

Growing Georgia's Bioscience Industries: Harnessing the Resources of Higher Education



ATLANTA REGIONAL CONSORTIUM *for* HIGHER EDUCATION

2ND EDITION

Growing Georgia's Bioscience Industries:

Harnessing the Resources of Higher Education



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Why a Directory?

Simply put, to support the growth of Georgia's bioscience industries.

Colleges and universities have much to offer to help advance that growth, as evidenced by this directory. It provides a useful "one-stop" source of information on higher education expertise and services in the biosciences and is intended to help industry leaders and others identify and access these vital resources.

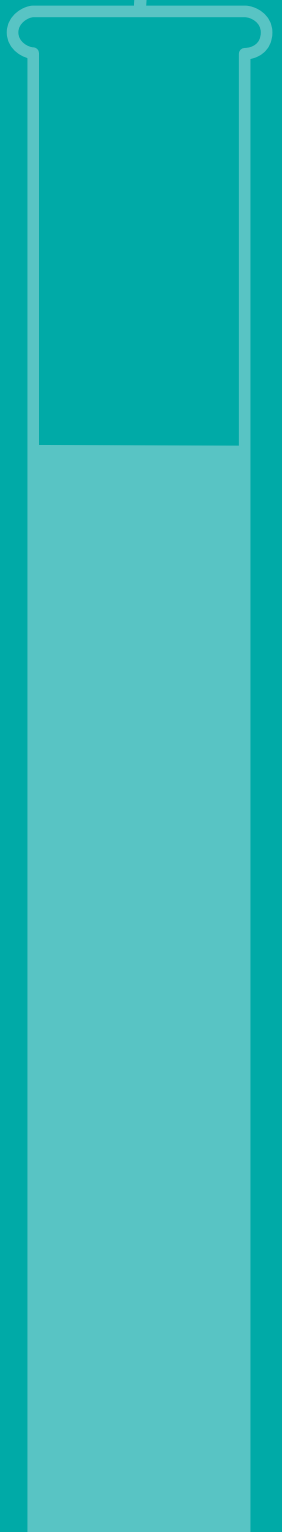
Information found in this directory, an update to the 2002 edition, is based on a survey by the Atlanta Regional Consortium for Higher Education (ARCHE) of its 19 member colleges and universities. While these institutions have their main campuses in the Atlanta region, the scope of their activities covers the State of Georgia and has national and international applications.

A searchable version of this directory is available on the ARCHE Web site at: www.atlantahighered.org.

Notes: Institutional information listed in this directory has been edited for length and consistency of style, but has not been independently verified by ARCHE. Due to the evolving nature of research, services, programs and staff contacts, the reader should confirm the details of any particular item of interest with the sponsoring institution rather than relying exclusively on information found in this directory. While ARCHE membership includes Mercer University's Atlanta Campus, this directory also includes information from the University's Macon Campus. While not an ARCHE member, the Medical College of Georgia is included because of its participation in the Georgia Research Alliance.



Overview of Higher Education Capabilities in the Biosciences



Overview of Higher Education Capabilities in the Biosciences

When it comes to the biosciences in Georgia, colleges and universities offer abundant strengths in research, education, and service. These capabilities, described in summary below by the surveyed institutions, provide a rich resource to industry in the Atlanta region and across Georgia.

Agnes Scott College

www.agnesscott.edu

Agnes Scott College's programs in the biological sciences encompass three major/minor programs: biology, biochemistry and molecular biology, and environmental studies. Our emphasis is on increasing the representation of women in the scientific work force. Much of our focus is on undergraduate participation in research, either in collaboration with College faculty or through directed projects with researchers at the Centers for Disease Control and Prevention, Emory University School of Medicine, Zoo Atlanta, and other institutions. Our new 115,000-square-foot, \$37 million science building has dedicated research spaces for each faculty and her or his student collaborators. Research by faculty encompasses molecular biology, developmental biology, genetics, microbiology, plant biology, evolutionary biology, and neurobiology.

Atlanta College of Art

www.aca.edu

The Atlanta College of Art is a professional, Bachelor of Fine Arts degree-granting institution whose principle mission is to prepare students to become practicing artists and designers. While the biosciences are not a focus of the College, faculty and students are skilled in providing the illustrations and graphics that depict and explain complex scientific/medical concepts and activities.

Brenau University

www.brenau.edu

Focus on the biosciences at Brenau University centers primarily on research conducted in the Department of Occupational Therapy. In addition, NIH funding is being used by faculty in the Department of Biology to develop a research laboratory to support faculty and student research in nursing, occupational therapy, environmental science, and environmental health.

Clark Atlanta University

www.cau.edu

Clark Atlanta University's specific focus areas related to the biosciences include molecular biology, biochemistry, and separation science. Research in these areas focuses on signal transduction, cancer mechanism, apoptosis and oncogenes, toxicology and enzymology, immunology (e.g., phage display of antibodies and peptides), gene expression, nucleic acid sequencing, enantioselective analysis and separation, protein purification and characterization, fluorescence-based biosensors, and molecular modeling.

Clayton College & State University

www.clayton.edu

Clayton College & State University offers a unique Bachelor's degree in biology, with concentrations in bioregulatory affairs/science management, biomedical applications, biotechnology/biocomputing, forensic science, and pre-veterinary medicine. Our program was developed by surveying top executives and laboratory personnel at Georgia biomedical companies, and identifying what they are seeking in

employees. An industry Board of Advisors continues to help mold the program to suit the evolving needs of the Georgia biotechnology community.

Columbia Theological Seminary

www.ctsnet.edu

Columbia Theological Seminary, a graduate educational institution of the Presbyterian Church (USA), and a community of theological inquiry and formation for ministry in the service of the ecumenical church, encourages exploration of the relationship between theology and ethics and contemporary social problems and issues. Such exploration may include ethical considerations related to biomedical research and development.

Emory University

www.emory.edu

Emory University is one of the fastest-growing research universities in the nation. During the past five years, sponsored research funding at Emory has increased by 77 percent. Emory's research growth in the health sciences is reflected most strongly in expanding programs in cancer, the neurosciences, transplantation medicine, vaccines, genetics, medical imaging, tissue engineering, biomedical engineering, and bioinformatics. Major new research facilities include the Whitehead Biomedical Research Building, which houses expanded basic science laboratories as well as a new interdisciplinary center for neurodegenerative diseases and a center for medical genomics; the Emory Vaccine Center, adjacent to the Yerkes National Primate Research Center; Emerson Hall, which includes biomolecular chemistry and high-field nuclear magnetic resonance laboratories; and the new 325,000-square-foot Winship Cancer Institute Building, with space for new faculty and expanded basic cancer research laboratories, including cancer genomics. Emory's strong partnerships with the Georgia Research Alliance, the Georgia Cancer Coalition, other Georgia research universities, and the Centers for Disease Control and Prevention provide numerous opportunities for research funding and collaboration. Emory leads the Southeastern Center for Emerging Biologic Threats (SECEBT), a research and public health partnership of regional academic medical centers, state health departments, and federal government agencies. The joint Emory/Georgia Tech Wallace H. Coulter Department of Biomedical Engineering and the Georgia Tech/Emory Center for the Engineering of Living Tissues are advancing research in biotechnology, genomics, tissue engineering, nanotechnology, and biomedical devices.

Georgia Institute of Technology

www.gatech.edu

Recognizing the traditional strengths in engineering and science of the Georgia Institute of Technology, "Georgia Tech" has launched bioengineering and bioscience programs to integrate engineering, information technology, and the sciences in the conduct of biomedical research and education. Partnerships between participating academic units are facilitated and integrated to foster synergistic collaborative research in biomedical engineering, biology, chemistry and biochemistry, chemical engineering, electrical and computer engineering, industrial engineering, materials science and engineering, mechanical engineering, as well as other academic units at Georgia Tech. Active areas of research include: new imaging techniques for diagnosing illnesses; creating biological substitutes for tissues and organs (tissue engineering); blood flow dynamics; cellular and soft tissue biomechanics; medical devices, parts, and products; drug design and delivery; bacterial and eucaryotic molecular genetics; signal transduction for animal and plant cells; synthesis and modification of small molecules, e.g. for use as enzyme inhibitors, anti-cancer and anti-AIDS compounds and neuropeptide analogs; and vascular disease. The expansion of knowledge in bioengineering and the biosciences is key to enhancing health care and the development of new medical and industrial technology, and Georgia Tech plans to be a major contributor to this expansion.

Georgia State University

www.gsu.edu

Georgia State University has an active research program in the biosciences and biotechnology. The Biology Department is one of the largest and most successful units at the University. The Chemistry Department, because of its focus on the biophysical nature of DNA and its interaction with other molecules, also plays a significant role in bioscience research. The Psychology, Mathematics and Statistics, and Computer Information Systems Departments have significant activity in the neurobiology and behavior area. In addition to the extensive focuses in the Biology and Chemistry Departments, there are peripheral programs in several other colleges that are integrally linked to biosciences research in the College of Arts and Sciences. In the College of Health Sciences, there is activity in a number of bioscience fields in the Departments of Nutrition, Cardiopulmonary Care, Nursing, and Physical Therapy. In the College of Education there are strong components which focus on both bioscience education and kinesiology and

health with several centers that are particularly relevant: biomechanics and ergonomics, Center for Applied Physiology, Center for Sports Medicine and Sciences, and the Laboratory for Elite Athlete Performance. The School of Policy Studies places a major emphasis on environmental policy issues. Several research centers have widespread interactions with industry focused on biotechnology.

Interdenominational Theological Center

www.itc.edu

The Interdenominational Theological Center is a Christian, ecumenical, graduate professional school of theology. The faculty and administration create a spiritual environment in which critical thinking, investigation, reflection, evaluation, communication, decision making, and responsible action are fostered. They challenge all students to become involved in problems that affect the human spirit; to become active on behalf of both the academic community and the community beyond the campus; to develop an appreciation for the disciplines that contribute to theological thinking; to incorporate contemporary technological resources in an ethically responsible fashion; and to maintain continuous development of the intellect, spirit, and skills required for spiritual growth.

Kennesaw State University

www.kennesaw.edu

Kennesaw State University has, as its primary mission in the area of the biosciences, the education of undergraduates to be productive members of the work force and to enter into advanced degree programs. We offer students the broadest possible training in the biosciences through Bachelor of Science degree programs in biology, biotechnology, chemistry, and biochemistry that include a broad array of courses and research experiences with KSU faculty, with local and state agencies, as well as internships/co-ops with private industry and consulting firms. Through aggressive curricular programming and judicious use of state funds and private donations, we are able to provide our students with hands-on lab experiences using state-of-the-art equipment that is unparalleled for undergraduate programs, even at major research universities.

Medical College of Georgia

www.mcg.edu

Medical College of Georgia builds on a research tradition that includes, among other achievements, a cure for pellagra and the groundwork that led to such breakthroughs as fertility pills, birth-control pills, and beta-adrenergic blocking drugs. In 1999, MCG developed a long-term strategic plan to build research in four broad thematic areas – cancer, cardiovascular diseases, infection and inflammation, and neurological diseases. The theme of biomedical technology runs through all of these areas. While not all of the research currently done on the MCG campus falls into the above areas, the institution has restricted most recruitment of new research faculty to those who will strengthen one or more of the above themes. Growth of extramural support for research at MCG has been impressive. In FY 1999, extramural research awards equaled approximately \$22 million. By FY 2000, extramural research funding increased to \$28 million – a single-year increase of 27 percent. When extramural research funds from foundations, the Georgia Research Alliance, the Augusta branch of the Veterans Affairs Medical Center, and other public and private sources are considered, total extramural research funding to MCG was nearly \$60 million in FY 2003. This growth in research activity occurred despite the early retirement program, which resulted in the retirement of about 20 percent of our faculty between 1999 and 2001. In particular, MCG has grown National Institutes of Health funding by over 300 percent over the past decade (from approximately \$8.9 to \$30 million).

Mercer University

www.mercer.edu

Mercer provides a biomedical specialization within an accredited Bachelor of Science degree in engineering and a Master of Science in engineering degree. Mercer's Southern School of Pharmacy has several faculty members working in the biosciences or related areas. Their specific research spans the range from drug effects on cellular systems to development of improved therapies and pharmaceutical delivery systems. Mercer's College of Liberal Arts has several programs leading to Bachelor of Science degrees, including biology, chemistry, environmental science, and the interdisciplinary concentration in biochemistry and molecular biology. Currently, faculty members engaged in biosciences research can be found in the Departments of Biology and Chemistry and the Environmental Science program.

Morehouse College

www.morehouse.edu

The major areas of bioscience research at Morehouse College are based on faculty expertise and include molecular biology (plasmid replication), biotechnology (genetic engineering of potatoes), animal behavior (mate selection), environmental biology (bioremediation), plant sciences (fungus-plant interaction), and cell biology (cell adhesion, prostate cancer).

Morehouse School of Medicine

www.msm.edu

The Morehouse School of Medicine is a historically black institution established to recruit and train minority and other students as physicians and biomedical scientists committed to the primary health care needs of the underserved. Although the School is a relatively young institution, the outcomes of our research activities have resulted in the establishment of major research centers, institutes, and programs which include the Cardiovascular Research Institute, Clinical Research Center, Neuroscience Institute, Space Medicine and Life Sciences Research Center, Prevention Research Center, National Center for Primary Care, Research Center in Minority Institutions, Minority Biomedical Research Support Program, Cooperative Reproductive Science Research Center, and Center of Excellence in Health Disparities. In order to maximize the effectiveness of our resources and build upon our institutional strengths, our long-term plan is to develop these multidisciplinary institutes with biomedical and bio-behavioral basic and clinician scientists into germinating centers for collaborative, innovative research that remains closely linked with both basic and clinical departments. The vast research capacity offered by these facilities provides a wealth of resources to industry in Atlanta and throughout Georgia. Core and shared-use facilities and major instrument laboratories are available to Morehouse School of Medicine and other researchers on a fee-for-service basis. Examples include: molecular genetics, functional genomics, SELDI proteomics, image analysis, electron microscopy, Center for Laboratory Animal Research, and Biomedical Technology Services Laboratory. Scientific imaging and graphics preparation service is provided by the Division of Information Technology.

Oglethorpe University

www.oglethorpe.edu

Oglethorpe University is dedicated to a broad, comprehensive education in the liberal arts and sciences. The biology major has one of the largest enrollments of all programs in the traditional day program offered by the University.

Southern Polytechnic State University

www.spsu.edu

Southern Polytechnic State University offers a Bachelor of Science degree in biology, with concentrations in molecular biology and bioinformatics.

Spelman College

www.spelman.edu

Spelman College currently has faculty with bioscience research expertise in the following areas: developmental biology, physiology, neurobiology, biochemistry, molecular genetics, environmental biology, biochemistry, and neuroscience.

State University of West Georgia

www.westga.edu

The mission of the State University of West Georgia and of the Department of Biology, primarily is education, but research is an important tool for student learning in the sciences. Accordingly, we are pleased to have a number of faculty members who are actively engaged in biosciences research and who are known nationally and internationally for their contributions to the field.

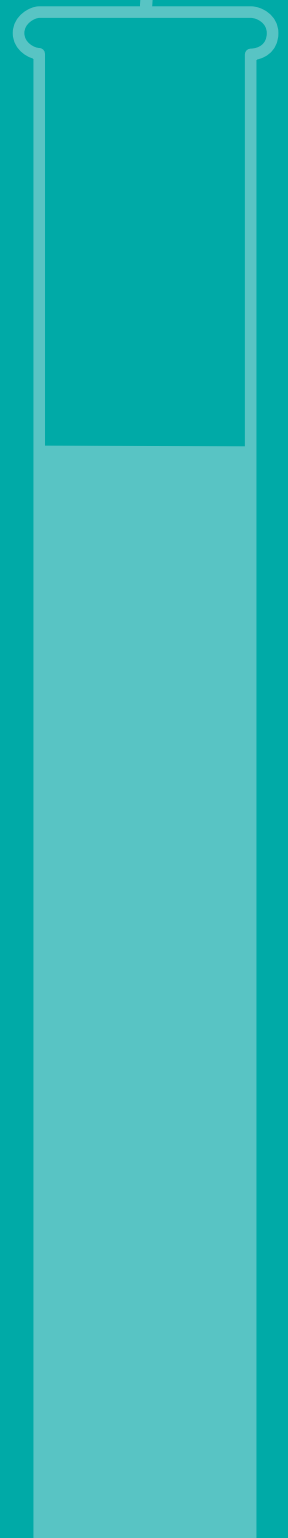
University of Georgia

www.uga.edu

The University of Georgia is one of the state's premier institutions for comprehensive education, research, and outreach at the university level. In addition to departments of genetics, botany, cellular biology, microbiology, chemistry, biochemistry, and molecular biology in the College of Arts and Sciences, the University has significant life science activity in the College of Veterinary Medicine, the College of Agricultural and Environmental Sciences, the School of Forest Resources, the College of Pharmacy, and in its many interdisciplinary research centers and institutes. UGA recently created the Biomedical and Health Sciences Institute to coalesce biomedical and human health research programs throughout the campus. In partnership with the Georgia Research Alliance, the UGA BioBusiness Center also has been established to assist start-up companies interested in collaborations based on UGA expertise and resources in the fields of biomedical and agricultural biotechnology.



Institutional Bioscience Research



Research Expenditures in FY 2003

Bioscience is a significant driver of Georgia's economy, generating \$580 million in research expenditures across the surveyed colleges and universities.

Institution	Grants/Contracts/Institutional Funding
Agnes Scott College	\$157,000
Brenau University	\$32,000
Clark Atlanta University	\$2,328,000
Emory University	\$253,000,000
Georgia Institute of Technology	\$22,086,000
Georgia State University	\$30,371,000
Kennesaw State University	\$1,250,000
Medical College of Georgia	\$60,000,000
Mercer University	\$3,481,000
Morehouse College	\$15,000
Morehouse School of Medicine	\$41,098,000
Spelman College	\$1,900,000
State University of West Georgia	\$399,000
University of Georgia	\$164,000,000
Total	\$580,117,000

** Information was collected at the very end of FY 2003 before institutions closed their books and, in some cases, includes best estimates.*

Research Areas by Department/Institute/Center

Because so much bioscience research is underway at colleges and universities, it's sometimes difficult identifying where all of it is happening. Listed below are major areas of bioscience research across the surveyed campuses – aggregated by key department, institute, or center – and whom to contact for information.

Agricultural Experiment Stations

University of Georgia

Research Areas: Researchers at the three campuses (Athens, Griffin, and Tifton) and eight research and education centers (Attapulgus, Blairsville, Calhoun, Eatonton, Midville, Plains, Reidsville, and Savannah) seek and verify new knowledge through research in the many fields related to agriculture and the environment. Research projects are conducted in agricultural and applied economics, biological and agricultural engineering, crop and soil sciences, animal and dairy science, entomology, environmental health sciences, food science and technology, forest resources, family and consumer sciences, horticulture, plant pathology, and poultry science.

Jerry Cherry

Associate Dean for Research

706-542-2151

agresch@uga.edu

www.research.caes.uga.edu

Agricultural Leadership, Education, and Communication, Department of

University of Georgia

Research Areas: This department's mission is to prepare students for careers in agricultural education, leadership, and communications; provide leadership training to students, faculty, and staff in the College of Agricultural and Environmental Sciences; provide professional development and in-service training to practicing extension agents and agricultural educators; and

research and develop techniques, principles, and technologies to better educate and inform the public about the agricultural and environmental sciences. This department has taken the lead in designing and developing courses for high school agriscience programs in the area of biotechnology.

Ray Herren

Department Head

706-542-8935

alec@uga.edu

www.uga.edu/alec

Agriculture Laboratory (NESPAL), National Environmentally Sound Production

University of Georgia

Research Areas: NESPAL fosters linkages with traditional and non-traditional public and private sector partners, national agencies, other institutions, and foundations to improve agricultural systems, both economically and environmentally. The unit's R&D activities include biotechnologies (peanut, cotton, pearl millet, turf grass), water quality and use, precision agriculture, sensing technologies, sustainable agriculture, aquaculture, soil ecology, and value added agriculture.

Craig Kvien

Director

229-386-7274

ckvien@tifton.cpes.peachnet.edu

http://nespal.cpes.peachnet.edu

AIDS Research, Emory Center for*Emory University*

Research Areas: Prevention science, vaccine development, AIDS pathogenesis, and clinical science

*Dr. James Curran**Director*

404-727-2924

*cfar@sph.emory.edu**www.sph.emory.edu/CFAR***Alzheimer's Disease Center, Emory***Emory University*

Research Areas: Promotion of clinical and basic scientific research on Alzheimer's disease through five core resources: clinical, education and information transfer, neuropathology, molecular biology, and administrative and data management

*Dr. Allan Levey**Director*

404-728-6950

*emoryadc@emory.edu***Anatomy and Neurobiology, Department of***Morehouse School of Medicine*

Research Areas: Limb development, vision, muscle development, cellular and molecular neuroscience

*Dr. Peter MacLeish**Chair*

404-756-5785

*macleip@msm.edu***Animal and Dairy Science Department***University of Georgia*

Research Areas: The new Animal and Dairy Science Complex contains well-equipped laboratory facilities along with instruction and research facilities that allow sophisticated animal studies including intensive feeding trials, metabolism studies, as well as physiology and transgenic research. In addition, the complex contains a meat science technology center to support meat science teaching and research. Cooperative research is conducted at the Richard B. Russell Agricultural Research Center, Southeast Poultry Research Laboratory, College of Veterinary Medicine, Department of Foods and Nutrition, and Department of Food Science and Technology.

