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Elizabeth City State University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award degrees at the baccalaureate and master’s level. Contact SACSCOC at 1866 Southern Lane, Decatur, GA 30033-4097 or call 404-679-4501 for questions about the accreditation of ECSU.
ECSU has earned top-tier rankings in various college guides and national publications. Our notable achievements – #1 in Affordable Schools’ (2018) Top 25 Most Affordable Bachelor’s-Granting HBCUs in America – #2 in U.S. News and World Report’s (2016) Top Public Schools (Regional Colleges in the South) – serve as a prime example of how well ECSU can compete on a regional and national level.

To add to these accomplishments, ECSU ranked in the Top 20 HBCUs across the country by U.S. News and World Report’s (2017) Best Colleges and received recognition on the list of the 2017 Military Friendly® Schools and Best Bet for Vets. This brings deserved attention to ECSU’s keen focus on distinctive approaches to providing college access to a broad community of learners.

Research opportunities and flexible study options are limitless with the 28 undergraduate and four graduate degree programs offered at ECSU. Students come to discover through participation in honor societies, community events, creative endeavors, fraternity and sorority organizations, musical ensembles, CIAA sports, service learning adventures, clubs, civic engagement functions, and student life activities—enhancing their personal growth, leadership development, and overall ability to conquer any challenge that lies ahead. New technology-enhanced learning initiatives also give our students a competitive advantage in the 21st century marketplace.

We invite you to venture over to Elizabeth City, North Carolina’s “Harbor of Hospitality,” and see what it’s like to be a part of the Viking Community. You’ll find that our beautiful, 222 acre campus, dedicated faculty, staff and students, supportive alumni, and local partners make ECSU a great university.

With warm regards and Viking Pride,

Dr. Karrie G. Dixon
Chancellor
Dear Friends of ECSU,

Elizabeth City State University serves as the premier public institution in northeastern North Carolina and is deeply committed to enhancing the quality of life for residents in this region, state, and beyond. We are proud of the accomplishments in research and scholarly activities demonstrated by our faculty and students that are celebrated in this issue of The ECSU Research Magazine. Their work illustrates the innovative, interdisciplinary, and global spirit of inquiry that is preeminent at Elizabeth City State University. Projects featured in this issue range from developing our students through undergraduate research experiences to improving the quality of education in the rural school districts of northeastern North Carolina. These initiatives shine a light on the dynamic scientific, educational, and artistic activities that engage our students and faculty. The articles in this publication also symbolize the University’s commitment to support collaborative and innovative scholarly activities spanning multiple academic disciplines crossing national and international boundaries. We are extremely proud of the participation of local and regional high school teachers and students in several of the activities highlighted here. Please enjoy this issue as we progressively transform ourselves to be of greater relevance to a rapidly changing world.

Sincerely,

Farrah Jackson Ward, Ph.D.
Interim Provost and Vice Chancellor for Academic Affairs
FROM UNMANNED AIRCRAFT SYSTEMS TO MATERIALS RESEARCH

With only a glance to the sky you can see that ECSU is aiming high these days with students and instructors taking flight over northeastern North Carolina. Under the leadership of Dr. Kuldeep Rawat, ECSU’s Aviation Science Program is steadily expanding its reach by teaching our students to fly, how to navigate unmanned aircraft systems (UAS), and hosting a NASA K-12 Aerospace Academy on campus. As Dr. Rawat has stated, not only do our programs enhance workforce development efforts in the region, but they put us well on our way to becoming “the premier public institution for UAS Education, Applied Research, and Outreach”.

In this Spring edition of Beyond Research at ECSU, you will also read about the University’s continued work on the forefront of advancing STEM education and careers through our Summer Transportation Institute (STI) offered to local high school students as well as an innovative collaborative approach by ECSU faculty to support the development of rural teachers in North Carolina. With funding received from the Department of Defense, ECSU is acquiring instrumentation that will allow faculty and students to engage in basic research in the field of Materials Science. In keeping with our mission to serve our community, you will also learn about ECSU’s Mobile Library Instruction Kit that will be used to expand instructional outreach to the community.

