



# The Basic Facts

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The Basic Facts, College of Basic and Applied Sciences, Middle Tennessee State University, Murfreesboro, TN

## Helping Students Succeed

### The Science of Success

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Mimi Thomas, TLSAMP director for MTSU, hosted a summer bridge for 23 STEM majors who will attend one of the Alliance Universities this fall—Vanderbilt University, University of Tennessee Knoxville, Tennessee State University, University of Memphis, and Middle Tennessee State University. Bridge students studied English, Math, Engineering, Biology, Chemistry, and



Physics, and learned about college life. The program was a great success.

The week of July 11, Computer Science will host three computer camps for high school students—robotics, Alice programming, multimedia programming. The goal is to interest more students in computing majors and careers. Both programs are funded by external grants from NSF with Dean Cheatham as the PI.

## Camp PRISM

MTSU is proud to have co-hosted the annual Camp PRISM for elementary students. Camp PRISM (Practices in Science and Mathematics) is a summer camp collaboration between MTSU College of Basic and Applied Sciences and Murfreesboro City



Schools. The camp was held June 6 through June 17 and served local 4<sup>th</sup> and 5<sup>th</sup> grade students. Approximately 30 students participated in the camp which included field trips, lectures, and hands-on activities. *SEE CAMP, PAGE 2*

## MTSU Student Farmers Market

The MTSU School of Agribusiness and Agriscience, has a history of providing students with quality experiential learning opportunities. The MTSU garden project is an extension of our overall teaching philosophy which places an emphasis on hands-on learning. Students in the ABAS 3660 Vegetable Gardening classes plan, prepare, and plant a garden during the spring semester. Hundreds of vegetable transplants are produced by the students in the MTSU Horticulture Center greenhouses, and



the students applied what was learned in class in order to properly select a site, prepare the soil, install drip irrigation, calculate fertilizer rates, and properly plant and maintain a garden. ABAS students maintain and continue planting in the garden over the summer. The produce is marketed to the MTSU campus community every Friday from 1:00 to 3:00 p.m. in the MTSU Horticulture Facility. The proceeds from the sale are used to help in purchasing materials that the students use at the MTSU Horticulture Center.

## MTSU's Experimental Vehicles Program Earns TBR Academic Excellence Award

MTSU's Experimental Vehicles Program has received the Tennessee Board of Regents' Academic Excellence Award because of the program's many benefits and



outstanding success. Dr. Paula Short, TBR Vice Chancellor for Academic Affairs and Chancellor John Morgan presented a plaque on June 23 to Saeed Foroudastan, who accepted the award for the University.

*SEE TBR, PAGE 2*

## Young STEM Majors Immerse Themselves in Science

In May 2011, 22 STEM majors engaged in an intense four-week science program called the First-STEP Immersion Experience. The students, who are rising sophomores, took part in student-centered, active learning in a research-like setting, with a goal of achieving depth of learning in a STEM discipline.

Faculty mentors for the projects included: Mark Abolins (Geosciences), Bruce Cahoon (Biology), Sing Chong (Chemistry), Daniel Erenso (Physics), Saeed Faroudastan (Engineering Technology), and Bill Robertson (Physics). *SEE STEM, PAGE 2*



The Science of Success

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## The Basic B.E.S.T. (Boastful Educators Sharing Talents)

All departments are invited to submit items for this column

### Agribusines/ Agriscience

MTSU Ag student Kimberly Way and Dean Tom Cheatham took a trip during the spring semester to Bradley County to see how a garden could turn lives of juvenile delinquents around. When they returned, Ms. Way did more



research, signed up for a summer internship with Warren Gill, and then approached Rutherford County Sheriff Robert Arnold with an idea to start a program in Murfreesboro.

Sheriff Arnold's idea is to use inmates from the Rutherford County Jail to start the garden. Evidently, it was a good idea, because the garden has been started and the inmates are making it work. Many people are involved, including John Hood, Gloria Bonner, Rosemary Wade Owens, and Nate Phillips from MTSU, Janie Becker from UT Extension, Arthal Mintor from the Sheriff's Department, and Brenda Benz-Elliott a community volunteer.

So far, this program has been recognized by being featured by Channel 4, WSMV News and by a front page article in the *Daily News Journal*. Senator Bill Ketron has enthusiastically endorsed it, hoping that the idea spreads to other locations.

