to figure out why black people and other minorities suffer so much more severely in these areas versus majority populations.”

Robert Drummond ‘02, biology major, graduated Phi Beta Kappa and magna cum laude, completed The Johns Hopkins School of Medicine MD/Ph.D. program, and is now an internal medicine resident at the University of Southern California.

“I entered Morehouse College with the goal of becoming a physician, but I developed an interest in research during my sophomore year. With support and encouragement from my mentors in the department of biology, I was awarded both the ARCS scholarship and the MARC/USTAR research scholarship. I subsequently participated in research internships at Yale School of Medicine, Morehouse School of Medicine, and the National Heart, Lung, and Blood Institute at the NIH. After having numerous conversations with mentors in my department, I concluded that I could have the maximum impact in my chosen field of interest (sickle cell disease) through a career as a physician scientist.”
Dr. J.P. Brown mentors a discovery-focused student.
INTERDISCIPLINARY EDUCATION

The different areas of science are not separate in nature, but continuous. There is an intriguing – and often amazing – overlap between the sciences and all academic disciplines, from literature to politics. The major problems to be solved today are primarily interdisciplinary. It is critical – both for their success and for the benefit of society – to equip our graduates with a broad base of fundamental knowledge that allows them to collaborate with their colleagues and be of value to their communities.

TWO MINDSETS, ONE GOAL
The scientific study of the brain and its functions is on the frontier of science. Neuroscientists study such issues as the molecular and cellular basis of neuronal function, nervous system structure, how systems of neurons process information, and many other fascinating areas. The neuroscience minor at Morehouse is designed to encourage students to approach their study of human behavior from an interdisciplinary perspective, particularly through a close blending of biology and psychology.

SAVING ENERGY AND THE ENVIRONMENT
The Morehouse-Wide Initiative for Sustainable Energy (M-WISE) is a model program at Morehouse to create a transformative, interdisciplinary curriculum and research infrastructure for students to become leaders in the global arena of sustainable energy.

M-WISE provides classroom and real-life opportunities for students to learn the connection of energy research to business, economics, social science, policy and psychology. The result is a model for energy education at Historically Black Colleges and Universities and liberal arts colleges to prepare students for future careers in energy and a green economy.

Courses throughout the College are infused with topics in sustainable and alternative energy. More than 50 percent of the total student population will be exposed to energy topics upon graduation.

In addition, a science-based, interdisciplinary energy minor can be pursued by all students, regardless of their majors.
OUR VALUES ARE INSPIRING

MENTORING

One of the bedrocks of a great liberal arts college is the close interaction between students and faculty. There is much that students can learn from faculty outside of the classroom – particularly when faculty and students share the same interests – by working together on research projects, service initiatives and career planning.

ADVOCATES OF HEALTHCARE CAREERS

The Office of Health Professions provides career advice and access to health profession mentors. Individual students are counseled one on one by the office director. Both the Professional Seminar Series, held twice a month during the regular semester, and the Health Careers Summer Scholars Program bring alumni in health professions back to the College to speak to pre-health students. During these sessions, each alumnus shares his story of becoming a successful healthcare provider and offers practical advice based on personal challenges and experiences.

The Office also organizes health professional school recruitment fairs and visits, and provides assistance with the application process to health professional schools.

The Office of Health Professions has played a major role in attracting and increasing the number of Morehouse undergraduates applying to and successfully entering health professional schools. Among our alumni are more than 1,000 physicians and more than 350 dentists who have gone on to successful careers in health professions.

According to the Association of American Medical Colleges, over the past 10 years, Morehouse has consistently ranked among the top five feeder schools of minority students into medical school. Currently, more than 300 Morehouse students have indicated an interest in a health career.

Over the past 10 years, Morehouse has consistently ranked among the top five feeder schools of minority students into medical school.

—Association of American Medical Colleges
Psychology students collaborate with Dr. Daniel Hummer (and a furry friend).
ACTIVE LEARNING

A liberal arts college presents a wonderful opportunity for a student to enrich his experience by exploring a variety of subjects that may relate to his area of study or perhaps simply pique his interest. We provide a variety of possibilities for active, hands-on learning, including collaborative and peer-based learning in the classroom, guided inquiry in the laboratory and partnering with faculty members on research initiatives.

TUTORING, THE NEW WAY

Our Peer-Led Team Learning (PLTL) Program follows an inventive, alternative model to traditional tutoring. Workshops, developed by faculty and led by student peers, are linked directly to relevant and specific course content. These workshops are more on the order of discussion groups among friends and colleagues — a way to share and enhance knowledge in an open, friendly and non-intimidating environment. Currently, the Division’s PLTL initiative involves 25 faculty members and more than 50 peer leaders each semester.