*Joe W. West**Interim Department Head*

706-542-6259

*ads-info@ads.uga.edu**www.ads.uga.edu***Animal Health Research Center (AHRC)***University of Georgia*

Research Areas: Under safe and secure conditions, scientists study infectious diseases and toxicity problems that plague animal and human populations in such research areas as animal diseases, environmental toxicants, and food safety

*Harry Dickerson**Associate Dean, College of Veterinary Medicine*

706-542-5734

*hdw@calc.vet.uga.edu**www.vet.uga.edu/ahrc***Applied Physiology, School of***Georgia Institute of Technology*

Research Areas: Understanding the science of human movement, the physiological basis of movement control, and instruction related to the importance of maintaining sound physiological systems utilizing both basic and applied sciences

*Dr. Robert J. Gregor**Chair, Director, Center for Human Movement Studies*

404-894-1028

*robert.gregor@ap.gatech.edu**www.ap.gatech.edu/who.shtml***Artificial Intelligence Center***University of Georgia*

Research Areas: The center offers a master's program in artificial intelligence and an undergraduate major in cognitive science. It supports and encourages interdisciplinary research and service activities involving its graduate students and faculty from several departments and schools. Through its Artificial Intelligence Laboratory, the center promotes the integration of artificial intelligence technology by industry and government agencies in the state and the nation. Fellows of the center work with other units on campus to apply A.I. technology in a wide variety of applications in business, agriculture, engineering, and the sciences.

*Donald Nute**Director*

706-542-0358

*Angela Paul**Administrative Secretary**aspaul@uga.edu**www.ai.uga.edu*

Avian Medicine, Department of*University of Georgia*

Research Areas: Research programs emphasize problems in the diagnosis and control of economically important diseases of poultry. Applied and basic research is focused on solving problems of importance to the industry. Modern biotechnology techniques are being used for diagnostic tests, development of vaccines, identification of etiological agents, and molecular epidemiology.

Stanley H. Kleven
Department Head
 706-542-1904

Sue Clanton
Sr. Administrative Secretary
sclanton@uga.edu
www.avian.uga.edu

Behavioral Health and Human Services Delivery, Center for Research on*University of Georgia*

Research Areas: The center, affiliated with the Institute for Behavioral Research, supports interdisciplinary research activities on deviance, health, human service delivery systems, and the management of productivity problems in the workplace. Its faculty, predoctoral fellows, staff, and graduate students from a variety of departments, assist investigators who are conducting research or seeking research funds from federal agencies and private foundations. Primary research topics include alcoholism, psychiatric illness, drug abuse, the management of pain, health communications, human resources management, service delivery to the elderly, children with psychiatric disorders, interpersonal violence, workplace management of alcohol and drug abuse problems, and systems for health care delivery. The center houses a predoctoral research training program supported by the National Institutes of Health.

Paul Roman
Director
 706-542-6090
proman@uga.edu
www.ibr.uga.edu/centers_groups/behav_health.htm

Behavioral Research, Institute for*University of Georgia*

Research Areas: The institute is an interdisciplinary organization for the social and behavioral sciences on campus. Its constituent centers and research groups include the Center for Research on Behavioral Health and Human Services Delivery; Center for Family Research; Basic Behavioral and Bio-behavioral

Processes Group; Community, Ethnicity, and Identity in Context Research Group; Methods and Models Group; and the Survey Research Center. The institute facilitates interdisciplinary research in the behavioral sciences by providing an atmosphere in which scholars from different disciplines from the university's various schools and colleges meet frequently to share information about ongoing research.

Steven Beach
Director
 706-542-1806

Sandra Gary
Sr. Administrative Secretary
sgary@uga.edu
www.ibr.uga.edu

Biochemistry, Department of*Emory University*

Research Areas: Cellular modifications (Xiaodong Cheng); study of transport of macromolecules into and out of the nucleus and the regulation of mitosis (Anita Corbett); inherited human metabolic disorders and understanding the complexity of expression of single gene traits – the effect of a loss of a single gene expression/function on the genome (Dean Danner); transposable elements in model organisms and humans (Scott Devine); molecular biology of DNA damage and repair (Paul Doetsch); investigations of structure-function relationships in enzymes catalyzing oxidation-reduction reactions (Dale Edmondson); molecular toxicology (Dean Jones); the family of 21kDa GTP binding proteins, termed ADP-rebosylation factors or Arfsl (Richard Kahn); role of inflammation/oxidative stress in the development of chronic diseases (Jack Kinkade); how contemporary metabolic and regulatory pathways evolved from less complex molecules (Ichiro Matsumura); molecular basis of the control of cell proliferation and of mechanisms by which this control is circumvented in neoplastic cell growth (David Pallas); biochemistry and molecular genetics of transcriptional regulation in eukaryotes (Daniel Reines); mechanism of mitochondrial gene expression in yeast and humans (Gerald Shadel); and regulation of protein degradation: ubiquitin-dependent proteolysis (Keith Wilkinson).

Dr. Dean Danner
Interim Chair
 404-727-5960
 404-727-2738(f)
ddanner@genetics.emory.edu
www.biochem.emory.edu

Biochemistry and Molecular Biology, Department of Medical College of Georgia

Research Areas: Membrane transporters: molecular biology and physiology of membrane transporters; placental transport of nutrients; influence of drugs of abuse on placental transport systems; use of membrane transporters for drug delivery; *C. elegans* as a model system for studies of membrane transporters. Vision research: hormone signaling and second messenger systems in different cell types in the eye; molecular mechanisms associated with glaucoma and corneal wound healing. Gene regulation: cellular and molecular events involved in RNA degradation; mechanisms associated with the control of globin gene regulation. Phagocyte biology: hormone signaling and second messenger systems in phagocyte activation. Research in microbiology: membrane transporters in pathogenic parasites; use of parasite transporters for delivery of therapeutic drugs for the treatment of parasite infections; drug resistance in pathogenic bacteria; use of proteomics in the identification of proteins involved in bacterial infectivity.

Dr. Vadivel Ganapathy
Interim Chair
 706-721-3271
vganapat@mail.mcg.edu
www.mcg.edu/BMB

Biochemistry and Molecular Biology, Department of University of Georgia

Research Areas: Bioinformatics, cell biology and signal transduction, complex carbohydrates/glycobiology, enzymes and mechanisms, medicinal biochemistry, physical biochemistry, plant biochemistry, the structure, metabolism and catalysis of RNA, structural biology, thermophilic organisms, and cancer research

David Puett
Department Head
 706-542-1334
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www.uga.edu/~biochem

Bioconversion Research and Education Center University of Georgia

Research Areas: This facility is geared toward 1) new process development, 2) process optimization, and 3) large-scale research and demonstration of processes for the biological stabilization of wastes. In addition to research capabilities at the Driftmier Engineering Center, the Bioconversion Center is associated with a four-acre, full-scale composting site that is run by the University of Georgia Physical Plant. This site

composts all the yard trimmings collected on campus and returns the compost to the campus for use by the grounds maintenance crew. At its Whitehall Road location, the center has two research buildings totaling 10,500 square feet containing an analytical laboratory, pilot test area, and a further-processing laboratory. Equipment available includes a 16-reactor (three to 12 tons capacity), state-of-the-art compost monitoring system, a bench-scale microbial respiration meter to evaluate efficiency of biological processes, and three scales of biofilters for air pollution control research. The center also has a window turner and tractor, and an auger mixer wagon used in demonstration projects, as well as gas chromatography capability and other standard laboratory equipment. Pilot bench scale facilities include nine 50 – L bioreactors instrumented with online data collection capabilities. The center facilities include classrooms for educational workshops and offices for students and researchers.

Dale Threadgill
Director
 706-542-1653
all_faculty@engr.uga.edu
www.engr.uga.edu/facilities/athens/research_labs.html

Biodiversity and Ecosystem Processes, Center for University of Georgia

Research Areas: The center has been established to study and address threats posed by the decline in the numbers and kinds of organisms with which we share the planet. Research initiatives include biodiversity as it relates to ecosystem services, genetic engineering, public health, emerging diseases, global environmental change, and Georgia biodiversity.

Mark Hunter
Director
 706-542-2968
mhunter@sparc.ecology.uga.edu

Bioengineering and Bioscience, Parker H. Petit Institute for

Georgia Institute of Technology

Research Areas: Areas of research include cell and tissue engineering, biomechanics, bioengineering, cellular and molecular biology, drug design and discovery, neural biology, and cell biology. The center seeks meaningful collaborations in research with companies and other entities in the biomedical fields.

Dr. Robert M. Nerem
 404-894-2768
robert.nerem@ibb.gatech.edu
www.ibb.gatech.edu/index2.html

Bioexpression and Fermentation Facility*University of Georgia*

Research Areas: This laboratory was created in September 2001 by combining BioXpress and the Fermentation Research Facility. The Bioexpression and Fermentation Facility is a research, service and training resource offering services in molecular biology, protein expression, protein purification, cell culture, fermentation, and process optimization to researchers from UGA and beyond. Molecular biology and small-scale protein expression and purification facilities are located in the Chemistry Building. Process development, bench-scale and large-scale fermentation, downstream processing and purification labs are located in the Fermentation Facility, adjoining the Life Sciences Building.

*Tim Davis**Director*

706-542-1035

706-542-1077(f)

*bff@uga.edu**www.uga.edu/bff/***Bioimaging Core Facility***Georgia State University*

Research Areas: The facility is extensively involved in three major interrelated research projects, all of which have strong industry ties: bioremediation, biofilms, and bioeffects (the affects of biological active molecules)

*Dr. Robert Simmons**Director*

404-651-3138

*rsimmons@gsu.edu***Bioinformatics, Institute of (IOB)***University of Georgia*

Research Areas: Bioinformatics can be defined as the acquisition, storage, and analysis of genomic and proteomic data. The purpose of the IOB is to facilitate and coordinate bioinformatics activity on the UGA campus and with partner institutions and start-up companies. The centerpiece of the institute is the computational core facility which serves as a central data storage and analysis center that can be accessed from any online PC or workstation. Other functions of the institute are: 1) developing formal and informal educational training programs for undergraduate and graduate students, as well as faculty interested in incorporating bioinformatics approaches to their

research programs; and 2) facilitating interactions between bioinformatics programs at other Georgia institutions of higher learning.

*Gordhan Patel**Vice President for Research*

706-542-5969

Biological and Agricultural Engineering, Department of*University of Georgia*

Research Areas: The faculty link engineers and scientists to explore new research frontiers and increase the state's competitiveness in a range of emerging fields such as biosensors, biomedical engineering, marine systems, environmental systems, metabolic engineering, bioconversion, and agricultural engineering. The 38 full-time faculty are working on more than 50 research projects housed in three units located at the university's Athens, Griffin, and Tifton campuses. Facilities and specialized modern laboratories are available at all three locations which provide opportunities for laboratory and field research under diverse environmental conditions. In addition, the department has interdisciplinary research programs with other departments in the College of Agricultural and Environmental Sciences, Division of Biological Sciences, and College of Veterinary Medicine.

*Dale Threadgill**Department Head*

706-542-1653

*all_faculty@enr.uga.edu**www.enr.uga.edu***Biological and Physical Sciences, Department of Kennesaw State University**

Research Areas: Water quality/aquatic ecology, watershed assessments, microbiology/microbial contamination of aquatic systems, limnology, aquatic toxicology, invertebrate species distribution, fish species bioindices, habitat assessment, microbiology, health risk assessments in populations, antibiotic resistance in populations (international focus), mathematical modeling of antibiotic resistance, plant biology, aquatic toxicology, source water usage, plant tissue culture, plant DNA profiling, animal behavior, insect behavior, bird feeding preferences, stress physiology, stress physiology in plants, stress physiology in fish cell culture, synthetic peptide biotechnology, population identification by RAPD analysis, multi-drug

resistance in cancer chemotherapy, molecular diagnostics of infectious diseases and genetic disorders, and molecular evolution

Dr. Ronald H. Matson

Chair

770-423-6508

770-423-6625(f)

rmatson@kennesaw.edu

<http://science.kennesaw.edu/biophys>

Biological Sciences, Department of

Clark Atlanta University

Research Areas: Molecular biology and biochemistry

Dr. Isabella Finkelstein

Chair

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www.cau.edu

Biology, Department of

Agnes Scott College

Research Areas: Molecular biology, developmental biology, genetics, microbiology, plant biology, evolutionary biology, and neurobiology

Phil Gibson

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Biology, Department of

Georgia State University

Research Areas: Applied and environmental microbiology (AEM), cell biology and physiology (CBP), molecular genetics and biochemistry (MG&B), and neurobiology and behavior

Dr. P.C. Tai

Chair

404-651-2259

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<http://biology.gsu.edu>

Biology, Department of

Mercer University

Research Areas: DNA repair in prokaryotes, arabidopsis genetics, amphibian ecology, insect lipid-binding proteins, and immunological response to fungus proteins

Dr. Mary C. Kot

Chair

478-301-2709

kot_mc@mercer.edu

<http://bio-oak.mercer.edu>

Biology, Department of

Morehouse College

Research Areas: Molecular biology and cell physiology, animal behavior and public health. Research topics: bioremediation, prostate cancer, sickle cell anemia, cell adhesion molecules in development, nerve-muscle interaction, mate choice in fishes, and population management of diabetes.

Dr. David B. Cooke

Chair

404-215-2323

dcooke@morehouse.edu

www.morehouse.edu/biology/index.html

Biology, Department of

Oglethorpe University

Research Areas: Animal behavior, water quality, urban ecology

Monte Wolf

Chair, Division of Natural Sciences

404-364-8406

Biology, Department of

Spelman College

Research Areas: The department focuses on cellular and sub-cellular biology, and offers a strong curriculum that can support successful graduate study in the biological sciences. In addition, individual faculty research focuses on microbiology, developmental biology, physiology, neurobiology, biochemistry, reproductive biology, neuroscience, molecular genetics, immunology, and environmental biology.

Dr. Michael McGinnis

Chair

404-270-5720

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www.spelman.edu/~biology/faculty/faculty.html

Biology, Department of

State University of West Georgia

Research Areas: Molecular and cell biology, microbiology, physiology, biotechnology, toxicology, aquatic ecology, terrestrial ecology, biodiversity

Dr. Carl Quertermus

Chair

770-836-4540

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Biology, School of*Georgia Institute of Technology*

Research Areas: Environmental biology (molecular and chemical ecology, marine sciences), microbiology (environmental, molecular), molecular biology (genetics and cell biology), bioinformatics

*Dr. Roger Wartell**Chair**404-894-3735**roger.wartell@biology.gatech.edu**www.biology.gatech.edu***Biomedical Engineering, Wallace H. Coulter Department of***Emory University, Georgia Institute of Technology*

Research Areas: Cardiovascular biomechanics and biology, cellular and tissue engineering, neuro-engineering, biomedical imaging, biomedical modeling and computing, cancer technology

*Dr. Larry McIntire**Chair**404-712-2618 (Emory)**404-385-0124 (Georgia Tech)**www.bme.gatech.edu***Biomedical and Health Sciences Institute (BHSI)***University of Georgia*

Research Areas: The BHSI links UGA's scientific programs in the biomedical and human health fields. The institute is designed to increase the breadth and intensity of biomedical and health-related research, interconnect UGA programs in these fields, and assist in securing extramural funding. The institute also is a catalyst for collaboration in the development of new interdisciplinary graduate degree programs to train new scientists and researchers in the health fields. The institute provides the administrative framework and institutional home for interdisciplinary graduate programs in four divisions: infectious disease and immunity, molecular medicine, neuroscience, and public health. The institute also seeks meaningful collaborations in research, service and teaching with universities, state organizations, private companies, and other entities in the biomedical and health fields.

*Harry Dailey**Director**706-542-5922**biomed@uga.edu**www.biomed.uga.edu***Biomedical Interactive Technology Center (BITC)***Georgia Institute of Technology*

Research Areas: Programs include telemedicine, medical visualization, surgery simulation, and advanced medical devices. The center seeks meaningful collaborations in research with companies and other entities in the biomedical fields. BITC is an applied research center and an Operating Research Center within the Georgia Centers for Advanced Telecommunications Technology (GCATT) and maintains close research collaborations with Emory University and the Medical College of Georgia. BITC's focus is on interactive communication and computer applications in medicine. Research programs include telemedicine, medical visualization and simulation, wireless applications for rehabilitation, and advanced medical devices.

*John W. Peifer**404-894-3964**john.peifer@bitc.gatech.edu**www.bitc.gatech.edu***Biomedical Research, Center for***Spelman College*

Research Areas: The center's purpose is to expand the college's infrastructure in support of biomedical and behavioral research activities. Phase II funding, currently pending, will continue support of individual biomedical/behavioral research with a focus on Junior Faculty Development.

*Dr. Mark Maloney**Interim Program Director**404-270-5719**mmaloney@spelman.edu***Biomolecular Structure and Dynamics, Center for***University of Georgia*

Research Areas: Computational chemistry and computer-assisted drug design have become established branches of modern scientific investigation. With the advent of powerful computers and sophisticated software, the applications of computer-based methods to problems of biomedical and pharmaceutical significance can be pursued more effectively. For example, the prediction of the physical and biological properties of small and large molecules has important ramifications for drug discovery. UGA established this center in December 2002 to replace the Computational Center for Molecular Structure and Design.

*J. Phillip Bowen**Director**706-542-2054**bowen@ccmsd.chem.uga.edu*

Biostatistics, Department of*Emory University*

Research Areas: Mathematical modeling of infectious diseases (including AIDS) and estimation of vaccine efficacy; statistical genetics; sample survey design and analysis; discrete multivariate analysis; linear models; categorical data analysis; probability; statistical computing; survival analysis; the design, management, and analysis of clinical trials; statistics of vector-borne and parasitic diseases; spatial statistics; as well as statistical issues related to cardiology, ophthalmology, neurology, breast cancer epidemiology, reproductive epidemiology, aging, and quality of life

*Dr. Michael H. Kutner**Interim Chair*

404-727-7693

*mkutner@sph.emory.edu**www.sph.emory.edu/hpbios.html***Biotechnology and Drug Design, Center for***Georgia State University*

Research Areas: Rational design and development of drug molecules, high-throughput screening

*Dr. Barbara Baumstark**Director*

404-651-3156

*biobrb@panther.gsu.edu**http://biology.gsu.edu/research/centers/index.html***Cancer Institute, Winship***Emory University*

Research Areas: Cancer prevention, oncology clinical research, pediatric oncology, molecular therapy, immunology, and cancer genetics

*Dr. Jonathan W. Simons**Director*

404-778-5177

*jonathan_simons@emoryhealthcare.org**www.winshipcancerinstitute.org***Carbohydrate Research Center (CCRC), Complex***University of Georgia*

Research Areas: The center includes a U.S. Department of Energy-funded Center for Plant and Microbial Complex Carbohydrates and a National Institutes of Health Resource Center for Biomedical Complex Carbohydrates. The CCRC studies the structures and functions of the complex carbohydrates of plants, microbes, and animals. CCRC scientists investigate the chemistry and the physiological, developmental, and molecular biology of complex carbohydrates having biological importance, using advanced analytical techniques, including mass

spectrometry, nuclear magnetic resonance (NMR) spectroscopy, computer modeling, tissue culture, immunocytochemistry, recombinant genetics, and chemical and enzymatic synthesis. Organized to optimize cooperation and collaboration among disciplines within the CCRC and with scientists elsewhere, the CCRC's 81,000-square-foot building is specifically designed for the interdisciplinary and equipment-intensive nature of carbohydrate science and to support a broad range of expertise. The CCRC provides analytical services to scientists, offers hands-on laboratory training courses each summer for scientists from academia and industry, and develops computer software to assist the study of complex carbohydrates. The CCRC operates a Georgia Research Alliance Regional NMR Center providing the analytical capabilities of a high-field 800-MHz NMR spectrometer to scientists at Georgia's research universities. CCRC personnel currently are collaborating on more than 150 research projects with scientists in Georgia, 29 states in the U.S., and in 17 countries. The CCRC is supported by federal, state, and industrial funds and has annual research funds of about \$6 million.

*Peter Albersheim**Director**palbersh@ccrc.uga.edu**Alan Darvill**Director**adarvill@ccrc.uga.edu**www.crc.uga.edu***Cardiopulmonary Care, Department of***Georgia State University*

Research Areas: Aerosol drug delivery and asthma intervention; evaluation of equipment and procedures for respiratory care medicine

*Joseph Rau**Chair*

404-651-1490

*jrau@gsu.edu***Cardiovascular Research Institute***Morehouse School of Medicine*

Research Areas: Molecular basis of vascular remodeling, genetic epidemiology of cardiovascular disease, gene expression profiles in vascular cells, mechanisms of salt sensitive hypertension

*Dr. Gary Gibbons**Director*

404-752-1545

ggibbons@msm.edu

Cell Biology, Department of Emory University

Research Areas: Development of stem cell lineages in the *Drosophila* CNS and germline (Krishna Bhat); interactions between the nervous system and the musculoskeletal system (Arthur English); cellular and molecular mechanisms of endosomal membrane trafficking in neuronal systems (Victor Faundez); ion channel regulation and signal transduction (Criss Hartzell); study of microtubules which play crucial roles in both mitotic and post-mitotic phases of neuron life (Harish Joshi); developmental neurobiology; regulation of cell proliferation, migration, and differentiation (Marla Luskin); Glial response to neural injury; axonal regenerative failure; neuroprotection (Robert McKeon); specification of pattern and cell fate in the developing eye, using *Drosophila* (Kevin Moses); protein inhibitors of the propeptide/prohormone convertases (Bryan Noe); structure and function of the nuclear pore (Maureen Powers); role of microtubules in cell motility, with emphasis on the mechanism and regulation of dynein ATPase (Winfield Sale); G-protein-coupled receptor-mediated signal transduction and its role(s) in development (Charles Saxe); neurobiology of the chemical senses; olfactory system (John Scott); molecular basis of cellular interactions during fertilization and development (Barry Shur); neuronal cell biology; cytoskeletal proteins and Alzheimer's disease; microglial tyrosine phosphorylation in neurodegeneration (John Wood)

Dr. Barry D. Shur
Chair
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<http://cellbio.emory.edu>

Cell and Molecular Signaling, Center for Emory University

Research Areas: The center is a multidisciplinary and interdepartmental research unit and a division of the Physiology Department. Currently, the center has 11 investigators: six from physiology, two from medicine, and one each from anesthesiology, pathology, and pediatrics. The center's research mission is to investigate cellular signaling or cellular signal transduction (the process by which cells recognize external events and respond to the events with appropriate changes within the cell). An additional goal is to understand how abnormalities in cellular signaling are associated with specific disease processes.