Finally, we also feature an article on our annual Undergraduate Research Week program that is open each year to all members of the ECSU community. The undergraduate research program celebrates the ongoing research of both faculty and students and promotes an exciting and multi-disciplinary program with featured guest speakers.

With more than $4 million received in external funding during fiscal year 2018, ECSU is poised to aim higher with new research opportunities and new degree programs in Homeland Security and an online Masters in Education program.

Annmarie Delgado, MPA, MA, CRA
Director of Sponsored Programs
ELIZABETH CITY STATE UNIVERSITY
RESEARCH CAPABILITIES

RESEARCH CAPABILITIES

NATURAL SCIENCES, PHARMACY AND HEALTH PROFESSIONS: Marine and Coastal Research, Synthetic Biology, Cell & Molecular Biology (Animal & Plant), Microbiology, Parasitology, Biochemistry, Histology, Enzyme Purification, Antiviral Studies, Organic & Medicinal Chemistry, Micro and Nano-electronics for Harsh Environment Application, Kinesiology


HEALTH DISPARITIES: Mental health, obesity, suicide prevention, nutrition

EMERGENCY MANAGEMENT: Disaster Management, Disaster Recovery, Resiliency, Economic, Sustainability, Business Resiliency

FACILITIES

NASA AEROSPACE EDUCATION LABORATORY (AEL): Funded through grants received from NASA and the Golden LEAF Foundation, this lab houses multiple desktop flight simulator stations, renewable energy station (solar panels, wind turbines), hand-held data loggers, aircraft/rocket design stations, wind tunnel, flow-visualization tunnel, weather stations, 3D printers, mobile robotic stations (ground and aerial), and experimental setups to cover various course topics related to STEM education.

ECSU KHAN PLANETARIUM: The mission of the Khan Planetarium is to serve as a community outreach program and academic support unit that provides educational programming (PK-College level) to ECSU students and faculty, regional schools and the community at-large. The planetarium received funding from the Department of Defense for remodeling and installation of digital upgrades.

CENTER FOR REMOTE SENSING EDUCATION AND RESEARCH (CSERER): Develops and implements innovative and relevant education and research collaborators focused on ice sheet, coastal, ocean, and marine research. The CERER Laboratory consists of computer workstations on Macintosh, Linux, and Windows platforms; remote storage areas of polar data; servers including a local web server and file server. CERER operates a Sea Pro Model 210 research vessel with UHF Radio, Raytheon 300 GPS and Raytheon 365 Depth Finder. The vessel utilizes an Imagenex SportScan dual channel, high-resolution, digital sidescan sonar with a 23 meter tow cable. For land research, CERER utilizes a SIR-3000 Ground Penetrating Radar by Geophysical Survey Systems, Inc. The SIR-3000 is a small, lightweight system designed for single user operation and incorporates advanced signal processing and display capability for in-the-field 3D imaging.

SCIENCE GATEWAYS COMMUNITY INSTITUTE (SGCI): NSF-funded, online and in-person resources and services. The goal is to allow science & engineering communities to access shared data, software, computing services, instruments, educational materials, and other resources specific to their disciplines. Institute activities include a 4-week coding institute, hackathon, internships, and young professional program.

ECSU NASA MOBILE STEM LAB: The mobile lab offers regional schools the opportunity to present science to students who might not otherwise have resources for advanced technology. The lab consists of 10 stations designed to offer students the opportunity to experience cutting edge technology firsthand. The stations cover aviation, technology, robotics, and more.

MAJOR & SPECIALIZED INSTRUMENTATION: Digital Starlab Saturn Package 120V model with Dome, Aviation learning lab, Robotic Faro Arm, Q-Ball Experimental Quadcopter

ACCREDIATIONS

AACSB Association to Advance Collegiate Schools of Business

ABET Accreditation Board for Engineering and Technology

CAEP Council for the Accreditation of Educator Preparation

CSWE Council on Social Work Education

NASM National Association of Schools of Music

NCDPI North Carolina Department of Public Instruction

SACSCOC Southern Association of Colleges and Schools Commission on Colleges
CSU’s Aviation and Technology Research team is exploring ways in which unmanned aircraft systems (UAS) are increasingly being used in civilian applications. Known mostly for its use by the military, UAS are gaining traction in the areas of law enforcement, agriculture, wildlife resource management, marine science, infrastructure inspection, and construction. As a result, ECSU is embarking on an effort to position itself as a principal player in the field of UAS.

