

FOR IMMEDIATE RELEASE

Researchers Studying Child Exposure to Beach Pollution

Greensboro, NC – July 9, 2019 – Dr. Alesia Ferguson is an Associate Professor and Interim Chair at N.C. A&T's Department of Built Environment in the College of Science and Technology. As Co-Pi, she joins Principal Investigator Dr. Helena Solo-Gabriele of the University in Miami in the research project Beach Exposure and Child Health Study (Beaches) which is funded by the Gulf of Mexico Research Institute. The 1 million dollar grant (N.C. A&T's portion is \$300k) is designated to explore the effects of petroleum pollution and its effects on children in the Gulf of Mexico, and also involves the University of Texas.



Catastrophe in the Gulf

On April 20, 2010, the Deepwater Horizon drilling rig, which operated approximately 50 miles off the coast of Louisiana, experienced a catastrophic failure resulting in an explosion and fire, the sinking of the rig and the discharge of petroleum gas and crude oil from an ocean depth of 5000 feet. The event also resulted in the deaths of 11 men who were working on the rig at the time of the explosion.

In 2010, shortly after the Deepwater Horizon disaster, owner BP announced a commitment of up to \$500 million over 10 years to fund an independent research program designed to study the impact of the oil spill and its associated response on the environment and public health.

GoMRI

The Gulf of Mexico Research Initiative (GoMRI) has been the steward of these BP funds, used to support research studying how the oil spill impacted the ecosystems of the Gulf of Mexico and affected coastal states. For nearly 10 years, GoMRI has been working to improve society's ability to understand, respond to and mitigate the impacts of petroleum pollution and related stressors, improving awareness of oil spill dynamics and resulting environmental and public health implications.



A Day at the Beach

As a recipient of GoMRI research funds, Dr. Ferguson and her N.C. A&T graduate students Foluke Adelabu and Esther Ehindero set out to study how children playing on gulf beaches might be affected by the residual effects of the 2010 oil spill. After their research plan was approved, the crew set out to study children at four beaches, two in Florida and two in Texas.

Using local pediatricians and parenting websites, researchers recruited 125 children in Miami and Texas to participate in their study. During the summer of 2018, the research team observed the children at play on the beaches, shooting videos and administering surveys to 400 parents. The team observed the duration and frequency of a variety of beach-related behavior common to children such as water play, the amount of time spent playing in the sand, if and how much sand children placed in their mouths, if children consumed food or beverages during the day with clean or dirty hands and other hygiene and risk behaviors.

It is extremely important to conduct this type of research on children, because children are at the greatest risk to chemicals that might be present in sand and water at beaches; their short stature puts them in close proximity to the ground, they often exhibit repetitive hand-to-mouth motions, their breathing is very rapid when they play, and their young organ systems are very susceptible to the toxic compounds found in petroleum.

Outcomes

Dr. Emmanuel Obeng-Gyasi in N.C. A&T's Department of Built Environment, is also assisting the research team with biostatistical analysis of the data collected. In general the research team at all three Universities employs biostatistics, epidemiology, molecular, and risk assessment and fate and transport modeling techniques to investigate the effects of these beach pollutants on

children. Ferguson and her team hope to better understand the risk posed to children playing in beach environments where chemical contaminants may reside.

The data from her studies and others will help better predict cancer outcomes and other long-term effects from exposure to chemicals affecting not only the child subjects in this study, but first-responders, environmental clean-up crews, oil rig workers and even birds and animals in affected areas, and from past and future spill events.

Dr. Ferguson's GoMRI funding will be extended through June 2020, and her research team has increased its analytic capacity this summer with the addition of Ashok Dwivedi, a Post-Doctoral student supported through the grant.

About North Carolina A&T State University

North Carolina Agricultural and Technical State University is the nation's largest historically black university, ranked number one among public HBCUs by U.S. News & World Report. It is a land-grant, doctoral high-research classified university by the Carnegie Foundation and constituent member of the University of North Carolina system. A&T is known for its leadership in producing graduates in engineering, agriculture and other STEM fields. The university was founded in 1891 and is located in Greensboro, North Carolina.

About the Division of Research and Economic Development (DORED)

DORED manages N.C. A&T's research enterprise. DORED provides 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.

###



North Carolina Agricultural and Technical State University is the nation's largest historically black university. Classified a "higher research" university by the Carnegie Foundation, it is a land-grant member of the University of North Carolina System. A&T is known for its leadership in producing graduates in engineering, agriculture and other STEM fields. The university was founded in 1891 and is located in Greensboro, North Carolina.