Panel Session on Fostering Diversity and Inclusion in Engineering Mechanics

Mentoring Initiative within EMI

Wednesday, May 26, 2021 5:30-7:00 pm EST

Please join us and our distinguished panelists for a panel session focusing on how to foster diversity and inclusion within the Engineering Mechanics research community. We will discuss the challenges and opportunities for establishing a mentoring initiative for junior faculty members and researchers. There will be small group discussions between the panelists and the session participants. We hope this panel provides a free forum to listen to your thoughts and experiences and what you expect from such mentoring initiative. If you have any questions please contact Dr. Arghavan Louhghalam (alouhghalam@umassd.edu).

<u>Invited panelists</u>

Ange-Therese Akono

Dr. Ange-Therese Akono is an Assistant Professor in the Department of Civil and Environmental Engineering at Northwestern University. Dr. Akono holds a PhD (2013) and an MSc (2011) from the Massachusetts Institute of Technology (United States), along with an MSc (2009) from the École Polytechnique (France). Dr. Akono's honors include the NIH Diversity Award (2020), the Searle Faculty Fellowship (2019), the NCSA faculty fellowship (2016-2017), the ASCE New Faces of Civil Engineering Professionals Award (UIUC, 2016), and the MIT Energy Initiative Fellowship (MIT, 2009). Dr. Akono's laboratory investigates fracture and failure mechanisms in complex materials systems from the molecular level up to the macroscopic scale. This research is articulated over three main thrusts: natural and nano-engineered biomaterials, geological materials, and environment-friendly and high-performance structural materials.

George Deodatis

Professor George Deodatis received his Diploma in Civil Engineering from the National Technical University of Athens in Greece in 1982. He holds M.S. and Ph.D. degrees in Civil Engineering from Columbia University (received in 1984 and 1987 respectively). He started his academic career at Princeton University where he served as Assistant Professor and Associate Professor (with tenure). He moved to Columbia University in 2002 where he served as Associate Professor and Professor. He currently holds the Santiago and Robertina Calatrava Family Endowed Chair at the Department of Civil Engineering and Engineering Mechanics at Columbia University. He served as Department Chair from 2013 to 2019 (two terms). His research interests are in the area of probabilistic methods in civil engineering and engineering mechanics, with emphasis on risk analysis and risk management of the civil infrastructure subjected to natural and man-made hazards (including earthquakes, floods and climate change). He has received the National Science Foundation Young Investigator Award, the International Association for Structural Safety and Reliability Junior Research Prize, and the American Society of Civil Engineers Walter Huber Research Prize. He is a Fellow of the Engineering Mechanics Institute of the American Society of Civil Engineers. In 2009, he was elected President of the International Association for Structural Safety and Reliability for a four-year term. In 2017, he was elected President of the Engineering Mechanics Institute of the American Society of Civil Engineers for a two-year term. While on the faculty at Princeton University, he was awarded the President's Award for Distinguished Teaching, Princeton's highest teaching honor. At Columbia University, he has received the Presidential Award for Outstanding Teaching and the Great Teacher Award from the Society of Columbia Graduates, Columbia's highest teaching honors.

Lori Graham-Brady

Lori Graham-Brady is Professor and Chair of the Civil and Systems Engineering Department at Johns Hopkins University, with secondary appointments in Mechanical Engineering and Materials Science & Engineering. She is also the Director of the Army-funded Center for Materials in Extreme Dynamic Environments and Associate Director of the Hopkins Extreme Materials Institute. Her research interests are in computational stochastic mechanics, multiscale modeling of materials with random microstructure, machine learning approaches for multi-scale modeling and the mechanics of failure under high-rate loading. Her research has resulted in over 100 referee-reviewed publications. She received her Ph.D. in Civil Engineering and Operations Research at Princeton University. Before joining the faculty at The Johns Hopkins University, she was an Assistant Professor at the University of Virginia for four years. Professor Graham-Brady is heavily engaged in the ASCE Engineering Mechanics Institute, as a former member of the EMI Board of Governors, as an EMI Fellow, as a current Associate Editor for the *Journal of Engineering Mechanics*, and as former Chair of the EMI Probabilistic Methods Committee. She has received a number of awards, including the Presidential Early Career Awards for Scientists and Engineers (PECASE), the Walter L. Huber Civil Engineering Research Prize, the IASSAR Junior Investigator Prize, and the William H. Huggins Award for Excellence in Teaching.