Dr. Douglas C. Eaton
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www.emory.edu/WHSC/MED/CCMS

Cellular Biology, Department of University of Georgia

Research Areas: Cell and molecular biology, developmental biology, molecular parasitology, immunology, cellular neurobiology, and endocrinology

Joe Crim
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www.uga.edu/~cellbio

Cellular Biology and Anatomy, Department of Medical College of Georgia

Research Areas: Cardiovascular development, origin and differentiation of specific cell types during embryogenesis, Alzheimer's disease pathogenesis, cellular wounding and healing, cancer, cell signaling in cancer cells and induction of cell death in cancer cells, mechanisms of neurotoxicity, corneal wound healing, epithelial transport and diabetic retinopathy, pathogenesis of ocular viral infections

Dr. Sally Atherton
Chair
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www.mcg.edu/SOM/cba/index.html

Chemical Engineering, School of Georgia Institute of Technology

Research Areas: Biomedical engineering, bioprocessing, catalysis, reaction kinetics and engineering, complex fluids and multiphase flow, electrochemical engineering, environmental engineering and sustainable development, microelectronics, nanotechnology and microfluidics, polymeric materials and high-performance fibers and composites, process modeling and control, pulp and paper engineering, separation and purification, thermodynamics, and intermolecular interactions

Dr. Ronald W. Rousseau
Chair
404-894-2865
ronald.rousseau@che.gatech.edu
www.che.gatech.edu

Chemistry, Department of*Clark Atlanta University*

Research Areas: Biochemistry and separation science

*Dr. Mark Mitchell**Chair**404-880-6858**mmitchell@cau.edu**www.cau.edu***Chemistry, Department of***Georgia State University*

Research Areas: Drug development, mechanisms of DNA binding, analytical techniques, enzyme production

*Dr. Al Baumstark**Chair**404-651-3120**chealb@panther.gsu.edu**http://chemistry.gsu.edu***Chemistry, Department of***Mercer University*

Research Areas: Biochemistry of the plant cytoskeleton, remediation catalysts, and proteolytic enzymes; computational chemistry of protein/ligand interactions; phytoremediation; and water quality analysis

*Dr. Dale E. Moore**Chair**478-301-2767**moore_de@mercer.edu**www2.mercer.edu/Liberalarts/Sciences/Chemistry/default.htm***Chemistry, Department of***Morehouse College*

Research Areas: Atmospheric, environmental, and space sciences with particular interest in the chemistry of the stratosphere and tropospheric photochemistry; quantum and classical dynamics and protein crystallography

*Dr. John Hall**Chair**404-215-2611**jhall@morehouse.edu**www.morehouse.edu/chemistry/index.html***Chemistry, Department of***Spelman College*

Research Areas: The department offers majors in chemistry and biochemistry. The department's research efforts are focused on atmospheric and environmental studies, applications of spectroscopy to materials and biochemistry, synthetic chemistry, organic and inorganic chemistry, spectrophotometry, materials science, synthesis of biological active compounds, and computational methods.

*Dr. Cornelia Gillyard**Chair**404-223-7603**cgillyard@spelman.edu**www.spelman.edu/chemistry/index.html***Chemistry, Department of***University of Georgia*

Research Areas: Spectroscopy, mass spectrometry, chemical physics, analytical chemistry, environmental chemistry, electrochemistry, chemical education, nuclear chemistry, physical chemistry, organic chemistry, medicinal chemistry, materials science, and metallobiochemistry

*Robert Scott**Department Head**706-542-2626**head@chem.uga.edu**www.chem.uga.edu***Chemistry and Biochemistry, Department of***Kennesaw State University*

Research Areas: Molecular evolution, molecular modeling using state-of-the-art software and hardware, molecular determinants of cannabinoid activity, NMR studies of cannabinoid receptor extracellular loop peptides, neurochemistry, activity of membrane-bound proteins, influence of environment on structure, and dynamics of receptors upon ligand binding

*Dr. Leon L. Combs**Chair**770-423-6159**770-423-6744(f)**lcombs@kennesaw.edu**http://science.kennesaw.edu/chem***Chemistry and Biochemistry, School of***Georgia Institute of Technology*

Research Areas: The school is organized under the following research areas: biomolecular structure and biophysics, the chemistry of materials, nanochemistry, pharmaceutical chemistry, photochemistry and

photobiology, environmental chemistry and sensors, and theoretical and computational chemistry.

Research encompasses the following areas:

development of sensors, studies using scanning probe microscopes, mass spectrometry, chromatographic, and spectroscopic techniques and bioanalysis; biomacromolecular structure (DNA, RNA, proteins, carbohydrates), medicinal chemistry, biophysical chemistry, and molecular biology; structural analysis of nucleic acids, protease-inhibitor complexes and polymerases, using high-resolution fluorescent probe technologies and recombinant DNA techniques, X-ray diffraction, nuclear magnetic resonance, and scanning probe microscopy; drug discovery program including cures for cancer, AIDS, heart disease, Alzheimer's disease, hypertension, and drug abuse; dynamic efforts in bioorganic, bioinorganic, bioanalytical processes, organic photochemistry, atmospheric and environmental chemistry, and biophysical chemistry; materials/polymer chemistry, synthesis of new monomers, development of new theories for polymerization dynamics, polymers for microelectronics, packaging, fibers, membranes, electro-optical devices, surface and interfacial science, and properties of nanostructures.

Dr. Thomas Orlando

Acting Chair

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Clinical Research Center (CRC)

Morehouse School of Medicine

Research Areas: Cardiovascular disease, hypertension, cancer, health effectiveness research, disease prevention, pharmacological-related research, nutrition

Dr. Elizabeth Ofili

Director

404-752-1192

ofilie@msm.edu

Community Health/Preventive Medicine, Department of

Morehouse School of Medicine

Research Areas: Disease prevention, cancer, HIV/AIDS, cardiovascular disease

Dr. Dan Blumenthal

Chair

404-752-1625

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Computational Quantum Chemistry (CCQC), Center for

University of Georgia

Research Areas: The center seeks to develop theoretical and computational methods through mathematical models for describing and understanding the movement and function of electrons in molecules and to apply the theoretical methods to significant problems of broad chemical interest. Areas of current special concern include: the mechanism of chemical vapor deposition, critical to the fabrication of devices for the microelectronics industry; the potential energy hypersurfaces that govern elementary gas-phase chemical reactions, particularly those important in combustion; molecular anions of fundamental importance in atmospheric and environmental chemistry; fundamental problems in physical organic chemistry involving, for example, carbenes and other biradical species and systems such as [10] annulene; hydrogen bonding in DNA base pairs, their anions, and larger fragments of DNA; and organometallic systems, especially polynuclear transition metal carbonyls.

Henry Schaefer

Director

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Computer Information Systems, Department of Georgia State University

Research Areas: Neural networks, interface of computers with human nervous system

Richard Baskerville

Chair

404-651-3880 x934

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Computer Science, Department of Georgia State University

Research Areas: Bioinformatics

Martin Fraser

Chair

404-651-0657

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www.cs.gsu.edu/index.html

Computer Science, Department of*University of Georgia*

Research Areas: Algorithms and combinatorics; databases and distributed information systems; tools for visualization and interaction in support of computational biology; and high-performance computing for computational biology, vision, and image processing

*Krys J. Kochut**Department Head**706-542-3455**kochut@cs.uga.edu**www.cs.uga.edu***Cooperative Reproductive Science Research Center (CRSRC)***Morehouse School of Medicine*

Research Areas: Sexual development or puberty, female reproduction or ovarian function, male reproduction or testicular function, pregnancy

*Dr. David Mann**Director**404-752-1682**mann@msm.edu***Crop and Soil Sciences, Department of***University of Georgia*

Research Areas: Faculty at campuses in Athens (College Experiment Station), Griffin (Georgia Experiment Station), and Tifton (Coastal Plain Experiment Station and Rural Development Center) conduct the teaching, research, and public service functions for the department in the areas of the nature of plant growth, crop production, soil characteristics, and the environment

*Albert Smith**Department Head**706-542-2461**cropsoil@uga.edu**www.cropsoil.uga.edu***Earth and Atmospheric Sciences, School of***Georgia Institute of Technology*

Research Areas: Environmental science and technology, marine sciences, biogeochemistry, biogeochemical cycling, biological experiments related to marine gas hydrates

*Dr. Judith A. Curry**Chair**404-894-3948**404-894-5638(f)**judith.curry@eas.gatech.edu**www.eas.gatech.edu/indresearch.html***Ecological Research Center at Ichauway, Joseph Jones***Independent Regional Research Center*

Research Areas: Both short- and long-term multidisciplinary research is being conducted at this research center (established by the Robert W. Woodruff Foundation) using experimental and descriptive studies of managed and less disturbed regional ecosystems. New information is transferred to targeted conservation and natural resource constituencies through the education program. Ichauway, located in the southeastern Gulf Coastal Plain, is used as an outdoor laboratory for research, as a site for conserving and restoring regional ecosystems, and as an educational demonstration for ecology and natural resource management. Center faculty work primarily in the niches of wildlife biology and management, forestry ecology and management, watershed and aquatic ecology, plant and wetland ecology, and conservation biology of rare plants and animals.

*Lindsay Boring**Director**229-734-4706**info@jonesctr.org**www.jonesctr.org***Ecology Laboratory (SREL), Savannah River***University of Georgia*

Research Areas: SREL, a UGA research unit, has organized its research into four major programs: Advanced Analytical Center, ecotoxicology, ecological stewardship, and radioecology. These programs conduct basic ecological research and apply the findings to environmental issues on the Savannah River site and elsewhere. Much of SREL's research is applicable to environmental problems related to the effects of industrial activities, including remediation strategies. Researchers conduct studies in both terrestrial and aquatic habitats on the site, covering all aspects "from atoms to ecosystems." Projects range

from computerized models of the interactions of contaminant molecules with soil particles to studies of natural plant and animal populations to the restoration of bottomland hardwood forests. The lab's mission is to better understand the environment by acquiring and communicating knowledge that contributes to sound environmental stewardship. SREL conducts basic and applied ecological research as well as education and outreach programs under a cooperative agreement with the U.S. Department of Energy (DOE) at the Savannah River site near Aiken, South Carolina.

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 Director
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Rosemary Forrest
 Public Relations Coordinator
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Electrical and Computer Engineering, School of Georgia Institute of Technology

Research Areas: Feature extraction in cardiac imagery, MEMS devices for direct interfacing with biological systems, modeling of biological sensory and motor systems, neuroengineering, medical imaging and signal processing, and the development of sensors for the detection of cancer cells

Dr. Roger Webb
 Chair
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Engineering, Institute of the Faculty of University of Georgia

Research Areas: Organized to enable the convergence of engineering with the sciences, humanities, and arts, the Faculty of Engineering is comprised of researchers in 24 academic units of eight schools and colleges. The use-inspired research paradigm that emerges from interdisciplinary collaboration leads to innovation in the development of products and services relevant to the needs of society. Bioscience-related areas of research expertise include biomedical

engineering, ecological engineering, information engineering, marine engineering, nanoscale science and engineering, and metabolic engineering.

Dale Threadgill
 Director
 706-542-1643
 www.engineering.uga.edu

Entomology, Department of University of Georgia

Research Areas: Current research includes agroecosystems, biochemistry of insect-plant interactions, biological control, forest entomology, molecular biology of insect pathogens, neuroendocrinology, pest management and applied entomology, and social insect biology, vector biology, insect genetics, stream and wetland ecosystems, systematics, and urban entomology

Ray Noblet
 Department Head
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Environment and Design, College of University of Georgia

Research Areas: The college brings together the university's School of Environmental Design with UGA's many environmental science programs, including the Institute of Ecology. The School of Environmental Design is a center for providing education for those students who wish to play a role in the planning, design, and management of the outdoor environment. The undergraduate program provides professional instruction in landscape architecture. Whether practicing in urban settings or natural environments, the landscape architect's tools blend horticultural, engineering, and artistic skills with an understanding of natural processes and a sense of stewardship. The Institute of Ecology offers the Ph.D. in ecology, two master of science degrees (ecology, and conservation ecology and sustainable development), a bachelor of science in ecology, and a graduate certificate in conservation ecology and sustainable development. In addition to laboratory facilities in the Ecology Building, access to research facilities off-campus may be arranged at the Savannah River Ecology Laboratory in South Carolina, Coweeta Hydrologic Laboratory (a member of the NSF's Long Term Ecological Research site network) in North Carolina, and the Joseph Jones Ecological Research Center in south Georgia. Other field sites include the McGarity Wetlands and Odum Watershed in Georgia,

Sapelo Island off of the Georgia coast, and international sites in Ecuador, Guatemala, Costa Rica, and Puerto Rico. Agro-ecological research is conducted on the institute's nearby Horseshoe Bend site. The institute supports applied and basic research in marine, freshwater, and terrestrial ecosystems in temperate and tropical regions with active programs in physiological, behavioral, biophysical, and evolutionary aspects of ecology. Of direct interest to biotechnology, there is a soil ecology project designed to investigate the ecological consequences of planting crops that contain toxin-producing genes. Institute service programs aid schools, communities, industry, and government through special short courses and participatory research. The institute also has an active program in environmental policy.

Jack Crowley
Dean, College of Environment and Design
706-542-1816

Rene Shoemaker
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Alan Kovich
Director, Institute of Ecology
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Janice Sand
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www.ecology.uga.edu (Ecology)
www.ced.uga.edu (Environment and Design)

Environmental Health Science, Department of University of Georgia

Research Areas: Faculty focus on biological, chemical, and physical agents occurring naturally or introduced into the environment and their effects on human health and well-being, including a study of human activities as a vital component in the complex ecosystem

Jeffrey Fisher
Department Head
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Environmental Science Program

Mercer University
Research Areas: Effects of chemicals on the natural environment, effects of DDT residue in breast adipose tissue and incidents of breast cancer

Dr. Robert Hargrove
478-301-2762
hargrove_rj@mercer.edu
www2.mercer.edu/liberalarts/sciences/env_sci

Environmental Science Research and Education, Center for

Spelman College
Research Areas: The center's purpose is to conduct environmental research, education, and training both on campus and at DOE national laboratories

Dr. Victor Ibeanusi
Program Director
404-270-5866
vibeausi@spelman.edu

Food Safety, Center for

University of Georgia
Research Areas: The center, located at the Georgia Experiment Station in Griffin, develops and improves methods for detecting, enumerating, controlling, and eliminating pathogenic microorganisms in foods. The center develops methods to quantify, prevent formation, and eliminate microbial toxins in foods as well as studying mechanisms of pathogenicity of food borne pathogens.

Michael Doyle
Director
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www.griffin.peachnet.edu/cfs

Food Science and Technology, Department of University of Georgia

Research Areas: Faculty train student scientists on how to apply skills in science, technology, and engineering for production, processing, packaging, storage, distribution, and marketing of food. The goal is to teach students to work with the properties and components needed to produce food that is nutritionally sound and affordable.

Rakesh Singh
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706-542-2286
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Foods and Nutrition, Department of

University of Georgia

Research Areas: This department specializes in human nutrition from the basic science of nutrition through to its application to clinical and community health. Faculty research focuses on chronic disease prevention and health promotion including obesity, diabetes, cardiovascular disease, bone health and osteoporosis, geriatric nutrition, and food quality and safety. The award-winning faculty come from diverse backgrounds and prepare students to function as professionals to meet the changing needs of society and industry in the areas of foods and nutrition. Faculty are involved in generating scholarly work in the discipline and in educating the public about issues related to foods, nutrition, and health.

Rebecca Mullis

Department Head

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www.fcs.uga.edu/fdn/index.html

Forest Business, Center for

University of Georgia

Research Areas: The center was established to integrate the business aspects of forest production and processing with the biological and ecological requirements of sustainable production. The center provides timely, relevant education, research, and service programs to business and industry leaders, forest landowners, and students. The center's mission is to provide national leadership in education, research, and service to the forest industry and private landowners in the following areas: integration of sound forest business principles and practices with contemporary biological and quantitative methods to achieve sustainable forest production; investigation of forest resources and forest industry alternatives that are economically competitive in the global marketplace; and proposal of market-based solutions to forest resource problems and opportunities. The center's principal activities will focus on: a graduate program to educate professionals to successfully occupy senior-level positions in private industry and public organizations; research to improve planning and provide financial analyses to forest industry and

private forest landowners; and service programs to educate professionals and organizations about the financial, biological, and social components of intensive forest production.

Robert Izlar

Director

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Forest Resources, Warnell School of

University of Georgia

Research Areas: Biotechnology research includes studies on a range of natural resource issues. Current projects focus on vegetative propagation of trees, gene transfer in trees, wood development, tree-pathogen interactions, avian and mammalian population genetics, genetically modified transgenic fish, and aquatic toxicology. Five faculty members form the core of the school's biotechnology program and they extend the impact of the program by actively collaborating with eco-physiologists, organismal biologists, tree geneticists, and public health scientists at UGA and other research universities. The biotechnology program is housed in state-of-the-art laboratories that are fully equipped for tree, fungal and fish molecular biology, plant tissue culture, biochemistry, and genomics. The new Aquatic Resources Center, supported by the Georgia Research Alliance, enhances the facilities to focus on patented transgenic fish to study fundamental processes of cancer, and mutations associated with drinking water, UV radiation, and chemicals in the environment.

James Sweeney

Interim Dean

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www.uga.edu/wsfr

Genetics, Department of

University of Georgia

Research Areas: Bacterial bioinformatics, genomics, biotechnology, cancer genetics, conservation genetics, DNA replication, repair and genetic recombination, eukaryotic molecular genetics and gene regulation, evolutionary genetics, genetics and ecology of natural populations, genome evolution, genome mapping, host-pathogen interactions, microbial development, molecular evolution, plant and animal development, prokaryotic molecular genetics and gene regulation, signal transduction, and theoretical population genetics

John McDonald
Department Head
 706-542-8000

Linda Brawner
Scientific Administrative Specialist
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www.genetics.uga.edu

Genetics, Department of Human Emory University

Research Areas: The division provides adult and pediatric consultation and management of genetic disease throughout metropolitan Atlanta and much of the state. It operates three state-of-the-art diagnostic laboratories dealing with cytogenetics, metabolic diseases, and molecular diagnostics. Research areas include: Down syndrome (Sherman); Fragile X syndrome (Warren, Sherman, Ceman); genetic causes of mental retardation (Sherman, Warren); genetic mapping of complex traits (Sherman, Epstein); genomics and genome evolution (Thomas); high-throughput sample extraction, sequencing and typing (Lamb); Huntington's disease (X. Li); inborn errors of metabolism (Danner, Fridovich-Keil, Sharer); laboratory automation/sample tracking (Lamb); metabolite induced neurological dysfunction (Danner); molecular mechanisms of inherited neurodegeneration (X. Li); nondisjunction of human chromosomes (Sherman, Lamb); normal function of proteins associated with genetic disease (Fridovich-Keil, Ceman); trinucleotide expansion and Neurodegenerative disease (S. Li); tissue specific gene regulation (Danner); neurogenetics (Warren); statistical methods for gene mapping (Epstein)

Dr. Stephen T. Warren
Chair
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www.emory.edu/WHSC/MED/GENETICS/index.html

Genomics - Functional Genomics Resources Facility

University of Georgia
 Research Areas: Part of the Integrated Biotech Laboratories, the Functional Genomics Resources Facility is a full service microarray and single-nucleotide polymorphism (SNP) analysis laboratory. Services include custom microarray printing services using the Amersham Pharmacia Gen III spotter and fluorescent probe preparation from tissue samples. For automated hybridization, an Amersham Biosciences 12 place hybridization

station (ASP) with manifold possibilities is used. This facility also provides access to microarray and sequencing based high-throughput SNP analysis (microsequencing and hybridization based assays).

Roger Nilsen
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 706-583-0911
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Gerontology Center

University of Georgia

Research Areas: The center coordinates and promotes multidisciplinary and interdisciplinary aging research, training, and outreach at UGA. The center offers a graduate certificate in gerontology and post-doctoral training opportunities. Undergraduate honors students also have the opportunity to study gerontology through the Aging Studies Program, jointly sponsored by the Gerontology Center and Honors Programs. The center has garnered international recognition for its research on adaptation and survival of the oldest-old (e.g., The Georgia Centenarian Study). It also serves as the executive coordinating institution for the International Centenarian Study involving Georgia, France, Germany, Japan, Sweden, and the United Kingdom. The center is the sponsor and hub institution for the Georgia Gerontology Consortium which administers and delivers gerontological programming throughout the University System of Georgia, including: 1) the Distance Learning Partnership in Gerontology, which employs collaborative teaching technologies to deliver four core aging courses to participating universities; 2) a faculty and student Seed Grant Program, which promotes aging research, course, and program development; 3) the Southeastern Regional Student Convention on Gerontology and Geriatrics, which is the nation's first and largest convention training venue designed for and conducted by students-in-aging; and 4) the Faculty, Instruction, Research, and Outreach Development Program, which is the sponsor of the Master Teacher in Gerontology Workshops series.

