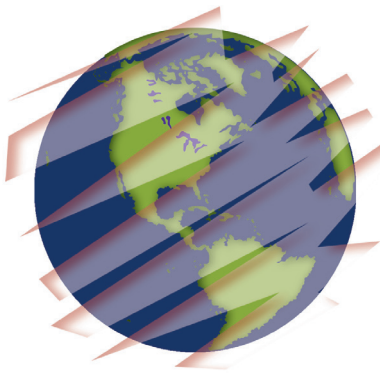


# ENVIRONNEWS

## Waste Management Institute

UNDER THE LEADERSHIP OF THE COLLEGE OF AGRICULTURE AND ENVIRONMENTAL SCIENCES  
DR. MOHAMED AHMEDNA, DEAN



### INTERDISCIPLINARY ACADEMIC AFFILIATE UNITS

- ANIMAL SCIENCES
- AGRICULTURAL EDUCATION
- AGRICULTURAL ECONOMICS
- ARCHITECTURAL ENGINEERING
- BIOLOGY
- BIOLOGICAL ENGINEERING
- BUSINESS MANAGEMENT
- CHEMICAL ENGINEERING
- CHEMISTRY
- CIVIL ENGINEERING
- COMPUTER SCIENCE
- BUILT ENVIRONMENT
- EDUCATION
- ECONOMICS
- ELECTRICAL ENGINEERING
- HISTORY
- FAMILY & CONSUMER SCIENCE
- INDUSTRIAL SYSTEMS ENGINEERING
- JOURNALISM AND MASS COMMUNICATIONS
- LIBERAL STUDIES
- MATHEMATICS
- MECHANICAL ENGINEERING
- NATURAL RESOURCES
- NURSING
- POLITICAL SCIENCE
- PHYSICS
- PSYCHOLOGY
- SOCIOLOGY/SOCIAL WORK

### Inside...

Environmental Top Official	1
25 Years WMI	1
WMI Certificate Recipients	2
Career Paths	2
Outreach & Engagement	3
Earth Day	3
Guest Speakers	3
WMI Research	3
Sustainability Leadership	3
Waste Management Projects	4
Noteworthy	4



**Interdisciplinary Waste Management Institute**

**Dr. Godfrey Uzochukwu**  
DIRECTOR

**Academic Deans**

**Dr. Beryl McEwen**  
PROVOST

**Dr. Harold L. Martin Sr.**  
CHANCELLOR

### University of North Carolina System General Administration (UNC-GA) Mandate

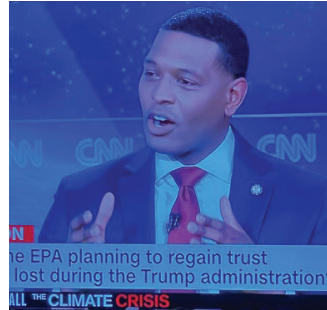
*"...This office has reviewed your request to establish a Waste Management Institute. We conclude that the proposed unit, as described, will be an academic support unit with more limited research and public service functions...Establishment of a Waste Management Institute is hereby approved..."*

- C. D. Spangler Jr., President

### N.C. A&T's Chancellor's Mandate

*"...Coordination of waste management and environmental efforts (instruction, research and outreach of the university which now exist in individual departments; implementation of certificate programs in waste management...advisement of students who are interested in environmental and waste management careers; and clearing house for the university's environmental/waste management activities..."*

- Edward B. Fort, Chancellor



Courtesy CNN TV

### Top Environmental Official of the United States

*"...Dr. Uzo ... you made me study, you made me focus, you gave me advice, you held me to a level of excellence. You, my friend, helped me get here! Thank you so much. Aggie Pride..."*

- Michael S. Regan

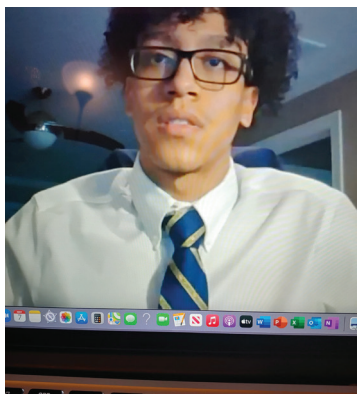
Michael S. Regan was confirmed by the United States Senate to become the first African American to lead the Environmental Protection Agency (EPA). The mission of the EPA is to protect human health and environment. In addition he served as Secretary of North Carolina Department of Environmental Quality (NC DEQ) prior to his appointment to lead EPA. Regan earned his bachelor's degree in Earth and Environmental Science and a Waste Management Certificate from N.C. A&T in 1998. He worked with Professor Godfrey Uzochukwu (Uzo), Ph.D. for three and half years to set up the infrastructure of WMI. Uzo served as his academic advisor and mentor. Regan was held to a high level of excellence and ethics. "...He really pushed me..." said Regan. He is passionate about environmental protection, waste management, environmental justice and equity and how these impact minority neighborhoods and quality of life.