Dr. Lawrence S. Blumer, a national leader in inquiry-based learning, teams with students to create undergraduate laboratory teaching protocols.
Due to the measurable success of this initiative, Morehouse is now recognized as a leader in PLTL implementation. The Division of Science and Mathematics planned and hosted a national conference, “Expanding Peer-Led Team Learning (PLTL) in the Sciences and Mathematics: Strategies for Successful Implementation.”

ASK AND YOU SHALL LEARN
Inquiry-Based Learning has been shown to be very effective in engaging students’ interests, introducing real-world issues, fostering group and individual work, and making students active learners. One of its leading practitioners is Lawrence S. Blumer, director of the Morehouse Environmental Studies Program. In collaboration with Emory University, Blumer is developing undergraduate laboratory teaching protocols focused on the Bruchid bean beetle, Callosobruchus maculatus. The goal is to test and share engaging, teachable, hands-on laboratory activities that science teachers can incorporate into their curricula.

The Division’s PLTL initiative involves 25 faculty members and more than 50 peer leaders each semester.
OUR VALUES ARE LASTING

INTERNATIONAL EXPOSURE
We live in a world where the connections between nations and people strengthen every day. Understanding other cultures and awareness of the global economy are imperative to effectively adapting, innovating, communicating and succeeding in a multicultural environment. A major goal of Morehouse – vigorously supported by our Division – is internationalizing our students’ experiences. Toward this end, we provide opportunities for our students to study and do research in various countries.

ENGINEERS TAKE GLOBAL STAGE
A collaborative award with Georgia Tech from the National Science Foundation enables pre-engineering students to participate in a 12-week research training program aboard. Research projects are hosted at a host-site technology firm or university and culminate in a report and seminar presentation.

Cultural-discovery excursions are also included in the summer experience. Since 2005, Morehouse students have traveled around the globe to pursue their research interests: from Brazil to Switzerland, Argentina to Tanzania, Ecuador to Ghana, and many other stops along the way.

A SPIN OF THE GLOBE
Morehouse is a participating institution in The Louis Stokes Alliance for Minority Participation (LSAMP) Discovery and Innovation Center for International Undergraduate Research Experiences. The program, administered by the National Science Foundation (NSF), has working relationships with major universities in France, Brazil, Argentina, South Africa and India. New opportunities will include the Czech Republic, Austria, Thailand and Costa Rica. In the inaugural year of the program, one Morehouse student studied in Argentina, one in France, and two in Brazil.

Olaseni Sode is an excellent example of a division student who made the most of his international opportunities. He studied abroad for a year at the University of Nantz in France and trained at the CNRS (National Center for Scientific Research) national laboratory in Toulouse, France. Sode graduated from Morehouse in 2008 with a double major in chemistry and French, and is currently pursuing a Ph.D. in quantum theory at the University of Illinois at Urbana – Champaign.
Dr. David Wall Rice, associate professor of psychology, on a research trip to Ghana.
Morehouse students and Dr. J.P. Brown hang out with Einstein at the National Academy of Sciences in our nation’s capital during an orientation for international research training in Argentina, Brazil and France.
DEVELOPING LEADERS

A significant level of student development takes place outside of the classroom, and thus a real strength of the Division is the extracurricular programs such as career and personal counseling that provide opportunities for students to develop leadership skills.

ROAD TO A LIFE OF RESEARCH

The Research Careers Office provides a variety of support, including: a Research Careers Club, GRE preparation, counseling, recruitment opportunities, scholarships and fellowships, and a vast source of information on graduate schools, summer programs, and research opportunities. Each year, 175 students participate in off-campus training programs across the country and abroad. A sampling of host sites includes Harvard, MIT, Cornell, Stanford and Georgetown. In many cases, these experiences provide stepping stones to the students’ later enrollment in the hosts’ graduate schools.
OUR PROGRAMS ARE INNOVATIVE

The breadth of opportunities offered by the Division of Science and Mathematics is truly remarkable, enabling students to pursue unique interests; delve into real, meaningful research; and sharpen critical-thinking and communication skills. These opportunities spring from a series of innovative, thoughtfully designed programs that give our students a competitive edge as they move toward graduate and professional school and up the ladder of their careers.

DISCOVERY RESEARCH EDUCATION FOR AFRICAN AMERICAN MEN IN STEM (DRK-12)
Growing the pool of talented and highly trained African American men to teach science and math is a critical goal supported by Morehouse College and the National Science Foundation. To achieve that, this recently established – and NSF-funded – program integrates science, technology, engineering and mathematics (STEM) with teacher preparation. The heart of the effort lies in recruiting promising black male students in the 11th grade. These students participate in an intensive six-week summer program at Morehouse after their junior year in high school, followed by a year of Morehouse Saturday Academy sessions while seniors in high school. They then begin their academic careers at Morehouse through a summer pre-freshman program.

