Savannah State University

College of Sciences and Technology
Degree Programs, Research Interests, Capabilities, and Projects

Degree Programs	
Civil Engineering Technology	Marine Science
Electronics Engineering Technology	Forensic Science
Computer Science Technology	Chemistry
Mathematics	Environmental Science
Biology	

NAME	EMAIL & PHONE NUMBER	CAPABILITIES / RESEARCH INTERESTS / PROJECTS
Engineering & Physical Science		
Spyros Andreou	(912) 358-3276 andreous@savannahstate.edu	Classical and modern control systems; MATLAB is the research tool used in modeling, analysis, design and simulation. Kalman filtering is of particular interest for estimation and control of harmonic signals as they occur in power systems.
Alex Kalu	(912) 358-4284 kalua@savannahstate.edu	Areas of research interest and capability include Power Systems (including advanced energy systems); Optimization of Industrial and Economic Systems (Operations Research); Sustainable development
Ying Liu	(912) 358-3278 liuy@savannahstate.edu	Image recognition, image tagging, and object identification. The current research including image tagging using Haar cascade related algorithms with training.
Mohamad Mustafa	(912) 358-3272 mustafam@savannahstate.edu	Application of sensors in civil engineering applications.
James Broberg	(912) 358-4458 brobergj@savannahstate.edu	Interested in astrophysics and cosmology
Mir Hayder	(912) 358-3282 hayderm@savannahstate.edu	My current research is focused on fluid flow around cylindrical strictures, fluid-structure interaction, and flow-induced vibrations. My interest also lies in the areas of syngas and blended fuel combustion, nanofluids, and concentrating solar power (CSP) technologies.
Earth Science & Soil Science		
Paramasivam Sivapatham	(912) 358-4290 siva@savannahstate.edu	Biogeochemistry trace elements, waste management, surface water quality, emission of greenhouse gases from soils amended with

		various soil amendments.

NAME	EMAIL & PHONE NUMBER	RESEARCH INTERESTS
Natural Science		
Hua Zhao	(912) 358-4448 zhaoh@savannahstate.edu	Research interests include the 'green' approach to renewable biofuel preparations (cellulosic ethanol and biodiesel), ionic liquids as materials and solvents, biocatalysis, DNA-based catalysis, betulinic acid derivatives with anti-cancer and anti-viral activities, and microwave-assisted reactions.
Olarongbe Olubajo	912-358-4450 olubajoo@savannahstate.edu	Organic Synthesis and Natural Products
Adegboye Adeyemo	912-358-4266 adeyemoa@savannahstate.edu	Anticancer Metal Complexes; Porphyrins and Metaloporphyrins, Vitamin B Metal Complexes, VitaminC Metal Complexes
Janie Baker	912-358-4449 bakerj@savannahstate.edu	Porphyrins and Metaloporphyrins
Cecil Jones	912-358-4453 jonesce@savannahstate.edu	Singlet Oxygen Interactions and Biological Thermodynamics. My interest is in addressing the primary problem with treating cancerous tissue with photodynamic therapy (PDT). PDT is an emerging noninvasive technique which employs dye-like substance called a photosensitizer, light and molecular oxygen to kill solid tumors. Our work employs a wide range of microscopic and spectroscopic techniques aimed at characterizing the nature of PDT-Induced biochemical changes that diminishes the efficacy of long-lasting tumor control after PDT.
Karla Sue Marriott	(912) 358-4454 marriottk@savannahstate.edu	Current research involves the synthesis and characterization of novel sigma receptor and norepinephrine transporter (NET)

		selective ligands for use as medicinal agents to assist in the treatment of addiction, depression, neurodegenerative disorders such as Alzheimer's and Parkinson's. These ligands also have potential use in the treatment of cancer. Synthesis of immune modulating agents (NASA-UR-1 project).
Zhiyan Song		Biological NMR for Characterization of Biomolecules Structures and Dynamics
Kameswara Rao Badri	912-358-4427 badrik@savannahstate.edu	Study molecular mechanisms of adipogenesis (fat development) and myogenesis (muscle development) in health and disease (Hyperetension, diabetes mellitus and lung fibrosis).
Kai Shen	(912) 358-4437 shenk@savannahstate.edu	My work has been focusing on roles of protein structure in health disparity diseases (e.g. cardiovascular diseases, Alzheimer's disease). Particularly, I am interested in the structural features of proteins that affect dynamics of actin filaments and subsequent cell mechanotransduction. My research interests also include using nanotechnology to develop novel tools for investigating protein-lipid interactions.
Pascal Binda	9123584451 bindap@savannahstate.edu	Organometallic catalysis, Biodegradable and shape memory polymers, and Synthesis of cinnamaldehyde derivatives as potential anti-diabetic and anti-cancer agents.
Zhiyan Song	(912)3584452 songz@savannahstate.edu	Biological NMR for Characterization of Biomolecules Structures and Dynamics, and interaction of binding ligands with proteins.
Life Science		
Tara Cox	(912) 358-4097 coxt@savannahstate.edu	Specializes in spatial ecology of large marine vertebrates. She has experience and publications in effects of underwater acoustics on marine species.
Carol Pride	(912) 358-4439 pridec@savannahstate.edu	Conducting research on the use of bio-indicator species and sediment records to understand the influence of climate variability and human activities on