### 25 Years of the Interdisciplinary Waste Management Institute at N.C. A&T.

WMI celebrated 25 Years of Interdisciplinary Waste Management Institute on Oct. 27, 2020. WMI has helped raised awareness about environmental issues and sustainability. "...Founded on the belief that waste management is the key to innovation, creativity and productivity, WMI is responsible for coordination of environmental and waste management instruction, research, outreach, internship, faculty development, and student development within various departments at N.C. A&T..." said Senior Professor Godfrey Uzochukwu, Ph.D. who has been serving as director since 1995. "...By working together across divides, WMI faculty and student affiliates are demanding new level of leadership to tackle environmental crises and sustainability before it is too late..." said Uzochukwu. He was honored with a plaque presented to him by Mohamed Ahmedna Ph.D., Dean on behalf of the College of Agriculture and Environmental Sciences (CAES) for his exemplary leadership.

# Interdisciplinary Waste Management Certificate Ceremony (2020/21)



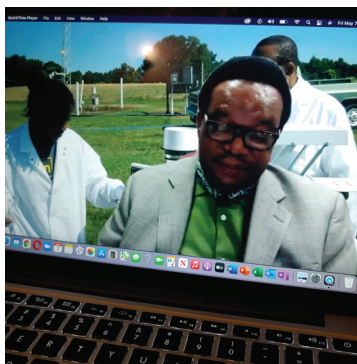
Q. Martinez



M. Johnson and mom



V. Tanoh



Dr. Uzo

Graduating seniors (B.A./B.S.) and graduate students (M.S./Ph.D.) received Waste Management Certificates at a special ceremony on Zoom because of COVID 19. The students completed their degree and certificate requirements. Speakers were **Dr. Tonya Smith-Jackson**, senior vice provost for academic affairs, **Dr. Mohamed Ahmedna**, dean of CAES; **Dr. Robin Cogger**, dean, College of Engineering and **Dr. Godfrey Uzochukwu**, director, Interdisciplinary Waste Management Institute. The Waste Management Certificate highlights the training of students in environmental sustainability, security and waste management issues and signals to employers that N.C. A&T graduates are ready to broadly advance waste management and sustainability in their fields. The certificate adds value to the undergraduate and graduate training at N.C. A&T.

## Undergraduate WMI Certificate Recipients

Mohsin Hussain Alnajrani	Mechanical Engineering
L'Quaan Cevante Atkinson	Civil Engineering
Isaiah Benjamin Barco	Environmental Studies
Amir John Isaac Barnett	Biological Engineering
Marvin Burke	Civil Engineering
Derrick Allen Cotton	Agribusiness
Gerald M. Carter	Civil Engineering
Maya Nicole Cohen	Sust. Land and Food Sys.
Sherrri Denise Davis	Biological Engineering
Rickie J. Freeman	Mechanical Engineering
Rodolfo Garcia Jr.	Civil Engineering
Sierra Generette	Environmental Studies
Tenea Michael Hamilton	Chemical Engineering
Warren Samuel de Sitter Hill	Environmental Studies
Chandyn Tranese Hogan	Speech Language Path.
Maya Lynnette Johnson	Environmental Studies
Rasheed Jones	Electrical Engineering
Quentin Isaiah Martinez	Environmental Studies
Frank William Mike Jr.	Civil Engineering
Michael T. Parker	Civil Engineering
Wendyam Annette Quedraogo	Architectural Engineering
Kobe Purdie	Environmental Studies
Dominae Antwan Smith	Environmental Studies
Marquan Rashadd Suggs	Landscape Architecture
Sean Workman	Environmental Studies

## Advanced WMI Certificate Recipients

Omodesola Comfort Ajayi	Chemical Engineering
Nagla Hashim Elruffai	Chemical Engineering
Mosarrar Samiha Kabir	Environmental Engineering
Victoria Gyameraah Tanoh	Ag. Business & Appl. Economics
Grace Emmanuelle Tarpeh	Ag. Business & Food Mgmt.

