

ENVIRONNEWS

Waste Management Institute

UNDER THE LEADERSHIP OF THE COLLEGE OF AGRICULTURE AND ENVIRONMENTAL SCIENCES - MOHAMED AHMEDNA, PH.D., DEAN



The Interdisciplinary Waste Management Institute (WMI) - enabling waste management sustainability education and environmental sciences at North Carolina Agricultural and Technical State University.

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

INTERDISCIPLINARY ACADEMIC AFFILIATE UNITS

- ANIMAL SCIENCES
- AGRICULTURAL EDUCATION
- AGRICULTURAL ECONOMICS
- ARCHITECTURAL ENGINEERING
- BIOLOGY
- BIOLOGICAL ENGINEERING
- BUSINESS MANAGEMENT
- CHEMICAL ENGINEERING
- CHEMISTRY
- CIVIL ENGINEERING
- COMPUTER SCIENCE
- CRIMINAL JUSTICE
- 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

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. '94 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, '95 Chancellor

N.C. A&T's Uzochukwu Named EPA Science Advisory Board CASTNET Review Panel Chair



Courtesy: N.C. A&T Media Contact jicrockett@ncat.edu

Godfrey A. Uzochukwu, Ph.D., a professor in the College of Agriculture and Environmental Sciences at North Carolina Agricultural and Technical State University, was named chair of the Science Advisory Board (SAB) Clean Air Status and Trends Network (CASTNET) review panel. The network was established by the Environmental Protection Agency (EPA) in 1991

"to assess the effectiveness of emission reductions programs by reporting trends in pollutant concentrations and acidic deposition." As of 2021, CASTNET monitors 99 sites in the United States and Canada. Uzochukwu brings expertise in science, strategy and leadership to CASTNET's review panel. Uzochukwu is the founding director of the campuswide Interdisciplinary Waste Management Institute, established in 1995 in response to the challenge that 90% of toxic dump chemicals in landfills are found in Black and Latino communities. More than 2,300 students have since graduated from various degree programs with a certificate in waste management. "There are so many issues that affect our health, including air, water and soil pollution and other environmental challenges," he said. "Our next generation of graduates are thinking differently and more importantly, they are pushing beyond the boundaries of our current knowledge to improve environmental quality," said Uzochukwu. "Science helps us make informed decisions. If the science is not there, that means there can be no improvement," said Uzochukwu. "We also look through this environmental justice lens to determine who is impacted and how." The advisory board has focused on any source or substance that is toxic or hazardous including PFAS, lead exposure and drinking water contaminants, as well as how renewable fuels can be used to enhance people's quality of life.

National Conference on Next Generation Technologies for Small-Scale Producers

North Carolina A&T State University hosted a National Conference on Next Generation Technologies for Small-Scale Producers on September 7-9, 2022. "...The purpose of the conference was to create a road map for developing and delivering the next generation of soil, air, and water technologies in support of sustainable production systems on small and limited resource farms..." said Godfrey Uzochukwu, PhD, Chair, Conference Organizing Committee. Conference attendees included 301 socially disadvantaged farmers, urban and controlled environment farmers, beginning farmers and ranchers, heirs, property holders, and absentee landowners, underserved rural community citizens, military veterans and retired farmers, agricultural professionals and agribusiness stakeholders, students, researchers, scientists and agency representatives, and other interested agricultural industry professionals.

The conference was funded by the United States National Institute of Food and Agriculture (NIFA) and sponsored by **North Carolina A&T State University** (*The Interdisciplinary Waste Management Institute, Center for Environmental Farming Systems, Cooperative Extension Service, College of Agriculture and Environmental Sciences, College of Science and Technology, Extended Campus: Continuing Education*), **Alabama A&M University** (Small Farms Research Center), **Alcorn State University** (The Socially Disadvantaged Farmers and Ranchers Policy Research Center) and Virginia State University (Small Farm Outreach Program). Conference topics included workshops, farmer to farmer interactions, networking, technical presentations (climate adaptation, computers and cyber security, farm justice and food security, planting and harvesting automations, small business innovations and sustainable farming, food processing technologies, field demonstrations of next generation sustainable technologies). Conference peer reviewed papers will be published in the Atlantis/Springer Proceedings.