In late Spring 2018, the ECSU UAS research team packed up not one, not two, not even three….but seven different research and professional grade small UAS platforms. With batteries charged, laptops updated, and firmware verified, the team loaded up and went for a 20-minute drive to a predesignated test site, selected well away from any distractions and clear of any nearby airports and airspace.

The team, led by Dr. Kuldeep Rawat, Department Chair and Director of Aviation, started their long day by unloading the systems, assembling the aircraft, performing thorough and detailed preflight checks, aircraft and sensor calibrations, mission planning and uploads, launch and recovery, and meticulously downloading and safeguarding the data. Other team members included, Technology Professor, Dr. Ellis Lawrence, two undergraduate students, Weston Smith and Leon Davis, and UAS lab tech and FAA 107 certified UAV pilot, Aron Bechiom.

The team performed over 10 flights, spanning from...
10 minutes and up to 30 minutes each, depending on mission size, sensor type, aircraft type, winds aloft, and battery state. After all the flights were completed and data secured, the team packed everything away and loaded up for the 20-minute drive back to the UAS lab. The systems used during this field testing are SenseFly products: the eBeeAG (3 in various sensor configurations for training), an eBee RTK, the Sequoia (2 for acceptance flight and sensor training) and a multi-role, inspection industry grade multirotor called Albris.

The day after the flight was spent processing the raw data, spanning from a few hundred geo tagged pics to form a 3-dimensional mosaic image, including a thermal image map, a NDVI image from a very unique multispectral sensor, and an RTK (Real Time Kinematic) GPS mosaic image in 3-dimensional form.

ECSU has a current UAS inventory of 16 systems comprised of eight fixed wing drones and eight multirotor drones. The fixed wing fleet is composed of an Aeromapper EV2, the TBM RoboFlight-70, three SenseFly eBees, two SenseFly Sequoias, a SenseFly RTK for survey applications. The multirotor fleet consists of a DJI Matrice 600, two Yuneec Typhoon H, one DJI Phantom 3, two DJI Inspires, one SenseFly Albris quadcopter, and one experimental quadcopter (Q-Ball) for indoor aerial robotics experiments. Sensor payloads include RGB cameras, multispectral sensors, 4K video cameras, thermal sensor, thermal video camera, and LiDAR system. Current application areas are focused on Precision Agriculture, Infrastructure Inspection, 3-D Mapping, and Surveying.

The Department of Technology and its Aviation Science program at ECSU recognizes the necessity of North Carolina employers to educate present and potential employees regarding the use of UAS technology. ECSU’s goal is to be the premier public institution for UAS Education, Applied Research, and Outreach.
The Department of Defense (DoD) research instrumentation grant, received by Dr. A. Victor Adedeji, Associate Professor in the Department of Natural Sciences, will be used to acquire instruments that can be integrated with existing facilities in performing high quality and competitive materials research activities. These materials science research instrumentations will position faculty at ECSU to be more competitive in acquiring external research funding and establishing collaborative and interdisciplinary materials research. ECSU faculty will be able to provide basic research training and prepare students interested in materials research for graduate programs in the field and for lucrative high technology jobs.

Grant funds will be used to purchase the following instruments: (i) a Mask Aligner for photolithography, (ii) Upgraded Filmetric F10-RT-UVX for thermochromic transition studies and (iii) a Stylus Profiler for control of thickness uniformity and size profile.

These instruments will be used primarily for (a) research by faculty - to investigate the impact of sample sizes, shapes and edge terminations on the Semiconductor-Metal Transition (SMT) characteristics of thermochromic Vanadium Dioxide (VO2) thin films, (b) research education and training of undergraduate students and (c) outreach activities to local community college and high schools in the 21-county service area of ECSU.

