

National Science Foundation Partner Meeting
Elizabeth City State University &
The University of New Hampshire

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Elizabeth City State University Biographies

Harry S. Bass, Ph.D.

Dean, School of Mathematics, Science & Technology



Dr. Harry S. Bass came to ECSU after serving at the National Science Foundation as a Program Director for the Louis Stokes Alliances for Minority Participation (LSAMP) program. Within the School of Mathematics, Science and Technology for which he serves as Dean are both undergraduate degree programs and graduate degree programs in biology and mathematics.

Dr. Bass believes that excellence begins here in the School of Mathematics, Science and Technology (SMST). SMST has two centers: The CERSER - Center of Excellence in Remote Sensing Education and Research and the CSSV - Computational Science - Scientific Visualization Center. He also directs six departments: Biology, Chemistry, Mathematics and Computer Science, Pharmacy and Health Professions, Technology, Geology and Physics.

Within these departments, ECSU offers undergraduate B.S. degree programs: Aviation Science, Biology, Chemistry, Computer Science, Geology, Mathematics, Marine Environmental Science, Industrial Technology, Pharmaceutical Science and Physics. Also offered are graduate programs leading to the M.S. degree in Applied Mathematics and the M.S. in Biology.

Linda Hayden, Ph.D.

Mathematics and Computer Science



Dr. Linda Hayden holds a PhD in Mathematics and Education. She is a professor in the department of Mathematics and Computer Science and the Director of the Center of Excellence in Remote Sensing Education and Research (CERSER). CERSER works in partnership with federal agencies,

other universities and private corporations on research projects, which include CReSIS (focusing on radar and seismic mapping of rapidly changing glacier zones in Polar Regions to determine impact on global warming and sea level change). She is Principal Investigator on the NSF CyberInfrastructure for Remote Sensing of Ice Sheets project funded through the National Science Foundation Office of CyberInfrastructure CI-TEAM project and the Undergraduate Research Experience (URE) program funded by the Office of Naval Research.

Dr. Hayden was presented the 2003 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring by the National Science Foundation. She also received the Emerald Award for Educational Leadership in 2003 from Black Engineers Magazine and the 2005 IEEE-USA Award for Professional Achievement, which acknowledges outstanding accomplishment in cultivating student interests in remote sensing and supporting both their involvement in and research presentations at IEEE-GRSS conferences.

Her two part interview "Renaissance People with Dr. Linda Hayden" is available on YouTube and on the Renaissance Computing Institute website <http://www.renci.org>.

Anthony Adade

Chief Information Officer, Information Technology

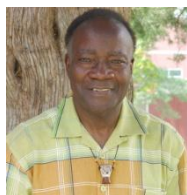


Anthony Adade is the Chief Information Officer at Elizabeth City State University (ECSU). He brought more than 20 years of technology support, management and leadership experience in corporate and higher education to his position. Prior to joining ECSU, Adade served as a technology project leadership consultant at Deutsche Bank, in charge of the bank's technology infrastructure project management in all of its locations in the United

Kingdom. At ECSU, he is responsible for providing overall management and leadership of all information technology strategic planning, development and implementation consistent with the UNC system. Current projects include overseeing the installation of a TeraGrid network at ECSU, as part of a 17 Teraflops cluster to be integrated with the NSF-funded TeraGrid to serve the polar research community, and to provide teaching and research opportunities to ECSU's students and faculty. This will make ECSU the first Historically Black College/University to house a cluster capable of acceptance into the national TeraGrid project. Adade received a Bachelor's from Northeastern University, and a Master's degree from Lesley University.

Johnny Houston, Ph.D.

