

THIRTIETH ANNUAL UNIVERSITY-WIDE RESEARCH SYMPOSIUM

1979-2008

RESEARCH:
CELEBRATING 30 YEARS OF EXCELLENCE



30TH ANNUAL UNIVERSITY-WIDE
RESEARCH SYMPOSIUM

MARCH 31 - APRIL 3, 2008

TENNESSEE STATE UNIVERSITY
OFFICIAL 2008 SYMPOSIUM PROGRAM





T H E R E S E A R C H S Y M P O S I U M

A B R I E F H I S T O R Y

The University-Wide Research Symposium at Tennessee State University is celebrating 30 years of providing an opportunity for faculty, undergraduate and graduate students to present their research. In 1979, The Research Symposium was called Research Day. In 1981, it was renamed University-Wide Research Day. During the early years, only oral presentations were given; since 1995, both poster and oral presentations were included. Also in 1995, the number of presentations had increased so much that all activities could not be completed one day. Consequently, the name was changed from Research Day to Research Symposium where there are now 4 days of activities including presentations from several speakers from various disciplines. Dr. Rubye Torrey was the first Research Day Chair (1979-1981). TSU is honoring Dr. Torrey at this year's Symposium. (Please see commentary on pages 10-11).

In 1979, the winners of the student presentations and their advisors were: Tyrone McKinnie (Advisor Richard Hogg); George Pruiett (Advisor Rudolph Woodberry) and Karen Sharp (Advisor Sandra Scheick). Faculty presenters included Baqar A. Husaini (Sociology), Robert Taylor (currently Department Chair of Biological Sciences, Alabama A & M University), Leana Springfield (English), and Sandra Scheick (Mathematics). Remarks were given by then Governor Lamar Alexander, Congressman John Bray, Mayor Richard Fulton, Walter Lennard, President of Fisk University, Richard Lester, President of Meharry Medical College, and Emmett Fields, President of Vanderbilt University.

Over the ensuing thirty years of annual symposia, the following persons have served as Symposium Chairs: Rubye Torrey (1979-1981); Jacquelyn Martin (1982-1986); Joan Elliot (1987-1994); Carolyn Caudle (1995-1999); E. Lewis Myles (2000-2004); Elaine Martin (2005-2007); and Brenda McAdory and Valerie Williams (2008).

The Dean of the College of Arts and Sciences (Dean Bell, Bobby Lovett and William Lawson) has supported the Research Symposium from its inception. In 1995, Dr. Carolyn Caudle was responsible for moving the activities to a new level. She reestablished the presentation times to 15 minutes and introduced concurrent sections. The symposium reached a peak of 130 presentations during her chairmanship. Dr. Caudle instituted advertisements in the symposium booklet from Schools, Departments and Institutes throughout the University. Dr. Caudle's Co-chair Ms. Nannette Martin, along with Ms. Jovita Wells, assisted in the design of the Research Symposium booklets and many of the advertisement pages. The Research Symposium booklets were given to all attendees and were used as a recruitment tool for students and faculty by the university's president, School of Engineering and other departments and schools of the university. The research booklet (or program) also became a means to showcase various research activities at Tennessee State University.

Vice President Marcus W. Shute and Dr. Maria Thompson of the Office of Research and Sponsored Programs, along with Dean Lawson of the College Arts and Sciences, continue to support the chairs of the Research Symposium. The research titles and authors are now published in the program booklet, while the abstracts and presentations are published on Tennessee State University's research website (www.research@tnstate.edu).



OFFICE OF
THE PRESIDENT

TENNESSEE STATE UNIVERSITY
3500 JOHN A. MERRITT BOULEVARD
NASHVILLE, TENNESSEE 37209-1561



March 31, 2008

Dear Participants:

I am pleased to welcome each of you to Tennessee State University for the 30th Annual Research Symposium. I must extend my congratulations to the division of Research and Sponsored Programs for initiating this symposium and coordinating great discussion, information and a consortium of talented research professionals.

