



# The Basic Facts

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

The Science of Success

## Undergraduate Research Symposium 2002

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### Recommended Book of the Month

*The Coming Biotech Age — The Business of Bio Materials*

By Richard W. Oliver

If you would like to make a recommendation for a Book of the Month, email [jcar-ter@mtsu.edu](mailto:jcar-ter@mtsu.edu)

In October of 1993, the Dean of the College of Basic and Applied Sciences formed the Undergraduate Research Council (URC) with the charge of developing a college level undergraduate research program at MTSU. The URC's mission is to promote, facilitate and showcase undergraduate research in the sciences at MTSU.

The URC engages in two primary activities each year. These are: 1) an annual competitive research grant program in which successful student applicants receive a stipend to help support them while they are conducting their research; 2) the URC sponsors an annual Undergraduate Research Symposium in which students from the college present their research, in poster format, to MTSU students and faculty as well as to members of the surrounding community.

On April 5, 2002, the 7th Annual Un-

dergraduate Research Symposium was held in KUC with six departments (ABAS, BIOL, CHEM, ETIS, MATH, & PHYS) from the College of Basic and Applied Sciences submitting posters.



A total of 31 students and 11 faculty from six departments were represented at the Symposium. The faculty included Dr. Warren Anderson, Dr. Rebecca Seipelt, Dr. Ngee Chong, Dr. Judith Iriarte-Gross, Dr. Andrienne Friedli, Dr. William Ilsley, Dr. Martin Stewart, Dr. B.S. Sridhara, Dr. Ginger Rowell, Dr. William Robertson, and Dr. Eric Klumpe.

The following are the winners of the poster contest:

### First place winner

*Today's Technology Implemented Into Chemistry Research Open*

plenty of food for everyone and the event ended with the annual Golden Goggles Lecture.

The speaker, Dr. Terry Collins was from Carnegie Mellon University and his topic "Green Chemistry: Sustaining a High Technology Civilization" was of interest to a wide audience. The lecture hall was packed.

### Yesterday's Tradition..

Russell White and B.S. Sridhara. Department of Engineering Technology and Industrial Studies.

### Two Second place winners

*Atomic Force Microscopy (AFM) as a Tool for Guiding Biosensor Development.* Cameron K. Gren and Andrienne C. Friedli. Department of Chemistry.

*Acoustic Band Gaps and Defect Modes in Periodically-Structured Wave Guides.* J.N. Munday, C. Brad Bennett, and W.M. Robertson. Department of Physics and Astronomy.

For more information on the Undergraduate Research Council, please visit their web site at <http://www.mtsu.edu/~collbas/UndergradResearch/>.



On March 21, the campus community and the general public had a chance to see the renovated \$254,000 biotechnology laboratory facility in the Davis Science Building. The grand opening was held with the assistance of the guest speaker, Dr. Rick Oliver, adjunct professor of management at Vanderbilt University's Owen Graduate School of Management, Dr. Sidney McPhee, President MTSU, Dr. Stephen Wright, assistant professor, biology, and Dr. Becky Seipelt, assistant professor, biology.

"This event represents partnerships in action," Wright said. "We began forging partnerships years ago and such activity is part of the university Master Plan and the current Master Plan update."

The lab was funded through student Technology Access Fee

## CBAS Biotechnology Lab Holds Open House

students and features state-of-the art equipment that allows students and faculty to perform research and prepare students for future biotech jobs. Features include DNA sequencing machine, Polymerase Chain Reaction equipment, electrophoresis equipment, thermal cycler, audio system, and Power Point projector. In addition, every desk has outlets for laptop computer data ports to utilize the Internet.

"All the equipment you will need is right here," Seipelt said, "and more people are going to be using it."

"It has all the stuff for doing my kind of research," said Dr. Matt Elrod-Erickson, assistant professor, biology. "It lets me and my students be a lot more productive doing research."

"The room represents a leap forward in capability and

opportunity for the students," said Todd Edwards, a junior biology (microbiology) major from Nashville. "This environment is a better simulation of the vocational environment they will see when they leave MTSU."

In addition to Seipelt, Wright, and Elrod-Erickson, other faculty who already have utilized the lab are Drs. Jeff LeBlond, Tony Farone, Anthony Newsom, Amy Jetton, John Zamora and Marion Wells. Seipelt said she and Dr. Phil Mathis might do an Honors College lab this fall.

For more information about the biotech lab, call Wright at 2056 or Seipelt at 8393. Information regarding the Biotech Resource Group can be accessed at their web site <http://www.mtsu.edu/~biotech>.





