

During the week of July 13-17, 2009 six middle and high school students participated in the Mathematics and Science Investigators program (MSI'09) on the campus of the University of Central Arkansas. MSI'09 was organized by Dr. Ramesh Garimella, Chair of the Department of Mathematics at UCA. The summer program received financial support from the Arkansas Science and Technology Authority, and a seed grant from the UCA Foundation.

This year's topic, Loudspeaker Audio Engineering, was conducted by Dr. William Slaton, Assistant Professor of Physics and Astronomy at UCA. Activities in MSI'09 were focused on the separate parts of a loud speaker by doing experiments to understand the underlying physics and mathematics. On the first day students explored mass-spring systems since the speaker cone acts as a mass and the spider plus surround act as a spring. On day two the participants learned about magnetic fields and the basics of how electrical signals interact with a magnetic field to move the speaker cone. Third day focused on electricity and electrical resistance. On the last two days, students performed experiments on the speakers to determine the mass of the speaker cone and the springiness of the spider and surround. Each participant built a speaker which he or she took home.

Each day's activity started at 10 am and ended by 4:30 pm with a lunch break from noon to 2 pm. Lunch time activities included a visit to UCA Planetarium with curator Dr. Scott Austin of the Department of Physics and Astronomy, a session on Scanning Electronic Microscope demonstrated by Professor Jerry Mimms of the Department of Biology, and a tour of the UCA campus guided by Mr. Arch Jones, Admissions Officer of UCA.

The Mathematics and Science Summer program was initiated in summer 2008 to provide opportunities for middle and high school students to learn about mathematics and sciences in a hands-on activity setting beyond a regular classroom. "I am glad we were able to offer it again in summer 09 and hopefully we will continue to offer these programs in the foreseeable future," said Dr. Garimella. Dr. Steven Runge, soon to be the Interim Dean of the College of Natural Sciences and Mathematics, said, "The MSI program provides outstanding learning opportunities for students who are interested in math and science. This is an excellent example of how our College is working to help students learn math and science in ways that are understandable and meaningful in the context of our increasingly technological society."

For more information on future MSI programs, please contact 450-3147.