Leonard W. Poon
Director
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Horticulture, Department of*University of Georgia*

Research Areas: The department's mission is to develop and disseminate new knowledge leading to the improvement and facilitation of cost-effective and profitable production, post harvest handling, and utilization of horticultural commodities and services in a concerted effort to conserve natural resources while protecting and enhancing the environment

*Douglas Bailey**Department Head**706-542-2471**hortath@uga.edu**www.uga.edu/~hort***Infectious Diseases - Center for Tropical and Emerging Global Diseases (CTEGD)***University of Georgia*

Research Areas: The center is a cross-college, interdisciplinary center and collaborative effort between the Franklin College of Arts and Sciences, the College of Veterinary Medicine, and the College of Agricultural and Environmental Sciences. It was established to support and promote the development of research, service, and educational programs related to tropical and emerging diseases. It focuses research and educational attention on formerly tropical diseases that have emerged from isolated areas and are now having a significant impact on a world-wide basis. The center's research includes the immunology, cell biology, biochemistry, and molecular biology of protozoan and metazoan parasites, and the biology of vectors of infectious agents.

*Daniel G. Colley**Director**706-542-3378**dcolley@uga.edu**www.uga.edu/ctegd/***Information Technology Outreach Services (ITOS)***University of Georgia*

Research Areas: ITOS is a UGA Public Service and Outreach unit involved in making governmental and non-profit agencies more technologically efficient through a variety of projects across the state, as well as in cooperation with other states and nations. This unit specializes in economic development, education, emergency services, and technology outreach through services such as GIS applications (maps with intelligence), special purpose mapping, computer modeling, database applications, networking, and installation and training. ITOS is active in data

warehousing in both the crisis management and medical fields, including medical insurance data and detailed socioeconomic data.

*Allan Adams**Associate Director**706-542-5308**info@itos.uga.edu**www.itos.uga.edu***Integrated Biotech Laboratories (IBL)***University of Georgia*

Research Areas: IBL includes the Sequencing and Synthesis Facility, the Proteomics Resource Facility, and the Functional Genomics Resources Facility (see more detail under separate entries). These laboratories use technology to meet the needs of researchers in molecular biology, studying proteins, peptides, and DNA. In addition to serving university and governmental agency researchers, the labs work with some private companies on a case-by-case basis, depending on the nature of their research and the availability of these services from other sources.

*John Wunderlich**Director**706-542-6409**wunder@mgif.rserv.uga.edu**www.ors.uga.edu/ibl/index.html***Isotope Studies (CAIS), Center for Applied***University of Georgia*

Research Areas: The center is a multidisciplinary research facility that applies nuclear analytical technology to critical research problems in environmental, archaeological, and marine sciences, biotechnology, and biomedicine, in addition to the basic physical and life sciences. Unique research capabilities include an accelerator mass spectrometer (AMS) that measures carbon isotopes at the atom level of detection. The AMS facility is the first in the Southeast and one of only two laboratories nationwide to direct efforts to the analysis of biomedical and environmental samples. The CAIS assists UGA researchers with instrumentation, methods, and techniques in isotopic analysis, offering opportunities for multidisciplinary industry collaborative research, public-private partnerships, and product development.

*John Noakes**Director**706-542-1395**cais@uga.edu**www.uga.edu/cais*

Kinesiology and Health, Department of*Georgia State University*

Research Areas: Exercise physiology, sports medicine, muscle biology, and biomechanics

*Jeffrey C. Rupp**Chair**404-651-2536**jrupp@gsu.edu***Marine Extension Service***University of Georgia*

Research Areas: The service helps solve problems related to the state's marine resources. The Marine Education Center and Aquarium on Skidaway Island is the major marine education facility for schools and colleges in the state. The Shellfish Aquaculture and Fisheries Center located on Skidaway Island works to develop marine aquaculture and new fisheries for the state. At the Brunswick Marine Advisory and Technology Transfer Center, specialists work directly with the commercial and recreational fisheries and seafood processing industry to increase its efficiency and effectiveness and to develop new eco-friendly industries.

*Randal Walker**Director**706-542-8849**Marie Scoggins**Business Manager**mms337@uga.edu**www.marsci.uga.edu/EXT/MAREX.HTML***Marine Institute***University of Georgia*

Research Areas: Marsh and estuarine ecology to provide an understanding of energy flow, cycling of minerals and nutrients through the marshes and nearby ocean, and factors regulating the metabolism of the salt marsh ecosystem

*Steven Newell**Interim Director**912-485-2221**sapelo@uga.edu**www.uga.edu/ugami***Marine Programs, School of***University of Georgia*

Research Areas: This school is responsible for the coordination and general management of the Marine Institute, the Marine Extension Service, the Georgia Sea Grant College Program, the Department of Marine Sciences, and the Environmental Ethics Certificate Program. The school conducts a wide range of marine-related programs involving undergraduate and graduate instruction, basic and applied research, and outreach/public service.

*James Hollibaugh**Director**706-542-7671**marsdir@uga.edu**www.marsci.uga.edu***Marine Sciences, Department of***University of Georgia*

Research Areas: This department is the degree-granting arm of the School of Marine Programs. The department offers an undergraduate degree through the Franklin College's Interdisciplinary Studies major as well as the Ph.D. and master of science in marine sciences. In addition, a proposal to offer the B.S. in marine sciences currently is pending.

*James T. Hollibaugh**Director**706-542-7671**aquadoc@uga.edu**www.marsci.uga.edu***Mass Spectrometry Center, Chemical and Biological Sciences***University of Georgia*

Research Areas: The facility is equipped with four mass spectrometers. A Hewlett Packard MSD GC/MS is used to obtain electron ionization (EI) mass spectra of small volatile organic molecules (less than 600 u). Three new mass spectrometers are available for high molecular weight samples and these are extensively used by faculty for biologically-related research programs. A Sciex API-1 quadrupole mass spectrometer with an electrospray ionization (ESI) source can be used for LC/MS in conjunction with a microbore or an analytical HPLC system. A Bruker reflex time-of-flight (TOF) mass spectrometer is used for matrix-assisted laser desorption ionization (MALDI) analyses of high molecular weight compounds (1,000-300,000 Da). The TOF instrument is equipped with delayed extraction electronics and is able to provide isotopic resolution to m/z 5000. A Bruker Esquire 3000 plus

ion trap mass spectrometer equipped with an ESI source and a capillary electrophoresis interface is in the facility. The ion trap is capable of ion isolation followed by induced fragmentation which is useful for structural analysis of small peptides (less than 2,000 u), for example, proteolytic fragments.

Dennis Phillips
 Director
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 drphillips@sunchem.chem.uga.edu
 www.uga.edu/mass-spec

Materials Science and Engineering, School of

Georgia Institute of Technology
 Research Areas: Biomaterials, dental amalgam, corrosion of implants, fracture and fatigue of implant materials, release of metallic ions into the body fluids, and simultaneous effects of corrosion and stress

Dr. Robert L. Snyder
 Chair
 404-894-2888
 robert.snyder@mse.gatech.edu
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Mathematics, Department of

University of Georgia
 Research Areas: Algebra, analysis, applications of mathematics in engineering, biology and ecology, geometry, number theory, teacher education, and topology

Dan Kannan
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 706-542-2211
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Mathematics and Sciences, Department of

Brenau University
 Research Areas: Development of funded research projects

Dr. John Dittmer
 770-718-5312
 jdittmer@lib.brenau.edu
 www.brenau.edu/shs/sciences

Mathematics and Statistics, Department of

Georgia State University
 Research Areas: Offers masters programs in bioinformatics and biostatistics in order to educate students in biomedical computing. Involved with Institute of Public Health in terms of teaching biostatistics courses.

Jean Bevis
 Chair
 404-651-0683
 jbevis@mathstat.gsu.edu
 www.mathstat.gsu.edu

Mechanical Engineering, Woodruff School of *Georgia Institute of Technology*

Research Areas: Bioengineering, computer-aided engineering and design, fluid mechanics, health physics/radiological engineering, manufacturing, mechanics of materials, micro-electromechanical systems

Dr. Ward O. Winer
 Chair
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 www.me.gatech.edu

Media Institute, New

University of Georgia
 Research Areas: The institute is an interdisciplinary unit committed to advancing and examining the commercial, critical, and creative elements of new media. Through teaching, research, and service, the institute is involving faculty, students, and staff from all areas of the campus in its programs and activities to further explore digital media technologies. The NMI focuses on issues of new media messaging, including the dissemination of biotech and biomedical information. The Institute offers new media courses and the New Media Interdisciplinary Certificate.

Scott Shamp
 Director
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Medical Sciences, Department of Basic

Mercer University
 Research Areas: Medical, basic biomedical

Dr. Jonathan Martin
 478-301-4969
 martin_jd@mercer.edu
 http://medicine.mercer.edu/departments/basic_science

Medical Science, Occupational Therapy Department*Brenau University*

Research Areas: Colored MRI technology

Dr. Keith Brown

770-534-6296

*kbrown@lib.brenau.edu**www.brenau.edu/shs/ot***Medicine, Department of Family***Morehouse School of Medicine*

Research Areas: Cardiovascular disease, diabetes, depression, hypertension

*Dr. Gregory Strayhorn**Chair*

404-756-1214

*gstrayhorn@msm.edu***Medicine, Department of Internal***Morehouse School of Medicine*

Research Areas: Kidney disease, hypertension, cardiovascular disease, pulmonary disorders, diabetes

*Dr. Samuel Aguayo**Chair*

404-756-1308

Metalloenzyme Studies (CMS), Center for*University of Georgia*

Research Areas: The center encourages cooperative research to determine how vital metalloenzymes function and how they are synthesized and regulated by cells. Through collaborative research, discussions, and seminars, enhanced knowledge is generated about enzymes that catalyze life-supporting reactions such as nitrogen fixation, sulfur interconversions, and hydrogen production. Use of the latest technologies and analytical equipment enables center faculty and its postdoctorate and graduate students to perform critical experiments and to organize state-of-the-art courses in bioinorganic chemistry, biochemistry, enzymology, fermentation technology, and anaerobic techniques as applied to metalloenzyme production, structure, and function.

*Michael Adams**Director*

706-542-1949

*Michael Johnson**Director*

706-542-1949

*Gimmy Lynch**Sr. Administrative Secretary**lynch@sunchem.chem.uga.edu**www.uga.edu/~cms***Microbiology, Department of***University of Georgia*

Research Areas: Programs range from protein structure and function and gene regulation to microbial diversity, bioengineering, and host-pathogen interactions

*Duncan Krause**Department Head*

706-542-1434

*Nancy Humphries**Scientific Administrative Specialist**nancydh@uga.edu**www.uga.edu/mib*

Microbiology and Immunology, Department of Emory University

Research Areas: Immunology and pathogenesis of chronic viral infections, immunological memory and vaccine development (Rafi Ahmed); immunological memory and vaccine development (John Altman); molecular immunology, regulation of major histocompatibility complex class II genes and tumor necrosis factor gene induction (Jeremy Boss); mechanisms of transposition, mycobacterial drug resistance, and pathogenesis (Gordon Churchward); cell biology of virus replication, focusing on the membrane glycoproteins of enveloped RNA viruses (Richard Compans); T cell activation (Brian Evavold); viral immunology, mechanisms of pathogenesis of DNA viruses (Linda Gooding); immunological memory (Joshy Jacob); regulation of gene expression during cell differentiation in microbes (Charles Moran, Jr.); DNA initiated immune responses and development of vaccines (Harriet Robinson); molecular mechanisms of bacterial virulence; control of gene expression and mechanisms of transpositions (June Scott); bacterial pathogenesis and structure and function of bacterial outer membranes (William Shafer); role of gamma herpes viruses and development of lymphomas and other associated cancers (Sam Speck); structure and function of the influenza virus fusion protein, molecular virology (David Steinhower); mechanism of heme and hemoglobin utilization by gram negative bacteria, virulence determinants of salmonella typhimurium and salmonella typhi (Igor Stojiljkovic); molecular biology and biochemistry of regulation of transcription eukaryotic cells (Guang-er Wu); and immunology, role of macrophage in the immune response to intracellular pathogens (H. K. Ziegler)

Dr. Richard W. Compans
Chair

404-727-5947

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www.emory.edu/MICROBIO/index.html

Microbiology and Parasitology (College of Veterinary Medicine), Department of Medical University of Georgia

Research Areas: Part of the department's mission is to develop new technologies at both the graduate and professional levels and affect the transfer of these technologies to assure the safety and welfare of food production and companion animals. Faculty conduct basic research on microbial pathogenesis, the molecular biology of microbial and parasitic pathogens, and the mechanisms of immunity.

Fred Quinn

Department Head

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www.vet.uga.edu/mmb/mmbhome

Microbiology/Biochemistry/Immunology, Department of

Morehouse School of Medicine

Research Areas: Immunity, cancer, infectious diseases, cardiovascular disease, HIV/AIDS

Dr. Gerald Sonnenfeld

Chair

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www.msm.edu

Molecular BioEngineering (CMBE), Center for University of Georgia

Research Areas: This center is involved in research and development of biological processes through metabolic engineering. The focus is on understanding and redirecting microbial activities to generate new products or generate a product at a higher rate or yield. Other general objectives of CMBE are to add economic value to underutilized food, agricultural, textile, and paper resources in Georgia through bioprocessing. CMBE has facilities for the maintenance of both anaerobic and aerobic microorganisms, the cultivation of organisms in fermenters, chromatographic analysis of products, and molecular biology.

Dale Threadgill

706-542-7801

Fermentation Lab

706-542-1117

Molecular Biology Lab

cmbe@engr.uga.edu

www.engr.uga.edu/research/groups/cmbe

Molecular Biology, Center for*Spelman College*

Research Areas: The center's goal is to highlight internationally the contributions of biotechnology to improving the quality of life for societies around the world. The center's activities will advance the study of molecular biology and biotechnology, while providing a training ground to increase the representation of highly qualified, enterprising African American women in this field of study.

*Dr. Michael McGinnis**Program Director**404-270-5720**gmcginni@spelman.edu***Molecular Design Institute***Georgia Institute of Technology*

Research Areas: Biomaterials, pharmaceuticals, electronic devices, and catalysts

*Dr. William S. Rees, Jr.**404-894-4049**will.rees@chemistry.gatech.edu**www.chemistry.gatech.edu/mdi/index.html***Molecular Medicine and Genetics, Institute of***Medical College of Georgia*

Research Areas: Cell signaling, developmental neurobiology, gene regulation, and molecular immunology. The institute's objective is to promote interdisciplinary research in targeted areas identified by the recent MCG strategic plan (neurosciences, infectious diseases, cancer, and cardiovascular diseases), to provide a supportive environment for the faculty to pursue the research and scholarly interests in a productive manner, and to provide faculty expertise and guidance for students, both professional and graduate.

*Dr. Robert Yu**Director**706-721-0699**ryu@mail.mcg.edu**www.mcg.edu/Institutes/IMMAG/index.html***NASA Space Medicine Life Sciences Research Center (SMLSR)***Morehouse School of Medicine*

Research Areas: Bone demineralization and calcium metabolism, cardiovascular alterations, immunology, vascular remodeling, neurobiology

*Dr. Myrtle Thierry-Palmer**Director**404-752-1505**thierrm@msm.edu**www.msm.edu/nasa/index.htm***National Center for Primary Care (NCPC)***Morehouse School of Medicine*

Research Areas: Asthma, diabetes, substance abuse, obesity

*Dr. David Satcher**Director**404-756-5740**dsatcher@msm.edu***Natural Sciences, Department of***Clayton College & State University*

Research Areas: Microbiology, environmental sampling, molecular virology, organic chemistry, bioacoustics and bat echolocation (including computer recording and analysis of sound), terrestrial mammals, effects of soil nitrogen, bioreactor optimization

*Dr. John Campbell**Department Head**770-961-3420**johnccampbell@mail.clayton.edu**http://a-s.clayton.edu/science***Neuroengineering, Laboratory for***Emory University, Georgia Institute of Technology*

Research Areas: Computational neuroscience, neuromorphic engineering, neural injury and biomechanics, neural interfacing, neurocomputing, neural prosthetics, nonlinear cardiac electrodynamics, biophysics and other interdisciplinary areas. Researchers apply the knowledge gained from experimental systems, numerical simulations and direct application of theory, the understanding of biological and adaptive systems, and dynamics of the human brain to a variety of medical conditions.

*Dr. Rob Butera**404-894-2935**494-894-2295(f)**robert.butera@ece.gatech.edu*

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 404-894-2295(f)
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Neuroscience, Center for Behavioral

Emory University, Georgia State University
 Research Areas: The center has six core technology programs: 1) the Molecular Core develops cDNA microarrays for multiple model systems to profile gene expression either from microdissected brain areas or from individual neurons; 2) the Cellular Core develops monoclonal antibodies to characterize proteins involved in behaviorally-relevant circuits and viral vectors to deliver behaviorally-relevant transcripts of proteins to specific regions or cell types; 3) the Systems Core focuses on multi-unit recording of populations of neurons within specific brain regions; 4) the Imaging Core provides the expertise to visualize and interpret brain activation during a behavioral task using PET or fMRI with both rodents and primates; 5) the Computational Core provides the expertise to model complex neural circuits using digital technology; and 6) the Behavioral Core develops technologies to accurately capture and quantify complex social interactions in diverse model systems.

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Dr. Elliott H. Albers
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Neuroscience, Center for Behavioral

Spelman College
 Research Areas: Science and Technology Center (STC) for study in the life sciences with the purpose of integrating research and education initiatives. Specifically, this program will assist in expanding and/or developing Neuroscience and Behavior programs and classes at participating schools and to create an inter-institutional major.

Dr. Michael McGinnis
 Program Director
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Neuroscience Institute

Morehouse School of Medicine
 Research Areas: Functional organization of the nervous system, circadian clocks, HIV/AIDS, multiple sclerosis, stroke, atherosclerosis

Dr. Peter R. MacLeish
 Director
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Nutrition, Department of

Georgia State University
 Research Areas: Food safety, nutritional factors in athletic performance

Jana R. Kicklighter
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Obstetrics and Gynecology, Department of

Morehouse School of Medicine
 Research Areas: Reproductive health, HIV/AIDS, hypertension, cancer, translational clinical research

Dr. Roland Matthews
 Chair
 404-616-4109

Pathology, Department of

Morehouse School of Medicine
 Research Areas: Vision, cancer, diabetes, cardiovascular disease

Dr. Marjorie Smith
 Chair
 404-752-1771
 smith@msm.edu

Pathology (College of Veterinary Medicine), Department of

University of Georgia
 Research Areas: The department is home to faculty trained in the specialties of veterinary anatomic pathology, veterinary clinical pathology, and human anatomic pathology. Faculty investigate and diagnose animal diseases by gross and microscopic examination of animal tissues, by analysis of clinical chemistries, and by examination of hematological and cytological samples. The faculty can provide support in the way of consultation and/or collaboration in anatomic and clinical pathology for other investigators in the biomedical sciences. Research activities in the

department include a variety of projects investigating the cause and pathogenesis of disease processes in mammals, birds, and fish. One such program investigates the pathogenesis of rabies virus infection. This program employs the most recently developed reverse genetics technology to construct attenuated rabies viruses for the study of viral pathogenesis, vaccine development, and construction of gene therapy vectors for CNS diseases. This laboratory also offers serological testing for anti-rabies virus antibodies. The department houses histopathology, clinical pathology, and electron microscopy laboratories. The histopathology laboratory is fully equipped to embed tissues in paraffin blocks for sectioning and microscopic examination. A variety of routine and special stains are available as well as immunohistochemical procedures. The electron microscopy laboratory provides tissue processing for transmission and scanning electron microscopy. Consultation and collaboration for ultrastructural studies is available. The clinical pathology laboratory provides automated clinical chemistries and hematology services for animals.

Barry Harmon
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Pediatrics, Department of Morehouse School of Medicine

Research Areas: Child abuse, maternal/child health, sickle cell

Dr. Frances Dunston
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 dunstof@msm.edu

Pharmaceutical and Biomedical Sciences, Department of

University of Georgia

Research Areas: Drug discovery and synthesis, biochemical pharmacology, computational chemistry and biology, toxicology and bioterrorism response, bioanalytical chemistry, pharmacokinetics and drug metabolism, drug dosage formulation, delivery and stability, and structural pharmacogenomics

Vasu Nair
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Pharmaceutical Sciences, Department of

Mercer University

Research Areas: Development of new pharmaceutically active agents, exploring mechanisms of drug action, especially in the areas of anti-inflammatory agents and cell communications, development of new drug delivery systems and therapeutic modalities

Dr. Fred F. Farris
Chair
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Pharmacology, Department of

Emory University

Research Areas: Understand how 14-3-3 proteins serve as regulatory elements in cell growth control, as well as the structural basis for their functions (Haian Fu); study how receptors modulate several mechanisms of gene expression control (T.J. Murphy); work on signal transduction pathways initiated by neurotransmitter and hormone receptors (Randy Hall)

Dr. Raymond J. Dingleline
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 www.pharm.emory.edu

Pharmacology and Toxicology Department Medical College of Georgia

Research Areas: Our faculty members investigate problems in neuroscience and cardiovascular biology. Our neuroscientists are working on understanding the cellular actions of cannabinoids (THC), neurodevelopment, anti-psychotic agents, inhibitory neural networks, and memory deficits in neurodegenerative diseases (i.e. Alzheimer's) and treatment of these diseases. Our cardiovascular pharmacologists are studying control of pulmonary vessels and obstructive pulmonary disease, the actions of estrogen on blood vessel functions, regulation of L-arginine uptake by endothelial cells, role and regulation of protein kinase C isozymes in cardiac muscle, mechanisms and treatment of vascular endothelium dysfunctions, and vascular cell signal dysfunction in diabetes.