BUILDING RESEARCH INFRASTRUCTURE CAPACITY (BRIC)
The BRIC program is specifically designed to enhance research infrastructure and capabilities by providing resources to strengthen faculty-initiated research projects and to foster more robust research training for faculty and students.

The BRIC program is especially vital at Morehouse because of our focus on the development of minority scientists and on health disparities. A particular focus of the program is supporting health disparity research by junior faculty, as well as increasing our entire faculty’s ability to compete for traditional research funds.

The program also aims to strengthen the access to and use of resources and training services – including library, data management and conferencing – through electronic media. The vision is that these shared facilities will foster collaborative projects in the area of health disparities.

HOward Hughes Medical Institute (HHMI) Undergraduate Science Education Program
Developing the next generation of scientists who will search for critical answers is also at the core of the Division of Science and Mathematics. On its website, the Howard Hughes Medical Institutes states, “We live in
an era of discovery. Each day, scientists bring us closer to understanding fundamental questions about human life. The quest for answers – as well as the promise of what those answers might yield – is at the heart of our work.” The generous support of HHMI enables academically advanced Morehouse students to develop close research mentorships with faculty in the Division as part of an intensive program that integrates classroom and laboratory research during the summer and throughout the academic year. To meet the rigorous demands of one of the program requirements – participation in the Frederick E. Mapp Symposium – these budding researchers have investigated, written about and presented their findings on subjects ranging from measuring the efficiency of commercial media on stem cell growth and differentiation to diabetes and its negative effects on the structure and function of sensory neurons; from production of resin-bound unnatural amino acids to discovering more about HIV proteins.

RONALD E. McNAIR POST BACCALAUREATE ACHIEVEMENT PROGRAM
Earning a Ph.D. is one of the definitive measures of academic ability and personal determination. It symbolizes outstanding career potential and ultimate career success. However, the road to a Ph.D. can be arduous and intimidating, especially for students from underrepresented segments of society.

The Morehouse College Ronald E. McNair Post Baccalaureate Achievement Program was created to facilitate the journey. It is a year-round graduate school preparatory internship with an eight-week summer research component. The program also provides students the opportunity to publish with their faculty mentors and/or present research findings, and assistance with the graduate school application process.

McNair is a TRIO Program, funded by the United States Department of Education to assist low-income individuals, first-generation college students and individuals with disabilities as they progress through the academic pipeline from middle school to post baccalaureate programs – building their confidence and expanding their horizons along the way.

S-STEM: RENAISSANCE SCHOLARSHIPS TO TRAIN FUTURE ENGINEERS AND PHYSICAL SCIENTISTS
The world needs more engineers. The engineering field needs far more African American practitioners. This dual motivation led the Division of Science and Mathematics to develop a pre-engineering program that aligns with the National Academy of Engineering’s Engineer of 2020 vision.

The program, limited to 32 students, supplements basic science studies in engineering-relevant fields (e.g. physics, chemistry, computer science and mathematics) through coursework, research, support programs and service projects. Participants who complete the program with a B.S. degree will be able to enter graduate school with leadership skills, social proclivity and academic breadth.

MINORITY ACCESS TO RESEARCH CAREERS/UNDERGRADUATE STUDENT TRAINING IN ACADEMIC RESEARCH PROGRAM (MARCU*STAR)
This nationally admired program propels a student to fulfill his intentions of earning an advanced degree that is his bridge to a biomedical research career — in industry, healthcare or academia. Funded by the National Institute of General Medical Sciences (part of the National Institutes of Health) and aimed specifically at increasing the pool of minority undergraduate students who demonstrate the talents and ambitions to earn a Ph.D. or M.D./Ph.D., this honors program provides substantial tuition and other support funding, and is open to sophomores and juniors majoring in biology, chemistry, computer science, engineering, mathematics, physics or psychology. Accepted students are widely recognized as high-achievers destined for careers driven by discovery.
MICRO/NANO OPTICS RESEARCH & ENGINEERING LABORATORY (MORE)
This state-of-the-art instructional and research laboratory, founded and directed by Willie Rockward, chair of the Department of Physics and Dual-Degree Engineering Program, boasts an array of advanced technology not normally available to undergraduates – ranging from optical and computational software to photolithography equipment; from a light scatterometer system to nanostructure characterization equipment.

When you marry the resources of this laboratory and the Division’s collaborative relationships with several major institutions, the results are “change makers.” It is a strong union that drives research in non-invasive optical imaging, as well as creates exciting new educational initiatives to engage and inspire future science professionals. Among the notable projects: modeling, fabrication and characterization of micro/nano optical elements for passive imaging; polarization analysis and signatures using continuous wave terahertz (THz) imaging systems; and development of experimental training modules (ETMs) in nuclear science and optical physics.