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

All departments are invited to submit items for this column

### Aerospace

**Janet McGee** recently had an article published in the *Historical Aviation Journal* entitled "The Cultural and Economic Impact of the British Comet."

**John Bertrand** recently had an article published in the *Professional Flight Instructor Journal* entitled "When Its for Real."

**Grady Jones** will be going on post-retirement this year.

### Agribusiness/Agriscience

**Harley Foutch** and **Warren Anderson** attended the Tennessee Association of Colleges and Teachers of Agriculture on the campus of Tennessee State University in April.

**Janet Kelly** won the 4th Quarter Secretarial/Clerical Employee Award and subsequently won the Secretarial/Clerical Employee of the Year Award.

The **MTSU Team Riders** had the highest combined score for the year at the Intercollegiate Horse Show Association (IHSA) Regional Championships held in March. They were named Reserve Champion Team in both Western and Hunter Seat disciplines. The championship classes were hosted by Southern Illinois University at Carbondale.

### Biology

In March, **Karen Hargrove** (Coordinator for Center for Environmental Education) worked with representatives from the Center in Toxicology, Vanderbilt University and Rutgers University in conducting a day-long workshop at the Society of Toxicology Annual meeting in Nashville.

**Cindi Smith-Walters** and **Kim Sadler** presented a workshop in April entitled "Sink or Swim: Navigating the Scary Waters of Life Science" at the 2002 *Pathways to Change: An International Conference on Transforming Math and Science Education in the K16 Continuum*. Their two-hour workshop highlighted the unique MTSU content course, "Life Science for Elementary Majors" offered through the biology department.

**Cindi Smith-Walters** and **Karen Hargrove** conducted a one-hour program in April entitled "Putting the Pig in Piggyback: Math and Language Arts Skills Through Science" through the Video Conferencing Center. The session bridged the science gap in elementary education by exploring how to use science skills/concepts while teaching traditional subjects in the elementary classroom.

**E. Ray Phillips** and **Cindi Smith Walters** are involved in a cooperative effort with the Tennessee Science Teachers Association and the TN State Department of Education to develop and distribute a K-8 science sampler of activities, content information, and cross-references to the Tennessee State Curriculum Guidelines. This collaborative effort is through the MTSU Environmental Education Center

and the Tennessee Center for Advancement for Math, Science, and Technology Education.

In March, **Amy Jetton**, **Matt Klukowski**, and **Nicole Welch** judged the 48th Cumberland Plateau Regional Science and Engineering Fair at Tennessee Technological University in Cookeville, TN.

**Amy Jetton** received an Instructional Technologies Development Grant for summer 2002.

**Sandra Johnson** gave a talk in April entitled "Flat Rock Natural Area: Preserving the Barrens," to a group of Savannah State University faculty and undergraduates as part of the Minority Mentorship in Science Seminar Series. Her talk described the work she is currently doing in the Cedar Glades in association with The Nature Conservancy (TNC) and the TN Division of Natural Heritage.

**Sandra Johnson** gave a talk on April 19 to faculty and students in the Department of Forestry at the University of Kentucky entitled "The Role of Fire in Barrens Preservation." The talk described her current research in the grassy glades or barrens of Middle Tennessee.

**Patrick Doyle** will be retiring this year.

**Marion Wells** will be going on Post Retirement this year.

### Chemistry

**Nabil Wakid** in March judged the 48th Cumberland Plateau Regional Science and Engineering Fair at Tennessee Technological University in Cookeville, TN.

**Judith Iriarte-Gross** was one of fifteen women chemists from across the nation to be invited in April to participate in a workshop entitled "The Chemistry of Leadership: A Women's Leadership Development Program," held in Orlando, FL.

The **Golden Goggles Lecture/Research Open House** event in the Chemistry Department was held in April. The lecture entitled, "Green Chemistry: Sustaining a High Technology Civilization," was given by Dr. Terry Collins of Carnegie Mellon University. Immediately before the lecture, a poster session showcasing the research activities in the Chemistry Department was presented.

**Amy Jetton** presented a research talk at the 223rd National American Chemical Society meeting in April in Orlando, FL. The title of the talk was "Good Chemistry Education: Student Voices."

### Computer Science

**Brenda Parker** and **Judy Hankins** attended the Consortium for Computing in Small Colleges Central Plains Conference in April in Kansas City, KS. **Parker** had two papers published in the conference proceedings and presented them at the conference. The papers' titles are "Using Technology to Teach Technology" (co-authored with **Thomas Cheatham** (Interim Dean CBAS) and

**Justin Milling** (2001 MTSU graduate) and "AAHE's Seven Principles for Good Practice Applied to an Online Literacy Course" (co-authored with **Judy Hankins**).