ECSU Math / National Association of Mathematicians



Dr. Johnny Houston has held the position of Senior Research Professor in the Department of Mathematics and Computer Science at Elizabeth City State University (ECSU) since 1988. Previously, he served ECSU for four years as Vice Chancellor for Academic Affairs and Dean of the Faculty. Houston received his B.A. degree from Morehouse College [1964], his M.S. degree from (Clark) Atlanta University (AU or CAU) [1966] and his Ph.D. degree from Purdue University [1974]. He also attended the U. of Georgia and studied for a year at the Universite de Strasbourg in France [1966-67]. All of his degrees are in the field of mathematics. Moreover, Houston is also a computer specialist and a computational scientist. Prior to his joining ESCU, Houston served as Chair of the Dept. of Mathematical Sciences at (Clark) Atlanta University for six years [1975-81]. Additionally, he taught at Fort Valley St. College (GA), Savannah St. College (GA), Stillman College (AL), and part-time at Purdue U. (IN), Morehouse College (GA), and Morris Brown College (GA). At Fort Valley St. College (University), Houston held an endowed and distinguished chair; he was the Callaway Professor of Computer Science.

Houston has served in several capacities as a Specialist in Mathematics and/or Computer Science. These include his current and long term position as Executive Secretary of the National Association of Mathematicians (NAM) [1975-2000], a member of the Board of Governors of the Mathematical Association of America (MAA) [1992-95], and a member of the Human Resource Advisory Group of

the Mathematical Sciences Research Institute (MSRI) [1993-98]. Formerly, he served as Vice President for Information for the Association of Computer and Information Science/Engineering Departments at Minority Institutions (ADMI) [1990-94] and a four (4) years appointment with the National Institute of Health (NIH) as a Mathematics/Computer Specialist on NIGMS' MARC Review Committee [1982-86]. He has been a reviewer for the National Science Foundation (NSF), a Consultant for the Southern Association of Colleges and Secondary Schools (SACS), and he has provided professional service for other organizations and agencies.

Dr. Houston is a co-founder of National Association of Mathematicians (NAM) and has been its Executive Secretary from 1975 until 2000.

Ephraim Gwebu, Ph.D.

Chair, Department of Chemistry and Physics



Ephraim Tobela Gwebu, Ph.D. is professor and chair of the Chemistry/Physics Department at ECSU. He has managed several grants, which increase the number of minority students trained in STEM disciplines. This includes a Minority Health and Health Disparities International Research Training (E-MHIRT) Program with NIH. The goal of the program is to provide international research training for minority students, from ECSU and other MSIs, in drug discovery and diabetes in Botswana, Swaziland and Zululand, South Africa. Dr. Gwebu holds a B.S. Ed. in Chemistry teaching from University of Sierra Leone, Sierra Leone, West Africa and a Ph.D. from The Ohio State University in Physiological Chemistry. He has a number of peer-reviewed publications and papers. Dr. Gwebu holds membership in the Society for Neuroscience, American Society for Biochemistry and Molecular Biology, the Society for In Vitro Biology, the American Chemical Society, the American Public Health Association, and the American Association for the Advancement of Science.

Ronald Blackmon, Ph.D.

Biology



Dr. Ronald H. Blackmon is currently Senior Research Professor in the Department of Biology at Elizabeth City State University. Since 1989, he has been extensively involved in the development of

research programs for students as a faculty member, department chair, dean and provost/vice chancellor for academic affairs. In addition, planning and development of master's degree programs in biology and mathematics as well as the joint doctor of pharmacy degree program with UNC-Chapel Hill were completed under his direction. His specific research interests include the biochemistry and developmental regulation of antioxidant enzymes. Dr. Blackmon completed his Ph.D. at Howard University with a specialization in cell biology and post-doctoral study at the USDA Research Labs in biochemistry and molecular biology. His interests in science education extend to the public schools and the training of science teachers. He was the first chair and is a current member of the Board of Directors of Port Discover: Northeast North Carolina's Hands-On Science Center.