NIMH-COR – NATIONAL INSTITUTE OF MENTAL HEALTH-CAREER OPPORTUNITIES IN RESEARCH EDUCATION AND TRAINING
This two-year honors program is open to rising juniors interested in pursuing a doctoral-level research program in the biomedical, behavioral sciences or health services areas relevant to mental health. Some of the sub-disciplines covered include neuropsychology, neuroanatomy, neurophysiology, health psychology, psychopharmacology, behavior genetics, health economics, social policy, epidemiology, biostatistics and physiological psychology, with a concentration on issues and problems in mental health. Participants receive a monthly stipend, funding to attend scientific conferences and partial payment of tuition and fees.

One popular distinction is that the program links students to valuable summer research opportunities. On the long list of possible locations are Albert Einstein College of Medicine, American Society of Microbiology and Boston University School of Medicine.

MINORITY BIOMEDICAL RESEARCH SUPPORT PROGRAM – RESEARCH INITIATIVE FOR SCIENTIFIC ENHANCEMENT PROGRAM (MBRS-RISE)
At the Atlanta University Center Psychology Research Day, a student research group was awarded first place for its poster showcasing an examination of Circadian rhythms.

One alumnus now holds the position of senior healthcare economic analyst for United Healthcare—an operating division of United Health Group.

What do these success stories have in common? They are because of the MBRS-RISE Program, which is designed to open the door for Division of Science and Mathematics students to the world of graduate studies and help them develop the attitude and tools to excel in those studies.
Supported by the National Institutes of Health, this very proactive program provides academic advising program retreats, peer mentoring, training in the responsible conduct of research, summer research training, a biomedical research seminar series, graduate school advising, and support for application preparation and interviews.

**DR. JOHN H. HOPPS, JR. RESEARCH SCHOLARS PROGRAM**

Morehouse Men are intellectually ambitious. Perhaps nowhere is that more evident than the significant number of students in the Division of Science and Mathematics with sights set on earning a graduate degree in the STEM professions. It is a tough challenge they are eager to accept because the rewards – personal and professional – validate the hard work.

One powerful stepping stone for these students is the Dr. John H. Hopps, Jr. Research Scholars Programs. HOPPS Scholars have done research in Brazil, Budapest and South Africa; presented their research at conferences across the country and as far away as Stockholm, Sweden; worked in close partnership with the Department of Defense; and received recognition from the Annual Biomedical Research Conference for Minority Students and ARCS. The core of this success is the one-on-one, research-based mentoring they receive from faculty members. All of which seems fitting when you consider the program honors John H. Hopps, Jr., who graduated Phi Beta Kappa from Morehouse in 1958 and earned the Ph.D. at Massachusetts Institute of Technology. The remarkable career of the late Morehouse provost and vice president for Academic Affairs also includes leadership roles at the National Science Foundation, the Charles Stark Draper Laboratory at MIT, and, finally, as the Deputy Undersecretary of Defense for Laboratories and Basic Sciences. Clearly, he would be proud of the Morehouse Men who have taken their experiences as HOPPS Scholars with them on the road to graduate school.

**THE PUBLIC HEALTH SCIENCES INSTITUTE (PHSI)**

Training students who will diversify the public health sciences workforce is a top-tier objective of the Division of Science and Mathematics. The Public Health Sciences Institute (PHSI) was created under a cooperative agreement with the Centers for Disease Control and Prevention. It is the only undergraduate program with a concentration in public health in the Atlanta University Center. PHSI functions as an academic program that formulates and implements strategies that lead to positive outcomes for underrepresented minority Americans and has made a commitment to training and mentoring undergraduate students in biostatistics, epidemiology, and occupational safety and health.

PHSI actively sponsors activities such as internship programs, an interdisciplinary seminar series, public health awareness conferences, a minor concentration in public health, and student-faculty teams for research and mentoring.

For complete details about each of these programs, visit us online, [www.morehouse.edu](http://www.morehouse.edu)
Our Faculty Are Energized

All of our full-time faculty members hold terminal degrees in their fields – an impressive distinction that reflects top-tier academic credentials. They author books, have their research findings published in academic journals, share their expertise as corporate and government consultants, and speak at association meetings and conferences across the country. However, their most applauded trait is the energy they bring to mentoring their students.

