



# The Basic Facts

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

## Sixth Annual Expanding Your Horizons (EYH) Conference

### The Science of Success

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**B**onnie Maynard makes quite an impression, especially when she brings her partner with her. Her partner, Jenny, is a 4-year old German shepherd who is part of the K-9 unit for the Urban Search and Rescue team.



Ms. Maynard was keynote speaker at this year's EYH conference and Jenny gave her some assistance with that job. The objective of her speech was to explain to the young women how she had used math and science to be successful in her work.

Maynard's presentation outlined how being a paramedic is all about the metric system converting pounds into kilograms. She began her presentation with a five-minute video and

then took questions from the audience.

Judith Iriarte-Gross (CHEM), the event coordinator said, "EYH conferences introduce young women to the challenges and rewards of STEM (science, technology, engineering, and math) careers

at an early age. The young women who attended this year's events learned what STEM classes are needed now to succeed in high school and later in college. To meet the growing STEM job demand, women must be made aware of the opportunities available to them and they must be prepared. This is the message that we are giving to the middle school girls who attended the MTSU EYH."

Student workshops included accounting, nursing, genetics, environmental science, statistics, physics, finance, botany, veterinary medicine, geography, microbiology, polymers, psychology, cosmetics chemistry, and many others.

Over 200 young women throughout Middle Tennessee attended the conference.



## Speed Limits Not a Problem

**D**r. Bill Robertson has always been one to observe the speed limit — that is, until earlier this year.

Robertson with the help of senior physics and astronomy major Jeremy Munday, used the department's oscilloscope and other basic laboratory equipment valued at about \$500 to send an electronic signal at least four times faster than the speed of light. A report of their experiment was published in the September 9 issue of *Applied Physics Letters*.

Robertson, who has become a man in demand for interviews worldwide after the work was highlighted in the online version of *New Scientist* magazine, said it

was "An exotic effect, but nothing more than pure classical physics." He hastened to add that the phenomenon does not violate Einstein's theory of relativity.

MTSU isn't the first to demonstrate faster-than-light pulse transmission. Scientists have been performing similar experiments in earnest since 1993, mostly with optical pulses.

What is remarkable is the fact that Robertson and Munday achieved a similar result in mid-spring with the basic lab kit in the Wiser-Patten Science Hall electronics lab. "It all happened fairly quickly," Robertson said.

"Once Jeremy set it up, we got re-

sults very quickly...seeing this type of (faster than the speed of light) behavior. It was a very simple experiment to set up and the results are very consistent," Robertson said.

MTSU's equipment consisted of the oscilloscope, 120 meters of coaxial cable filter and two function generators. Electric pulses were produced when the waves interfered with each other, and these pulses could be viewed by using the oscilloscope.

The above article appeared in the September 30 issue of *The Record* — By Randy Weiler

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## A Carnival of Health

**S**everal second-semester nursing students led MTSU School of Nursing faculty, other students, and staff in the School's Third Annual MTSU Community Health Fair on Tuesday, October 15th. Under the theme "A Carnival of Health," the Nursing School provided fourteen venues for health promotion and disease prevention education using gaming and learning activities.

A sampling of topics included, "The Guessing Game" for hemoglobin and blood glucose screenings, "Climb the Pyramid" for nutrition, "Health Fortune Teller" for health risk ap-

praisal, "What Are You Made Of?" for body composition (conducted by Lisa Sheehan-Smith and students from Human Services), "Hey, Are You DENSE?" for bone density determination, and "Capture the Threat" for bioterrorism disease awareness.

"What A Sideshow!" performances on domestic violence and acquaintance rape were conducted in the KUC Theatre every 15 minutes.

Announcements of recipients for "Healthiest Person at MTSU" were made

and drawings for door prize and free flu shots finished off the day.





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

All departments are invited to submit items for this column

### Aerospace

**David Robinson**, an MTSU Aerospace Professional Pilot major, has won the National Business Aircraft Association's Ginocchio Scholarship. David won the Aerospace Department's "Fast Start" Scholarship last year, but the Ginocchio Scholarship is a nationwide competition with hundreds of applicants. Five were chosen. The other universities having winning students were University of North Dakota, Ohio University, Oklahoma State University, and Southern Illinois.

### Agribusiness/Agriscience

**Harley Foutch** recently attended the annual meeting of the American Association of state Colleges of Agriculture and Renewable Resources (AASCARR) at the University of Wisconsin at River Falls. He served as president for 2001-02 and remains on the Board as Past President.

**Warren Anderson** attended a Turf Equipment Field Day in September at the Golf House of Tennessee. The field day was sponsored by the Tennessee Gold Course Superintendent's Association. Equipment and irrigation demonstrations were presented.

**Jessica Gentry, Tim Redd, Daniel Boyer, and Danny Troup** assisted with the State FFA Livestock Judging Contest which was held during the Tennessee State Fair in September.

### Biology

**Judith Shardo** recently published "Morphology and Development of the Postcranial Skeleton in the Channel Catfish, *Ictalurus punctatus*, (Ostariophysi: Siluriformes)," in the *Fieldiana: Zoology, New Series*.

**Cindi Smith-Walters and Kim Sadler** presented "Like It, Love It, Want Some More of It," a workshop on threatened and endangered species and ecosystems in Tennessee at the state conference of the TN Environmental Education Association in September. They also conducted a Project Learning Tree workshop in October for teachers and Girl Scout leaders as part of the ongoing Expanding Your Horizons conference for young women in grades 5, 6, 7, and 8

**Cindi Smith-Walters and Karen Hargrove** held an after-school workshop, "Bats in Your Belfry," in October at the Wilderness Station at Barfield Park

### Chemistry

**Preston MacDougall**, who is serving as Chair of the Public Relations Committee of the American Chemical Society, received the Chemluminary Award from the society. He received the award because he has been so instrumental in getting local media coverage of the society's public relations activities.