		estuarine waterways and salt marsh systems. Experience with stable isotopes, foraminifera and diatoms.
Sue C. Ebanks	(912) 358-4430 ebankss@savannahstate.edu	Focuses on freshwater and estuarine invertebrate physiology, metal and organic toxicological response, and ecology.
Elissa Purnell	(912) 358-4447 purnelle@savannahstate.edu	Research focuses on the effects of *para*-substituted halogenated aniline analogs on various aspects of rat erythrocytes: induction of methemoglobin, alterations in skeletal membrane proteins, glucose-6-phosphate dehydrogenase activity, and overall cell morphology
Victoria Young	(912) 358-4291 youngv@savannahstate.edu	Responsible for outreach programs for pre-colligate individuals. Coordinates and organizes both the Coast Camp program for 7-18 yr olds and the NOSB Southern Stingray Bowl.
Harpal Singh	912-358-4456 Singhh@savannahstate.edu	Research interest in male reproductive toxicology and chemical-induced hemolytic anemia. Other skills include proposal development, mentoring, intellectual property, and bioethics, oral presentations, locating and searching biological literature.
Tara Cox	(912) 358-4097 coxt@savannahstate.edu	Specializes in spatial ecology of large marine vertebrates. She has experience and publications in effects of underwater acoustics on marine species and global bycatch of long-lived marine vertebrates.
Chris Hintz	(912) 358-4096 hintz@savannahstate.edu	Marine Chemistry, Carbonate Chemistry and Ocean acidification, Analytical Technique Development, Oceanographic Instrumentation, pCO2-controlled culture techniques.
Kenneth Sajwan	(9912) 358-4440 sajwank@savannahstte.edu	Area of research interest and capability include trace metals biogeochemistry, coal and coal combustion byproducts, organic waste co-disposal, PAHs, organochlorine compounds, dioxins, toxic chemicals in pharmaceutical and personal care products.
Mathematics		
Alrazi Abdeljabbar	(912) 358-4306	My research area is in nonlinear partial

	abdeljabbara@savannahstate.edu	differential equations. Wronskian , Pfaffian and Grammain solutions are computed using Hirota method for bilinear PDEs. I am also interested in functional analysis and norm inequalities in Hilbert spaces.
Mulatu Lemma	(912)-358-4303 lemmam@savannahstate.edu	Real Analysis, Complex Analysis, Summability Theory, Sequence and Series, Number Theory, Abstract Algebra, and topological group.
Agegnehu Atena	(912)358-4274 atenaa@savannahstate.edu	Interested in Mathematical Modeling and Simulation of Physical Phenomena, Numerical Analysis, PDE, Thin Liquid Films, Multi-Objective Optimization. Uses Matlab, Maple, and Fortran for computer programing. Uses Latex, Ms Office, and Open Office packages for Word Processing.
Sujin Kim	(912)358-4302 kims@savannahstate.edu	Interested in Stochastic Differential Equations, Stochastic calculus, and Stochastic Processes applied in financial mathematics and Wavelets.
Shinemin Lin	(912)356-4304 lins@savannahstate.edu	Data Analysis for big data using Matlab, and Asyncronized and synchronized online math instructions Lattice Ordered System
Alfredo Villanueva	(912) 358-4307 villanuevaa@savannahstate.edu	Differential geometry, conformal geometry, differential equations, mathematical physics. Mathematica (mathematical software) in numerical analysis. Training for mathematical Olympiad.
Tilahun Muche	(912) 358-4305 muchet@savannahstate.edu	Applications of Combinatorics , Graph Theory and Splicing language
Xingwang Chen	(912)358-3297 chenx@savannahstate.edu	Interested in numerical integral equation, especially wavelet collocation method, high performance computing, theory and application of lattice Boltzmann method.
Hyounkyun Oh	(912) 358-4301 hoh@savannahstate.edu	Numerical Analysis and scientific computing and simulation of real life, especially in human motion into robot's movement. Image processing in recognition of voice, facial feeling, sign language, etc

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Overview of Laboratory and Research Facilities (Engineering Technology and Mathematics)

Lab Facilities

In Hubert D all labs have the basic software such as OFFICE and ADOBE READER.