Maurice Crawford, Ph.D.
Marine Science



Dr. Maurice Crawford holds a B.S. in Biology from the University of Massachusetts at Dartmouth. He began his career as a Fishery Biologist studying the age and growth of fishes with the National Oceanic and Atmospheric Administration (NOAA) in Woods Hole, MA. He received his M.S. in Ecology from Rutgers University, where he studied the population genetics of weakfish and later investigated stream fish assemblages at the University of Georgia. Dr. Crawford received his Ph.D. from North Carolina State University, and was awarded a post-doctoral fellowship with the American Association for the Advancement of Science (AAAS), where he assisted the Agency for International Development (AID) on their Climate Change Initiative. He returned to NOAA in 1999, where he worked with the National Centers for Coastal Ocean Science and later with the National Estuarine Research Reserves.

Dr. Crawford is an Assistant Professor at ECSU in the Biology Department. His research interests include fish ecology, estuarine habitat conservation/restoration; affects of land use on coastal systems; the dispersal and movement of organisms; and the interplay between science and policy. He is PI on Diversity in Research in Environmental and Marine Sciences (DREAMS), funded by NSF, which aims to increase the numbers of underrepresented groups in the sciences.

Jinchun Yuan, Ph.D.
Ocean Science



Jinchun Yuan, Ph.D., is a Research Associate for the ECSU Center of Excellence in Remote Sensing Education and Research (CERSER). His publications and research interests include marine photochemistry of hydrogen peroxide, analytical methods for trace chemical species, fluvial and air-sea fluxes to the ocean and their effects on the marine ecosystems. Previous studies include research into the early diagenesis of carbonate sediments in the Dry Tortugas, Florida, to understand how the biogeochemistry of the sediments affects sediment structure and properties. He received his Ph.D. in 2000 from the University of Southern Mississippi.

William Porter, Ph.D.
Geography



Dr. William Porter received the doctorate in 1986 from the University of Maryland at College Park. His research specialties include urban geography, urban planning, and geographical information systems. Areas of teaching experience include physical geography, earth science and weather and climate. Dr. Porter, Professor in the Department of History and Political Science, has received funding from the Burroughs Wellcome Fund to train high school students in school districts of northeastern North Carolina in the area of earth science to increase their interest and competency in the subject. Dr. Porter has also received funding from the Department of Education's Minority Science and Engineering Improvement program, in collaboration with the University of New Hampshire, Penn State University, and Dillard University, to train pre-service teachers in the Department of Teacher Education at ECSU and in-service teachers from middle and high schools in northeastern North Carolina methods of learning earth science using problem-based learning strategies, geospatial technologies, and field experiences. The program is funded for over one million dollars and has a duration of three years from 2007 through 2009. The name of the program is Transforming Earth Systems Science Education (TESSE) and is funded by the National Science Foundation. Dr. Porter has been involved with several other funded projects, including Critical Thinking Through Technology in which he is Co-

Director. In this project, ECSU is in charge of helping minority serving institutions from across the nation to infuse critical thinking strategies in entry-level science courses. The project involves eleven institutions and workshops have been conducted at ECSU and at North Carolina Central University in Durham, North Carolina for the purpose of helping science faculty selected to the program to infuse critical thinking strategies into their science classes. Dr. Porter is a member of the National Association of Black Geologists and Geophysicists (NABGG).

Lloyd Mitchell, Ph.D., M.P.H., R.S.
Geoscience



Dr. Lloyd Mitchell is an Assistant Professor in the Department of Health and Physical Education at Elizabeth City State University. He also is a research team member with the U.S. Department of

Homeland Security's National Center for Risk and Economic Analysis of Terrorism Events. He received a Ph.D. in Education with a concentration in Adult Higher Education-Earth Sciences, and an M.S. in Space Studies from the University of North Dakota. He also received an M.P.H. from Oregon State University with a focus on Environmental Health and Safety. He is also a nationally Registered Sanitarian. His research interests include the study of crack patterns in North American ice fields, disaster geomorphology, and bioterrorism. Dr. Mitchell has worked extensively with indigenous populations throughout North America in an effort to reduce the economic and social impact of geological disasters and bioterrorism. He has also served and continues to serve rural, low income, and minority communities by establishing and maintaining public health clinics, technical public health symposia, and hands-on workshops. Dr. Mitchell has been recognized for his work by the U.S. Department of Homeland Security, the Society for the Advancement of Chicanos and Native American in Science, the American Indian Science and Engineering Society, and most recently, the Society for Mexican Americans in Engineering and Science.