Dr. R. William Caldwell
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Pharmacology and Toxicology, Department of Morehouse School of Medicine

Research Areas: Cancer, drug abuse, vision,
cardiovascular pharmacology, diabetes

Dr. Mohammed Bayorh
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Pharmacy, Department of Clinical and Administrative

University of Georgia

Research Areas: This department includes the
general areas of pharmacy administration, pharmacy
practice, and experimental therapeutics. The goals
of work in these areas are to identify and assess
patient drug problems, collect and utilize patient
information to improve drug therapy and develop
solutions to patients' drug-related problems, select
and recommend therapies with appropriate follow-
up to assess outcomes, and improve drug use
through population-based drug use analysis. In
addition, efforts are being directed to understanding
mechanisms of disease and identifying new
approaches for drug treatments.

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Pharmacy Practice, Department of Mercer University

Research Areas: Pharmacogenomics,
pharmacokinetics, drug evaluation, and clinical
drug studies

Dr. Michael Jann
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Physics and Astronomy, Department of University of Georgia

Research Areas: Astronomy and astrophysics, atomic,
molecular and chemical physics, computational
physics, condensed matter physics and statistical
mechanics, biophysics, bioinformatics, and nuclear
physics and elementary particle physics

Heinz-Bernd Schüttler
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Physics, Chemistry & Biological Sciences, Department of

Southern Polytechnic State University

Research Areas: Microbiology and genetics

Dr. Russ Patrick
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Physiology, Department of Emory University

Research Areas: Neurophysiology and cellular and
molecular physiology in cell and molecular signaling,
spinal cord neurophysiology, and biophysics and
quantitative biology

Dr. Robert B. Gunn
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Physiology, Department of Medical College of Georgia

Research Areas: Cardiovascular and renal physiology,
neuroscience, reproductive physiology

Dr. R. Clinton Webb
Chair
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www.mcg.edu/som/phy

Physiology, Department of*Morehouse School of Medicine*

Research Areas: Infectious diseases, cardiovascular, reproductive physiology

*Dr. Gordon Leitch**Chair**404-752-1681**leitch@msm.edu**www.msm.edu***Physiology and Pharmacology (College of Veterinary Medicine), Department of***University of Georgia*

Research Areas: The department is involved in the study of the functions of the living organism and the mechanisms by which drugs produce their effects on organisms. Research areas include renal pathophysiology, neuroscience research, functional genomics, and molecular pharmacology of endocrine disorders including diabetes mellitus.

*Thomas Murray**Department Head**706-542-3014**Linda Black**Office Manager**lblack@vet.uga.edu**www.vet.uga.edu/vph***Plant Biology, Department of***University of Georgia*

Research Areas: The department is a multi-disciplinary program with its faculty working on a wide range of research problems in the plant sciences ranging from genomics and bioinformatics to plant speciation and community disturbance ecology

*Gary Kochert**Department Head**706-542-3732**Department Admissions**admit@dogwood.botany.uga.edu**www.botany.uga.edu***Plant Center***University of Georgia*

Research Areas: The center fosters and supports interactions among those members of the UGA research community who share common interests in cellular and molecular aspects of plant growth and development, in plant genome organization and function, in the application of molecular and genetic tools to improve cultivated plants, and in organisms that interact with plants. The center hosts a regular seminar series, organizes an annual scientific retreat to encourage the development of interdisciplinary research, and sponsors symposia and technical workshops.

*Jeff Dean**Director**706-542-1710**jeffdean@uga.edu**www.plantcenter.uga.edu***Plant Pathology, Department of***University of Georgia*

Research Areas: The department emphasizes quality undergraduate and graduate education in the areas of bacteriology, epidemiology, genetics, host-pathogen interactions, mycology, nematology, molecular biology, pest management, and virology. The department has an international reputation for research and extension programs on diseases of apples, cotton, cowpeas, ornamentals, peaches, peanuts, pecans, small grains, soybeans, tobacco, turf, and vegetables.

*John Sherwood**Department Head**706-542-2571**pathath@uga.edu**www.plant.uga.edu***Poultry Diagnostic and Research Center***University of Georgia*

Research Areas: The center carries out basic and applied research programs on diseases which are of economic importance to Georgia's poultry industry using classical and molecular techniques. Diagnostic, laboratory, and consultative services are provided to individuals and groups in all phases of poultry production. The center houses the Department of Avian Medicine of the College of Veterinary Medicine. The department teaches courses in avian medicine to veterinary and poultry science students and directs graduate students in avian medicine, medical microbiology, veterinary pathology, and poultry science.

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 Director, Diagnostic Services and Teaching Lab
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 sthayer@uga.edu or pdrctxlb@uga.edu
 www.avian.uga.edu

Poultry Science, Department of
 University of Georgia

Research Areas: Poultry genetics, poultry physiology and management, biotechnology (molecular endocrinology and immunology), physiology, microbiology, toxicology, parasitology, nutrition and feed ingredient quality, and poultry products (processing and product development)

Michael Lacy
 Department Head
 706-542-1351
 poulat@uga.edu
 http://department.caes.uga.edu/poultry

Prevention Institute, Georgia
 Medical College of Georgia

Research Areas: Evaluation of the development and treatment of biobehavioral antecedents (e.g. physical activity, diet, smoking, stress, coping resources, etc.) of cardiovascular diseases and related metabolic disorders beginning in childhood within the context of gene-environment interactions, ethnicity, and gender

Dr. Frank Treiber
 Director
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Prevention Research Center (PRC)
 Morehouse School of Medicine

Research Areas: HIV/AIDS, cardiovascular disease, substance abuse

Dr. Eileen Yancey
 Director
 404-752-1511
 yanceye@msm.edu

Primate Research Center, Yerkes National

Emory University
 Research Areas: Microbiology and immunology, neuroscience, psychobiology, visual science, research resources, and animal resources

Dr. Stuart Zola
 Director
 404-727-7707
 szola@rmy.emory.edu
 www.emory.edu/WHSC/YERKES

Proteomics Resource Facility

University of Georgia

Research Areas: Part of the Integrated Biotech Laboratories, the facility is equipped with two state-of-the-art mass spectrometers, robotics for mass spectrometer sample preparation, high-throughput two-dimensional gel electrophoresis units, and an automated chromatography station for multi-dimensional chromatography. This facility also provides two approaches for comparing two or three different cell conditions simultaneously. Labeling the protein extracts with different fluorescent tags prior to electrophoresis, and running a mixture of the extracts within the same gel can enhance standard two-dimensional gel electrophoresis. Isotope-coded affinity tags (ICAT) also can be used to compare two cell extracts. This process involves labeling the protein extracts with tags differing by 8 amu and using liquid chromatography and mass spectrometry to detect up-regulated and down-regulated proteins.

Tracy Andacht
 Manager
 706-583-8286
 prfinfo@mgif.rserv.uga.edu
 www.ors.uga.edu/ibl/prf/index.html

Psychiatry and Behavioral Science, Department of
 Morehouse School of Medicine

Research Areas: Substance abuse, schizophrenia, depression, diabetes

Dr. Gail Mattox
 Chair
 404-756-1455
 mattoxg@msm.edu

Psychology, Department of*Georgia State University*

Research Areas: Neurobiology and behavior

*Mary K. Morris**Chair**404-651-1620**mmorris@gsu.edu**www.gsu.edu/psychology***Psychology, Department of***Morehouse College*

Research Areas: The basis of health disparities between African-Americans and the majority population; learning; problem-solving and decision-making; non-human primate behavior; insect behavior; and alternative health practices

*Dr. Harold Braithwaite**Chair**404-215-2626**hbraithwaite@morehouse.edu**www.morehouse.edu/psychology/index.html***Psychology, Department of***Oglethorpe University*

Research Areas: Animal behavior

*John Carton**Chair, Division of Social Sciences**404-364-8381***Psychology, Department of***Spelman College*

Research: Faculty have interest in basic and applied behavioral science work that includes neuroscience, public health topics, HIV/AIDS, and psychological development issues. Two faculty in particular focus on cognitive development. The faculty often engage students in the research process in preparation for graduate study. With current faculty of seven and one new appointment planned for the upcoming academic year, the department is reviewing its curriculum structure to provide more integration of teaching and research.

*Dr. Sandra Sims Patterson**Chair**404-681-3643 x2153**spatters@spelman.edu**www.spelman.edu/psychology/index.html***Psychology, Department of***University of Georgia*

Research Areas: Applied psychology, biopsychology, cognitive-experimental psychology, clinical psychology, life-span developmental psychology, and social psychology

*Garnett Stokes**Department Head**706-542-2174**psydept@uga.edu**www.uga.edu/psychology***Remote Sensing and Mapping Science (CRMS), Center for***University of Georgia*

Research Areas: The CRMS undertakes interdisciplinary research projects requiring the development of image and map data processing technologies for applications in the physical, biological, and mapping sciences. Typical projects include: evaluations of image data recorded by satellite and airborne sensor systems; digital image processing for feature extraction and map compilation/revision; and geographical information system (GIS) studies of agricultural land, wetlands, forest land, and urban areas to assess man's impact on the environment. The CRMS also undertakes service projects requiring the transfer of mapping technologies and provides technical assistance to universities and local, state, and federal agencies.

*Roy Welch**Director**706-542-2359**rwelch@crms.uga.edu**www.crms.uga.edu***River Basin Science and Policy Center***University of Georgia*

Research Areas: The center involves more than 90 faculty members from 26 academic areas at UGA, affiliated units, and governmental agencies. The center addresses complex problems of water management through interdisciplinary collaboration. Scientific expertise in the area of hydrology, engineering, and riverine ecosystems are combined with policy, law, economics, and planning to inform water-related public policy. The center conducts and compiles scientific research and policy, provides information and support to policy makers,

and conducts public education and outreach activities on the science of riverine ecosystems and on water resources problems and issues.

Ronald Carroll
 Director
 706-583-0940
 contactus@rivercenter.uga.edu
 www.rivercenter.uga.edu

Sea Grant College Program, Georgia

University of Georgia

Research Areas: Part of the National Sea Grant College Program, Sea Grant promotes the wise use of marine resources through a coordinated program of research, education, and advisory services. Sustained excellence in all three areas of activity earned Sea Grant College status for the university in 1980, when it became the 15th institution in the nation to attain that rank. In 1990, the Sea Grant College status of the university was reaffirmed by the National Sea Grant College Program. Funding for marine environmental biotechnology projects is available through state and national competitive grants processes.

Mac Rawson
 Director
 706-542-6009
 mrawson@uga.edu
 www.marsci.uga.edu/gaseagrant.html

Sequencing and Synthesis Facility

University of Georgia

Research Areas: Part of the Integrated Biotech Laboratories, the facility has two basic lab services, one for studying proteins and peptides and the other for DNA analysis. The protein laboratory sequences proteins using an ABI Procise (494) protein sequencer. Two Advanced Chemtech synthesizers are utilized for peptide synthesis, producing up to 35 peptides simultaneously on each instrument. The DNA facility has two ABI 394 synthesizers, an ABI 3948 synthesizer and an ABI 3900 synthesizer, allowing for a large potential output of oligonucleotides (oligos) a day. DNA sequencing includes single-stranded DNA, double-stranded DNA, or PCR products on an ABI 3100 automated DNA sequencer.

Jeff Wagner
 Manager
 706-542-6409
 ssfinfo@mgif.rserv.uga.edu
 www.ors.uga.edu/ibl/ssf/index.html

Soybean Improvement (CSI), Center for

University of Georgia

Research Areas: The center promotes interdisciplinary and inter-university collaboration among scientists and support staff interested in soybean research and education. The CSI facilitates research that will result in the development of superior yielding, drought tolerant, and multiple pest resistant soybean cultivars and improved management systems. Research also is addressing the development of cultivars with unique combinations of value-added traits and new technologies to improve the efficiency of cultivar development. The CSI hosts an annual workshop to encourage the development of interdisciplinary and inter-university programs and enhance skills of center members. A newsletter informs center members, support groups, and clientele of center activities and accomplishments.

Roger Boerma
 Director
 706-542-0927
 rboerma@uga.edu
 www.cropsoil.uga.edu/csi

Statistics, Department of

University of Georgia

Research Areas: The department has retained its strong emphasis on computing and maintaining its own state-of-the-art computing network. Faculty are active in cross-disciplinary research projects which cover areas such as statistical genomics and population genetics, biostatistics, categorical data analysis, epidemiology, statistical toxicology, and survival analysis.

Ishwar Basawa
 Department Head
 706-542-5232
 stat@stat.uga.edu
 www.stat.uga.edu

Surgery, Department of

Morehouse School of Medicine

Research Areas: Cardiovascular disease, trauma, cancer

Dr. William Lynn Weaver
 Chair
 404-616-3562
 weaver@msm.edu

Swine Research Center*University of Georgia*

Research Areas: The center is a research and teaching facility used primarily for research in pig nutrition, reproductive physiology, fetal growth, and development and animal breeding. A portion of the research is conducted in cooperation with USDA/ARS scientists from the Richard Russell Research Facility. The center also serves the teaching needs of various courses in the Department of Animal and Dairy Science in the College of Agricultural and Environmental Sciences. In addition, this unit serves as a resource for veterinary students, pork producers, secondary students, and extension-related demonstrations. In conjunction with ProLinia, a biotech start-up company currently affiliated with UGA's BioBusiness Center, the center provides pigs for their cloning research headed by Steve Stice.

*Mike Daniel**Manager**706-369-5721**mdaniel@uga.edu**www.ads.uga.edu/groups/swine/UGASWINE.htm***Tissues, Georgia Tech/Emory Center (GTEC) for the Engineering of Living***Emory University, Georgia Institute of Technology*

Research Areas: Cardiovascular substitutes (tissue-engineered vessel substitutes, heart valves and myocardial patches), metabolic secretory organs (bioartificial pancreas and liver), orthopaedic tissue engineering (bone, cartilage, and fibrocartilage). Associated projects in biomaterials development, cell sources and cellular engineering, stem cells, cryopreservation of cells and tissues, modulation of immune responses, bioreactor system development, biomechanics of cells and tissues, flow and mechanical dynamics in cardiovascular tissues.

*Dr. Robert M. Nerem**Director**404-894-2768**robert.nerem@ibb.gatech.edu**www.gtec.gatech.edu***Toxicology Program, Interdisciplinary***University of Georgia*

Research Areas: This interdisciplinary program is designed to train students to assume positions as toxicologists in academia, industry, and government. The faculty come from fields including ecology, entomology, environmental health science, foods and nutrition, forest resources, medical microbiology, pathology, pharmaceutical and biomedical sciences, physiology and pharmacology, and poultry science. Research focuses on growth and survival characteristics of bacterial pathogens in food processing environments, molecular biomarkers in wildlife to assess exposure to environmental contaminants, mercury and lead analysis of tissues collected from wildlife refuges, and the development of transgenic technology for toxicologic assessments.

*Cham Dallas**Director**706-542-5412**cdallas@rx.uga.edu**www.rx.uga.edu/main/home/toxi/toxi.html***Ultrastructural Research, Center for Advanced***University of Georgia*

Research Areas: The center serves the University System of Georgia by providing a repository of facilities and expertise to assist in pursuing and achieving research and instructional needs employing advanced microscopical instrumentation. A variety of light and electron microscopes as well as complete darkroom and image processing facilities are available for use. The center assists researchers from nearly every science-related discipline at UGA and is recognized as a regional asset to scientists throughout the southeastern United States. The center reports to the dean of the Franklin College of Arts and Sciences and also serves the private sector.

*Mark Farmer**Director**706-542-4080**farmer@cb.uga.edu**www.uga.edu/caur***Ultraviolet Monitoring Center, National***University of Georgia*

Research Areas: The center is under contract with the U.S. Environmental Protection Agency to maintain and operate a ground-based network of Brewer spectrophotometers throughout the United States that measures full-sky spectrally resolved solar radiation values in the UV-B and UV-A bands and total column ozone values. In addition, the NUVMC

maintains and operates a calibration and instrument characterization laboratory to provide accurate absolute UV irradiance calibrations for each of the instruments. Absolute irradiance values and total column ozone concentrations are derived from the data. The data are stored in a database maintained by the EPA for dissemination to government and non-government scientists and other interested parties. Fourteen of the UV monitoring sites are located in national parks as part of the Park Research and Intensive Monitoring of Ecosystems Network (PRIME Net). An additional set of seven sites are currently operating in urban areas. The data are used to provide information on the geographical distribution and temporal trends of ultraviolet radiation in the United States and to provide long-term records of UV irradiance for scientists studying the effects of UV on biota and materials.

John Rives
 Director
 706-542-5755
 jrives@hal.physast.uga.edu
<http://oz.physast.uga.edu>

Vaccine Center, Emory

Emory University
 Research Areas: Basic and clinical science researchers at the center work to understand the mechanisms underlying immune function. Some of these areas include: long-term T cell immune memory, AIDS pathogenesis, DNA vaccine development, evaluation of cellular immune responses to vaccination/tetramer technology, vaccine delivery systems, malaria vaccines and genomics, mechanisms and prevention of Neuro-AIDS, tracking B and T memory cells, mucosal immunity, protein trafficking, lentiviral pathogenesis, T cell co-stimulation via TNFR superfamily members, quantitative virology. Core facilities include: Human Immunology Core, Tetramer Core, Genomics Core, Microscopy Core, Flow Cytometry, Virology Core, and Vivarium.

Dr. Rafi Ahmed
 404-727-4700
 ra@microbio.emory.edu
www.emory.edu/WHSC/YERKES/VRC

Vascular Biology Center

Medical College of Georgia
 Research Areas: Investigation in the diagnosis, causes, development, prevention, and management of disease of blood vessels throughout the body, utilizing techniques ranging from molecular and genetic to cellular, tissue/organ, whole animal, and

clinical. Diseases studied include atherosclerosis, hypertension, retinopathies, diabetes, pulmonary edema, stroke, coronary artery disease, and shock.

Dr. John D. Catravas
 Director
 706-721-9800
 jcatrava@mail.mcg.edu
www.mcg.edu/centers/VBC/index.html

Veterinary Medical Diagnostic and Investigational Laboratories

University of Georgia
 Research Areas: The laboratories at Athens and Tifton process over 100,000 requests for assistance each year. The laboratories are staffed and equipped to provide diagnostic service to the Georgia Department of Agriculture, the Georgia livestock industry, and animal owners of Georgia through a policy of referral by practicing veterinarians.

Doris Miller
 Director, Athens Veterinary Diagnostic Laboratory
 706-542-5568
www.vet.uga.edu/erc/diagnostic/index.html

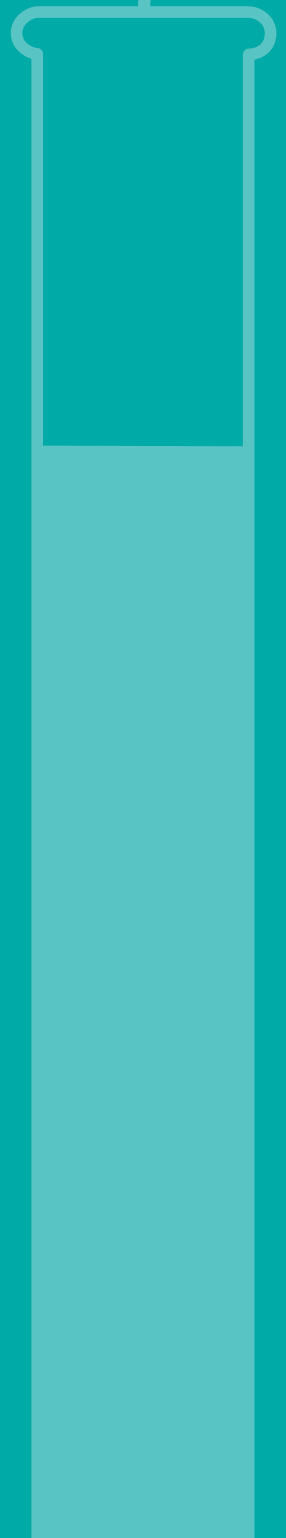
Veterinary Medical Experiment Station

University of Georgia
 Research Areas: This experiment station coordinates and conducts research on disease problems of food- and fiber-producing animals, fish, poultry, and companion animals. The research programs, which have applied, basic, and comparative medical orientation, are divided broadly into four main categories: infectious diseases, noninfectious diseases, diagnostic techniques, and therapeutic procedures. Research facilities are located within the College of Veterinary Medicine at Athens, in the Poultry Diagnostic and Research Center at Athens, and in the Veterinary Diagnostic Assistance Laboratories at Athens and Tifton. Opportunities for graduate training in the biomedical sciences, including biotechnology, are provided by the station's research programs.

Harry Dickerson
 Director
 706-542-5734
 hwd@calc.vet.uga.edu
www.vet.uga.edu



Services to Bioscience Industries



Research Centers & Service Labs

Some of the key assets colleges and universities offer bioscience companies are facilities suitable for industry-related research and development. Listed below are centers and labs on the surveyed campuses that are available to serve bioscience companies and researchers – and whom to contact for more information.

AIDS Research (CFAR), Emory Center for Emory University

Purpose: 1) to lead and enable HIV/AIDS research through the selection, funding, and evaluation of CFAR core facilities and activities; and 2) to enhance HIV/AIDS research activities by serving as a hub for scientific communications and education for CFAR investigators and the public.

