

Engineering Education Research Seminar

Speaker: Yacob Astatke, Assistant Vice President for International Affairs, Morgan State University

When: Thursday, November 7, 2019

Time: 3:30pm-4:15pm-Presentation
4:15pm-4:45pm-Informal discussion w/light refreshments

Where: ARMS B071

Using Experimental Centric Learning Pedagogy (ECP) to Improve ECE Education in the USA, and Africa for the past 10 years

Abstract: Dr. Astatke will give an overview of how portable laboratory instruments have changed the way we teach electrical engineering (EE) concepts at higher education institutions in the USA, and Africa for the past 10 years. He will discuss some of the key findings and results he has obtained by implementing the ECP project at 13 Historically Black Colleges and Universities (HBCUs). He will then present the work he has been doing in Ethiopia for the past 10 years and how it has culminated with a two day workshop that was held in April 2019, where he was able to introduce ECP to 29 universities with the support of Purdue faculty member Dr. Jennifer DeBoer and her PhD student. He will finish his presentation with recommendations on how the latest EE portable instrumentations can easily be incorporated to improve both regular lecture and laboratory courses in the USA, Africa, and the rest of the world.

Bio: Dr. Astatke currently serves as the "Assistant Vice President for International Affairs." He has enjoyed a very successful career at MSU for the past 25 years, as a tenured Associate Professor of Electrical and Computer Engineering (ECE), and served in different capacities including as the "Interim Associate Dean for Education" in the School of Engineering from 2015 until 2017.



He has developed and implemented several exciting summer camps from 2013-2017 geared towards middle and high school, and community college students to expose and increase their interest in pursuing Science, Technology, Engineering, and Mathematics (STEM) fields. Dr. Astatke played a leading role in 2009 and led the expansion of the *Mobile Studio™* portable laboratory technology and pedagogy at MSU to offer ECE courses with laboratory components completely online. This pioneering work and the use of the new technology and pedagogy was expanded to 13 Historically Black Colleges and Universities (HBCUs) in 2013 when he served as Co-PI on a 5 year \$3.8 Million NSF grant entitled "Experimental

Centric Based Engineering Curriculum for HBCUs." Dr. Astatke has always found time to go back to his home country of Ethiopia at least twice per year to support ECE departments throughout the country. He has facilitated using grants from private and public agencies, and the donation of more than 300 *Mobile Studio™* portable laboratory boards to 5 Ethiopian universities, by conducting capacity building workshops in collaboration with Addis Ababa Institute of Technology (AAiT) from 2010 - 2012. In April 2019, he received the support of the new Ministry of Science and Higher Education (MoSHE) and was able to conduct 2 day pedagogy and hands-on training workshops for more than 100 ECE faculty members from 29 universities in Ethiopia. The new state of the art portable laboratory instrumentation and innovative pedagogy training has improved the education of thousands of ECE students since 2010. He plans to expand his capacity building training workshops to other African countries.

Dr. Astatke has won several national and international awards, based on his research and outreach work both in the USA and around the world. More recently, he has won 3 awards in 2016: the "2016 Global Engineering Deans Council (GEDC)- Airbus Diversity Award," the "2016 Black Engineer of the Year (BEYA)" for College Level Promotion of Education," and the "Dr. Iva G. Jones Medallion Mantel Award" for being the most Outstanding Faculty member of the year at MSU. He is the winner of the 2013 American Society for Engineering Education (ASEE) "National Outstanding Teaching Award," and the 2012 ASEE "Mid-Atlantic Region Distinguished Teacher Award."

Next week: PhD Exchange Speaker: Staci Johnson, PhD Candidate at Clemson University and Associate Professor of Biology at S. Wesleyan University