## Career Paths for Graduates Who Received WMI Certificates

### Major and Career Path

- Animal Science**  
Environmental Animal Health and Specialist
- Biology**  
Environmental Biology
- Business**  
Environmental Business and Supply Chain
- Chemistry**  
Environmental Chemistry
- Communication**  
Environmental Communication
- Construction Management**  
Construction Safety
- Criminal Justice**  
Environmental Crimes and Safety
- Economics**  
Environmental Economics and Supply Chain
- Education**  
Environmental Education and Justice
- Environmental Studies/Science**  
Environmental Scientists/Consultants/Specialists
- Engineering**  
Environmental Engineering
- Journalism**  
Environmental Journalism
- Landscape Architecture**  
Environmental Design/Visual Resource Specialist
- Mathematics**  
Environmental Mathematics/Statistics
- Nursing**  
Environmental Health/Nursing
- Occupational Safety and Health**  
Work Place Safety
- Other**  
Environmental Consultants
- Physics**  
Environmental Physics
- Political Science**  
Environmental Policy/Politics
- Psychology**  
Environmental Psychology and Justice
- Sociology**  
Environmental Sociology and Justice
- Social Work**  
Environmental Social Justice



## Public Service – Outreach and Engagement

### Environmental Security, Sustainability and Waste Management Workshop

Pre-College Workshop on Environmental Security, Sustainability and Waste Management was conducted on Zoom for high school students and teachers in June 2021. The theme of the workshop was “Environmental Security and Waste management” highlighting challenging environmental security, sustainability and waste management questions.

#### Earth Day Imperative (April 22, 2021)

*Hi Colleagues: It is great to know that Dr. Uzo's transdisciplinary passion and vision is the solid foundation for this event. Also, the Department is proud to recognize Dr. Bhowmik's, as a soil scientist and soil microbiologist, featured panelist role. The Department is honored to recognize both Dr. Uzo and Dr. Bhowmik for their significant contributions to this A&T University and Community event..."*

- Gregory Goins

**Panel discussions on Environmental Justice, Equity & Sustainability: Earth Day Imperatives** highlighted Earth Day celebration at N.C. A&T. Panelists included **Tracy Lloyd McCurdy**, J.D., executive director of Washington, D.C.-based Black Belt Justice Center; **Dr. Walter Hill**, dean of the College of Agriculture, Environment and Nutrition Sciences and Vice Provost for Academic Affairs, Land Grant, Community Engagement and Integrative/Sustainability Affairs at Tuskegee University; **Dr. Deidra Hodges**, associate professor of Electrical and Computer Engineering, University of Texas-El Paso; **Dr. Arnab Bhowmik**, assistant professor of Soil Science/Soil Microbiology, North Carolina A&T State University; **Kay Brandon**, MSW, chair, Solid Waste Management Commission, City of Greensboro, N.C. A two-time graduate of Howard, Kay Brandon is a retired public health social worker and an instructor in the School of Social Work, UNC Chapel Hill, and the Joint school of Social Work, North Carolina A&T State University and UNC Greensboro and **Michael Carter, Jr.**, a graduate of the North Carolina A&T College of Agriculture and Environmental Sciences, an 11th generation farmer, and the part of the fifth generation to run his family's century farm.

### Environmental and Waste Management Guest Speakers (Big Ideas and New Perspectives)

RAMBOLL  
Site Remediation  
ENVIRONMENTAL PROTECTION AGENCY  
Environmental Compliance and How all things are connected  
HACKLEY AND ASSOCIATES  
Ethics and leadership

## Sustainability Leadership at A&T

North Carolina Agricultural and Technical State University has a history of providing leadership in addressing sustainability issues such as infrastructure, energy and climate change, waste management, water usage, transportation and education through Colleges, Facilities Department, Budget Office, Division of Research and Economic Development, Campus Enterprise, Office of Strategic Planning and Institutional Effectiveness, University Farm and Interdisciplinary Waste Management Institute (WMI). These collaborations have made the university a major contributor to understanding sustainability on a global scale. The University has taken advantage of Higher Education Sustainability Bill (The Higher Education Opportunity Act-P.L. 110-315) signed by President George W. Bush in 2008. In March 2011, Chancellor Harold Martin Sr. launched a robust sustainability program and encouraged everyone to integrate sustainability into their daily operations.

## Interdisciplinary Graduate Level Environmental Certificate is Off and Running

The new Interdisciplinary Graduate Environmental Certificate Program (IECP) in *Environmental Engineering, Environmental Sciences, Environmental Justice and Environmental Health and Safety* provide tools for dealing with issues in the areas of infrastructure; air quality, water quality, and soil quality; protection of food systems; health and safety issues; risk assessment and social and environmental justice dynamics. The program is available to B.A. and B.S. graduates and graduating seniors. Certificate graduates will earn 15 credit hours which may be applied to a master's degree in that respective discipline. Email [uzo@ncat.edu](mailto:uzo@ncat.edu) for more information.

