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Western Michigan University

College of Engineering and Applied Sciences

Engagement ~ Leadership ~ Globalization ~ Innovation

WMU Engineers
Help Shape
the
Future

June 20, 2014

Anita Ludwig, Editor
anita.ludwig@wmich.edu

www.wmich.edu/engineer

"Flying a machine is bravery...engineering a flying machine is brainy."
~ Niroshan Kiriwella

CEAS News

Transportation Research Center receives second \$1.4 million installment of funding for research

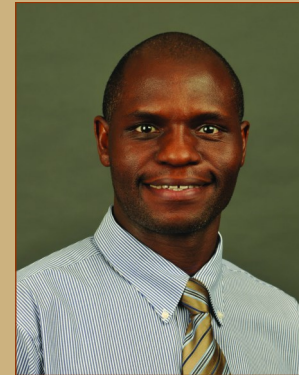
The project being funded by the US Department of Transportation (USDOT) is titled, "Transportation Research Center for Livable Communities". The principal investigator is Dr. Jun-Seok Oh, the co-principal investigators from are Dr. Osama Abudayyeh and Dr. Valerian Kwigizile all three are from the Civil and Construction Engineering Department. Dr. Richard Long from Blind and Low Vision Studies, Dr. Christopher Smith from Geography, and Dr. Ron Van Houten from Psychology are all co-principal investigators as well. WMU is the lead institution of the Transportation Research Center for Livable Communities (TRCLC), and that the following universities are member institutions of the center: Tennessee State University, University of Texas, Arlington, Utah State University, and Wayne State University.



Dr. Jun-Seok Oh Associate Professor, Undergraduate Advisor, principal investigator.



Dr. Osama Abudayyeh Associate Dean for Research and Graduate Programs, co-principal investigator.



Dr. Valerian Kwigizile Assistant Professor, co-principal investigator.

Civil and construction engineering students investigate sensing technologies

Dr. Abiola Akanmu is in charge of the Cyber-Physical Construction Systems Lab in the department of Civil and Construction Engineering. Akanmu reported that her graduate class is investigating the dynamic interaction between sensing technologies and the construction activities in order to develop models capable of predicting the placement of sensors throughout a construction project. Akanmu explained that part of the research is the outdoor test which is aimed at conducting a performance evaluation of 3 real time location sensing devices (RFID, 'Chirp Spread Spectrum' and the Ultra-wide band sensor). These sensing technologies are also being deployed in the course 'Sensing and Modelling in Construction Management'.



Center: Dr. Abiola Akanmu with her graduate students.



Students set up the equipment for the research activities.

Geomatics summer course offers fundamentals in surveying and advanced technologies



Geomatics is an undergraduate course offered by the Department of Civil and Construction Engineering every fall semester, and often summer I semester. The term “**Geomatics**” refers to the integrated approach of measurement, representation, analysis, management, storage, retrieval and display of the descriptions and location of earth-based data, often termed spatial data. These data come from many sources, including earth orbiting satellites, air and sea-borne sensors and ground based instruments. It is processed and manipulated with state-of-the-art information technology using computer software and hardware. The principal disciplines embraced by Geomatics include mapping sciences, land management, geographic information systems, environmental visualization, geodesy, photogrammetry, remote sensing and surveying.

Geomatics has applications in all disciplines which depend on spatial data, including environmental studies, planning, engineering, navigation, geology and geophysics, oceanography, land development and land ownership and tourism. It is thus fundamental to all the geoscience disciplines which use spatially related data.

The objective of this course is to introduce to students the fundamentals and elements of surveying and advanced technologies in this area. By the end of this course, students are able to apply these skills to land survey and managing associated data. The course includes both lecture sessions taught by **Dr. Valerian Kwigizile**, as well as field laboratories taught by **Richard Atta Boateng**. Field laboratories focus on topics such as:

- Pacing, Taping and Electronic Distance Measurement (EDM)
- Differential and Profile Leveling
Measuring Angles using both Theodolites and Total Stations
- Running a Traverse and Performing Traverse Computations
- Topographic and Global Positioning System Surveying
- Horizontal Curve Layout

The pictures left show students doing their lab activities.

~Richard Atta Boateng, contributor.

Summer commencement

Summer commencement ceremonies are on Saturday June 28 in Miller Auditorium.

For the schedule visit: [Commencement](#)