Located on the 2nd floor of the Jenkins Science Center building is the photolithography room. The mask aligner (Suss, MJB4) is installed in a yellow room along with the contact profiler (KLA Tencor, P7). Both of these instruments cost more than $220,000. Pattern transfer for Microelectronic and Microelectromechanical systems (MEMS) device fabrication can be implemented in conjunction with other instruments including the UHV magnetron sputtering system and the Scanning Electron Microscope (SEM).

The Research Triangle Nanotechnology Network (RTNN) awarded Dr. Adedeji $1,000 through the Kickstarter program to make masks at North Carolina State University for the new mask aligner at ECSU.

The photoresist used in the pattern transfer process is sensitive to light spectrum in the ultraviolet to blue wavelength range, which is the reason for the yellow room. The images of the mask aligner and the contact profiler are shown below. The third instrument acquired with this grant (Filmetric F10-RT-UVX) has been acquired and is being set-up.
DEPARTMENT OF THE NAVY VISITS ECSU faculty and students met with Mr. Anthony Smith, Sr., Program Director and Manager for the Department of Navy’s HBCU/MI Program. Mr. Smith toured ECSU’s aviation lab and the Center for Remote Sensing Education and Research (CERSER) Lab. He spoke to students about internship opportunities available with the Navy. Mr. Smith also met with ECSU faculty and gave an overview of the agency’s HBCU /MI research programs. ECSU currently has received funding from the Office of Naval Research to conduct innovative materials research, leverage existing partnerships and resources. The long-term goal is to establish a Materials Research Center that will facilitate new partnerships with major research institutions.
Khan Planetarium Gets Big Digital Upgrade

Gazing at the stars through the prism of Elizabeth City State University’s Khan Planetarium is about to become a digital state-of-the-art experience. According to Dr. Gloria Payne, the Khan Planetarium is undergoing a scheduled upgrade this summer that will connect it to a worldwide digital system.

“The upgrade will enhance the educational and research opportunities for faculty and students in the region,” said Payne, chair of the ECSU Department of Natural Science, Pharmacy and Health Professions.

Funded by a grant from the U.S. Department of Defense, the upgrade will include projection, lighting, and sound systems that power the planetarium’s big screen, full-dome experience.

“This will be the only planetarium in the state of North Carolina with a Digistar 6 Projection System, and it will have built-in cloud capability that will allow us to connect with all Digistar systems worldwide,” she said.

Payne says upgrades to the planetarium will begin an exciting new era in planetary learning. Full dome digital technology has become the norm for planetariums worldwide, offering high resolution and multi-media image production.

Visitors to the Khan Planetarium will experience a panoramic view of the stars and universe. The new system will automatically connect to science data repositories and update itself with the latest data about the universe so that repeat visitors will always have something new to see and learn.

Since its inception in 1990, the Khan Planetarium has served over 175,000 visitors from the region and across the state. The facility’s star projector has taught a generation how to find the North Star, as well as constellations, and motions of planets in the heavens.

The remodeling of the planetarium began early May for installation of the digital upgrades.

A grand reopening ribbon cutting ceremony is expected in early fall 2018.

Payne says that during this period of upgrade, all planetarium shows are suspended as ECSU prepares for the next generation of learners.

This work was supported by the Department of the Navy, Office of Naval Research, for upgrading ECSU’s Planetarium through the “Digitalization of Planetarium Enhances Education and Research (DOPLEER), dated 31 August 2016, under award number W911NF-17-1-0489.
Over the past two summers, the collaboration between the Department of Mathematics and Computer Science and the North Carolina Mathematics and Science Education Network (NC-MSEN) Pre-College Program at Elizabeth City State University (ECSU) has worked together to provide summer STEM enrichment opportunities for 47 middle school students.