Anne Kiremidjian

Professor Kiremidjian's research focuses on two main aspects of earthquake engineering. These include earthquake hazard and loss modeling and structural health monitoring for extreme events. Within the area of earthquake hazard and risk modeling, she has developed methods for time-dependent earthquake occurrences, regional hazard mapping, regional loss assessment, and lifelines risk analysis of water, transportation and power systems. Within the area of structural health modeling, her research includes the development of wireless sensors and sensing networks for structural performance evaluation. The research on sensors and sensor networks lead to the design, development and validation of the first wireless sensors and sensor networks for structural health monitoring. Novel damage detection and localization algorithms utilizing data from the sensor network have been formulated using advanced data analytics, statistical and machine learning methods. Professor Kiremidjian has held a leading role in research in lifeline earthquake engineering by assessing the seismic risk to the California Aqueduct (1976), the development of transportation network systems as applied to the San Francisco Bay Area (1997-2006), and, most recently, models for evaluating the resilience of electric power systems through the formation of microgrids from rooftop solar systems within communities. For more than 45 years, Professor Kiremidjian has led teams of students and researchers advancing the state-of-the-art in earthquake engineering and wireless structural health monitoring, nationally and internationally. For her research contributions, Kiremidjian has been recognized with numerous awards including the *Extraordinary Achievement Award in Loss Estimation* from Applied Technology Council and the *C. Martin Duke Award* for Excellence in Lifeline Earthquake Engineering Research by the American Society of Civil Engineers (ASCE). In 2014 she was elected *Distinguished Member of the American Society of Civil Engineers*, then in 2017 she received the *Lifetime Achievement Award at the International Workshop on Structural Health Monitoring*. In 2018 she was awarded *the John Fritz Medal* from the American Association of Engineering Societies, one of the highest awards given to an engineer in the United States. She was elected as Distinguished Member of the Earthquake Engineering Research Institute in March of 2020 and in 2021 she was elected to the National Academy of Engineering.

Chris Swan

Chris Swan is Dean of Undergraduate Education in the School of Engineering and an associate professor in the Civil and Environmental Engineering (CEE) department. He also serves as the School of Engineering's representative to the new Tufts University Cabinet on Diversity, Equity and Inclusion (TUCDEI), an effort borne from his own education research on diversifying the audience for STEM education through service-learning efforts. He is also a faculty member in the Tisch College of Civic Life and serves on their diversity and inclusion committee as the faculty representatvie. Previously, he has served as the Associate Dean of Tisch College (2016), Associate Dean of Undergraduate Curriculum Development in the School of Engineering (2012-2015) and as CEE department chair (2002-2007). He received a Doctor of Science (ScD) degree in Civil and Environmental Engineering from MIT in 1994 and both Bachelor (BS) and Master (MS) of Science degrees in Civil Engineering from the University of Texas at Austin in 1984 and 1986, respectively.

As noted earlier, his engineering education research efforts focus on evaluating the impact of service-based learning efforts in engineering education, as well as on applying entrepreneurial principles in examining sustainable and scalable pathways for innovations in engineering education and evaluating faculty perspectives on the inclusion of macroethics in engineering education. Additionally, he has served as a lead instructor for NSF's national I-Corps™ for Learning (I-Corps L) program, which explores the use of an 'entrepreneurial mindset' to examine the sustainability and scalability of innovations in engineering education.

He also performs engineering research on the development/implementation of reuse strategies for waste materials. Most notably, his research efforts focus on the development and use of an innovative construction aggregate made solely from coal fly ash from coal burning facilities combined with recovered waste plastics. The resulting synthetic lightweight aggregates (SLA) can be used in place of traditional sand and gravel.

With respect to university service, he has served as an inagural member of the University-wide Faculty Senate (2017-2020), and is a member of the the faculty advisory boards of the Center for the Enhancement of Learning and Teaching (CELT) and the Center for Engineering Educaton and Outreach (CEEO).