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INTERDISCIPLINARY WASTE MANAGEMENT INSTITUTE

DIRECTOR
Godfrey Uzochukwu, Ph.D.
 PROVOST
Tonya Smith-Jackson, Ph.D.
 CHANCELLOR
Dr. Harold L. Martin Sr.



Interdisciplinary Waste Management Certificate Recipients (2022/23)

Graduating seniors (B.A./B.S.) and graduate students (M.S./Ph.D.) received Waste Management Certificates at special ceremonies in December 2022 and May 2023. The students completed their degree and certificate requirements. 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 NC A&T.



Undergraduate WMI Certificate Recipients (2022-23)

Zaria Destini Ancar	Architectural Engineering
Joshua Best	Environmental Studies
Lawren Caldwell	Environmental Studies
Phoenix Cook	Journalism and Mass Communications
Destinee Clay	Chemical Engineering
Breanna Monai Davis	Sustainable Land Mgmt and Food Systems
Jalen Patrick Day	Sustainable Land Mgmt and Food Systems
Kantayeni D. Douglas	Environmental Studies
Jasmine Dupree	Animal Science
Brandon Free	Animal Science
Marco Antonio Cervantes Garcia	Civil Engineering
Demico E. Guy	Biological Engineering
Ashley K. Holt	Animal Science
Jordan Shane Kelly	Sustainable Land Mgmt and Food Systems
Christopher T. Manigan	Environmental Health Safety
Karl E. McCloud II	Civil Engineering
Joseph William Norman III	Environmental Studies
Wendyam Annette Ouedraogo	Architectural Engineering
William Oxner	Liberal Studies
Timothy Michael Ptak	Civil Engineering
Taylor S. Riley	Environmental Studies
Shalores Lynn Rupert	Animal Science
Kiana Tutt	Marketing
Roman Whitaker III	Landscape Architecture
Marquesha Ware	Environmental Studies
Ethan Whalen	Mechanical Engineering
Shaquite Nyisha Whiting	Animal Science
Alicia K. Yodlowsky	Environmental Studies

Advanced WMI Certificate Recipients (2022-23)

Yohannes Gebrekidan	Civil Engineering
Sree Navya Inupala	Integrated Animal Health
Esther Foluso Iwayemi	Food and Nutritional Sciences
Sowmya Jagana	Animal Sciences
Oluteru Emmanuel Orimaye	Animal Sciences
Lydia Kehinde Olagunju	BioScience
Morgan Parker	Counseling
James Pinkney	Agricultural and Environmental Systems
Md Redowan Rashid	Civil Engineering
Dominae Smith	Agricultural and Environmental Systems

40 Hour Hazmat Training Certificates Awarded

Craig A. Bailey – Chemical Engineering
Isaiah J. Brown – Agricultural Education
Lawren A. Caldwell – Environmental Studies
Breanna M. Davis – Sustainable Land and Food Systems
Jordan S. Kelly – Sustainable Land and Food Systems
Karl E. McCloud – Civil Engineering
Jariah I. Putney – Civil Engineering
Alexis M. Robertson – Environmental Studies
Tiara I. Russell – Environmental Health and Safety
Oludotun O. Adelusi – Natural Resources
Joel O. Alabi – Animal Science
Chika C. Anotaenwere – Animal Science
Niya M Hawkins – Biological Engineering
Esther F. Iwayemi – Food and Nutritional Science
Cheyenne E. Lewis – Environmental Studies
Gilbert M. Ndumbe – Natural Resources
Mary O. Bakre – Civil Engineering
Nascier G. Bryant – Environmental Studies
Jasmine M. Dupree – Animal Science
Devante Jones – Environmental Studies
Summer M. Lauder – Environmental Studies
Quincey L. Lee – Environmental Studies
James W. Locklear – Civil Engineering
Sambridhi Bhandari – Civil Engineering
Oghenetajiri Ebakivie – Natural Resources
Jennifer D. Eriagbondia – Information Technology
Franklin C. Ezeanowai – Natural Resources
Yohannes A. Gebrekidan – Civil Engineering
Wafik Sama – Environmental Studies
Dominae A. Smith – Biological Engineering
Zion J. Stancil – Environmental Studies
Janeva A. Williams – Natural Resources