The NC-MSEN Program and Math/Computer Science Department received an award from the Federal Highway Administration (FHWA) and the North Carolina Department of Transportation (NCDOT) to be a host site for a Summer Transportation Institute (STI). The STI is a two to four-week intensive program to expose middle and high school students to STEM careers in the area of transportation. STI participants are exposed to all modes of transportation: air, land, water, space, and safety, and careers associated with each area. Each area of transportation is covered by guest presenters, professionals, and field trips that allow the participants to meet transportation related professionals using STEM skills in their everyday work. This is an opportunity for the participants to understand math and science are not courses they have to take, but rather skills they need to possess. The STI emphasizes that STEM skills are vital for many of the career pathways our students are interested in pursuing. Even for participants whose initial interest seems independent of STEM, it is important for them to understand STEM skills remain important for any career choice they make. ECSU has been a host site for STI-High School program since 2000 under the direction of Dr. Ellis Lawrence in the Department of Technology. Mr. Milton Bond, MSEN Director, and Professor Antonio Rook, Faculty Math/CS Department, wanted to provide a similar STI experience to a different group of participants. They both believe summer enrichment for students is vital to the growth, development, and preparation for the children in northeastern North Carolina. Bond and Rook are each ECSU Alums and grew up in northeastern North Carolina and sought to lead such a program. Both were once middle school teachers, so they wanted to focus on an age group they have experience and passion to work with.

In 2016, they were awarded their first STI-Middle School Program. ECSU’s program invited 26 students from Pasquotank, Gates, Perquimans, Edenton, Camden, and Wayne counties to participate in a three week intensive non-residential program. Participants took Math and Computer Programming courses (Python). They also had Career Exploration class, where they were exposed to different STEM/Transportation careers and competed in a bridge building competition in the Project Design course. STI visited several locations in North Carolina, including (Port Authority, Wave Transit Bus and Trolley Ride), Wilmington, NC; Center for Homeland Security, Fayetteville State University, Transportation Museum.

Professor Antonio Rook
Fayetteville, NC; NASCAR Hall of Fame, CSX Intermodal Terminal, Charlotte, NC; NC Museum of Transportation, Spencer, NC, as well as several other sites.

In 2017, they were awarded for a second year. STI was extended to four-weeks and provided 21 new participants from local counties and other areas in North Carolina (Raleigh and Greensboro) and the East Coast, including Virginia and Maryland, the summer enrichment opportunity. STI planned to create a new experience for the new participants to keep a fresh outlook on the program moving forward. They introduced a new design project (SeaPerch (Underwater Remote Operated Vehicle (ROV)), entrepreneurship project, and new trip destinations. ECSU is the only STI host site with both a high and middle school program and the only middle school STI program in North Carolina. Our STI-Middle School program is one of 15 middle school STIs in the United States.

A typical day of STI includes instructional courses (Math, STEM, Programming, or Entrepreneurship), workshops to improve soft skills, Career Exploration, and guest STEM/Transportation professionals. STI participants are also required to complete a group project (Bridge Building, Underwater ROV) to apply the STEM skills they have learned in courses in a tactile learning environment. Middle school is a great time to introduce students to the many relatable methods of math and science beyond what a local school district may have the resources to provide. STI participants have traveled all over North Carolina and to Virginia to be exposed to transportation careers and experiences. Participants traveled on city transit systems (bus/trolley/monorail) to Wilmington and Charlotte, NC.
Ignite Next Generation of New Teachers, A Kellogg Funded Project, Supporting development of Rural Teachers in North Carolina

By Dr. Gwen Williams

Working with rural teachers and schools at a grassroots level and seeing the needs up close and personal sparked a passion for Dr. Gwendolyn Williams as demonstrated by her longstanding work in developing and working with teachers. Her research has focused on cultivating teacher leadership. However, the realities and challenges of preparing teachers for rural communities caused her inner fire to ignite and led to the development of a unique, imaginative approach to educating teachers in northeastern North Carolina. Under the dynamic leadership of Distinguished Endowed Professor, Dr. Gwendolyn Williams, the Elizabeth City State University (ECSU) Teacher Education Department has committed to supporting the change that is needed to move beyond the teacher shortage crises plaguing the entire country. North Carolina is one of the states hardest hit by teacher shortages and, within North Carolina, the rural northeastern sector has faced the greatest challenge.