Over the years, this symposium has grown to showcase the excellent innovations being made in everything from engineering to agriculture to health education. The past year has been met with much success for the university in terms of exposure, grant funding and new initiatives and programs in our research division.

As we position Tennessee State University as one of the state's top research institutions, we look forward to increasing awareness and support to research in our academic programs in all meaningful facets.

Sincerely,

A handwritten signature in blue ink that reads "Melvin N. Johnson".

Melvin N. Johnson
President

UR&D/MNJ/pc

"A Commitment to Excellence"
AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER M/F



OFFICE OF
THE VICE PRESIDENT

TENNESSEE STATE UNIVERSITY
RESEARCH AND SPONSORED PROGRAMS
3500 JOHN A. MERRITT BOULEVARD
NASHVILLE, TENNESSEE 37209-1561



31 March 2008

Dear Colleagues:

I am delighted to welcome you to the 30th Annual University-Wide Research Symposium celebrating the accomplishments of our outstanding students, distinguished researchers, dedicated staff, and accomplished faculty. The theme for this year is "Research: Celebrating Excellence." We pause at this time to reflect and celebrate the many contributions made by students, faculty, researchers and staff to the success of the research enterprise at Tennessee State over the past thirty years! The presentations and posters presented during the symposium this year highlight the commitment to excellence of the research programs at Tennessee State University. We are especially pleased to announce the opening of the new core laboratory facilities in the Research and Sponsored Programs building which were partially funded by the efforts of our congressional delegation, the Department of Defense Research and Engineering Office, and the Air Force Office of Scientific Research. These initial laboratories will support collaborative research and investigation at the intersection of nanoscience, biotechnology and computational science of complex problems related to the environment, human health, and national security.

Research at Tennessee State continues to flourish. We look forward to supporting interdisciplinary, collaborative efforts across high growth areas such as biotechnology, computational sciences, learning sciences, nanotechnology, and others. By leveraging our expertise and past success, focusing on the needs of our partners, and providing infrastructure improvement, we hope to continue to stimulate the growth of research and scholarly activity at the University.

On behalf of the Division of Research and Sponsored Programs, I congratulate and celebrate the outstanding accomplishments of our students, researchers, faculty, and staff, as we also celebrate our thirtieth anniversary! At Tennessee State, we believe research is essential to excellence in education as it informs the learning process and enhances the experience of our students by providing outstanding opportunities. We remain committed to excellence in research, education and service!

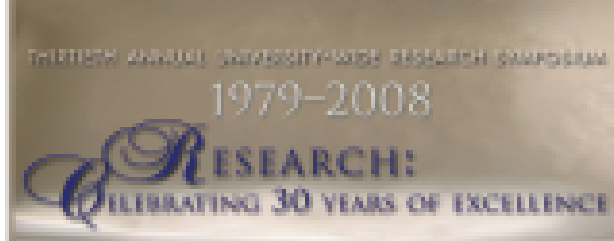
As always, I remain

Sincerely,

A handwritten signature in blue ink that reads "Marcus W. Shute".

Marcus W. Shute, P.E., Ph.D.
Vice President

"A Commitment to Excellence"
AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER M/F



OVERVIEW OF EVENTS

MONDAY, MARCH 31, 2008

11:30 AM - 4:00 PM REGISTRATION, *RESEARCH AND SPONSORED PROGRAMS BUILDING (RSP), FIRST FLOOR LOBBY*

1:00 PM - 4:00 PM ENGINEERING GRADUATE STUDENT PRESENTATIONS
RSP, ROOMS 163 AND 209, CONCURRENTLY

TUESDAY, APRIL 1, 2008

8:00 AM - 10:30 AM REGISTRATION, *RSP FIRST FLOOR LOBBY*

9:00 AM - 11:00 AM CONCURRENT SESSIONS
GRADUATE STUDENT PRESENTATIONS, EDUCATION, HEALTH - *RSP ROOM 163*
UNDERGRADUATE STUDENT PRESENTATIONS, SOCIAL, BEHAVIORAL, HEALTH
RSP ROOM 209