DEPARTMENT OF BIOLOGY

DAVID B. COOKE III
Professor and Chair, Biology
dcooke@morehouse.edu
www.morehouse.edu/facstaff/dcooke
Ph.D. – Howard University School of Medicine
Research Interests: Endocrinology and Cell Metabolism; Role of Oncogene Expression in Prostate Cancer; Tumor Progression in Prostate Cancer

ERROL R. ARCHIBOLD
Professor, Biology
earchibold@morehouse.edu
Ph.D. – Atlanta University
Research Interests: Bioinformatics

LAWRENCE S. BLUMER
Professor, Biology
lblumer@morehouse.edu
www.morehouse.edu/facstaff/lblumer
Ph.D. – University of Michigan
Research Interests: Ecology, Animal Behavior; Evolution; Instructional Laboratory Pedagogy

VALERIE K. HAFTEL
Associate Professor, Biology
vhaftel@morehouse.edu
Ph.D. – Emory University
Research Interests: Neurobiology; Physiology

GREGORY FORD
Assistant Professor, Biology
gford@morehouse.edu
Ph.D. – Meharry Medical College
Research Interests: Using a systems approach to determine mechanisms of acute brain injury (ABI) and stroke. The lab uses a neuroinformatics framework to construct molecular networks to elucidate the mechanisms of traumatic brain injury, exposure to neurotoxins and stroke. The goal of the lab is to identify biomarkers and novel therapeutic targets for ABIs and stroke.

J. K. HAYNES
David Packard Professor and Dean of Science and Mathematics
jhaynes@morehouse.edu
www.morehouse.edu/facstaff/jkhaynes
Ph.D. – Brown University
Research Interests: Cell Biology; Cell Membranes; Biochemical Characterization of Sickle Cell Membranes; Regulation of Cell Volume; Higher Education and Leadership Development

TRISCIA HENDRICKSON
Assistant Professor, Biology
thendrix@morehouse.edu
www.morehouse.edu/facstaff/thendrix
Ph.D. – Emory University
Research Interests: Mechanisms that regulate cell motility

KEITH M. HOWARD
Associate Professor, Biology
khoward@morehouse.edu
www.morehouse.edu/facstaff/khoward
Ph.D. – Ohio State University
Research Interests: Plant Pathology, Parasite-Plant Interaction, Fungal Biochemistry and Development; Microbial Physiology

ALEXANDRA PEISTER
Assistant Professor, Biology
apeister@morehouse.edu
Ph.D. – Tulane University

“My research lab focuses on the use of stem cells for regenerative medicine and tissue engineering, as well as the role of diabetes on the function of bone marrow cells. To date, nine students have worked in the lab. Two are co-authors of a recently published journal article – very impressive for undergraduates.”

Research Interest: Evaluation of Stem Cell Sources for the Production of Engineered Tissues.

ELISABETH JAVAZON
Assistant Professor, Biology
ejavazon@morehouse.edu
Ph.D. – Tulane University
Research Interest: Stem Cell Biology
JOSEPH W. MCCRAY
Associate Professor, Biology
jmccray@morehouse.edu
www.morehouse.edu/facstaff/jmccray
Ph.D. – Purdue University
Research Interests: Immunoochemistry; Peptide Antibodies as Vaccines for the Common Cold and Schistosomiasis

WALLACE SHARIF
Assistant Professor, Biology
wsharif@morehouse.edu
Ph.D. – Vanderbilt University
Research Interests: Molecular Mechanisms of Aging

WASI SIDDQUI
Professor, Biology
wsiddqui@morehouse.edu
Ph.D. – Rutgers University
Research Interests: Microbiology; Interferons and Virus Multiplication

KRISTY WILSON
Visiting Assistant Professor, Biology
kwilson@morehouse.edu
dr.wilson27@gmail.com
Ph.D. – Purdue University
Research Interests: Biology education research to assess the effects of active learning on the development of transferable skills (problem solving, information literacy, life-long learning, and communication), motivation, outcomes, and knowledge retention.

DEPARTMENT OF CHEMISTRY

JOHN HALL
Bruce Rauner Professor of Natural Sciences and Chair
jhall@morehouse.edu
www.morehouse.edu/facstaff/jhall
Ph.D. – Harvard University
Research Interests: Understanding the Mechanisms of Tropospheric and Stratospheric Chemical Reactions (specifically those involving photochemical oxidation)

BRIAN LAWRENCE
Assistant Professor, Chemistry
blawrenc@morehouse.edu
www.morehouse.edu/facstaff/blawrence/index.html
Ph.D. – Harvard University
Research Interests: Organic Chemistry

JUANA MENDENHALL
Assistant Professor, Chemistry
jmendehall@morehouse.edu
Ph.D. – Clark Atlanta University
Research Interests: Biomaterials; Nanotechnology; and Tissue Engineering

TROY STORY
Professor, Chemistry
tstory@morehouse.edu
www.morehouse.edu/facstaff/tstory
Ph.D. – University of California at Berkeley
Research Interests: Applications of Differential Geometry and Exterior Calculus to Dynamics, including Hamiltonian Mechanics; Geometric Optics; Irreversible Thermodynamics; Black Hole Dynamics; Electromagnetic and Classical String Dynamics; Navier-Stokes Dynamics, and Economic Growth Dynamics