IGNITE: the Next Generation of New Teachers is the brain child of a synergistic team of ECSU professors and community partners led by Dr. Williams and charged with the task of giving birth to a new version of teacher education—the first teacher residency at Elizabeth City State University. It is designed with culturally relevant pedagogy, hands-on-learning, innovative pedagogical strategies and developmentally appropriate teaching practices. Dr. Geraldine Hill, Dr. Jennifer Brown, Dr. Sandra Copeland, Dr. Nicole Austin, and Dr. Timothy Goodale worked tirelessly in a multidisciplinary fashion of diverse skill sets with Northeast Academy of Aerospace and Advanced Technologies (NEAAAT); Halifax County Public Schools (HCPS); Halifax Community College (HCC); and the College of Albemarle (COA) to conceive of a new model of a teacher residency that would work in this area and that had the potential to be duplicated in rural districts around the country.

The WK Kellogg Foundation awarded a $300,000 planning grant that enabled Dr. Williams and the collaborative team to launch IGNITE: The Next Generation of New Teachers in June 2017. The grant is designed to increase both the quantity and quality of new teachers available to teach in public schools in rural northeastern North Carolina.

Over the 2017-2018 academic year, IGNITE provided a path for 9 students with an education associate degree to pursue a bachelor’s degree so that they are well on their way to becoming full-time classroom teachers. Their journey so far has had them engaged in distance learning classrooms where they have benefited from the expertise of ECSU faculty. They have participated in an ECSU based Reading and Writing Institute where classroom and national literacy experts came from diverse locales to work with IGNITE Preservice and mentor teachers. NEAAAT provided training in project based-learning (PBL) and will prepare PBL training videos over the next few months. NEAAAT videos will be integrated across all content in all IGNITE courses.

The planning grant supports the development of professional development schools in Halifax County and Northampton County School districts; integrates culturally relevant pedagogy in classrooms; establishes a mentoring program for cooperative teachers and harnesses project based-learning principles within and across content.

IGNITE Preservice Teacher, Ollie Gibbs, empowered by her college project based-learning classroom...
experience, transformed her lifelong passion for working with girls into a high-caliber research project that she introduced to the entire ECSU faculty, staff and students during the Undergraduate Research Week. *Rose Petals: A Model for Promoting Self Esteem Among Rural Pre-adolescent Girls of Color Through the Lens of “Just a TA.”* Faculty and community representatives recommended her presentation as an introduction to all incoming preservice teachers.

Randy Artis, another IGNITE Preservice Teacher, introduced internationally renowned, educational thought leader, Dr. Lisa Delpit at the keynote address of her presentation for the *Harnessing the Power of Scholarly Dialogue E.V. Wilkins Distinguished Endowed Chair Lecture Series.* Faculty and students from all over campus attended the event. Dr. Delpit’s presentation was entitled, *The Stories We Tell: Transforming Narratives about “Other People’s Children.”*

Each IGNITE student is in the process of designing and implementing an action research project based on his or her personal interests and the needs of the children they serve. Halifax student, Marialena Valencia, a first generation college student, was passionate about empowering her daughter and seven nieces with the attitudes and skills that will foster a deep commitment to learning and the pursuit of higher education. Her project will explore best practices related to developing a love of learning and tenacity or “grit” the ability to keep striving when life gets tough. IGNITE student and paraprofessional Beverly Rooks was moved deeply by an autistic child in her classroom. Her action research project will examine the best practice related to strategies that can help her student master phonemic awareness and phonics. All these Ignite teachers in the ECSU residency are inspired and ready to continue on the path to become extraordinary teachers.
ECSU’s G.R. Little Library was awarded a $39,377 grant during the 2017-18 academic year to create a Mobile Library Instruction Kit to serve the Elizabeth City State University community and the River City Community Development Corporation River City Youthbuild (RCYB). This program was supported by grant funds from the Institute of Museum and Library Services under the provisions of the federal Library Services and Technology Act (LSTA) as administered by the State Library of North Carolina, a division of the Department of Natural and Cultural Resources.

The LSTA grant enabled the staff to acquire the technology to create the Mobile Library Instruction Kit to promote library services (including a “Pop-Up Library”) throughout the campus, and to provide workshops to the larger Elizabeth City community. The kit consists of a set of thirty laptops with projection tools needed to facilitate instruction sessions to a larger group of students in any location. Staff also offered various computer training sessions with its partner, River City Youthbuild.