Water Quality Workshop at Archer Elementary School, Greensboro, NC (by BIOE Graduate Students James Pinkney, Dominae Smith and Arjun Thapa)



Ethics and Leadership Workshop at Corpus Christi College, Enugu State, Nigeria by Dr. Uzochukwu

Collaborative Environmental and Waste Management Funded Projects

– WMI Affiliates, Source: DORED

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

Chemistry

Environmental Chemistry

Communication

Environmental Communication

Construction Management

Environmental Safety

Criminal Justice

Environmental Crimes

Economics

Environmental Economics

Education

Environmental Education

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/Occupational Safety

Occupational Safety and Health

Environmental Safety

Other

Environmental Consultants

Physics

Environmental Physics

Political Science

Environmental Policy/Politics

Psychology

Environmental Psychology

Sociology

Environmental Sociology

Social Work

Environmental Social Justice

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

- Hackley and Associates (4)
- Kelly Witter and Team (8) – US EPA
- Steve Roland and Team (3) – GZA Inc.
- Sarah Slagle and Mike Hall – Ramboll (2)

Soil/Dust Ingestion for Children: A Modeling and Data Collection Approach Based on Regional and Sociodemographic Differences

Ferguson, Alesia C, ObengGyasi, Emmanuel, Samuel, Raymond, Martin, Patrick, Anwar, Mohd

Soil/Dust Ingestion for Children: A Modeling and Data Collection Approach Based on Regional and Sociodemographic Differences

Ferguson, Alesia, ObengGyasi, Emmanuel, Samuel, Raymond, Martin, Patrick M~Anwar, Mohd

Next Generation Sustainable Technologies for Small-Scale Producers **Uzochukwu, Godfrey, Ejimakor, Godfrey, Aryal, Niroj, Ferguson, Alesia, Gu, Sanjun**

The Wellspring Coalition Project: Promoting Research Experiences for Black American Undergraduates in the Environmental Sciences

Clay, Gloster, Clay S, Aryal, Niroj, Uzochukwu

Sustainable and Equitable Urban Stream Corridors: Improving Aesthetic, Social, Water Quality and Ecological Values of Urban Watersheds to Achieve Downstream Rural Benefits

Jha, Manoj K and Billign Solomon

Assessment of Sustainable Affordable Housing, Health & Safety Hazards in Urban Low-Income Communities

Shofoluwe, Musibau, Deng, Dongyang, Ferguson, Alesia

Excellence in Research: Understanding environmental adaptation by elucidating the underlying changes in molecular mechanisms associated with genetic selection in two-component response systems early in STE

Thomas, Mist and Graves, Joseph

Sustainable agriculture and environmental stewardship for small-scale farms and woodlands as essential family economic assets

Beckford, Fitzroy, Dale, Rosalind, Robertson, Donna

Integrated Social, Economic and Environmental Impact to Support SFRLs (Tuskegee University)

Lin, Yuh Lang

Reducing an environmental contaminant GenX via biochemically engineered device

Dong, Ming and Dellinger, Kristen

A Framework to Comprehensively Evaluate, Distribute And Catalog Geospatial Data Sources Used In the Study of The Food Environment

Kurkalova, Lyubov A

Generating Best Practices to Promote and Stimulate Innovation and Entrepreneurship through Integrated Social, Economic and Environmental Approaches to Support SFRLs

Liang, Chyi Lyi Liang, Robertson, Donna K

Environmental Impacts of Landfill Induced Anthropogenic Dissolved Organic Nitrogen in Eastern North Carolina Estuaries Current research on nitrogen (N) removal from anthropogenic sources is focused on inorganic nitrogen

Zhao, Renzun

Modeling the Effects of Rail Noise Propagation on Pedestrians In North Carolina Railroad

Liu, Rongfang R, Allen, Nicholas R, Dudley, Carletta, Liu, Rongfang

Excellence in Research: Environmental Justice and the Multigenerational Persistence of Environmental Exposure