Dr. James Curran, MPH
 Director
 404-727-2924
 cfar@sph.emory.edu
 www.sph.emory.edu/CFAR

Analytical Services Lab

Clark Atlanta University
 Purpose: Providing analytical services facilities for the testing and characterization of samples

Dr. Conrad Ingram
 Director
 404-880-6898
 cingram@cau.edu
 www.cau.edu

Animal Imaging Core

Emory University
 Purpose: The facility, equipped with a 4.7 T Varian MRI scanner, provides investigators assistance with the magnetic resonance imaging of small animals. Services include project consultation, coil design and building, sequence development, and data analysis.

Dr. Robert C. Long, Jr.
 Facility Director
 404-727-4570
 rlong@emory.edu
 www.corelabs.emory.edu

Animal Research, Center for Laboratory

Morehouse School of Medicine
 Purpose: Provides a full array of animal husbandry services

Clarence Wilkes
 Director
 404-756-3722
 wilkes@msm.edu

Bioanalytical Mass Spectrometry Facility

Georgia Institute of Technology
 Purpose: Georgia Tech has five research grade mass spectrometers including state-of-the-art Q-TOF and TOF/TOF instruments. The research interests include identification, quantitation, and structure elucidation of a wide variety of biomolecules via molecular mass. Capabilities include low and high resolution MS and MS/MS, complex mixture analysis via gas or liquid chromatography, and ionization by electron impact, chemical ionization, fast atom bombardment, matrix assisted laser

desorption, and electrospray. Collaborative projects with other academic institutions, industry, and government agencies are invited.

Dr. M. Cameron Sullards
404-385-4249
404-894-4061(f)
cameron.sullards@chemistry.gatech.edu

Bioengineering and Bioscience, Parker H. Petit Institute for

Georgia Institute of Technology

Purpose: The institute houses a number of core facilities for the conduct of research on the Georgia Tech campus and in collaboration with others outside of Georgia Tech. These facilities are: Microscopy and Microanalysis Lab, Mass Spectrometry Lab, Biomodeling Lab, Physiological Research Lab, Histology Lab, and the DNA/Protein Synthesis and Analysis Lab. The institute seeks meaningful collaborations in research with companies and other entities in the biomedical fields.

Steve Woodard
404-894-5981
steve.woodard@ibb.gatech.edu

Bioimaging Core

Georgia State University

Purpose: The core is extensively involved in three major interrelated research projects, all of which have strong industry ties: bioremediation, biofilms, and bioeffects (the affects of biological active molecules)

Dr. Robert Simmons
Director
404-651-3138
rsimmons@gsu.edu

Biomacromolecules Core (BMMC)

Georgia State University

Purpose: The core provides network state-of-the-art facilities for local firms and scientists focusing on fermentation and protein/DNA separation and characterization. The BMMC consists of a protein facility, a nucleic acid facility, a fermentation facility, a molecular modeling facility, a graphics facility, and a NMR facility.

Dr. John Houghton
jhoughton@gsu.edu

Dr. Al Baumstark
chealb@panther.gsu.edu

Biomedical Imaging Technology Center (BITC)

Emory University

Purpose: BITC is a core facility of the School of Medicine at Emory University and a research center of the Wallace H. Coulter Department of Biomedical Engineering, a joint department of Georgia Tech and Emory University. The various sources supporting the center include Emory University's School of Medicine, the Georgia Research Alliance, the Whitaker Foundation, and the Department of Biomedical Engineering. Our mission is to conduct cutting-edge research in biomedical imaging, to provide support for researchers in and around the Emory community, and to provide training and dissemination of knowledge related to our expertise. With a 3 T Siemens whole body MRI scanner dedicated for research and the planned acquisition of a high field (9.4+T) animal scanner in two years, our research emphasizes biomedical magnetic resonance at high magnetic fields. Our current focus is on functional brain imaging, high-field imaging, in vivo spectroscopy, and molecular imaging.

Dr. Xiaoping Hu
Director
404-712-2618
kgourde@emory.edu
www.corelabs.emory.edu

Biomedical Technology Service Laboratory

Morehouse School of Medicine

Purpose: Provides services in the areas of flow cytometry/cell sorting, bio-image analysis, gel and capillary electrophoresis, monoclonal/polyclonal antibody production/cell culture, cryopreservation/immunological techniques, HPLC facility, P2 and P3 facilities.

Dorothea Parker
Director
404-752-1931
parkerd@msm.edu

Biomolecular Computing Resource (BimCore)

Emory University

Purpose: BimCore at Emory University School of Medicine is a subscription-based computing support service for researchers. BimCore provides computational resources, training, collaborations, and on-call support for various bioinformatics software (sequence analysis, genomics, microarray analysis) and biomolecular modeling software (display, modeling, mutagenesis, docking). BimCore actively evaluates current software packages to

create an offering which addresses the software, programming, and data analysis needs of faculty, is complete, and supplies state-of-the-art solutions to bioinformatics questions.

The Sequence Analysis Facility (SAF) supports various genetic data analysis software packages along with access to the Celera human genome database, SNPs database, and a local BLAST Server. The Molecular Modelling Center (MMC) supports molecular modelling and graphics software packages. The Microarray Analysis Facility supports various microarray expression data analysis programs, SAS (a statistical package) and a database archive.

Dr. Kim Gernert
 Director
 404-727-3501
 gernert@emory.edu
 www.bimcore.emory.edu

Biosensing and Neural Computation Core (BNCC)

Georgia State University
 Purpose: BNCC consists of three components: the neural computation laboratory, the confocal microscope facility, and the research and development laboratories

Dr. Donald Edwards
 biodhe@panther.gsu.edu

Dr. Vincent Rehder
 biovre@panther.gsu.edu

Biotelemetry Core Laboratory

Medical College of Georgia
 Purpose: Part of the Physiology Department, the lab deals with the measurement of physiological variables in conscious, unrestrained animals. The telemetry system enables continuous monitoring of body temperature, motor activity, exercise performance (running-wheels), blood pressure and heart rate, as well as food and water intake and changes in body mass in small rodents (mice and rats). The available services include: blood pressure and heart rate, body temperature, body mass, food and water intake, exercise performance, and motor activity. Also provided are stereotaxic surgery, vessel catheterization, drug delivery, diet management, and sampling and processing.

Dr. Michael Brands
 Director
 706-721-9785
 mbrands@mail.mcg.edu
 www.mcg.edu/Core/Labs

Cancer Institute, Winship

Emory University
 Purpose: To accelerate discoveries that prevent and cure cancer, and to accelerate translation of the knowledge to the care of the patient

Dr. Jonathan W. Simons
 Director
 404-778-5180
 jonathan_simons@emory.org
 www.winshipcancerinstitute.org/index.htm

Cell Culture Research Lab

Clark Atlanta University
 Purpose: Providing supporting facilities for cell culture research

Dr. Juarine Stewart
 404-880-6764
 jstewart@cau.edu
 www.hbcumi.cau.edu/ccrtd

Cell Imaging Core Laboratory

Medical College of Georgia
 Purpose: Part of the Institute for Molecular Medicine and Genetics, the lab is a cutting-edge high-resolution imaging facility that features state-of-the-art equipment and the latest in imaging and computing. The available services include multi photon microscopy, confocal microscopy, digital light microscopy, calcium imaging, 3-D reconstruction, image enhancement, ratiometric analysis, microinjection, photo-uncaging, and data presentation.

Dr. Paul McNeil
 Director
 706-721-3065
 pmcneil@mail.mcg.edu
 www.mcg.edu/Core/Labs

Cell Production Core Laboratory

Medical College of Georgia
 Purpose: Part of the Institute for Molecular Medicine and Genetics, the lab helps investigators with their in vitro cell culture needs. Available services include large scale culturing of eukaryotic suspension cells, small scale production of cells,

hybridoma supernatant production, resale of tested FBS, consultation and training, liquid nitrogen storage, and E. coli production (for protein expression or large-scale plasmid preparation).

Dr. Hernan Flores-Rozas
 Director
 706-721-8758
 hfloresrozas@mail.mcg.edu
 www.mcg.edu/Core/Labs

Combinatorial Chemistry Center (GC3), Georgia State University

Purpose: The primary objective of the center is to help pharmaceutical, biotechnology, agrochemical, and environmental industries discover new leads in their respective areas of interest by providing easy access to proprietary and focused combinatorial libraries. By integrating the discovery efforts of local academic institutions, GC3 can maximize the availability of diverse libraries to collaborating partners. As a cost-effective, business-oriented extension of Georgia State research programs, the center offers corporate partners the opportunity to benefit from groundbreaking academic discoveries.

Dr. David Boykin
 dboykin@gsu.edu

Computation, Cherry L. Emerson Center for Scientific

Emory University

Purpose: To provide high-end computational facilities and expertise in support of computationally-oriented scientific research at Emory; to propel Emory into the forefront of research in computational science; and to encourage collaboration in computational sciences with other institutions as well as on campus

Dr. Keiji Morokuma
 Director
 404-727-2180
 morokuma@emory.edu
 www.emerson.emory.edu

Computation and Modeling Lab

Clark Atlanta University

Purpose: To provide high-performance computing facilities to support work on molecular modeling

Kofi B. Bota
 404-880-6969
 kbota@cau.edu
 www.cau.edu

Core Labs at MCG

Medical College of Georgia

Purpose: All of the core labs at MCG are administered and operated by a local campus administrative unit (department or institute, etc.), with overall coordination and assistance provided by a Core Lab Coordinator. The Coordinator helps managers and technicians with pricing, marketing, accounting, and general business assistance. This person is part of the office of Technology Transfer and Economic Development in the Office of the Vice President for Research. Virtually all of the cores and services are available to the public sector, as well as to academic institutions.

Dr. Abhijit Afzalpurkar
 Core Laboratory Coordinator
 706-721-9822 x1376
 aafzalpurkar@mail.mcg.edu
 www.mcg.edu/Core/Labs

Digitized Video Image Analysis/Confocal Microscopy Core Facility

Morehouse School of Medicine

Purpose: Provide a wide variety of options for the analysis and quantification of fluorescent probes, markers and antibodies within fixed and living cells

Dr. Mary Scanlon
 Director
 404-752-1683
 scanlon@msm.edu

DNA Facility

Emory University

Purpose: The facility is a core resource of the Emory University School of Medicine and the Atlanta VA Medical Center. This facility offers automated fluorescent DNA sequencing for research community and medical professionals, using state-of-the-art instrumentation and the latest technical protocols to ensure high-quality results at reasonable prices. The facility also integrates Affymetrix Gene Chip technology and offers the services to Emory and surrounding vicinities to study high-throughput gene chip expression analysis.

Dr. Jan Pohl
 Director
 404-778-4589
 jpohl@emory.edu
 www.corelabs.emory.edu/home.cfm

Drug Design, Center for Biotechnology and Georgia State University

Purpose: The center was established in order to contribute to the economic development of the Atlanta metropolitan area and the state of Georgia through several avenues, including: continued development of strong faculty research programs, training of top-flight graduate students, attraction of new high-tech businesses to Georgia, and ordination of academic and industrial cooperation

Dr. Barbara Baumstark
 Director
 404-651-3156
 biobrb@panther.gsu.edu
<http://biology.gsu.edu/research/centers/index.html>

Electron Microscopy

Morehouse School of Medicine

Purpose: Provide complete preparation and processing of all materials including darkroom photography

Dr. Woo-Kuen Lo
 404-752-1558
 lowk@msm.edu
www.msm.edu/AREsearch.htm

Electron Microscopy Core Laboratory

Medical College of Georgia

Purpose: Part of the Cell Biology and Anatomy Department, the lab provides investigators with access to instrumentation, services, consultation, and training in the use of transmission and scanning electron microscopes

Dr. Sally Atherton
 Director
 706-721-3731
 satherton@mail.mcg.edu
www.mcg.edu/Core/Labs



Endocrine Core Laboratory, Yerkes

Emory University

Purpose: Yerkes Endocrine Core Laboratory provides immunoassay determinations of steroid and protein hormones or other biologically active compounds in biological fluids. The laboratory currently provides determinations on over 30 compounds validated for nonhuman primates and humans.

Dr. Mark E. Wilson
 Director
 404-727-9058
 markw@rmy.emory.edu
www.emory.edu/WHSC/YERKES/DIV/RSRCHRES/asay/

Flow Cytometry Core Laboratory

Medical College of Georgia

Purpose: Part of the Institute for Molecular Medicine and Genetics, the lab helps researchers to characterize and isolate cells based on their morphology, surface phenotype or phase of cell cycle. Services provided through this core include immunophenotyping, intracellular Ag/cytokine detection, DNA ploidy/cell cycle analysis, single cell/one to four way sorting, sorting into multiwell cell culture plates, one to nine color analysis, apoptosis detection, and intracellular calcium.

Dr. Leszek Ignatowicz
 Director
 lignatowicz@mail.mcg.edu
www.mcg.edu/Core/Labs

Flow Cytometry Facility

Emory University

Purpose: The facility provides flow cytometry services as a tool for the research community. Services include high-speed multi-parameter sorting, consultations, and training in the use of analyzers.

Robert Karaffa
 Technical Director
 404-712-4429
 rkaraff@emory.edu
www.emory.edu/WHSC/MED/RESEARCH/FLOWCYT/

Flow Cytometry Facility, Center for Tropical and Emerging Global Diseases

University of Georgia

Purpose: The facility provides the research community with state-of-the-art flow cytometry instrumentation and expertise. Equipment includes a Cytomation MoFlo 3 high-speed cell sorter and two self-serve flow analyzers, the BD FACSCalibur, and the Coulter Elite Analyzer.

Julie Nelson

706-542-9474

706-542-3582(f)

jnelson@uga.edu

www.ctegd.uga.edu

Genomics and Bioinformatics, Laboratory for

University of Georgia

Purpose: This laboratory possesses the facilities and expertise to support low-cost, high-throughput DNA sequencing (up to 4000 sequences/week), as well as sophisticated data storage, processing, and mining. Major items of instrumentation for the wet-lab work include a robotic colony/plaque picker (Mantis, GeneMachines), robotic 96-channel pipetor (Hydra 96, Robbins Scientific), and ready access to a 96-capillary ABI3700 DNA sequencer. Beginning with a cDNA library and including all labor, consumables, and the charge for using the sequencer, a high-quality DNA sequence can be obtained for as little as \$3. Bioinformatics is supported by a suite of five in-lab servers: firewall, Web, Oracle database, Linux, and Spotfire. Numerous custom query capabilities for sequence data continue to be implemented. Incorporation of microarray data into the database already is underway.

Lee Pratt

Director

706-542-1841

leepratt@uga.edu

Marie-Michèle Cordonnier-Pratt

Director

706-542-1860

mmpratt@uga.edu

<http://funken.botany.uga.edu>

Genomics Core Laboratory

Medical College of Georgia

Purpose: Part of the Center for Biotechnology and Genomic Medicine, the lab is a full-service facility dedicated to providing services for automated DNA sequencing, microsatellite genotyping, SNP genotyping, oligonucleotide and peptide synthesis

and gene expression by high throughput microarray analysis using the Affymetrix® GeneChip® oligo-nucleotide microarray system. The core facility serves both on- and off-campus users.

Dr. Jin-Xiong She

Director

706-823-3973

jshe@mail.mcg.edu

www.mcg.edu/Core/Labs

Genomics Core Laboratory

Morehouse School of Medicine

Purpose: Provide assistance with Microarray gene expression profiling, serial analysis of gene expression (SAGE), single nucleotide polymorphism (SNP)

Dr. Nerimiah Emmett

Director

404-752-1679

emmett@msm.edu

Histopathology Core Laboratory

Medical College of Georgia

Purpose: Part of the Institute for Molecular Medicine and Genetics, the lab provides quality histology services that will meet every investigator's needs. This core is approved for both human and animal tissue samples. Services provided include tissue processing, paraffin embedding, cutting of paraffin and OCT frozen blocks, tissue sectioning (unstained and routine Hematoxylin and Eosin stains) decalcification of bone/tissue, providing technical assistance and hands on training, and preparing protocols to fit investigator needs.

Dr. Jeffrey Lee

Director

706-723-1223

jlee@mail.mcg.edu

www.mcg.edu/Core/Labs

Human Tissue Culture Core Laboratory

Medical College of Georgia

Purpose: Part of the Pathology Department, the core provides a variety of human cells in tissue culture, with current emphasis on vascular wall cells and purified leukocyte population, and has the expertise to develop other human cell cultures and culture model systems, to meet the needs of individual researchers. The emphasis is on primary or low passage cultures, not cell lines. Various conditioned media and endothelial cell growth factors also are produced by, and available through the core. The

core also provides assistance with Institutional Review Board (IRB) protocols, as well as training to investigators in techniques for isolation, culture, and safe handling of various human cell types.

Dr. Ross Gerrity
 Director
 706-721-2374
 rgerrity@mail.mcg.edu
 www.mcg.edu/Core/Labs

Human Tissue Procurement and Banking Service

Emory University

Purpose: The Human Tissue Procurement and Banking Service (HTPBS) is a shared resource of the School of Medicine established to collect, distribute, and bank human tissue for the basic scientists and clinicians in Emory University. It will include an online Web access program for requesting fresh tissue and a searchable database of archived human tissue (surgical specimens, urine, serum, etc.). The mission of the facility is to provide investigators access to optimum quality human tissue to support their basic, clinical, translational, and epidemiological research.

Rahj Robinson
 Director
 404-712-2581
 crrobin@emory.edu
 www.corelabs.emory.edu

Imaging Center, Scientific

Clark Atlanta University

Purpose: Providing optical and spectroscopic imaging facilities

Dr. Juarine Stewart
 404-880-6764
 jstewart@cau.edu
 www.hbcumi.cau.edu/ccrtd

Industrial Collaboration, Center for

Kennesaw State University

Purpose: The center is an enterprise within the College of Science and Mathematics for generating and sharing technical knowledge in our core competencies of biology, chemistry, computer science, information systems, and mathematics as a consequence of partnerships with the business and industrial community. The activities of the center enable both students and faculty to apply the theory taught in the classroom to practical problems in the workplace, thereby enriching the overall educational

process through service learning with major benefits accruing to our state and local communities. Faculty also are available on an individual consulting basis.

Laurence I. Peterson
 Dean, College of Science & Mathematics
 770-423-6760
 lpeterso@kennesaw.edu
 http://cic.kennesaw.edu

Information Technology, Division of

Morehouse School of Medicine

Purpose: Provide enabling infrastructure and applications that enhance the operation, communication, and management of the education, research, and clinical practice enterprises

Eric Jackson
 Chief Information Officer
 404-752-1786
 elj@msm.edu
 http://msmdit.msm.edu/

Integrated Microscopy and Microanalytical Facility (IM and MF)

Emory University

Purpose: To provide the microscopy services for chemistry programs, and serve as a molecular imaging facility for investigators from Georgia Tech, Georgia State, and Atlanta Cardiovascular Research Institute. Regional and university-wide collaborations are welcomed.

Dr. Robert P. Apkarian
 Director
 404-727-7766
 rapkari@emory.edu
 http://euch3i.chem.emory.edu/~nmr/apk

Laser Capture Microdissection Core Laboratory

Medical College of Georgia

Purpose: Part of the Institute for Molecular Medicine and Genetics and the Pathology Department, the lab offers the ability to directly extract single cells from any tissue section, using the Arcturus PixCell II Laser Capture Microdissection system, thereby providing a pure population of cells for further analysis. An archival workstation allows photographic documentation of every step.

Dr. Jeffrey Lee
 Director
 706-823-2232
 jlee@mail.mcg.edu
 www.mcg.edu/Core/Labs

Magnetic Resonance Research Center, Frederik Philips

Emory University

Purpose: The center is an MRI research facility located in the Department of Radiology at the Emory University School of Medicine. The center began in 1988 as a joint project between Emory University and Philips Medical Systems with the mission of advancing MR science, technology, and clinical applications.

Dr. John Oshinski

Director

404-712-5757

jnoshin@emory.edu

www.emory.edu/RADIOLOGY/MRI/FPMRRCb.html

Mass Spectrometry Center

Emory University

Purpose: To provide mass spectrometry services to the Emory University community, including high-resolution electron impact and high-resolution fast atom bombardment to provide confirmation of elemental composition

Dr. Frederick H. Strobel

404-727-6622

404-727-6586(f)

fstrobe@emory.edu

<http://userwww.service.emory.edu/%7Efstroke/eumsc.html>

Mass Spectrometry Facilities

Georgia Institute of Technology, Georgia State University

Purpose: Georgia State and Georgia Tech share mass spectrometry facilities (located at Georgia Tech). The VG 70SE double-focusing high-resolution magnetic sector mass spectrometer can ionize samples using electron impact (EI), chemical ionization (CI), fast atom bombardment (FAB), and field desorption/field ionization (FD/FI), in either positive or negative ion mode.

Dr. Al Baumstark

Chair

404-651-3120

chealb@panther.gsu.edu

<http://chemistry.gsu.edu/facilities/resources.html>

Mass Spectroscopy and Vibrational Spectroscopy Lab

Clark Atlanta University

Purpose: Provide vibrational spectroscopy and mass spectroscopy facilities for the characterization of samples

Dr. Mark Mitchell

404-880-6860

mmitchell@cau.edu

www.cau.edu

Microarray Core

Emory University

Purpose: The facility provides protocol development, microarray design; clone distribution; high and low density cDNA array production and software development for analysis and laboratory information management systems

Dr. Scott Hemby

Director

404-727-5988

shemby@rmy.emory.edu

<http://www.emory.edu/YERKES/VRC/genomicsstats.html>

Microchemical and Proteomics Facility

Emory University

Purpose: The facility is a shared core resource of the Emory University School of Medicine and the Winship Cancer Institute that provides peptide synthesis, oligonucleotide synthesis, peptide purification, and oligonucleotide purification. The facility also provides peptide and protein sequence analysis, mass spectrometry (MALDI and ESI), and amino acid analysis in support of proteomics research.