LANCE SHIPMAN YOUNG
Associate Professor, Chemistry
lshipman@morehouse.edu
www.morehouse.edu/facstaff/lshipman/index2.html
Research Interests: Structural Biology, Protein X-Ray Crystallography, Protein Chemistry, Biochemistry

DEPARTMENT OF COMPUTER SCIENCE

KENNETH PERRY
Associate Professor and Chair, Computer Science
kperry@morehouse.edu
Ph.D. – Stanford University
Research Interests: Noninvasive Fetal Electrocardiography; Computer Science Education; Wireless Telecommunications

CHUNG NG
Associate Professor, Computer Science
cng@morehouse.edu
www.morehouse.edu/facstaff/cng
Ph.D. – Tulane University
Research Interests: Computational Complexity; Design and Analysis of Algorithms, Programming Languages; Distributed Computing; Scheduling Theory and Optimization

HENRY COOK
Instructor, Computer Science
hcook@morehouse.edu
Masters – Clark Atlanta University
Research Interests: Networking and Data Communications

SONYA DENNIS
Instructor, Computer Science
sdennis@morehouse.edu
Research Interests:

JUAN MENDENHALL
Assistant Professor, Computer Science
jmendehall@morehouse.edu
Ph.D. – Auburn University
Research Interests: Advanced Learning Technologies, Virtual Agents, Technology Entrepreneurship and Culturally Relevant

AMOS JOHNSON
Assistant Professor
ajohnson@morehouse.edu
Ph.D. – Georgia Institute of Technology
Research Interests: Action Recognition Automatic Visual Surveillance

“I have always enjoyed teaching. There’s a simple pleasure that comes from seeing light bulbs go off in the minds of students. Also, I have always appreciated the power of having students gain a greater understanding of the physical world through exploration. Being a chemistry professor allows me to merge my two passions – teaching and research.”

DEPARTMENT OF SCIENCE AND MATHEMATICS
MOREHOUSE COLLEGE
DEPARTMENT OF MATHEMATICS

DUANE COOPER
Associate Professor and Chair, Mathematics
dcooper@morehouse.edu
www.morehouse.edu/facstaff/dcooper
Ph.D. – University of California at Berkeley
Research Interests: Mathematical Analysis of Voting and Representation; Mathematics Student and Teacher Development

ABDELKRIM BRANIA
Professor, Mathematics
abrania@morehouse.edu
Ph.D. – Emory University
Research Interests: Geometric Function Theory; Applied Mathematics

DOUGLAS CARTER
Instructor, Mathematics
docarter@morehouse.edu
M.S. – Emory University
Research Interests: Differential Equations

CURTIS CLARK
Professor, Mathematics
cuclark@morehouse.edu
www.morehouse.edu/facstaff/cuclark
Ph.D. – University of Michigan
Research Interests: Graph Achievement and Avoidance Games and Their Applications

JOSEPH EYLES
Assistant Professor, Mathematics
jeyles@morehouse.edu
Ph.D. – University of Texas, Austin
Research Interests: Mathematics Education

RUDY HORNE
Assistant Professor, Mathematics
rhorne@morehouse.edu
Ph.D. – University of Colorado
Research Interests: Optic fiber pulse propagation; models of optic devices; models which describe the evolution of certain variables in queuing systems

KIANDRA JOHNSON
Instructor, Mathematics
kijohnson@morehouse.edu
M.S. – Emory University
Research Interests: The use of technology to enhance engagement and learning in mathematics

TUWANER LAMAR
Assistant Professor, Mathematics
tlamar@morehouse.edu
Ph.D. - Auburn University

BENEDICT NMAH
Assistant Professor, Mathematics
bnmah@morehouse.edu
Ph.D. – New Mexico State University
Research Interests: Reliability Optimization and Numerical Analysis

STEVEN PEDERSON
Associate Professor, Mathematics
spederson@morehouse.edu
www.morehouse.edu/facstaff/spederson
Ph.D. – University of Georgia
Research Interests: Dynamical Systems; Fuzzy Hybrid Processes

CHUANG PENG
Professor, Mathematics
cpeng@morehouse.edu
www.morehouse.edu/facstaff/cpeng
Ph.D. – University of Georgia
Research Interests: Bioinformatics

ULRICA WILSON
Assistant Professor, Mathematics
uwilson@morehouse.edu
Ph.D. – Emory University

“…I knew I wanted to be in a liberal arts institution that gave me the opportunity to interact with students – formally and informally – particularly in terms of undergraduate research. It was also really important to me to mentor a group that is traditionally underrepresented in the field of mathematics.”