Li, Huan

Partnership for Education and Research in Electronics for Extreme Environments (E3P) **Abdullah Eroglu, Numan Dogan, Corey Graves, and Zhijian Xie, Alam, Md Monzurul, Xie, Zhijian**

Geospatial analysis of environmental data to support mapping and the identification of vulnerable areas for erosion and runoff to support agricultural stewardship programs

Jha, Manoj K

The Emerging Built Environment Women Center: Research and Outreach to Broaden Women Participation in Architecture, Engineering, and Construction (AEC) Professions

Ofori-Boadu, Andrea

Integrated Social, Economic and Environmental Impact to Support SFRLs (Tuskegee University)

Liang, Chyi Lyi, Robertson, Donna K

Catalytic Deconstruction of Plasma-treated Single-Use Plastics to Value-added Chemicals and Novel Materials

Debasish. Kuila, Liang, Chyi Lyi, Prokofjevs, Aleksandrs, He, Peng

Renewable Natural Gas from Carbonaceous Wastes via Phase Transition CO₂/O₂ Sorbent Enhanced Chemical Looping Gasification

Wang, Lijun



Environmental Security, Sustainability and Waste Management Workshop
Pre-College RAP Workshop on Environmental Security, Sustainability and Waste Management was conducted in person for high school students in June 2023. The theme of the workshop was “Environmental Security and Waste management” highlighting challenging environmental security, sustainability, waste management and climate change issues.

Sustainability Leadership at N.C. 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.

WMI Interdisciplinary Steering Committee

Michael Atkinson, PhD	Department of Mechanical Engineering
Renzun Zhao, PhD	Department of Civil and Architectural Engineerin
Godfrey Ejimakor, PhD	Department of Agribusiness
Alesia Ferguson, PhD	Department of Built Environment
Gregory Goins, PhD	Department of Natural Resources
George Robinson, PhD	(Psychologist), Department of Psychology
Godfrey Uzoichukwu, PhD	Interdisciplinary Waste Management Institute

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.	Industrial Systems Engineering
Fafanyo Asiseh, Ph.D.	College of Business and Economics
Kory Bennett, Ph.D.	College of Engineering
Arnab Bhowmik, Ph.D.	College of Agriculture and Environmental Sciences
Clayton Clark II, Ph.D.	College of Engineering
Carla Denise Coates, Ph.D.	College of Arts, Humanities and Social Sciences
Heather Colleran, 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
Salam Ibrahim, Ph.D.	College of Agriculture and Environmental Sciences
Louis Jackai, Ph.D.	College of Agriculture and Environmental Sciences
Blessing Masasi, Ph.D.	College of Agriculture and Environmental Sciences
Radiah Minor, 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 and Humanities
Godfrey Uzoichukwu, 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

WMI NOTEWORTHY SUMMARY

- Awarded 2,389 certificates. Adds value to degree programs.
- Offers the best interdisciplinary supporting courses
- Selected Interdisciplinary Model for NC A&T – Futures Goal II (Created Interdisciplinary Energy and Environmental Systems PhD (Renamed Science and Technology PhD); Informed Interdisciplinary Leadership Studies PhD; Inspired the creation of Interdisciplinary Computational Science and Engineering PhD; Interdisciplinary Masters, Bachelors and Certificate Programs).
- Promotes Big Ideas of Sustainability – infrastructure, energy, climate, waste management, waster conservation, transportation and education.
- Forum for exchange of big ideas among faculty and students from different disciplines.
- 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 (awarded \$384,000 to students in different colleges, provided \$33,191 for faculty support, created core WMI course.
- WMI 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 percent in 2017 (No. 14 overall) and No. 4 in USA rankings (UI Green Metric – University Sustainability World Ranking for N.C. A&T and 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)
- Leader in Convergence Research Thrusts for environmental and waste management solutions involving air, soil, water, bio-energy, global climate, education and infrastructure
- Top 3 HBCU for Environmental Science – The Edvocate, 2023

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.

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We welcome creative ideas that are suitable for inclusion in the EnviroNews. Send a brief summary of your ideas to:

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