11:30 AM - 1:30 PM KEYNOTE ADDRESS AND LUNCHEON
KEYNOTE SPEAKER: DR. THOMAS W. HUSSEY,
CHIEF SCIENTIST, AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
JAMES E. FARRELL-FRED E. WESTBROOK BUILDING 118

2:30 PM - 3:30 PM DEDICATION OF THE NANOSCIENCE AND BIOTECHNOLOGY LABORATORIES
GUESTS: DR. THOMAS W. HUSSEY, AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
MRS. EVELYN KENT, DEPARTMENT OF DEFENSE, RESEARCH AND ENGINEERING OFFICE
MR. ED LEE, AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
U.S. SENATOR LAMAR ALEXANDER, TENNESSEE (INVITED)
U.S. REPRESENTATIVE JIM COOPER, FIFTH DISTRICT, TENNESSEE (INVITED)
RSP SECOND FLOOR

WEDNESDAY, APRIL 2, 2008

8:00 AM - 4:00 PM REGISTRATION, *RSP FIRST FLOOR LOBBY*

9:00 AM - 10:30 AM FACULTY PRESENTATIONS, *RSP ROOM 163*

11:30 AM - 1:30 PM NASA SCIENCE EDUCATION LUNCHEON
SPEAKER: JO ANN CHARLESTON, CHIEF, EDUCATIONAL PROGRAMS OFFICE,
NASA JOHN H. GLENN RESEARCH CENTER
JAMES E. FARRELL - FRED E. WESTBROOK BUILDING 118

1:30PM - 3:00 PM GRADUATE STUDENT PRESENTATIONS, SCIENCES, *RSP ROOM 163*

1:30PM - 4:15 PM UNDERGRADUATE STUDENT PRESENTATIONS, SCIENCES
RSP ROOM 209

THURSDAY, APRIL 3, 2008

8:00 AM - 10:00 AM REGISTRATION, *RSP FIRST FLOOR LOBBY*

9:00 AM - 10:30 AM FACULTY PRESENTATIONS, *RSP ROOM 163*

11:30 AM - 1:30 PM AWARDS PRESENTATION LUNCHEON
GUEST SPEAKER: DR. RUBY P. TORREY, FOUNDING CHAIR, RESEARCH DAY, 1979
JAMES E. FARRELL - FRED E. WESTBROOK BUILDING 118

1:30 PM ADJOURNMENT



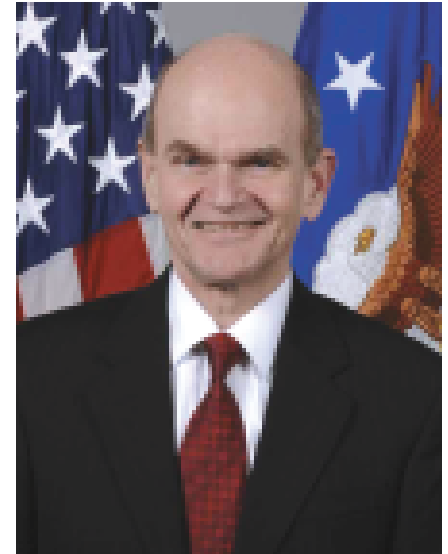
LUNCHEON KEYNOTE SPEAKER

DR. THOMAS W. HUSSEY

CHIEF SCIENTIST

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH, ARLINGTON, VIRGINIA

Dr. Thomas W. Hussey is Chief Scientist of the Air Force Office of Scientific Research (AFOSR), located in Arlington, VA. AFOSR is the Directorate of the Air Force Research Laboratory (AFRL) responsible for executing the Laboratory's basic research portfolio. Dr. Hussey is a member of the scientific and professional cadre of AF senior executives and is responsible for assuring the quality of AFOSR research and advising the Director on future emphasis for funding priorities. AFOSR has an annual budget of \$400 million that support more than 5,000 worldwide basic research projects critical to the defense of the U.S.