The community partnership with River City YouthBuild, led by Information Literacy Librarian, Anthony Holloway has been successful and goes beyond educating young people about library services. The grant allowed ECSU to partner with River City YouthBuild to help its participants learn skills to assist them in a number of areas such as public speaking, applying to college, healthy lifestyle, and more.

Being able to provide these activities is key to lifelong learning opportunities for university students and our community partner River City YouthBuild

River City YouthBuild is a program designed to give economically disadvantaged youth in the community the employment skills through training and work. The classes for River City YouthBuild took place for two hours, once a month, and alternated between the River City facility in Elizabeth City, and the ECSU campus.

Librarian, Anthony Holloway, asked 2017-2018 RCYB Policy Council President, LaDreema Melvin, what she got out of the community partnership. She stated, "The partnership was very helpful, and it prepared me for the future, as well as enhanced my ability to be confident in my public speaking skills."

Library Director, Dr. Juanita Midgette-Spence stated, "I am very excited about the grant and the benefit to library users by facilitating instructional outreach and making the information accessible where the users are. Being able to provide these activities is key to lifelong learning opportunities for university students and our community partner River City Youthbuild."

G.R. Little Library received one of the 39 competitive grants for the fiscal year 2017-2018 awarded to North Carolina libraries. The LSTA grant program funds library projects across the state that advance literacy and lifelong learning, expand access to library resources and expertise, promote partnerships and collaboration, and digitize materials essential to the cultural heritage of North Carolina.

For more information about North Carolina’s LSTA program visit the State Library of North Carolina’s LSTA web page at http://statelibrary.ncdcr.gov/ld/resources/lsta-grants or contact the State Library’s Federal Programs Consultant at 919-807-7423.
ECSU Partners with NASA to Establish a Regional K-12 Focused Aerospace Academy

In 2015, Elizabeth City State University (ECSU) was designated as one of the nine K-12 Aerospace Academy sites by NASA to implement a comprehensive K-12 Aerospace Academy program. The academy exposes students, especially minorities from rural counties surrounding ECSU, to science, technology, engineering, and mathematics (STEM) learning. Additional support for the site came from the Golden LEAF Foundation and the Burroughs Wellcome Fund grants.

Dr. Kuldeep Rawat, Department Chair of Technology and Director of Aviation at ECSU, serves as the Principal Investigator and Site Director on the project.

The program team developed curriculum enhancement activities by adopting a well-established NASA STEM curriculum with problem-based learning at its core and integrated 3D printing technology, sensor-based measurement systems, and Unmanned Aerial Vehicle (UAV) design activities to enhance authentic and experiential learning experiences. The curriculum supports the Next Generation Science Standards and contains a strong emphasis on math and science literacy for 21st century learners.

Dr. Rawat highlighted that the STEM jobs, especially in the field of engineering and technology, are expected to grow nearly twice as fast as other fields by 2020. “An increasing number of jobs at all levels require knowledge of mathematics and science. Hence, rigor in math and science at early age is crucial to the future success of our young people.”

“The program activities are designed to increase interest in STEM fields and improve college readiness and career exposure through aerospace/aviation-themed hands-on activities,” said Rawat.

During the second year of the project, 855 students participated in the program. Over 85% of student participants came from the target area of the 21-county region of northeastern North Carolina. The participants comprised of 46.67% Male (399) and 53.33% Female (456) across K to 12th grade levels. Student activities were delivered through Friday Academy, Saturday Academy and Summer Academies with students participating in a total of thirty-six (36) to forty (40) hours of hands-on experience.

Mr. Orestes Gooden, an Assistant Professor in the Department of Technology and project coordinator, indicated that learning activities integrated modern educational technology tools and inquiry-based learning to reinforce science and mathematical concepts required to enter STEM degrees and eventual careers, especially high-demand aerospace and aviation fields.

“We supplement classroom instruction with exposure to hands-on experiments, engineering design challenges, virtual simulations, guest speakers, and field trips that exposed the students to a wide variety of topics and experiences in STEM.”

ECSU’s NASA Aerospace Academy program has established partnerships with school districts, state agencies, private foundations, and other outreach/community engagement programs to maximize the program impact. The program expects to contribute strengthening the STEM pipeline and seeks opportunities to create pathways leading students to post-secondary degrees, and, ultimately, to life-long, sustainable careers for the students in northeastern North Carolina.