Building	Room #	Description	Information/Equipment	Quantity
Hubert D	23	AutoCAD Lab	Autodesk Software STAAD Pro Software PCA Software	25 PCs
Hubert D	21	Matlab/GTPRE	MatLab	19 PCs
Hubert D	109	Computer Science Lab	Visual Studio	32 PCs
Hubert D	118	Unix Lab	Linux/Visual Studio	24 PCs (Apple)
Hubert D	111	General Lab (managed by Comp. Serv.)	Visual Studio/Autodesk	22 PCs
Hubert B	420	Engineering Material	Concrete Tester Torque Machine Universal Testing Tri Flex	
Hubert B	405	Soil	Sieve Shaker Ovens Digital Scales Consolidation Testing Unit Soil Materials. Etc	
Hubert B	422	Surveying	Total Stations GPSs TDS PDA Surveying equipment such as Tripods, Rulers, Poles, etc.	
Hubert C	510	Electrical Machinery	AC/DC Motors trainers	
Hubert A	124	Electronics	Nat'l Instrument Software:	22 PCs

		Computer Lab	LabView, Circuit Design
Hubert A	123	PLC and Microcontrollers Lab	PLC Trainer Basic Stamp Trainer
Hubert A	113	Electronics Lab	NI ELVIS Electronic equipment: Function Generator, Power Supplies, Oscilloscopes, Digital Logic Trainers, etc.

Overview of Research Facilities (Natural Sciences)

Research Capability of the Department of Natural Sciences and Mathematics: Well developed research laboratories are located in Drew-Griffith, Hubert A & D and Marine Science buildings. These laboratories are fully equipped with the instruments required to conduct advanced research in biomedical and marine sciences, chemistry, and engineering areas by participating faculty and students.

 Biomedical Research Laboratories: Since 1999, the following laboratories have been developed by NIH SCORE Program faculty to conduct biomedical research: 1) a biochemical toxicology laboratory, 2) a molecular genetics laboratory, and 3) a biochemistry laboratory and a cell-culture facility. In addition to these laboratories, the SCORE Program has established: a) a radioisotope laboratory, b) a small animal facility and c) a Core-Facility. All these laboratories and facilities are active and fully equipped with funds from NIGMS/NIH, the US Air Force, NOAA and the US Department of Education Title III Program. The Core-Facility has several major instruments required for faculty and students to conduct the biomedical research.

 Molecular Biology and Biotechnology Research Laboratory (BTRL): The BTRL is equipped with state-of-the-art instrumentation such as the ballistic bombardment device (gene gun), thermal cycler, growth chambers, CO_2 Incubator, transfer hoods and several other pieces of equipment needed for conducting experiments in biotechnology and molecular biology.

 Hemolytic Anemia Research Laboratory: This laboratory is fully equipped with a Beckman centrifuge, UV Spectrophotometer, Waters HPLC, Laminar Flow Hood, and gel electrophoresis units required to conduct hematology research. Undergraduate students conduct research in this laboratory as part of their research courses.

Environmental Health Research Facility: This facility is well equipped to conduct analytical environmental health research. The equipment includes: a Inductively Coupled Plasma Optical Emission Spectrometer, an Atomic Absorption Spectrophotometer, a Gas Chromatograph, a Liquid Scintillation Counter, and a Gamma Counter. This laboratory has the capability of analyzing organochlorine compounds, PCBs, PAHs, dioxins, heavy metals and radionuclides in biological tissues, plant, soil and sediments.

 The Living Marine Resources Cooperative Science Center (LMRCSC): The LMRCSC is an established collaborative research center, with partners including NOAA and the University of Maryland, which prepares students for careers in marine science. The center has been instrumental in providing the

training for the science majors and marine science graduate students in conducting research. Each year the center enables many students to present papers at national and international conferences.

 Chemistry Research Laboratories: There are four state-of-the art research laboratories, an instrument room and a cold room in the renovated Drew-Griffith Building. There is also a computer laboratory for the chemistry program. The instruments available for teaching and research are of the quality and caliber to support graduate level research, including a JEOL ECX 300 MHz Nuclear Magnetic Resonance (NMR) Spectrometer, Varian BioMelt Uv-Visible Spectrophotometer and Fluorescence BioMelt, Thermo Electron Polaris Polaris Q, CEM Microwave System, Applied Separations Super Critical Fluid Extraction System and Shimadzu Prestige FT-IR.

 Teaching Laboratories: The teaching laboratories are modern and well equipped. All the laboratories are equipped with extractor arm on each lab table. The MeasureNet, network-powered data acquisition system is used in the teaching of General Chemistry labs.

 Geographic Information Systems (GIS) Laboratory: The GIS Laboratory In Herty Hall supports ArcInfo, Statistical Analysis Software (SAS, Inc.), and the Statistical Program for the Social Sciences (SPSS). It is one of the most powerful computing laboratories on the SSU campus. It has 20 stations equipped with Arc Info 9.2, SPSS, SAS, and Microsoft Office Professional. It also holds audio-visual and video-conferencing equipment, a wireless network and microphone system, as well as a plotter. This facility is connected to the NOAA Living Marine Resources Cooperative Science Center's virtual campus. The laboratory was noted by analysts at the Savannah Metropolitan Planning Commission as having the largest GIS training capacity in this region.