

# STEM Entrepreneurship & Innovation Forum at The University of Toledo College of Engineering Nitschke Technology Commercialization Center, 1600 N. Westwood Ave., Toledo, Ohio 43606 Wednesday, November 13, 2019, 10am – 12:45pm



COLLEGE OF ENGINEERING  
THE UNIVERSITY OF TOLEDO



BELIEVE IN  
OHIO

*Presented by*

*The Ohio Academy of Science and Entrepreneurial Engagement Ohio*



## Partial Listing of Fall 2019 STEM Forum Speaker Bios November 13, 2019



### **Dr. Luis Mata, Construction Engineering Technology**

Dr. Luis Mata is an Associate Professor of Construction Engineering Technology at the University of Toledo. He received his Masters and Ph.D. degrees in Civil Engineering with focus in Construction Engineering and Management from North Carolina State University. He is a Professional Engineer registered in Michigan, Ohio and North Carolina, and a LEED Accredited Professional in Building Design and Construction. He is also a member of the American Concrete Institute Committee on Pervious Concrete. His research interests include sustainable construction practices, nondestructive test methods for evaluating concrete structures and concrete technology.



### **Dr. Sandrine Mubenga, Engineering Technology**

Dr. Ngalula Sandrine Mubenga was born and raised in The Democratic Republic of Congo (DRC). She visited schools in Africa and Europe before deciding to attend college in Toronto to study engineering. En route to Canada to begin her freshman year, she decided to stop and see family in Toledo first — and visit The University of Toledo. “I never did make it to Canada,” she laughed. “I had all my papers in place, and all the arrangements had been made. But, I liked the engineering program at The University of Toledo, and the opportunity to do co-ops. And I had friends at other schools and could compare their experiences with what UT offered. So, I changed my plans.”

Dr. Mubenga’s pursuit of an engineering degree was mission-driven. “As a child, I nearly died waiting for surgery because a hospital in the DRC had no power,” she explained. “I came to the University of Toledo to change that.” “At the bachelor’s level, I was already working on solar photovoltaic battery systems,” she said. “After graduating and working for a power company, I returned to UT for my master’s degree, where I worked on extending the range of electric vehicles through hydrogen fuel cell technology.”

Upon completing her masters, Dr. Mubenga realized one aspect of her dream to bring reliable power to her home country — she founded her own company, SMIN Power Group, which designs and installs solar systems in DRC.

Dr. Mubenga went on to earn her PhD at UT. Her groundbreaking doctoral work with Dr. Tom Stuart produced a battery management technology called the “bilevel equalizer.” The system significantly increases both battery life and capacity of lithium ion batteries, and could enable renewable energy use in applications where limited battery life was previously an obstacle. As a member of UT’s engineering faculty, Dr. Mubenga is helping other young engineers realize their potential. Describing the joys of mentoring students, she said, “When someone ‘gets it’ — when that lightbulb is lit — it is priceless. And once it is lit, it glows brighter and brighter — I just love seeing that.”