



Stony Brook University

Department of Civil Engineering
College of Engineering and Applied Sciences

FALL 2022 SEMINAR SERIES

Dr. Oladoyin Kolawole, Ph.D.

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Friday, October 21st, 1:00 – 1:55 PM
Frey Hall Room 201

Integrated Geomechanics for Sustainable Geosystems

Abstract

The world is currently being threatened by geohazards and extreme weather conditions due to climate change. The mitigation of these hazards and protection of our environment requires technical knowledge of geomechanics, geotechnical engineering, and sustainable geo-resources. However, as engineers, irrespective of our expertise, we all have a role to play in sustainability, geohazard mitigation, and improving energy resources. The efficient development and application of engineering technology to sustainable resources and geomaterials require a multidisciplinary approach. This talk will show how we can integrate geomechanics, biotechnology, energy engineering, and geo-environmental engineering to address critical problems related to sustainable energy, CO₂ sequestration, and geomaterials, and provide potential pathways for addressing sustainable energy and geosystems development.



Speaker Biography

Dr. Oladoyin Kolawole is an Assistant Professor in the Department of Civil and Environmental Engineering Department, New Jersey Institute of Technology (NJIT). He is also the director of the Biogeomechanics, Sustainability, and Geotechnics (BSG) Lab at NJIT. He integrates rock

mechanics, energy engineering, and biotechnology to address problems related to geomaterials, sustainability, energy, and the environment. He earned his Ph.D. degree in Petroleum Engineering (Geomechanics concentration) from Texas Tech University. Prior to joining NJIT faculty, Dr. Kolawole was a Postdoctoral Research Associate at Texas Tech University, before later working as a Faculty Fellow (Visiting Faculty) at Hope College, Michigan. Dr. Kolawole developed the “biogeomechanics” concept, which studies the mechanical responses of microbial-rock interactions. His integrated research lab is focused on experimental rock mechanics, geomechanical/geotechnical modeling, biogeomechanics, geologic CO₂ sequestration, energy geo-resources, geotechnical-related hazard mitigation, thermal-induced deformation of rocks, hydraulic fracturing, and geothermal energy systems. He is a 2022 Future Leader of the American Rock Mechanics Association (ARMA), and an appointed Member of the Committee on Geological and Geotechnical Engineering (COGGE) at the National Academies of Sciences, Engineering, and Medicine (NASEM). He is also a recipient of the Distinguished Service Award from the ARMA. He has published more than 30 peer-reviewed journal articles and conference papers, and He volunteers as a peer reviewer for Nature Scientific Reports, Rock Mechanics and Rock Engineering, and other reputable scientific journals, in addition to mentoring undergraduate and graduate students.