*The Tennessee Conservationist* (July/August 2011 – Vol. LXXVII, No. 4) published the following article "Grasshopper Named for Tennessee State Park Ranger by Aubrey Watson." The article featured Wayne Ingram is a past graduate of MTSU.

Park Ranger/ Naturalist Wayne (Buddy) Ingram assisted Mississippi Entomological Museum staff in discovering a new species of grass-

hopper in the cedar glade of Tennessee. Because of Mr. Ingram's assistance, JoVonn Hill of the Department of Entomology and Plant Pathology at Mississippi State latinized Mr. Ingram's last name to "ingrami". JoVonn Hill named the newly discovered cedar glade grasshopper *Melanoplus ingrami*.

Mr. Ingram joins an exclusive list of Tennesseans for whom a plant or animals has been named. Mr. Ingram is a MTSU Plant & Soil Science graduate. He is an interpretive specialist and 35 year veteran at Cedars of Lebanon State Park.

### Biology

Cindi Smith-Walters conducted a day long PROJECT LEARNING TREE workshop with over 50 teachers at the Wilson County Fairgrounds in June. Educators used trees and forests as a window into the world of STEM education.

This summer Dr. Smith-Walters is serving as a curriculum consultant to the Seattle based non-profit, Facing the Future (FtF). FtF is developing a secondary interdisciplinary curriculum based on the topic of sustainability and living green. Topics include air and water quality, habitat protection, and human built environments. Her work with FtF is an in-kind contribution and part of her public service for the MTSU Department of Biology and Center for Environmental Education.

Steve Howard, Mark Owens (Economics-MTSU), and John Nunley (Economics-University of Wisconsin) wrote a paper titled "The Effects of Information and Competition on Racial Discrimination: Evidence from A Field Experiment" which has been



accepted for publication in the *Journal of Economic Behavior & Organization*.

### Engineering Technology

The Nissan Paint Plant Six Sigma team consisting of graduate student, Chul Shin, and undergraduate students, Festus Chemaoui and Steve Prathamavong, completed comprehensive analyses of both the measurement system and the process used to apply the correct paint coat thickness to the Nissan Altima vehicles. A presentation was made to Nissan management that was well received and changes made according to the team's recommendations to improve the SPC control of the paint process.

### Physics and Astronomy

Daniel Erenso presented a World Sickle Cell Day Lecture at Meharry Medical College Sickle Cell Center on June 17. The presentation was titled "Laser Tweezers for Probing the Mechanical Properties of Erythrocytes: From Normal Erythrocytes in Humans to Genetically Corrected Sickle Erythrocytes in Mice."

### CAMP FROM PAGE 1

Students were able to learn about various areas of math and science by engaging in hands-on applications of math, science, and technology. A diverse number of departments were represented by MTSU faculty, including Engineering Technology, Aerospace, Mathematics, and Geosciences. This unique camp gives students the opportunity to engage in authentic learning experiences in a college setting. MTSU would

especially like to thank Dr. Linda Gilbert, Director of Murfreesboro City Schools, and Rebecca Calahan, Director of Camp PRISM.

### TBR FROM PAGE 1

Dr. Foroudestan serves as faculty advisor for the Experimental Vehicles Program (EVP) since its inception. The year 2011 marks the third time CBAS has received the Academic Excellence Award from the TBR. Both Dr. Foroudestan and David O'Brian, President of the Experimental Vehicles Program student organization, gave a presentation about the EVP program at the TBR meeting.

The Experimental Vehicles Program consists of five collegiate design projects. For each project, student teams design, develop and produce an experimental vehicle. MTSU's EVP uses classroom knowledge and applies it to hands-on projects that foster critical thinking, initiate creative problem-solving, and create an interest in STEM disciplines. Through these design projects, students learn about alternative energy and work in a diverse cultural setting. The Experimental Vehicles Program would like to thank Walter Boles, Charles Perry, and Tom Cheatham for supporting the EVP program. Thanks also to Rick Taylor, Director of the MTSU Machine Shop.

### STEM FROM PAGE 1

The Immersion Experience completed the first year of a five-year, 2-million-dollar FirstSTEP grant funded by the NSF, whose goal is to improve retention rates in STEM--particularly for STEM majors whose pre-college math experiences place them into an at-risk category. The Principle Investigators on the grant are Tom Cheatham, Don Nelson, Ginger Rowell, Chris Stephens, and Elaine Tenpenny.