**Roland Untch** attended the 7th Annual Mid-South Instructional Technology Conference in April held on campus and sponsored by the Office of Information Technology.

**Richard Detmer** presented a talk in April entitled "The IA-64 Architecture" at the MTSU Association for Computing Machinery (ACM). In April **Detmer** also attended a NSF High Performance Networking Connection proposal preparation workshop in Kansas City, KS. He is preparing a proposal to bring Internet 2 to the MTSU campus.

### Engineering Technology/Industrial Studies

On April 25, the Manufacturing Engineering Technology Advisor Committee met at the Foundation House to consider membership for two industries, Dell and Pillsbury. Also, two students from the Manufacturing Engineering Technology concentration were also considered for membership.

In March the **MTSU Space Robotics Team** won 3rd place in a competition held in Albuquerque, New Mexico.

### Mathematical Sciences

**King Jamison** will be retiring this year.

**E. Ray Phillips** gave a presentation in April at the chemistry department's weekly seminar series entitled "The Center for the Advancement of Mathematics, Science, and Technology Education at MTSU."

### Military Science

The MTSU ROTC Department hosted a Joint Field Training Exercise with the University of Tennessee, Carson Newman, Tennessee Tech, and Western Kentucky at Tullahoma in April. Over 280 cadets participated with 82 cadets from MTSU.

This summer MTSU Junior Cadets will receive training and be evaluated on their leadership skills and compete with over 4,000 other cadets from universities and colleges from around the country at Fort Lewis, WA. British Cadets from the United Kingdom will also participate at Fort Lewis in an exchange program as cadets from the United States will taste the British cup of tea and train. MTSU will send an MTSU cadet to London to train with Cambridge Cadets and hopefully, have an experience of a lifetime. Cadets will also be sent to Airborne (parachuting) Ft. Benning, Georgia, Air Assault (helicopter operations) Ft. Campbell, Kentucky, and to military units in Hawaii and Germany for a two week introduction as a Third Lieutenant.

Currently five MTSU sophomore students not enrolled in ROTC will go to a Leadership Training Camp at Ft. Knox, Kentucky to receive credit for the ROTC Basic Course and

enroll as Advance Course Juniors in the Fall. This intense four-week course will train and evaluate students' leadership potential through a myriad of mental and physically demanding tasks. Over 3,000 students from colleges and universities across the United States will participate.

### Nursing

**Linda Covington** published a book chapter entitled "Chloride Balance and Imbalances" in the book *Fluids, Electrolytes, and Acid-Base Balance* (2003). Hogan, M. & Wayne, D. New Jersey: Prentice Hall.

**Pat O'Leary** presented "Use of Web-Based Multimedia Applications for Teaching Nurse Health Assessment" at the Mid-South Instructional Technology Conference at MTSU in April.

**Suzanne Prevost** presented "Pain Management Strategies" at the St. Clair Street Senior Center in April.

**Anita Crockett** attended a workshop in February entitled "Teaching About Telehealth and Internet Technologies: Strategies for Educating Nurses" in February. The workshop was provided by FITNE, Inc., a nursing owned and developed instructional technologies company. She also presented her research "Leaders' and Workers' Perspectives of Health: Exploring Time, Space, Movement in Nursing Environments" in April at the 8th Annual International Qualitative Health Research Conference in Banff, Alberta, Canada. Also in April she presented "Decisions, Decisions, Decisions: A Model for Selection of Mobile Technology in Health Professions Education" at "The Connected Classroom," the 7th Annual MidSouth Instructional Technology Conference held at MTSU.

**Kate Moore**, a Major in the Army Nurse Corps, has been selected as one of four reserve officers to complete a NATO exercise in England during July. In addition, she was the office in charge of medical operations during March for the joint task force, "New Horizons." The project supported the rebuilding of infrastructures damaged by earthquakes in San Salvador.

**Lyn Parsons** and **Karen Ward** presented "Delegation Strategies for Health Care Managers in Redesigned Delivery Systems" for hospital administration/management at Middle Tennessee Medical Center in April.

**Kate Moore** published an article entitled "Critical Care Hemodynamic Parameters and Pharmacologic Interventions" in *Critical Care Nursing Clinics of North America*, Volume 14 (1), 71-76.

RaChelle Bennett, Nursing, received the prestigious James E. Walker President's Award at the University Awards Ceremony in April.