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William W. Cobern

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Zeroing in on K-8 science instruction:

WMU researcher shares methods in Turkey



Dr. William W. Cobern, Distinguished University Professor of Science Education and Biological Sciences as well as director of the Mallinson Institute for Science Education, spent five months in Turkey beginning in September 2011 conducting research and giving lectures on methods for effective instruction for the teaching of science.

Cobern is known internationally in the discipline of science education for his research on the socio-cultural aspects of the teaching and learning of science and is engaged in a related active research program funded by the National Science Foundation. He received a Fulbright Lecturing/Research award for the Turkey project, which came about a few years ago through a chance meeting with several Turkish researchers who were hosted for a campus visit by Dr. Paul Pancella in WMU's Physics Department.

"The Turkish guests went home and talked to other people about their experiences at WMU," Cobern said. "The Turkish government funds quite a few students and professors who come to the U.S. to study English and science education. As a result of their conversations, two students from Turkey applied to the WMU's science education master's program and two professors from another institution became interested in one of WMU's projects.

"We were doing our work at WMU with support from the National Science Foundation and I knew we could request a small amount of money to collaborate on an international project," he continued. "I have always liked to travel, and I was quickly connected to other Turkish scholars who wanted to participate on our project."

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Cobern and his wife stayed in Turkey from September 2011 through February 2012, based in the city of Hendek in the Sakarya region, which is about 1.5 hours east of Istanbul. His academic home in Turkey was at the Education Faculty of the [University of Sakarya](#). He logged more than 1,000 miles traveling to give 14 lectures at various Turkish universities, including Bogazici University, Black Sea Technical University, Canakkale Onskiz Mart University, Dokuz Eylul University, and Ahi Evran University. In addition to speaking about the primary focus of the project, he also gave lectures on the experimental study of science teaching efficacy.

“My hope for the lectures was to get teachers thinking about ways that have proven to be successful for the teaching of science which were based on several case studies,” he said. “It is important for a teacher to continually assess how well learning is going on, then adjust curriculum to improve learning before you get to the end of the semester or year. I also spoke with several professors about our WMU assessment work and work has begun to translate our assessment instruments into Turkish.”

In 2009, Cobern made his first visit to Turkey with one of his colleagues, Professor Renee’ Schwartz, to demonstrate to faculty from Sakarya University how to use assessment devices in an instructional way to come to a better understanding of science instruction for K-8. A year later, Schwartz, an associate professor of biological science and science education, and faculty specialist Brandy Skjold visited Istanbul for WMU, where they and a Turkish colleague presented findings at a conference hosted by the European Science Education Research Association.



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“Turkish schools are very test-driven and they have a much more regimented curriculum,” Cobern said. “The country has a very active scientific educators community that is interested in the interactive teaching of science. They are a lot of fun to be around.”

For his Fulbright project, Cobern also worked with a Turkish professor, Dr. Osman Titrek of Sakarya University, who considered Cobern’s work from an Islamic perspective, particularly about the teaching of evolution. Turkey is historically a Muslim country, but is officially a secular country, so Cobern wished to proceed cautiously in how he presented and made queries about these topics.

“The sensitive topic is evolution—human evolution,” he said. “In Turkey, you will not find objection to science teachers saying the earth or a species is a certain age, but you can’t do that about humans. However, there is a creationist movement that is growing. I was surprised at some of the diversity of religious thought I encountered. I met some atheists—Turkish professors, who opened my eyes to the diversity that exists in Turkey. You can see how geopolitically important the country is because it is trying to be open and tolerant. Though there are people who would like to go back to the old days, Turkey is a good example of an Islamic country trying to operate as a democracy.”

Self-described as an “academic gypsy,” Cobern earned his Ph.D. from the University of Colorado in Boulder, then worked as a science educator for four years at the University of Sokoto in Nigeria. When he returned to the U.S., he taught science at the high school and middle school levels, before segueing back into higher education with teaching positions in Oregon, Texas and at Arizona State University. He came to WMU in 1996.

“My wife and I didn’t like the hot weather in Arizona and I had heard that WMU had a good reputation for developing science teachers/educators,” he said. “I was hired as a tenured professor in the College of Education. Science education existed in different formats at WMU back to 1958, first as a master’s program, then as a doctoral program in the 1960s. Between 1996 and 2002, the graduate program in the College of Arts and Sciences was reorganized into the [Mallinson Institute for Science Education](#) as a home for graduate programs in science education. They needed a permanent director, and the dean and provost asked me to consider taking the position. I was thrilled to be named the institute’s first program director in 2002, following Drs. Len Ginsberg and Joe Stoltman, who each served one year as interim director.”

Cobern is currently teaching all graduate-level courses on cognition and instruction and evolution for teachers and mentors five doctoral candidates. He is the recipient of numerous awards recognizing his teaching and research, including being named in 2006 as a Fellow of the American Association for the Advancement of Science, as a fellow by the American Educational Research Association (2008) and as a WMU Distinguished University Professor (2008).

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While in Turkey, Cobern's wife, Kathy, taught English as a Second Language. They met many "incredibly friendly" people in the small town where they were based, and were often invited to join the locals for a cup of tea.

"The trip was immensely enjoyable for both of us and we're hoping to go back," he said. "Some of my colleagues at Canakkle University are putting together a proposal for me and a colleague to conduct a short-term workshop on research methods in science education for grad students and young professors."

For more information about Dr. Cobern's teaching and research, visit his [website](#).

Forbes.com featured Dr. Cobern in July--[article](#)