Dr. Jan Pohl

Director

404-778-4593

404-778-4589 (lab)

mclab@emory.edu

www.winshipcancerinstitute.org

Microstructural Characterization Facility, Material Science and Engineering (MSE)

Georgia Institute of Technology

Purpose: Image Analysis Laboratory, X-Ray Diffraction Laboratory, Crystal Physics Laboratory, Surface Analysis Facilities

Dr. Arun Gokhale

MSE, Image Analysis Facilities

404-894-2887

Dr. Stuart Stock
MSE, X-Ray Diffraction Facilities
404-894-6882

Dr. Brent Carter
MSE, Surface Analysis Facilities
404-894-6762
[http://www.mse.gatech.edu/academics/facilities/MC/bo
dy_mc.html](http://www.mse.gatech.edu/academics/facilities/MC/bo
dy_mc.html)

Molecular Biology Research Lab

Clark Atlanta University
Purpose: Provide supporting facilities for research
and testing in molecular biology

Dr. Juarine Stewart
404-880-6764
jstewart@cau.edu
www.hbcumi.cau.edu/ccrtd

Molecular Core Facility, Center for Tropical and Emerging Global Diseases

University of Georgia
Purpose: The facility provides the research
community with state-of-the-art services and
instrumentation not available at other service
facilities. Instruments include a Roche LightCycler
for real-time PCR, a high-throughput Hitachi
Microarrayer, a Genetic Microsystems array scanner,
a GeneTraffic array analysis server, a MWG
PCR/Sequencing system, a Beckmen CEQ 2000XL
sequencer, and a Packard Multi-Probe liquid
handling robot.

David Dowless
Research Coordinator
706-583-0587
706-542-3582(f)
ddowless@uga.edu
www.ctegd.uga.edu

Molecular Design Institute (MDI)

Georgia Institute of Technology
Purpose: MDI is a multidisciplinary research and
education unit, with headquarters at Georgia Tech,
and funded by the Office of Naval Research and the
Georgia Research Alliance. The purpose of MDI is to
combine the efforts of chemists, biologists, physicians,
mathematicians, materials scientists, and physicists
to educate graduate students in the necessary
fundamentals required for the atomic-scale design,
synthesis, processing, and characterization of new
molecules and materials. Targeted areas of application
include biomaterials, pharmaceuticals, electronic
devices, and catalysts.

William S. Rees, Jr.
404-894-4049
will.rees@chemistry.gatech.edu
www.chemistry.gatech.edu/mdi/index.html

Molecular Genetics Core Facility

Morehouse School of Medicine
Purpose: Assist investigators who need to determine
DNA sequences, design and make oligonucleotide
primers, or do sequence analysis

Dr. Kelwyn Thomas
Director
404-752-1507
thomask@msm.edu

Dr. Vincent Bond
Director
404-752-1862
bond@msm.edu

Nuclear Magnetic Resonance Center

Clark Atlanta University
Purpose: Providing nuclear magnetic resonance
facilities for the characterization of compounds

Dr. Mark Mitchell
404-880-6858
mmitchell@cau.edu
www.cau.edu

Nuclear Magnetic Resonance Facility, Atlanta High Field

Georgia State University
Purpose: The facility provides nuclear magnetic
resonance (NMR) instrumentation for scientists in
biotechnology and drug design. The NMR facility is
open to qualified researchers in both academics and
industry.

Dr. Dabney Dixon
Director
404-651-3908
ddixon@gsu.edu
<http://chemistry.gsu.edu/NMR/NMRfacility.html>

Nuclear Magnetic Resonance Research Facility

Emory University
Purpose: To provide high-resolution, super conducting
NMR spectrometers, and associated facilities

Dr. Shaoxiong Wu
Director
404-727-6621
swu@emory.edu
www.emory.edu/NMR/index.html

Peptide and Oligonucleotide Synthesis Biosciences Core Laboratory

Georgia Institute of Technology

Purpose: Peptide and oligonucleotide synthesis service center

Nadia Boguslavsky

404-385-0215

nadia.boguslavsky@ibb.gatech.edu

Picosecond Laser Laboratory

Georgia State University

Purpose: The lab features a Brookhaven Instruments laser light scattering system with Argon ion He-Ne lasers as light sources. Total intensity and dynamic light scattering measurements can be carried out. This is useful in determining the molecular weight, size, and shape of macromolecules. Current work focuses specifically on energy and electron transfer in biological molecules.

Thomas L. Netzel

Professor, Biomolecular Spectroscopy

tnetzel@gsu.edu

<http://chemistry.gsu.edu/facilities/resources.html>

Positron Emission Tomography

Emory University

Purpose: To provide a financially responsible core facility and resources to the Emory University System of Health Care and the state of Georgia for leading-edge research, clinical service, and teaching associated with positron emission tomography.

These resources are used to pursue new techniques to continue to improve the diagnosis and assessment of the treatment of disease. The ultimate focus of these activities is to provide the highest standards of health care delivery.

Dr. J. Douglas Bremner

Director

404-712-0108

csegres@emory.edu

www.emory.edu/RADIOLOGY/PET/index.htm

Poultry Science Research Laboratory (PRL)

University of Georgia

Purpose: Researchers and organizations outside the college and university community can be served on a specialized case basis. The primary goal of the laboratory is to return quality analytical results as rapidly as possible, using the most up-to-date and accurate methods and equipment available, for an economical fee. Depending on the analysis, there are five areas of specialization which include proximate analyses, gas chromatography, mineral analyses,

special chemical analyses, and clinical chemistry. PRL is an inter-departmental service, research, and teaching facility. The laboratory performs over 40 different analytical procedures, from the standard proximate analyses on feed samples to sophisticated determinations on fatty acids using gas chromatographic techniques. The PRL also has the capability of setting up additional analyses.

Ronald Etheridge, Sr.

Director

706-542-0999

retherid@uga.edu

www.uga.edu/~psrl

Primate Research Center, Yerkes Regional

Emory University

Purpose: Yerkes is focused on the following goals: to conduct a research program focused on scientific problems relevant to human health and the mission of the National Institutes of Health; to provide the resource infrastructure and expertise in appropriate scientific and veterinary specialties to support the research program; to enhance the center's ability to serve as a resource to core investigators as well as to scientists from around the world

Dr. Stuart Zola

Director

404-727-7707

szola@rmy.emory.edu

www.emory.edu/WHSC/YERKES

Proteomics Facility, SELDI

Morehouse School of Medicine

Purpose: Provide mass spectrometry techniques used to analyze proteins and other complex mixtures of biomolecules

Dr. Mike Powell

Director

404-752-1582

powellm@msm.edu

Proteomics and Mass Spectrometry Core Laboratory

Medical College of Georgia

Purpose: Part of the Institute for Molecular Medicine and Genetics, the lab is a resource facility for the characterization and the measurement of expression levels for proteins through the use of mass spectrometry, electrophoresis or chromatography.

The facility employs the Amersham Pharmacia multiple Cy-dye labeling of proteins, 2-DIGE, scanner, spot picker, digester, and a MALDI-TOF instrument.

John Nechtman
 Manager
 706-721-7670
jnechtma@mail.mcg.edu
www.mcg.edu/Core/Labs

Scientific Glass Blowing Shop

University of Georgia
 Purpose: The shop fabricates, repairs, and modifies all types of glassware designed for scientific research and for UGA scientists, local companies, other universities, and federal agencies

Richard Harrison
 Manager
 706-542-3104
glass@rserv.uga.edu

Sensor Laboratory, Applied

Georgia Institute of Technology
 Purpose: Research interests in advanced chemical IR sensors, molecular recognition layers, quantum cascade lasers, and SECM-AFM

Boris Mizaikoff
 404-894-4030
boris.mizaikoff@chemistry.gatech.edu
<http://asl.chemistry.gatech.edu/index.html>

Small Animal Behavior Core Laboratory

Medical College of Georgia
 Purpose: This core lab is a state-of-the-art facility designed to serve as a time-efficient and cost-effective service for researchers in need of behavioral analyses in small animals (specifically mice or rats). The core provides expertise in all aspects related to the design and implementation of behavioral experiments as well as data analysis and interpretation. The core is fully equipped to accommodate a full battery of behavioral tests relevant to learning and memory, sensory gating, place/fear conditioning, motor function, nociception, anxiety-related behaviors, etc.

Dr. Alvin Terry
 Director
 706-721-4915
aterry@mail.mcg.edu
www.mcg.edu/Core/Labs

Tetramer Facility

Emory University
 Purpose: A NIAID Tetramer Facility has been established through the NIH AIDS Research and Reference Reagent Program to provide custom synthesis and distribution of soluble MHC I/peptide tetramer reagents that can be used to stain antigen specific CD8 T cells

Eugene Ravkov
 Technical Director
 404-727-7215
eravkov@emory.edu
www.niaid.nih.gov/reposit/tetramer/index.html

Tissues, Georgia Tech/Emory Center (GTEC) for the Engineering of Living

Emory University, Georgia Institute of Technology
 Purpose: To develop tissue engineering technologies through an integrated systems approach, harnessing discoveries from the biological revolution to significantly improve clinical therapies. Focus areas of research are in cardiovascular substitutes (tissue engineered vascular substitutes, heart valves and myocardial patches), metabolic secretory organs (bioartificial pancreas and liver), orthopaedic tissue engineering (bone, cartilage, and fibrocartilage). Associated projects in biomaterials development, cell sources and cellular engineering, stem cells, cryopreservation of cells and tissues, modulation of immune responses, bioreactor system development, biomechanics of cells and tissues, flow dynamics in cardiovascular tissues. The center seeks meaningful collaborations in research with companies and other entities in the biomedical fields. GTEC has an active industrial partners program for industry to closely interact with faculty, students, and staff to attain their research objectives.

Dr. Robert M. Nerem
 Director
 404-894-2768
 404-894-2291 (f)
robert.nerem@ibb.gatech.edu
www.gtec.gatech.edu

Transgenic and Embryonic Stem Cell Mouse Core Laboratory

Medical College of Georgia
 Purpose: Part of the Institute for Molecular Medicine and Genetics, this core lab provides access to transgenic animal technology at reduced effort and cost. It offers services such as DNA injection into fertilized oocytes, ES cell injection into blastocysts, strain rederivation, and embryo and

sperm cryopreservation, along with the care and housing of the mice up to the stage where they would be transferred to the participating investigator. The facility is located behind a specific pathogen-free environment where admittance is restricted and all food, water, cages, and bedding are autoclaved before use.

Dr. Ali Eroglu
 Director
 706-721-7595
aeroglu@mail.mcg.edu
www.mcg.edu/Core/Labs

Transgenic Mouse and Gene Targeting Core Facility

Emory University

Purpose: The facility is a resource of the Emory University School of Medicine and offers a full range of services for the production, characterization and analysis of transgenic and gene-targeted mice. The core strives to provide high-quality, cutting edge transgenic and gene-targeting technology, in both a time-effective and cost-efficient manner. The core also serves as a repository for valuable research tools such as targeting vectors and mouse strains. Finally, the core facility director can form both consultative and collaborative partnerships with investigators to best suit their research needs and goals.

Dr. David Martin
 Director
 404-712-8372
dwmarti@emory.edu
www.corelabs.emory.edu

Transgenic Zebrafish Core Laboratory

Medical College of Georgia

Purpose: Part of the Institute for Molecular Medicine and Genetics, this core facilitates the use of zebrafish as a vertebrate model system for basic and biomedical science and comparative genomics. The zebrafish, *Danio rerio*, is a small teleost fish with many of the same organ systems (brain, heart, gut, ear, eye) and congenital and acquired diseases (blindness, anemia, craniofacial defects, hearing or balance loss, cancer) as mice and humans. They are cheap to maintain, relative to other model systems, and their embryos have many cell biological, embryological, and genetic features that are important tools to study development and disease. Some of the specific services offered through this core are embryo production, production of transgenic lines and maintenance of wild type, transgenic and mutant lines.

Dr. David Kozlowski
 Director
 706-721-8760
dkozlowski@mail.mcg.edu
www.mcg.edu/Core/Labs

Vaccine Center, Emory

Emory University

Purpose: The goal of the center is to create new technologies to prevent AIDS, tuberculosis, malaria, influenza, and respiratory illnesses. Scientists at the center are pioneering scientific initiatives and are poised to move promising pre-clinical discoveries to the next level, with the aim of making a positive impact on world health. Core facilities include: Human Immunology Core, Tetramer Core, Genomics Core, Microscopy Core, Flow Cytometry, Virology Core, and Vivarium.

Dr. Rafi Ahmed
 404-727-4700
ra@microbio.emory.edu
www.emory.edu/WHSC/YERKES/VRC

Viral Immunology Core (VIC)

Georgia State University

Purpose: The core consists of four components centered around the needs and research interests of GRA Eminent Scholar Dr. Julia Hilliard: the BSL3/BSL4 glove-box facility, the clinical diagnostic test laboratory, research and development laboratories, and the business office

Dr. Richard Henkel
biordh@panther.gsu.edu

X-ray Crystallography

Emory University

Purpose: To provide a variety of X-ray facilities for the investigation of inorganic, organometallic, organic, or macromolecular materials with state-of-the-art X-ray diffractometry

Dr. Kenneth Hardcastle
 Director
 404-727-6140
 404-727-6586(f)
khardca@emory.edu
www.emory.edu/CHEMISTRY/resources/xray

Incubators & Business Centers

Other areas of service that colleges and universities offer to bioscience businesses in Georgia are incubators and business centers. Listed below are a variety of these outreach services that can help “hatch” bioscience and related companies, and contacts for more information.

Emory University/Georgia Institute of Technology *EmTech Bio*

Services: Provide to resident biotech companies office space; wet-lab space; high-end equipment support (NMR, HPLC, freezers, refrigerators, water baths); advisory services; and access to university core facilities at Emory University and Georgia Tech. Facilities include suites for performing tissue culture and/or drug discovery/chemistry research and development.

Connie Snipes
404-727-4518
csnipes@emory.edu

Georgia Institute of Technology

Advanced Technology Development Center

Services: With a commitment to the technology-based enterprise, the ATDC provides a broad base of assistance to bioscience entrepreneurs. Available assistance covers the continuum of new company formation and maturation including the fundamental aspects of strategic focus through facilitating vital connections with potential board members, management, and sources of capital. In December 2002, ATDC opened the new bioscience incubator laboratory space on the Georgia Tech

campus that is currently available for occupancy. This incubator facility has been designed to accommodate a wide range of bioscience activities.

Lee Herron
404-385-1597
lee.herron@atdc.org
www.atdc.org

Industrial Educational Partners Program

Services: The Industrial Educational Partners Program involves industry in the Georgia Tech/Emory Center (GTEC) for the Engineering of Living Tissues by direct participation in the evaluation of research and educational programs, and provides opportunities to interact with faculty and students involved in biomedical and bioscience research. The Educational Partner members have access to early stage technologies and innovations generated from GTEC faculty laboratories for licensing and research opportunities in cell and tissue engineering, biomaterial scaffolds, bioreactor design and optimization, immune modulation strategies, cells and tissue cryopreservation, stem cells, and other areas impacting the medical device and tissue engineering industries.

Dr. Ann Schmierer
Manager for Industrial Relations at GTEC
404-385-2259
404-894-2291(f)
ann.schmierer@ibb.gatech.edu
www.gtec.gatech.edu/industry/index.html

Georgia State University*CollabTech*

Services: The incubator consists of four major components: three biological applications revolving laboratories, two chemical applications revolving laboratories, a conference room, and industrial office space

Dr. P.C. Tai

biopct@langate.gsu.edu

Dr. Al Baumstark

chealb@panther.gsu.edu

Medical College of Georgia*Life Sciences Business Development Center (LSBDC)*

Services: MCG is creating a new business incubator on campus for both faculty entrepreneurs and those in the community who wish to start up a new business in the life sciences area. Occupancy for five start-up companies is expected in early 2004, with a significant portion of the new Phase II Interdisciplinary Research Building being devoted to this project. Each entrepreneurial suite will have a large wet-lab, a clean room, and two offices. Basic furniture and an extensive array of lab equipment are provided along with access to campus resources, including a comprehensive collection of core labs. MCG is working closely with the Georgia Medical Center Authority as they develop a research park (likely including another incubator) in Augusta. The LSBDC will provide business mentors and advisors, seminars and sessions on business and science topics. Inquiries from entrepreneurs needing lab and office space (and other services) are welcome.

Dr. Michael Gabridge

Executive Director

MCG Life Sciences Business Development Center

706-721-9822

mgabridge@mail.mcg.edu

www.mcg.edu/research.htm

Lenie Roos-Gabridge

Executive Director

Georgia Medical Center Authority

706-432-4040

lenie@georgiamedicalcenterauthority.org

www.georgiamedicalcenterauthority.org

University of Georgia*Georgia BioBusiness Center*

Services: The Georgia BioBusiness Center is a program of the University of Georgia Research Foundation (UGARF) developed in cooperation with the Georgia Research Alliance. The program enables biotechnology start-up companies to accelerate their early growth through access to management expertise and core lab facilities with state-of-the-art instrumentation. The Center's new facility opened 2001 and will house up to 10 start-up companies. Seven of the companies affiliated with the Center raised \$30 million in venture funding and corporate financing during FY 2001.

Margaret Wagner-Dahl

Director of Research, Development and Technology Alliances

706-583-8209

biobiz@uga.edu

Intellectual Property & Technology Transfer

Tech transfer and commercialization in the biosciences depend on strong working partnerships between industry and higher education. Here are the professionals to contact at the surveyed campuses who can help build such partnerships.

Agnes Scott College

*Rosemary Levy Zumwalt
Vice President for Academic Affairs
and Dean of the College
404-471-6101
rzumwalt@agnesscott.edu*

Brenau University

*Jim Barco
Vice President for Institutional Advancement
770-534-6161
jbarco@lib.brenau.edu*

*Dr. Keith Brown
Professor of Medical Science,
Occupational Therapy Department
770-534-6296
kbrown@lib.brenau.edu*

*Dr. Ken Frank, J.D.
Director of Legal Studies
770-534-6297
kfrank@lib.brenau.edu*

Clark Atlanta University

*Dr. Dorcas D. Bowles
Provost and Vice President for Academic Affairs
404-880-8753
ddbowles@cau.edu*

Emory University

*Mary L. Severson
Chief Technology Officer, Office of Technology Transfer
404-727-7218
msevers@emory.edu*

*Kevin Lei
Assistant Director, Office of Technology Transfer
404-727-7241
klei@emory.edu*

*Jason McDevitt
Senior Licensing Associate, Office of Technology Transfer
404-727-5256
jmcdevi@emory.edu*

*Orman A. Simpson
Senior Licensing Associate, Office of Technology Transfer
404-727-4968
osimpso@emory.edu*

Georgia Institute of Technology

Dr. George G. Harker III
 Director, Office of Technology Licensing,
 Georgia Tech Research Corporation
 404-894-6287
 george.harker@gtcr.gatech.edu
 http://otl.gtcr.gatech.edu

Dr. Ann E. Schmierer
 Manager for Industrial Relations, Georgia Tech/Emory
 Center for the Engineering of Living Tissues (GTEC)
 404-385-2259
 404-894-2291(f)
 ann.schmierer@ibb.gatech.edu
 www.gtec.gatech.edu

Georgia State University

Vince LaTerza
 Assistant to the Vice President for Research
 404-463-9478
 vlaterza@gsu.edu

Kennesaw State University

Dr. Teresa Joyce
 Dean of Graduate Studies
 770-423-6738
 tjoyce@kennesaw.edu

Medical College of Georgia

Dr. Michael Gabridge
 Associate Vice President
 Office of Technology Transfer and Economic
 Development
 706-721-9822
 mgabridge@mail.mcg.edu

Morehouse School of Medicine

Dr. Sandra Harris-Hooker
 Associate Dean for Research
 404-752-1725
 hooker@msm.edu

Southern Polytechnic State University

Dawn Ramsey
 Dean of Extended University
 770-528-3174
 dramsey@spsu.edu

Spelman College

Dr. Sylvia Bozeman
 Professor, Mathematics
 404-223-7621
 sbozeman@spelman.edu

State University of West Georgia

Dr. John Storer
 Director, Sponsored Operations
 770-836-4360
 jstorer@westga.edu

University of Georgia

Robert R. Fincher
 Director, Technology Commercialization Office
 706-583-0352
 rrf@ovpr.uga.edu
 www.ovpr.uga.edu/tco/

Employee & Intern Recruiting

It's the education and training of talented students that form the core of higher education's mission. Whether a business is looking for new employees or wants to begin the employee recruitment process by utilizing student interns, the campus staff listed here are the ones to contact for information.