## Interdisciplinary Environmental and Waste Management Research

Development of effective environmental and waste management solutions requires converging approaches such as the integration of knowledge from air, water, energy, infrastructure, climate and education. Search for solutions must draw upon innovative ideas from different disciplines.



#### WATER AND AIR QUALITY

Manoj Jha, Ph.D.  
Arnab Bhowmik, Ph.D.  
Godfrey Uzochukwu, Ph.D.  
Niroj Aryal, Ph.D.  
Renzun Zhao, Ph.D.

#### WASTE MANAGEMENT

Renzun Zhao, Ph.D.  
Godfrey Uzochukwu, Ph.D.  
Arnab Bhowmik, Ph.D.  
Abolghasem Shahbazi, Ph.D.  
Niroj Aryal, Ph.D.

#### ENERGY AND CLIMATE

Abolghasem Shahbazi, Ph.D.  
Lijun Wang, Ph.D.  
Godfrey Uzochukwu, Ph.D.  
Omar Basha, Ph.D.  
Manoj Jha, Ph.D.  
Arnab Bhowmik, Ph.D.  
Solomon Bililign, Ph.D.  
Ademe Mekonnen, Ph.D.

#### EDUCATION AND INFRASTRUCTURE

Godfrey Uzochukwu, Ph.D.  
Leotis Parrish, Ph.D.  
George Robinson, Ph.D.  
Alesia Ferguson, Ph.D.



Beatrice Dingha, Ph.D. with Godfrey Uzochukwu, Ph.D. discussing environmental factors impacting the growth of hemp crop at N.C. &T Agricultural Research Station

## Environmental and Waste Management Research Projects

**Mapping the Soil Urban Lead Exposome in Greensboro, North Carolina**  
Obeng-Gyasi, Emmanuel  
Built Environment

**Research Initiation Award: Plant and Rhizosphere Processes that Prevent Groundwater Contamination from Metals and Nitrates**  
Aryal, Niroj  
Natural Resources

**Excellence in Research: Dynamics of Orographic Effects on Major Wildfires that Occurred in the Southwest U.S. Under Diverse Mesoscale Environments**  
Lin, Yuh Lang  
Physics

**Toxicity of Complex Aerosols from Combustion**  
Billiign, Solomon  
Physics

**Excellence in Research: Understanding Environmental Adaptation by Elucidating the Underlying Changes in Molecular Mechanisms Associated with Genetic Selection in Two-component Response Systems**  
Thomas, Misty  
Biology

**2020 International Conference on Resource Sustainability (icRS 2020)**  
Deng, Dongyang  
Built Environment

**Soil/Dust Ingestion for Children: A Modeling and Data Collection Approach Based on Regional and Sociodemographic Differences:**  
Alesia Ferguson  
Built Environment

**Building Immunoproteomics Research Capacity for Biomarker Discovery: Detection of Pathogenic Antigens In Swine Lung And Environmental Samples**  
Waterman, Jenora  
Biology

**Sustainable Agriculture and Environmental Stewardship for Small-scale Farms and Woodlands as Essential Family Economic Assets**  
Beckford, Fitzroy  
Cooperative Extension

**Excellence in Research: Manufacturing of Sustainable and Environment-Friendly Bio-Binder from Algae for Epoxy-Based Composite Materials**  
Zhang, Lifeng  
NanoEngineering

**Monitoring and Remediation of Mercury and Industrial Contaminants**  
Uzochukwu, Godfrey  
WMI

**An Integrated Approach to Control Foodborne Bacterial, Viral, and Mycotoxins in High Risk Foods Using Ultraviolet Technologies**  
Bansode, Rishipal  
Center of Excellence for Post Harvest Technologies

**Water Quality at the Edge-of-field and In-stream in the Lower Mississippi River Basin**  
Aryal, Niroj  
Natural Resources

**Thrust 5: Integrated Social, Economic and Environmental Impact to Support SFRLs**  
Liang, Chyi-Lyi  
Cooperative Extension

**Improving Fertility Applications for Sustainable Pest Management, Weed Management, and Soil Health**  
Bhowmik, Arnab  
Natural Resources

**Development of a Sustainable Cropping System for Industrial Hemp Production by Limited Resource Farmers**  
Dingha, Beatrice  
Natural Resources

**Enhanced Teaching and Learning of Ecological Engineering Science and Data Science using Hands-on and Project-based Learning Strategies**  
Aryal, Wang and Uzochukwu  
Natural Resources and WMI

