CASE WESTERN RESERVE UNIVERSITY

CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT SEMINAR

DR. OLADOYIN KOLAWOLE
Assistant Professor
John A. Reif, Jr. Dept. of Civil and Environmental Engineering
New Jersey Institute of Technology

Date: Thursday, November 7th, 2024
Time: 4:00pm – 5:00pm EST
Location: Nord, Room 356
Zoom link here

Integrated Geomechanics and Sustainable Geotechnics: Interdisciplinary Perspective for Improving Infrastructure Resilience and Geohazard Mitigation Abstract

Abstract: The world is currently being threatened by geohazards and extreme weather conditions due to climate change. The mitigation of these geohazards requires combining technical knowledge of geomechanics and geotechnical principles. However, as engineers, irrespective of our expertise, we all have a role to play in sustainability, geohazard mitigation, and resiliency. The efficient development and application of engineering technology to improve the resilience of natural and built infrastructure and improve geomaterials (rocks and soils) require an interdisciplinary approach. This talk will show how we can integrate geomechanics and geotechnical engineering to address critical problems related to natural and built infrastructure, ground improvement, and sustainability, and further provide potential pathways for addressing current research problems.

Bio: Dr. Oladoyin Kolawole is an Assistant Professor of Geomechanics and Geotechnical Engineering in the Department of Civil and Environmental Engineering at the New Jersey Institute of Technology (NJIT), and also the Faculty Coordinator for the Geosystems Minor program at NJIT. He is the director of the Geomechanics for Geo-Engineering and Sustainability (GGES) Lab. He received his BSc (2012) at Rivers State University in Nigeria, followed by an MS (2018) at the University of Mickolc in Hungary, and a PhD (2021) at Texas Tech University, USA. Prior to joining NJIT, Dr. Kolawole was a Postdoctoral Research Associate at Texas Tech University, before later working as a Visiting Assistant Professor at Hope College, Michigan. He pioneered the "biogeomechanics" concept, which studies the mechanical response of rocks due to biological-induced reactions. His interest is in experimental and computational studies to fundamentally understand and predict the multiscale deformation and fracture behavior of porous granular media (rocks and soils) to address problems related to natural and built infrastructure, sustainability, geohazard mitigation, and energy. Additionally, He studies distinct mechanical responses due to geomaterial interactions with bio-induced and bio-mediated processes and their applications in mitigating geohazards and climate change. Dr. Kolawole is a recipient of the 2022 Future Leader Award and the 2021 Distinguished Service Award from the American Rock Mechanics Association (ARMA). He currently serves on the Committee on Geological and Geotechnical Engineering at the U.S. National Academies. He has authored and co-authored several peer-reviewed journals and conference papers on geomechanics and geotechnical engineering. He is an Editorial Board Member of Springer Nature's Discover Civil Engineering journal, and volunteers as a peer reviewer for reputable rock mechanics and geotechnical engineering journals, in addition to mentoring undergraduate and graduate students.