Agnes Scott College

Catherine Neiner
 Director of Career Planning
 404-471-6245
 cneiner@agnesscott.edu

Brenau University

Amy Shutts
 Director of Career Planning and Placement
 770-534-6265
 ashutts@lib.brenau.edu

Dr. Terry Barron
 Chair, Department of Math and Science
 770-534-6278
 tbarron@lib.brenau.edu

Dr. Gale Hansen Starich
 Dean, School of Health and Science
 and Professor of Biochemistry
 770-718-5305
 gstarich@lib.brenau.edu

Clark Atlanta University

Ernita Hemmitt
 Director, Career Planning and Placement Office
 404-880-6057
 ehemmitt@cau.edu

Clayton College & State University

Dr. Greg Hampikian
 Associate Professor and Grants Coordinator
 greghampikian@mail.clayton.edu

Emory University

Tariq Shakoor
 Director, Career Center
 404-727-6211
 cppats@emory.edu

Dr. Susan Rich
 Director, Office of Postdoctoral Education,
 School of Medicine
 404-727-3302
 srich@emory.edu

Georgia Institute of Technology

Ralph Mobley
 Director of Career Services
 404-894-3754
 ralph.mobley@sucess.gatech.edu

Sally Gerrish
 Education Director, Georgia Tech/Emory Center for
 the Engineering of Living Tissues (GTEC)
 404-385-2259
 404-894-2291 (f)
 sally.gerrish@ibb.gatech.edu

Georgia State University

Ann Perry
 Director of Career and Job Search Services
 404-651-3617
 aperry@gsu.edu

Kennesaw State University

Dr. Kathleen Fleiszar
 Professor of Biology, Department Internship
 Coordinator
 770-423-6158
 770-423-6625(f)
 kfleisza@kennesaw.edu

Patricia H. Reggio
 Professor of Chemistry and Biochemistry,
 Department Internship Coordinator
 770-423-6159
 770-423-6744(f)
 preggio@kennesaw.edu

Medical College of Georgia

Dr. Gretchen Caughman
 Associate Dean, School of Graduate Studies
 706-721-3278
 gcaughma@mail.mcg.edu

L.D. Newman
 Director, Office of Postdoctoral Affairs
 706-721-9516
 dinewman@mail.mcg.edu

Dr. Patricia Cameron
 Assistant Dean, School of Graduate Studies
 Director of Undergraduate Research Program
 706-721-6829
 pcameron@mail.mcg.edu

Mercer University

Dr. Fred F. Farris
 Professor and Chair, Department of
 Pharmaceutical Sciences, Mercer University
 Southern School of Pharmacy
 farris_f@mercer.edu

Dr. Steve R. Brown
 Director of Career Services
 478-301-2863
 brown_sr@mercer.edu

Morehouse College

Dr. J.K. Haynes
 Dean of Science and Mathematics
 404-215-2610
 jhaynes@morehouse.edu

Morehouse School of Medicine

Dr. Gerald Sonnenfeld
 Associate Dean for Graduate Studies
 404-752-1687
 sonneng@msm.edu

Oglethorpe University

Robbie Ouzts
 Career Services Office
 404-364-8533
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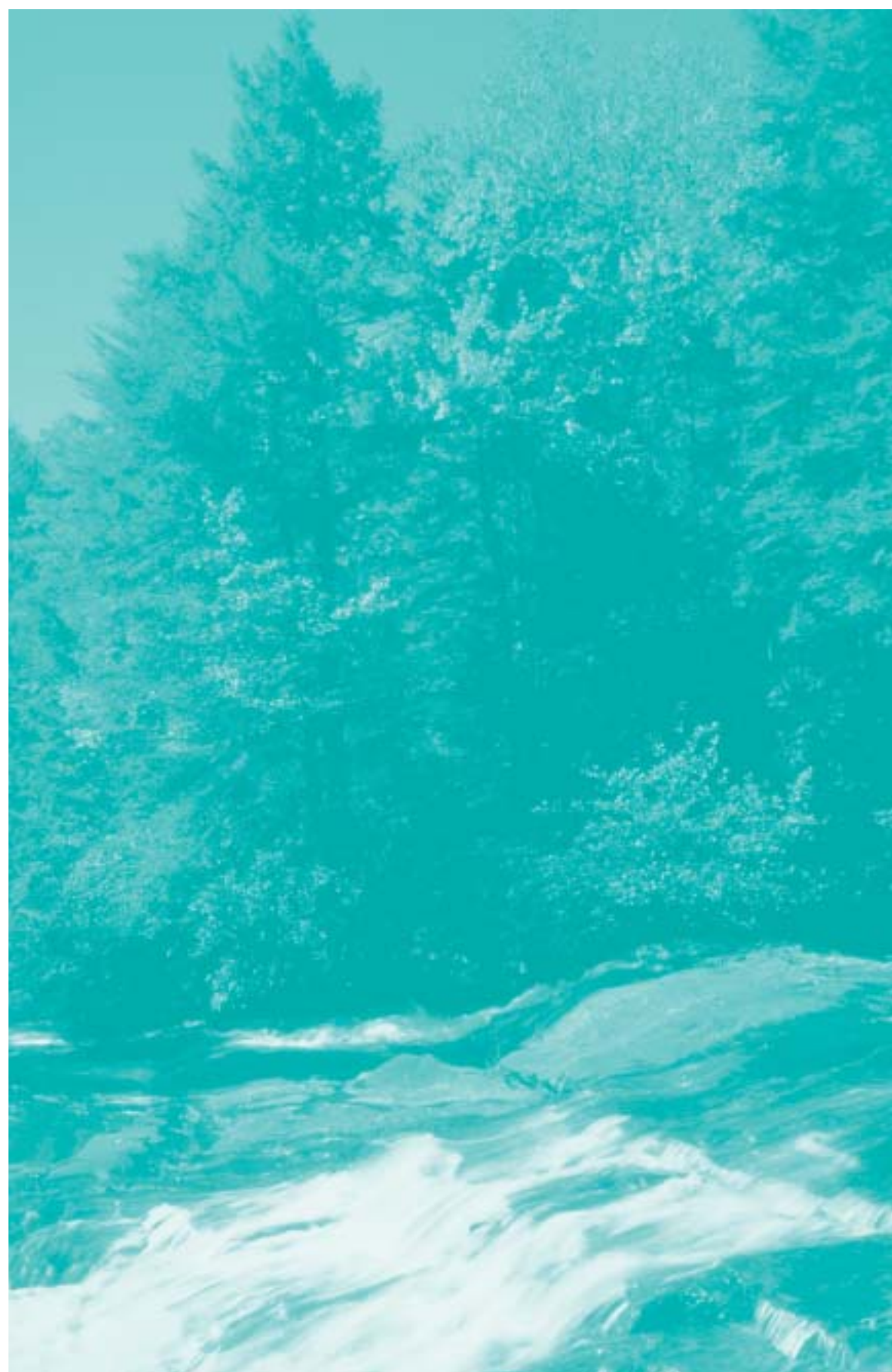
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Additional Higher
Education Resources

Bioethics Contacts

Government policy affecting bioscience industries often is driven by social values and morals. So, understanding bioethics is both philosophically appropriate and practically important. Higher education can help sort through matters of “applied” bioethics, and the faculty and staff listed below are key contacts on the surveyed campuses.

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The UGA Center for Humanities and Arts sponsors an annual lecture in environmental ethics and also sponsors an annual bioethics seminar in collaboration with the UGA Biomedical and Health Sciences Institute. Several UGA faculty are involved in formal research in bioethics.

Bioscience Degrees & Programs of Study

For business, the secret to hiring skilled and capable employees is knowing where that talent can be found. To help bioscience companies find needed talent, a list of bioscience (and related) degree programs offered by the surveyed colleges and universities is shown here.

Major Program of Study	Degree	Institution
Agricultural Engineering	Bachelor of Science in Ag. Engin.	University of Georgia
	Master of Science	University of Georgia
Agricultural Extension	Master of Agricultural Extension	University of Georgia
Agronomy	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Anatomy (Veterinary)	Master of Science	University of Georgia
Animal & Dairy Science	Doctor of Philosophy	University of Georgia
Animal Health	Bachelor of Science in Agriculture	University of Georgia
Animal Nutrition	Doctor of Philosophy	University of Georgia
Animal Science	Bachelor of Science in Agriculture	University of Georgia
	Master of Science	University of Georgia
Applied Physiology	Master of Prosthetics and Orthotics	Georgia Institute of Technology
	Doctor of Phil. (under development)	Georgia Institute of Technology
Artificial Intelligence	Master of Science	University of Georgia
Avian Medicine	Master of Avian Medicine	University of Georgia
Behavioral Sciences	Master of Public Health	Emory University
Biochemistry	Bachelor of Science	Kennesaw State University
	Bachelor of Science	Spelman College
Biochemistry & Molecular Biology	Bachelor of Arts	Agnes Scott College
	Bachelor of Science	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Bioengineering	Master of Science	Georgia Institute of Technology
	Doctor of Philosophy	Georgia Institute of Technology
Bioinformatics	Master of Science	Georgia Institute of Technology
Biological & Agricultural Engineering	Doctor of Philosophy	University of Georgia
Biological & Biomedical Sciences	Doctor of Philosophy	Emory University
Biological Engineering	Bachelor of Science in Bio. Engin.	University of Georgia
	Master of Science	University of Georgia
Biological Science	Bachelor of Science in Agriculture	University of Georgia
Biological Sciences	Bachelor of Science	Georgia State University
	Doctor of Philosophy	Georgia State University

Major Program of Study	Degree	Institution	
Biology	Bachelor of Arts	Agnes Scott College	
	Bachelor of Arts	Brenau University	
	Bachelor of Arts	Emory University	
	Bachelor of Arts	Mercer University	
	Bachelor of Arts	State University of West Georgia	
	Bachelor of Science	Brenau University	
	Bachelor of Science	Clark Atlanta University	
	Bachelor of Science	Clayton College & State University	
	Bachelor of Science	Emory University	
	Bachelor of Science	Georgia Institute of Technology	
	Bachelor of Science	Kennesaw State University	
	Bachelor of Science	Mercer University	
	Bachelor of Science	Morehouse College	
	Bachelor of Science	Oglethorpe University	
	Bachelor of Science	Southern Polytechnic State Univ.	
Biomedical Engineering	Bachelor of Science	Spelman College	
	Bachelor of Science	State University of West Georgia	
	Bachelor of Science	University of Georgia	
	Bachelor of Science/Master of Science	Clark Atlanta University	
	Master of Science	Clark Atlanta University	
	Master of Science	Georgia Institute of Technology	
	Master of Science	Georgia State University	
	Master of Science	State University of West Georgia	
	Doctor of Philosophy	Clark Atlanta University	
	Doctor of Philosophy	Georgia Institute of Technology	
	Bachelor of Science	Georgia Institute of Technology	
	Master of Science in Engineering	Mercer University	
	Doctor of Philosophy	Georgia Institute of Technology	
	Biomedical Sciences	Master of Science	Medical College of Georgia
		Doctor of Dental Med./Doctor of Phil.	Medical College of Georgia
Doctor of Med./Doctor of Philosophy		Medical College of Georgia	
Doctor of Philosophy		Medical College of Georgia	
Doctor of Philosophy		Morehouse School of Medicine	
Biomedical Specialization	Bachelor of Science in Engineering	Mercer University	
Biopsychology	Bachelor of Science	Oglethorpe University	
Biostatistics	Master of Public Health	Emory University	
	Master of Science	Emory University	
	Master of Science in Public Health	Emory University	
	Doctor of Philosophy	Emory University	
Biotechnology	Bachelor of Science	Kennesaw State University	
Botany	Bachelor of Science	University of Georgia	
	Master of Science	University of Georgia	
	Doctor of Philosophy	University of Georgia	
Cellular Biology	Bachelor of Science	University of Georgia	
	Master of Science	University of Georgia	
	Doctor of Philosophy	University of Georgia	
Chemical Engineering	Bachelor of Science	Georgia Institute of Technology	
	Master of Science	Georgia Institute of Technology	
	Doctor of Philosophy	Georgia Institute of Technology	
Chemistry	Bachelor of Arts	Agnes Scott College	
	Bachelor of Arts	Emory University	
	Bachelor of Arts	Mercer University	
	Bachelor of Science	Clark Atlanta University	
	Bachelor of Science	Emory University	

Major Program of Study	Degree	Institution	
Chemistry (continued)	Bachelor of Science	Georgia State University	
	Bachelor of Science	Kennesaw State University	
	Bachelor of Science	Mercer University	
	Bachelor of Science	Morehouse College	
	Bachelor of Science	Oglethorpe University	
	Bachelor of Science	Spelman College	
	Bachelor of Science	University of Georgia	
	Bachelor of Science/Master of Science	Clark Atlanta University	
	Master of Science	Clark Atlanta University	
	Master of Science	Georgia State University	
	Master of Science	University of Georgia	
	Chemistry & Biochemistry	Doctor of Philosophy	Clark Atlanta University
		Doctor of Philosophy	Emory University
Doctor of Philosophy		Georgia State University	
Doctor of Philosophy		University of Georgia	
Chemistry & Biochemistry	Bachelor of Science	Georgia Institute of Technology	
	Master of Science	Georgia Institute of Technology	
	Doctor of Philosophy	Georgia Institute of Technology	
Clinical Research	Master of Science	Morehouse School of Medicine	
Cognitive Science	Bachelor of Arts	University of Georgia	
Computer & Information Sciences	Bachelor of Science	Clark Atlanta University	
	Bachelor of Science/Master of Science	Clark Atlanta University	
	Master of Science	Clark Atlanta University	
Computer Engineering	Bachelor of Science	Georgia Institute of Technology	
Computer Engineering Technology	Bachelor of Science	Southern Polytechnic State University	
Computer Information Systems	Bachelor of Business Administration	Georgia State University	
	Master of Business Administration	Georgia State University	
	Master of Science	Georgia State University	
	Doctor of Philosophy	Georgia State University	
Computer Science	Bachelor of Arts	Mercer University	
	Bachelor of Arts	Southern Polytechnic State Univ.	
	Bachelor of Science	Georgia Institute of Technology	
	Bachelor of Science	Georgia State University	
	Bachelor of Science	Kennesaw State University	
	Bachelor of Science	Mercer University	
	Bachelor of Science	Oglethorpe University	
	Bachelor of Science	Southern Polytechnic State Univ.	
	Bachelor of Science	University of Georgia	
	Master of Science	Emory University	
	Master of Science	Georgia Institute of Technology	
	Master of Science	Georgia State University	
	Master of Science	Southern Polytechnic State Univ.	
	Conservation Ecol./Sustainable Dev.	Master of Science	University of Georgia
		Doctor of Philosophy	Georgia Institute of Technology
Doctor of Philosophy		Georgia State University	
Doctor of Philosophy		University of Georgia	
Crop Science	Bachelor of Science	University of Georgia	
Dairy Science	Bachelor of Science in Agriculture	University of Georgia	
	Master of Science	University of Georgia	
Database Administration	Bachelor of Information Technology	Clayton College & State University	
Decision Sciences	Bachelor of Business Administration	Georgia State University	
	Master of Business Administration	Georgia State University	
	Master of Science	Georgia State University	
	Doctor of Philosophy	Georgia State University	

Major Program of Study	Degree	Institution
Decision Sciences/Info. Systems	Master of Business Administration	Clark Atlanta University
Earth & Atmospheric Sciences	Bachelor of Science	Georgia Institute of Technology
	Master of Science	Georgia Institute of Technology
	Doctor of Philosophy	Georgia Institute of Technology
Earth Sciences	Bachelor of Science	Mercer University
Ecology	Bachelor of Science	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Electrical & Computer Engineering	Master of Science	Georgia Institute of Technology
	Doctor of Philosophy	Georgia Institute of Technology
Electrical Engineering	Bachelor Science	Georgia Institute of Technology
	Master of Science in Engineering	Mercer University
Electrical Engineering Technology	Bachelor of Science	Southern Polytechnic State Univ.
Electronics Technology	Associate of Applied Science	Clayton College & State University
Engineering	Bachelor of Science	Clark Atlanta University
Engineering Technology	Master of Science	Southern Polytechnic State Univ.
Entomology	Bachelor of Science in Agriculture	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Environ. & Occupational Health	Master of Public Health	Emory University
Environmental Engineering	Doctor of Philosophy	Georgia Institute of Technology
	Master of Science	Georgia Institute of Technology
Environmental Science	Bachelor of Arts	Brenau University
	Bachelor of Arts	Mercer University
	Bachelor of Science	Brenau University
	Bachelor of Science in Environ. Sci.	University of Georgia
Environmental Soil Science	Bachelor of Science in Agriculture	University of Georgia
Environmental Specialization	Bachelor of Science in Engineering	Mercer University
Environmental Studies	Bachelor of Arts	Brenau University
	Bachelor of Arts	Emory University
Environmental Studies	Bachelor of Science	Brenau University
Environmental Systems	Bachelor of Science	Mercer University
	Bachelor of Science	Mercer University
Epidemiology	Master of Public Health	Emory University
	Master of Science in Public Health	Emory University
	Doctor of Philosophy	Emory University
Fisheries and Aquaculture	Bach. of Science in Forest Resources	University of Georgia
Food Science	Bachelor of Science in Agriculture	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Forest Resources	Master of Forest Resources	University of Georgia
	Doctor of Philosophy	University of Georgia
Forestry	Bach. of Science in Forest Resources	University of Georgia
Genetics	Bachelor of Science	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Health Administration and Policy	Master of Public Health	Morehouse School of Medicine
Horticulture	Bachelor of Science in Agriculture	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Information Systems	Bachelor of Science	Kennesaw State University
Information Technology	Associate of Applied Science	Clayton College & State University
	Bachelor of Science	Southern Polytechnic State Univ.
	Master of Science	Southern Polytechnic State Univ.
	Master of Science in Info. Tech.	Southern Polytechnic State Univ.

Major Program of Study	Degree	Institution
International Health	Master of Public Health	Morehouse School of Medicine
Marine Sciences	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Materials Science & Engineering	Master of Science	Georgia Institute of Technology
	Doctor of Philosophy	Georgia Institute of Technology
Mathematical Sciences	Bachelor of Arts	Clark Atlanta University
	Bachelor of Science	Clark Atlanta University
	Bachelor of Science/Master of Science	Clark Atlanta University
	Master of Science	Clark Atlanta University
Mathematics	Bachelor of Arts	Georgia State University
	Bachelor of Arts	Southern Polytechnic State Univ.
	Bachelor of Arts	University of Georgia
	Bachelor of Science	Georgia State University
	Bachelor of Science	Kennesaw State University
	Bachelor of Science	Oglethorpe University
	Bachelor of Science	Southern Polytechnic State Univ.
	Bachelor of Science	University of Georgia
	Master of Arts	Emory University
	Master of Arts	Georgia State University
	Master of Arts	University of Georgia
	Master of Science	Emory University
	Master of Science	Georgia Institute of Technology
	Master of Science	Georgia State University
	Doctor of Philosophy	Emory University
	Doctor of Philosophy	Georgia Institute of Technology
Mathematics & Computer Science	Doctor of Philosophy	University of Georgia
	Bachelor of Arts	Emory University
	Bachelor of Science	Emory University
Mechanical Engineering	Bachelor of Science	Oglethorpe University
	Master of Science	Georgia Institute of Technology
Medical Microbiology	Doctor of Philosophy	Georgia Institute of Technology
	Master of Science	University of Georgia
Medical Scientist Training Program Medicine	Doctor of Philosophy	University of Georgia
	Doctor of Med./Doctor of Philosophy	Emory University
	Doctor of Med./Doctor of Philosophy	Emory University
	Doctor of Medicine	Emory University
Medicine & Public Health	Doctor of Medicine	Mercer University
	Doctor of Medicine	Morehouse School of Medicine
	Doctor of Med./Master of Pub. Hlth.	Emory University
Microbiology	Bachelor of Science	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Neuroscience & Behavioral Biology	Bachelor of Science	Emory University
Nuclear & Radiological Engineering	Master of Science	Georgia Institute of Technology
	Doctor of Philosophy	Georgia Institute of Technology
Pharmaceutical Sciences	Doctor of Philosophy in Pharm. Sci.	Mercer University
Pharmacology	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Pharmacy	Master of Science	University of Georgia
	Doctor of Pharmacy	Mercer University
	Doctor of Pharmacy	University of Georgia
	Doctor of Philosophy	University of Georgia
Physical, Materials & Comp Science	Doctor of Philosophy	Emory University

Major Program of Study	Degree	Institution
Physics	Bachelor of Arts	Emory University
	Bachelor of Arts	Mercer University
	Bachelor of Arts	Southern Polytechnic State Univ.
	Bachelor of Science	Clark Atlanta University
	Bachelor of Science	Emory University
	Bachelor of Science	Mercer University
	Bachelor of Science	University of Georgia
	Master of Science	Emory University
	Master of Science	Georgia Institute of Technology
	Master of Science	University of Georgia
	Doctor of Philosophy	Emory University
Plant Pathology	Doctor of Philosophy	University of Georgia
	Master of Science	University of Georgia
Plant Protection & Pest Management	Doctor of Philosophy	University of Georgia
	Bachelor of Science in Agriculture	University of Georgia
Poultry Science	Master of Plant Protect./Pest Mgmt.	University of Georgia
	Bachelor of Science in Agriculture	University of Georgia
Psychology	Bachelor of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
	Bachelor of Arts	Spelman College
Social and Behavioral Sciences	Doctor of Philosophy	University of Georgia
Statistics	Master of Public Health	Morehouse School of Medicine
	Bachelor of Arts	University of Georgia
Toxicology	Bachelor of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
Veterinary Medicine	Doctor of Veterinary Medicine	University of Georgia
Veterinary Parasitology	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia
	Master of Science	University of Georgia
	Doctor of Philosophy	University of Georgia

Major Program of Study	Certificate	Institution
Applied Physiology	Certificate in Health Science	Georgia Institute of Technology

Sources & Acknowledgments

This directory is a project of the Atlanta Regional Consortium for Higher Education (ARCHE). Founded in 1938, ARCHE is comprised of 19 public and private institutions of higher learning. Membership also includes corporate and non-profit Community Partners and regional Affiliated Libraries. The Consortium's mission is to advance Atlanta-area higher education through academic collaboration, community partnerships, and public awareness.

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