Research Interests: Noncommutative Ring Theory; Combinatorial Matrix Theory

MASILAMANI SAMBANDHAM
Professor, Mathematics
msamband@morehouse.edu
www.morehouse.edu/facstaff/msamband
Ph.D. – Annamalai University (India)
Research Interests: Random Equations, Fuzzy Differential Equations, Numerical Techniques

SHIRLEY THOMPSON
Associate Professor, Mathematics
sthompso@morehouse.edu
Ph.D. – Georgia State University
Research Interests: Mathematics Education; Algebra; Knot Theory; Computer Science

DE TING WU
Associate Professor, Mathematics
dtwu@morehouse.edu
Ph.D. – University of Georgia
Research Interests: Applied Mathematics; Numerical Study of Stochastic Differential Equations; Teaching Mathematics with Technology

GEORGE L. YUHASZ
Assistant Professor, Mathematics
gyuhasz@morehouse.edu
Ph.D. – North Carolina State University
Research Interests: Symbolic Computation; Computer Algebra

CHAOHUI ZHANG
Associate Professor, Mathematics
czhang@morehouse.edu
Ph.D. – The State University of New York at Stony Brook
Research Interests: Riemann Surfaces; Teichmuller Theory; Hyperbolic Geometry; Low Dimensional Geometry and Topology

DEPARTMENT OF PHYSICS AND DUAL-DEGREE ENGINEERING PROGRAM

WILLIE S. ROCKWARD
Associate Professor and Chair, Physics and Dual-Degree Engineering
wrockwar@morehouse.edu
Ph.D. – Georgia Institute of Technology
Research Interests: Particle Physics and Optics

AAKHUT E. BAK
Associate Professor, Physics and Dual-Degree Engineering
abak@morehouse.edu
www.morehouse.edu/facstaff/abak
Ph.D. – Massachusetts Institute of Technology
Research Interests: Particle Physics and Optics

JOHN HOWARD
Instructor, Physics and Dual-Degree Engineering
jhoward@morehouse.edu
Ph.D. – Georgia Institute of Technology
Research Interests: Condensed Matter Physics

EMMANUEL KARIKARI
Assistant Professor, Physics and Dual-Degree Engineering
ekarikari@morehouse.edu
Ph.D. – University of Virginia
Research Interests: Structural Properties of Materials
“Morehouse College is home of the best and brightest minority male students. These are students who come to class eager to learn and understand the principles and ideas they are taught. As an alumnus, it feels good to see the younger generation of Morehouse students respecting and practicing the historic precepts of this great institution.”

**Research Interests**: Electron/Photon Interactions with Atoms and Molecules; Quantum Control of Molecular Reactions Development and Incorporation of Numerical Techniques into High Performance Algorithms

**CARLYLE E. MOORE**  
Associate Professor, Physics and Dual-Degree Engineering  
cmoore@morehouse.edu  
www.morehouse.edu/facstaff/cmoore  
Ph.D. – Georgia Institute of Technology  
Research Interest: Thermal Science

**OYEKALE OYEDEJI**  
Associate Professor, Physics  
kovedeji@morehouse.edu  
Ph.D. – Howard University  
Research Interest: Solid State and Dynamical Systems – Nonlinear

**AUGUSTINE J. SMITH**  
Associate Professor, Physics and Dual-Degree Engineering  
asmith@morehouse.edu  
Ph.D. – Oregon State University  
Research Interest: Atomic Physics

**DEPARTMENT OF PSYCHOLOGY**

**DUANE JACKSON**  
Professor and Chair, Psychology  
djackson@morehouse.edu  
www.morehouse.edu/facstaff/djackson  
Ph.D. – University of Illinois, Chicago  
Research Interests: Learning and Behavior in Insects; Swarm Intelligence; Human and Non-human Animal Behavior in the Zoo Setting

**JANN H. ADAMS**  
Associate Professor, Psychology  
jadams@morehouse.edu  
Ph.D. – Indiana University  
Research Interests: John Henryism and Elevated Cardiovascular Activity; Hypertension and Other Long-term Health Consequences; Intervention Effectiveness in Reducing Attraction and Enhancing Performance of African American Undergraduates in the STEM Fields

**TINA R. CHANG**  
Associate Professor, Psychology  
tchang@morehouse.edu  
Ph.D. – Georgia Institute of Technology  
Research Interests: Effects of Captivity on Non-human Primate Behavior and Psychological Well-being; Evolutionary Theory and Affordances as Predictors of Environmental Preference in Human and Non-human Primates; Application of Applied Behavior Analysis to Program Evaluation in Non-traditional Work Settings

**DANIEL HUMMER**  
Assistant Professor, Psychology  
dhummer@morehouse.edu  
Ph.D. – University of Michigan  
Research Interests: Neurobiological Mechanisms Involved in the Synchronization of the Circadian Clock to the Light-dark Cycle; Development and Sexual Differentiation of Brain and Behavior; Neuroendocrinology of Social Behavior