Althea Bluiett, Ph.D.
Chemistry and Physics



Dr. Althea G. Bluiett is an assistant professor in physics in the department of Chemistry, Geology, and Physics. Currently, ongoing

research is being conducted in exploring new mid-infrared materials for military applications as well as basic research.

Her research interest concerns the crystal growth and optical characterization of rare earth (RE) doped solid-state materials. Currently, with the assistance of Army grant-W911NF-06-1-047, she has ongoing research on exploring the potential of sensitizing rare-earth ions for mid-infrared emission in the 4-5 μm regime. In this work, the excited state dynamics of trivalent RE-ions will be modified by employing a sensitization pumping scheme. This pump scheme will simultaneously take advantage of two RE-ions. One RE-ion will resonantly absorb the pump radiation, which is defined as the sensitizer or donor ion. A fraction of the absorbed pump radiation is subsequently transferred to the second RE-ion, the activator or acceptor ion. The activator ion emits the MIR light that is responsible for the laser emission. The sensitization scheme basically takes advantage of the strong absorption cross-section and convenient absorption wavelength of the sensitizer ion, and the intra-4f mid-infrared transition of the activator ion. The host materials under investigation include KPb_2Cl_5 and KPb_2Br_5 . The dopant materials include various combinations of the following RE-ions: Tm, Nd, Er, Dy, Pr, Tb, and Yb.

Farrah Chandler, Ph.D.
Mathematics



Dr. Chandler received her Bachelor of Science degree in Mathematics Education from North Carolina Agricultural and Technical State University in 1999. She received her Master of Science degree and

Doctor of Philosophy degree in theoretical Mathematics from North Carolina State University in 2001 and 2005 respectively. Before joining the faculty at Elizabeth City State University Dr. Chandler worked as an Assistant Professor at the University of North Carolina Wilmington and is currently an Associate Professor of Mathematics at ECSU. Dr. Chandler serves as the Associate Director of the Computational Science and Scientific Visualization Center and is the Director of the Graduate Program for ECSU's M.S. in Mathematics. Dr. Chandler has a particular interest in increasing the number of underrepresented minorities pursuing graduate degrees in the mathematical sciences and has been involved in various programs and panels which address this issue. Her research interests are in

mathematics education and algebra. In particular, she focuses on symmetric spaces and the classification of involutions of various linear algebraic groups. Dr. Chandler is a member of the National Association of Mathematicians (NAM).

Reginald Little, Ph.D.
Chemistry and Physics



Dr. Reginald B. Little is Associate Professor of Chemistry in the Department of Chemistry, Physics and Geology at Elizabeth City State University (ECSU). He is a native of Lithonia, Georgia of suburban Atlanta. He started chemistry research at 10 years of age in the fifth grade at Humphries Elementary School and demonstrated his chemistry set and experiments with his classmates in the library. He finished Valedictorian of Walter F. George High School (Atlanta, Georgia) (now South Atlanta High School) in 1984 and was named Atlanta's Male Teenager of the Year (1984) by the Atlanta Board of Education. He finished BS in Chemical Engineering at Ga Tech in 1989, MS in Chemical Engineering LSU in 1992 and PhD in Physical Chemistry in 1999 from Ga Tech. He has prior research experience and collaborations at the National High Magnetic Field Laboratory, Naval Research Laboratory, Penn State Univ., Florida State University and National Lightning Research Center. He was Assistant Professor of Chemistry at Florida A&M University before joining ECSU in 2007. Currently, ongoing research is being conducted in exploring magnetic properties of graphene, carbon nanotubes and diamond and the role of magnetic fields and polarized spins on different length scales for organizing these carbonaceous allotropes. In July 2000, a ferromagnetic mechanism of carbon nanotube nucleation and growth was formulated and discovered. On the basis of this ferromagnetic mechanism of carbon nanotube nucleation and growth, the first proper and correct physical and chemical bases for ferromagnetism in carbon were proposed and discovered in July 2000 in terms of defective, disordered, strained, stressed and distorted carbon bonds during the bond rearrangements with the possibility of intrinsic and extrinsic magnetic synchronization and organization of the bonding dynamics to form the carbon nanotube. It was further realized that much stronger magnetic field environments shift and rotate the molecular orbitals inside the atoms for rehybridization of the atomic