Dr. Kuldeep Rawat
The Office of Undergraduate Research at ECSU was established in fall 2016 with Dr. Margaret Young serving as the Director. The Office aims to serve as a liaison to the UNC System and to CUR (Council for Undergraduate Research); collect, store and disseminate all information regarding undergraduate research activities (including grants and conferences); and coordinate all activities of ECSU’s Undergraduate Research Week. This event is held the 2nd week of each April which is declared nationally as Undergraduate Research Week (https://www.cur.org/).

Two faculty and staff from each department and division are appointed by the Provost’s Office to serve on the Undergraduate Research Week Committee. Dr. Farrah Ward, Interim Provost and Vice Chancellor for Academic Affairs, serves as the co-Chair with Dr. Young as the Chair. The other members of the Committee for 2017 – 2018 included Drs. Victor, Adedeji, Kimberley Bazemore, Malcolm Dcosta (webmaster), Robert Freeland, James Goar, Tim Goodale, Gary Harmon, Kenneth E. Jones, Krishna Kulkarni, Bijandra Kumar, Peter Loebach, Adam McKee, Lloyd Mitchell, Walter Swan, Kungpo Tao, Jingbin Wang, Mr. Orestes Gooden, Clarence Goss (program graphic designs), and Ms. Annemarie Delgado and Kenya Hinton. The Committee also coordinates the event with the Offices of the Chancellor, Academic Affairs, Sponsored Programs, Student Affairs, University Advancement, Business and Finance, Communications and Marketing, Information Technology, and Facilities Management.

Last year’s ECSU Undergraduate Research Week was held April 9 - 13, 2018. Planning for the weeklong events began in October of 2017. The theme for this past year was “Daring to Inquire and Inspire”. Each day of the week had presentations centered on specific departments and divisions. Monday (April 9th) was declared as Education Day; Tuesday (April 10th as STEM Day); Wednesday (April 11th) as Business, Economics, Kinesiology and Public Health Day; and Thursday (April 12th) as Fine Arts and Humanities Day.

Special guest speakers on Monday, April 9th included Mr. Vann Newkirk II, staff writer of the Atlantic, who spoke on the “The Hidden Outcomes of Economic Injustice” as part of the Welcome Ceremony.

Mr. Anthony Smith from the Department of the Navy also visited on Monday and discussed career and funding opportunities with ECSU. This event was planned with the Office of Sponsored Programs.

The Plenary Session keynote speaker was Dr. Lisa Clough, Head of Ocean Sciences at NSF who gave a talk on “Ocean Observing: The Past, The Present, The Future?” . This event was also coordinated with the Chamber of Commerce of Elizabeth City.

On Wednesday, April 11th, Dr. Lisa Delpit, a distinguished author and Professor of Education at Southern University, gave a talk on “Other People’s Children: Cultural Conflict in the Classroom”.

Dr. Margaret Young
Friday, April 13th 2018 was declared as Dr. Darnell Johnson’s Day in honor of a former professor and Head of Mathematics and Computer Sciences at ECSU, who was part of the first committee that planned undergraduate research week activities at ECSU in 2005. Activities included a university-wide poster session (24 ECSU’s undergrads participated as well as 3 NEAAAT Academy high school students); Planetarium shows (led by Dr. Sulatana Khan); and science and humanities outreach sessions led by ECSU’s faculty (Drs. Gary Harmon, Roberto Suau, Victor Adedeji, Althea Bluett, Anthony Emekalam, James Goar, Adam McKee, Walter Iriarte, Orestes Gooden) and students. Over 400 middle and high school students and teachers attended from the NEAAAT academy.

At noon, a presentation of Dr. Darnell Johnson’s life was given with special invitees including his wife, Dr. Stephanie Johnson, and other family members, in attendance.

The week culminated in a Poetry session at Page after Page Bookstore in Downtown Elizabeth City. All activities can be viewed at: http://www.ecsu.edu/academics/undergraduateresearch/undergraduateresearchweek.html.