**BRYANT MARKS**  
Associate Professor, Psychology  
bmarks@morehouse.edu  
Ph.D. – University of Michigan  
Research Interests: Psychological Impact of the Black College Experience; Impact of Activated Stereotypes on Performance and Behavior; Gender Stereotypes Among African Americans; Racial Identity as a Predictor of Academic Achievement, Self-esteem, and Ingroup and Outgroup Racial Attitudes

**YOHANCE MURRAY**  
Assistant Professor, Psychology  
ymurray@morehouse.edu  
Ph. D. – University of Michigan  

**MARTIN ROSENMAN**  
Professor, Psychology  
mrosenma@morehouse.edu  
Ph.D. – University of South Carolina  
Research Interests: Leadership, Creative Problem Solving and Decision Making; Organizational Innovation Through Employee Ideas; Electronic Brainstorming; Scientific Discovery

**DAVID WALL RICE**  
Associate Professor, Psychology  
drice@morehouse.edu  
www.morehouse.edu/facstaff/drice  
Ph.D. – Howard University  
Research Interest: Personality Psychology and Popular Culture

**MARGARET L. WEBER-LEVINE**  
Professor, Psychology  
mweberle@morehouse.edu  
Ph.D. – The State University of New York at Stony Brook  
Research Interests: Uses and Effectiveness of Complementary and Alternative Practices in Health and Illness; Effects of Nutrition and Other Environmental Factors on Brain Function and Behavior/Health Psychology; Issues in the Responsible Conduct of Science.

**SINEAD N. YOUNGE**  
Assistant Professor, Psychology  
syounge@morehouse.edu  
Ph.D. – Michigan State University  
“As an ecological community psychologist, I conduct behavioral science research on health behaviors among underserved populations. It is a privilege to work at an institution that has a history of producing servant leaders and agents of social change. Both in the classroom and through my research, I try to support the institution’s mission by training the next generation of scholar activists.”

**Research Interests**: STIs/HIV, Sustainability, Pedagogy
OUR INVITATION IS GENUINE

The Division of Science and Mathematics has an amazing story to tell. There are always new and exciting initiatives, recognitions, breakthroughs and personalities to discover. We invite you to keep up to date with our progress by visiting us at www.morehouse.edu.

Even better, come for a visit. Let us know in advance, with a call to 404-614-3796, and we will take you on a tour to show you around and introduce you to the remarkable students and faculty who make the Division of Science and Mathematics such a dynamic presence at Morehouse.

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MOREHOUSE COLLEGE AT A GLANCE

DESCRIPTION:
Founded in 1867 as the Augusta Institute in Augusta, Ga., Morehouse College is the nation’s largest liberal arts college for men. Historically, Morehouse has conferred bachelor’s degrees on more African American men than any other college or university in the United States. The 66-acre campus is located three miles southwest of downtown Atlanta.

MISSION:
The mission of Morehouse College is to provide a comprehensive academic, social and spiritual experience that prepares its students for leadership and success in the larger society.

ENROLLMENT:
With an enrollment of approximately 2,800, the student body represents more than 40 states and 14 foreign countries.

FACULTY:
172 full-time; 62 part-time; 100 percent of tenured and tenure-track faculty hold terminal degrees.

ACADEMIC PROGRAMS:
Morehouse operates under the semester system with a six-week summer session. The College offers the Bachelor of Arts and Bachelor of Science degrees in 26 majors in three academic divisions: Humanities and Social Sciences, Science and Mathematics, and Business Administration and Economics. The College also offers a dual-degree program in engineering with the Georgia Institute of Technology.

SPECIAL PROGRAMS AND SOCIETIES:
Special programs include Phi Beta Kappa, Honors, Study Abroad and the Andrew Young Center for International Affairs and Office of Global Education. The College houses the Martin Luther King Jr. International Chapel, Morehouse Research Institute, the Leadership Center at Morehouse College, the Morehouse Male Initiative and the CLA Journal.

ATHLETICS:
Morehouse is a member of the Southern Intercollegiate Athletic Conference (SIAC) and the National Collegiate Athletic Association (NCAA), Division II. Varsity letter sports include football, basketball, baseball, tennis, golf, cross country, and track and field.

AFFILIATIONS:

ACCREDITATION:
Morehouse is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS). Morehouse is one of five Historically Black Colleges and Universities, and one of four undergraduate institutions in Georgia with a Phi Beta Kappa National Honor Society chapter. The College also is one of only four liberal arts colleges in the nation with accreditation from both the International Association for Management Education and a Phi Beta Kappa chapter.

RECENT RANKINGS:
One of the Top 100 Social Media Colleges in the country
- studentadvisor.com

No. 3 HBCU in the nation for 2012
- U.S. News and World Report

No. 2 Liberal Arts College in the nation
- Washington Monthly’s 2011 College Guide

One of 45 Best Buy Schools for 2011
- The Fiske Guide to Colleges

One of the nation’s most grueling colleges in 2010
- The Huffington Post