orbitals from sp^2 for sp^3 diamond formation. Nucleation of diamond in the open atmosphere under strong external magnetization and iron catalyst was subsequently demonstrated in 2002. Free standing graphene was predicted and published to form at very high temperatures in electric arc and laser plasmas in 2003.

My research interest concerns the mechanisms of graphene, carbon nanotube and diamond nucleations and growths. I have ongoing research in developing prior magnetic models for the formations of these carbonaceous allotropes. Catalytic chemical vapor deposition of carbon in strong magnetic environments has been done to determine that weak magnetic field dynamics on nanoscales favor carbon nanotube condensation and deposition whereas diamond forms in very strong magnetic fields with sub-nano-length scale magnetic dynamics for shifting the hybridization of carbon from sp^2 to sp^3 network bonding. Dynamic magnetic fields over larger scales than nanoscale into the micron or larger length scales favor the formation of graphene, graphite and filamentous carbon. Recently, experimental confirmations of these magnetic selective formations of carbon allotropes have been explored by use of microwave radiation to select diamond formation and suppress graphitization, RF radiation to organize carbon nanotube formation, RF radiation to select graphene formation, and microwave radiation to suppress multilayer graphene for single layer graphene formation.

Eric Akers, Ph.D.
Computer Science



Dr. Eric Akers is an Assistant Professor in the Mathematics and Computer Science Department. He holds a Ph.D. in computer science from the University of Kansas. Dr. Akers' research area is robotics and computer vision and his dissertation was titled "Autonomous mobile robot localization in a large-scale environment using only a camera." Through the CReSIS Project he has nine published articles on autonomous polar robotics that are listed in the included vita and performed experiments and data collection in both Greenland and Antarctica. Dr. Akers is a member of the Advancing Robotics Technology for Societal Impact (ARTSI) Alliance.

Benjamin Branch, Ph.D.

Education



Dr. Benjamin Dewayne Branch holds a Ph.D. degree in Educational Research and Policy Analysis, from North Carolina State University (NCSU May 2009) with a concentration in Geographic Information Systems (GIS) and Geospatial Thinking. He received a M.S. degree in computer science (1996) and a B.S. degree in Industrial Engineering (1994) from North Carolina Agricultural and Technical State University. He has proven to be a strong advocate for undergraduate research and student achievement. During summer 2009 Dr. Branch not only mentored the team of undergraduates in research titled "The Carolina Bays: An Investigation of North America's Post Last-Glacial Maximum Environment (LGM)", but he traveled to Cape Town, South Africa where he conducted hands-on GIS workshops and remote sensing training for 400 local high school learners.

Adetayo Adedeji, Ph.D.

Chemistry and Physics



Dr. Adedeji is an Assistant Professor Department of Chemistry, Geology and Physics at Elizabeth City State University. He received a Ph.D. in Physics from Auburn University. His research interest include development of new precursors for inexpensive pyrolytic deposition of thin solid films, deposition and characterization of thin solid films for photovoltaic, opto-electronic and efficient energy consumption (smart films) applications. Dr. Adedeji is also interested in the development of contact metallization for Wide Band Gap (WBG) semiconductors that will operate in harsh environment (high temperature, high radiation, and reactive environment).

Dr. Adedeji received a B.S. Physics degree from University of Ilorin, Nigeria, M.S. Solid State Physics degree from Obafemi Awolowo University, Nigeria and a Diploma in Condensed Matter Physics from the International Center for Theoretical Physics (ICTP), Trieste, Italy.