**Pesticide Exposures for Communities in the Delta**  
Alesia Ferguson  
Built Environment

## WMI Noteworthy

- Awarded 2,284 WMI certificates for adding value to degree programs
- Offers the best interdisciplinary supporting courses
- Selected Interdisciplinary Model for N.C. A&T – Futures Goal II (*Created Interdisciplinary Energy and Environmental Systems Ph.D. (Renamed Science and Technology Ph.D.); Informed Interdisciplinary Leadership Studies Ph.D.; Inspired the creation of Interdisciplinary Computational Science and Engineering Ph.D.; Interdisciplinary master's, bachelor's and certificate programs*)
- Promotes Big Ideas of Sustainability – infrastructure, energy, climate, waste management, waster conservation, transportation and education
- Lead Institute for the Interdisciplinary Graduate Certificate Tracks in Environmental Engineering, Environmental Sciences, Environmental Justice and Environmental Health & Safety
- Awarded \$1.4 million to establish interdisciplinary WMI
- Awarded \$18 million NSF Inter-institutional (A&T, NCSU, UNC -CH and UT Austin) for saving water
- Campus-wide resource for faculty and students
- Works with 18 academic departments to tailor WMI core and over 360 courses offered by departments to follow an interdisciplinary waste management curriculum
- Facilitated top 2% in 2017 (No. 14 overall) and No. 4 in USA rankings (*UI Green Metric of World Universities*)
- N.C. A&T was ranked in the top 7% for five consecutive years 2013, 2014, 2015, 2016 and 2017)
- Selected No. 1 by the Environmental Careers Organization for innovative programming and diversity
- Recognized by the Greensboro Chamber of Commerce as an innovative environmental program
- Top 28 interdisciplinary institute/center in USA (2013 NCSE report - 360 were profiled)

North Carolina Agricultural and Technical State University (N.C.A&T) is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, master's and doctoral degrees. | N.C. A&T does not discriminate against any person on the basis of age, color, disability, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, veteran status, or any other basis protected by law. | N.C. A&T is an AA/EEO and ADA compliant institution.

**WMI Mission:** To enhance awareness and understanding of waste management issues and develop programs that protect the environment and improve the quality of life.

This newsletter is a publication of the Waste Management Institute of North Carolina Agricultural and Technical State University. It is intended to increase the awareness of teachers, students, industry, government and community groups about environmental, sustainability and Waste Management issues.

**From the Editorial Staff:**  
For more information about the Waste Management Institute call, fax or write Director, Waste Management Institute, 1601 East Market Street, North Carolina A&T State University, Greensboro, NC 27411  
**336-334-7030 • FAX 336-334-7399**  
**Email: uzo@ncat.edu**

We welcome creative ideas that are suitable for inclusion in the EnviroNews. Send a brief summary of your ideas to:  
**WMI, Carver Hall**  
**261 North Carolina A&T Greensboro, NC 27411**  
**PHONE: 336 334-7030**  
**Email: uzo@ncat.edu**

### Interdisciplinary WMI Faculty Affiliate

Uchenna Anele, Ph.D.	College of Agriculture and Environmental Sciences
Niroj Aryal, Ph.D.	College of Agriculture and Environmental Sciences
Michael Atkinson, Ph.D.	College of Engineering
Samuel Atkinson, Ph.D.	College of Engineering
Fafanyo Asiseh, Ph.D.	College of Business and Economics
Omar Basha, Ph.D.	College of Engineering
Kory Bennett, Ph.D.	College of Engineering
Arnab Bhowmik, Ph.D.	College of Agriculture and Environmental Sciences
Heather Collieran, Ph.D.	College of Agriculture and Environmental Sciences
Derome Dunn, Ph.D.	College of Engineering
Godfrey Ejimakor, Ph.D.	College of Agriculture and Environmental Sciences
Alesia Ferguson, Ph.D.	College of Science and Technology
Gregory Goins, Ph.D.	College of Agriculture and Environmental Sciences
Louis Jackai, Ph.D.	College of Agriculture and Environmental Sciences
Leotis Parrish, Ph.D.	College of Engineering
George Robinson, Ph.D.	College of Health and Human Sciences
Amy Schwartzott, Ph.D.	College of Arts, Humanities and Social Sciences
Godfrey Uzochukwu, Ph.D.	Interdisciplinary Waste Management Institute
Tobin N Walton, Ph.D.	College of Health and Human Sciences
Renzun Zhao, Ph.D.	College of Engineering
Gregory Meyerson, Ph.D.	College of Arts, Humanities and Social Sciences