**Preston MacDougall** gave the inaugural lecture in the 2002-2003 Chemistry Seminar Series at Tennessee Tech. His seminar was entitled, "The Two Faces of Electron Density Analysis."

The Middle Tennessee State University chapter of Sigma Xi has won a Sigma Xi Diversity Award for its support of the Expanding Your Horizons program, for the luncheon discussion entitled "Graduate/Professional School in Science for Women and Minorities: Questions and Answers," and for the panel discussion "Perspectives of MTSU Women in Science."

### Engineering Technology/ Industrial Studies

**Saeed Foroudestan** and three student officers of the student section of the American Society of Mechanical Engineers attended the Southeastern Region XI 2002 Regional Student Leadership Seminar and Student Section Advisor Training Program in Atlanta, GA, in September.

**Tom Cheatham, Walter Boles, and Saeed Foroudestan** attended a Tech After Hours event sponsored by the Nashville Technology Council Quality Growth for Middle Tennessee in September. The event was held at the Franklin Marriott Cool Springs and a display was set up showcasing the College of Basic and Applied Sciences and the Engineering Technology & Industrial Studies programs.

**Saeed Foroudestan** has submitted to the American Society for Engineering Education (ASEE) South East an abstract titled "How to Bring Reality into the Classroom Through Project Innovation," for peer review. When accepted by peer review, the paper will be published for the ASEE South East Annual Conference. The peer review conference will be in April.

**Saleh Sbenaty** made a presentation at the Central Christian Church entitled "One Nation Toward Reconciliation" and also made a presentation at St. Mark's United Methodist Church entitled "Religious and Political Ferment in the Middle East." The presentations were made in September.

**David Hatfield** attended the Rutherford County Home Builders Monthly Meeting in September.

**Ken Sergeant** attended the Nashville Chapter #43 Society of Manufacturing Engineers (SME) in September. He also set up a tour for six students to see Accu-Cast Technologies, LLC, in Lawrenceburg. Accu-Cast is a rapid manufacturer of aluminum and zinc metal castings, plastic prototypes, concept design models, and also specialized tooling which gave the students an opportunity to see master models made by the 3D systems stereolithography process.

**Don Beard** gave presentations to the following community groups, Southern Land Corp. and Greater Nashville Apartment Managers Association on indoor air quality concerns, primarily indoor mold assessment and remediation. Also, he, along with two graduate students, gave an exhaust ventilation assessment of a commercial manufacturing facility in Cookeville.

**Heather Brown** attended the following events: ACI Seminar on the revised 318 Building Code in Nashville; American Society of Concrete Contractors reception for conference; guest lecturer at Nashville Chapter of ACI on the topic of "Update on Innovative Concrete Technology;" and Strategic Planning Meeting for Tennessee Ready Mixed Concrete Association in Fairfield Glade.

**Al Carter** served as co-host for the Tennessee Technology Symposium at the Radisson Hotel in Nashville in September.

### Mathematical Sciences

**Dovie Kimmins and Joan Raines** conducted an interactive workshop for grades 6-12 mathematics teachers at the Central Regional Conference of the National Council of Teachers of Mathematics in October in Paducah, KY. Title of the workshop was "Graphing Window Selection: What You See Is Not...."

**Michaele Chappell** attended the Mathematics Learning Study Symposium held in September in Washington, DC at the National Academy of Sciences and sponsored by the Mathematical Sciences Education Board of the National Research Council. Also, she published a chapter in S. Senk and D. Thompson's book, *Standards-Based School Mathematics Curricula: What Are They? What Do Students Learn* entitled "Keeping Mathematics Front and Center: Reaction to Middle Grades Curriculum Projects Research." The publisher is Lawrence

Erlbaum Associates.

**Zachariah Sinkala** has been invited to become a reviewer of Mathematical Reviews (MR). The MR database covers the world research literature in mathematics by means of critical reviews. The literature is growing rapidly and the MR need additional reviewers to keep up with this growth, speed up the reviewing process, and improve the quality of the reviews by having specialists in all fields.

### Nursing

The MTSU Student Nurses Association received several awards at the recent Students Nurses' Annual State Convention. The awards received were Gold Precious Medal Award for excellence in Membership; Outstanding Chapter Legislative Award; and Most Represented School at Convention. Two individual awards were given to graduates RaChelle Bennet for Outstanding Individual Legislative Award and Lara James for TASN Student Nurse of the Year Award.

### Physics and Astronomy

**Eric Klumpe and Charles Higgins** gave presentations at the Tennessee Star party 2002 in Crossville, TN in October. **Klumpe's** presentation was entitled "Our Changing Sun and the Prehistoric Greenhouse Effect and **Higgins'** presentation was entitled "Radio Jove."

**Victor Montemayor** participated in a panel review of proposals submitted to the NSF Course, Curriculum, and Laboratory Improvement (CCLI) Program held in Arlington, VA in July.

**Ronald Henderson and Victor Montemayor** attended Project Kaleidoscope's F21 National Assembly in Washington, D. C. in October. **Montemayor** served as a group facilitator for physics faculty from around the country.

### CBAS

**Lynn Parsons** gave the opening address at the National Gerontological Nurses Association (NGNA) Convention in October in Chicago, IL. The title of the address was "The Graying of Nurses and Aging in America: Strategies for Managing in a New Era." She also spoke at one of the concurrent sessions on the subject, "Nurse Delegation Decision-Making: Strategies for Acute and Chronic Care Nurses."