

# DORED

## Points of Pride Spring 2018



1601 East Market St. Greensboro, NC 27411 Fort IRC Building 336.334.7995 [NCAT.edu/research](http://NCAT.edu/research) [NCATresearch.org](http://NCATresearch.org)

### N.C. A&T Celebrates Successful Undergraduate Research Symposium

A&T's Alumni-Foundation Event Center was the setting for yet another successful undergraduate research symposium. Each fall and spring, undergraduate students who are pursuing research, accompanied by their faculty mentors, gather for a poster competition, oral presentations, keynote address and research-oriented workshops. Last fall's symposium also featured a real-time research survey exercise to measure student screen time habits over a 24-hour period.



Around 100 students attended the event, representing research initiatives across all N.C. A&T Colleges. Emeka Anazia, N.C. A&T alumnus, presented the keynote address, inspiring students to achieve academic success through his program *Acing the Undergrad*. "Our fall event sets the stage for the year's research," explains Lando Little, the event's coordinator. "It is a great indicator of student research involvement for the academic year, and we are pleased to see our highest participation levels in the history of the symposium."

### BioSolar, Inc. Extends Research Program with N.C. A&T

BioSolar, Inc. has extended the funding of a sponsored research program at N.C. A&T to support the next phase of its silicon anode material technology development. BioSolar's research program with N.C. A&T began in September 2016 with a focus on low cost and high performance materials for next generation lithium-ion batteries. Dr. Sung-Jin Cho, assistant professor in the Department of Nanoengineering is internationally recognized in the field of lithium-ion battery development, will continue to be the lead investigator of the sponsored research. Dr. Cho also serves as Director of the Nano Energy Laboratory, a role he has held since August 2014. This BioSolar extension funds the research program for another 12 months, until September 2018.



The Center for Energy Research and Technology (CERT) at N.C. A&T was awarded a \$300K National Science Foundation grant to create a pathway to the STEM workforce for minorities and women. The NSF funding is for a CERT-created program called EMERGE in STEM, which stands for Education for Minorities to Effectively Raise Graduation and Employment in STEM. It offers STEM-related career exposure to Guilford County students in grades 4-12.

DORED manages N.C. A&T's research enterprise. We provide services to faculty, postdoctoral research associates, student researchers, current and potential research partners, funding agencies and economic development agencies. **DORED** serves the university and its Research efforts through research services and project management, compliance and ethics guidelines, aiding in the submission of research proposals, handling financial and regulatory administration of all contracts and grants awarded to N.C. A&T, management of the university's technology transfer and commercialization programs and promoting opportunities for undergraduates to conduct research.

### By the Numbers

**\$62.5M**  
in Sponsored Research  
**R2**  
Research Classification  
**#3**  
in Sponsored Research  
in UNC System

N.C. A&T took in a school-record \$62.5 million in research contracts and grants in 2016-17.

External research funding at North Carolina A&T has more than tripled over the past 16 years, growing from \$18.4 million in 2001 to \$62.5 million in 2017.

## N.C. A&T Receives \$3 Million NSF Grant to Study Food Aid Using Big Data Analytics

Principal Investigator Dr. Lauren Davis and her cross-disciplinary team have secured a five-year, \$3 million grant through the National Science Foundation's Research Traineeship (NRT) Program. The NRT grant will support food insecurity research in a project called Improving Strategies for Hunger Relief and Food Security Using Computational Data Science. In addition to Dr. Davis, the research grant involves four additional Co-Principal Investigators, Dr. Seong-Tae Kim, Dr. Kenrett Jefferson-Moore, Dr. Steven Jiang and Dr. Albert Esterline. The team represents talent and expertise across three N.C. A&T Colleges: the College of Engineering, the College of Science and Technology, and the College of Agriculture and Environmental Sciences.



## N.C. A&T's Kuila Secures \$2 Million UNC ROI Grant to Convert Bio-Waste to Gasoline

N.C. A&T's Dr. Debasish Kuila has secured a \$2 million UNC ROI Grant to convert bio-waste to gasoline. The primary goal of Kuila's and his interdisciplinary team members' three-year research project is to convert animal and food wastes to gasoline, lowering the environmental footprint and costs of the agricultural enterprise, while simultaneously generating a fuel of immediate value to the farmer. The project will demonstrate proof-of-concept for a highly efficient, modular gas-to-liquids (M-GTL) technology that uses solar energy to convert biogas obtained from animal and food-wastes into carbon-neutral gasoline. The resulting M-GTL prototype will be used to attract robust private and public funding for scale-up and commercialization.



## N.C. A&T's Ongerer Awarded \$1.42 Million NIH Grant to Study Kidney Disease

Dr. Elimelda Moige Ongerer, associate professor in the Department of Biology, has been awarded a \$1.42 million grant from the National Institute of General Medicine (NIGMS) to investigate acute kidney disease initiated by ischemia/reperfusion (reduced blood flow to the kidneys and subsequent oxygen deficiency).

Acute kidney disease costs tens-of-billions of dollars to treat each year, and is associated with extremely high mortality rates because there are no effective therapies. Dr. Ongerer's work will focus on determining how meprin metalloproteases (meprins are enzymes, abundant in proximal kidney tubules) influence ischemia/reperfusion-induced kidney injury via modulation of inflammation and fibrosis.

Previous studies by Dr. Ongerer's group and other N.C. A&T investigators utilizing meprin knockout mice have shown that meprins enhance kidney damage associated with ischemia/reperfusion, however, the underlying cellular and molecular mechanisms are not fully understood. This research will advance understanding of kidney disease and the development of effective therapies.

This individual research grant was awarded under the Support of Competitive Research (SCORE) Program, a research capacity-building program that seeks to increase the research competitiveness of faculty at under-resourced institutions.



## Regional Diabetes Research Symposium March 16, 2018

A&T Life Sciences faculty, as well as faculty interested in translational diabetes research, are planning to attend North Carolina's Regional Diabetes Research Symposium, which is being hosted by N.C. A&T in Collaboration with Duke University, UNC-Chapel Hill and Wake Forest University. The event will be taking place on March 16th at the Union Square Campus at 124 East Gate City Boulevard in Greensboro, convening researchers from across the translational spectrum who are interested in developing cross-institutional projects in diabetes, obesity and metabolism. The all-day event features presentations, workshops, networking opportunities, information about pilot research award opportunities and the core research initiatives which are being led by this regional consortium.