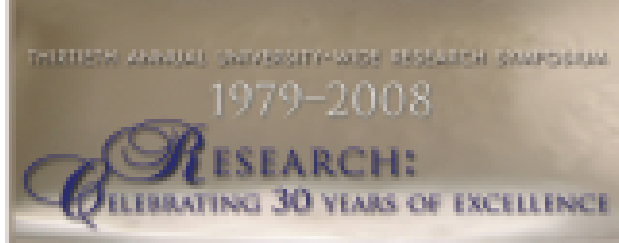


Dr. Hussey earned a doctorate in physics from the University of Florida, Gainesville in 1974. He then joined the Air Force Weapons Laboratory as an active-duty Air Force officer and was responsible for the numerical modeling of high-energy-density z-pinch plasmas under development for nuclear weapons effects simulation. Dr. Hussey's early career involved a series of activities related to theoretical and computational plasma physics, including z pinches, x-ray lasers, cathode plasma formation and evolution, hohlraum physics, and high-current-density electrode behavior. In 1995 he took over management of a Division of AFRL with responsibility for high-power microwave (HPM) source and pulsed-power development. In 1997 he became involved with understanding, experimentally and theoretically, HPM effects on electronics, and continued that work until joining AFOSR in 2006. Dr. Hussey is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE).

Keynote Luncheon

Tuesday, April 1, 2008, 11:30 am Farrell-Westbrook Bldg., Room 118

Mistress of Ceremonies	Ms. Valerie Williams , <i>Symposium Co-Chair</i>
Welcome	Dr. Marcus W. Shute, P.E. , <i>Vice President, Research and Sponsored Programs</i>
Lunch is Served	
Introduction of Speaker	Dr. Brenda McAdory , <i>Symposium Co-Chair</i>
Keynote Speaker	Dr. Thomas W. Hussey , <i>Chief Scientist, Air Force Office of Scientific Research</i>
Acknowledgements and Closing Remarks	



NANOSCIENCE AND BIOTECHNOLOGY CORE FACILITIES AT TENNESSEE STATE UNIVERSITY



Dr. Margaret Whalen (right), Associate Professor in the Chemistry Department, works with graduate students Fred Dudimah and Sabah Ghazi to process data from the core lab flow cytometer that makes a distinction among four different cell markers.

The core labs constructed in 2007 in the new Research and Sponsored Programs (RSP) building at Tennessee State University bring the total collaborative research space to approximately 24,000 square feet. The Department of Defense through the Air Force Office of Scientific Research provided the funding to build these dedicated laboratories as well as purchase multi-user equipment for nanoscience and biotechnology. These core laboratories attract researchers from numerous disciplines across campus and foster research in an environment similar to larger research institutions. Investigators using the core laboratories are drawn from a number of graduate and undergraduate programs including biology, chemistry, computer science, agriculture and engineering.

The core laboratories complement and extend existing research capabilities in the academic departments as well. For example, the AFOSR funding was used to purchase a high-

resolution scanning electron microscope which complements the confocal microscope presently located in the Department of Biological Sciences and the fluorescence microscopy system in our Institute of Agricultural and Environmental Research. In addition, the grant was used to purchase an x-ray diffractometer and a flow cytometer. The RSP core facilities also provide space and infrastructure to perform analytical procedures such as microscopy and imaging, as well as accommodate enhancement in synthesis, preparation, purification and separation procedures.

Centrally located core laboratories at TSU afford several benefits. They serve as a hub for research activity and leverage synergy of research efforts in biotechnology and nanotechnology by causing regular interaction among campus-wide researchers. As researchers (both faculty and students) return to their departments in various colleges and schools, research successes and challenges are circulated throughout the campus stimulating additional discoveries and breakthroughs. The economic value of core laboratories is best realized through the sharing and maintenance of equipment thereby increasing productivity, equipment longevity, and return on investment of major equipment purchases.

This first phase of core laboratories stimulates growth of a coordinated program that promotes research, develops technical applications and creates more effective collaboration. As one of the nation's premier HBCUs with nationally recognized research and development programs in place, this support allows Tennessee State to maintain exemplary programs, while keeping pace with novel developments in biotechnology and in the rapidly emerging field of nanotechnology.

Dedication of the Nanoscience and Biotechnology Laboratories

Tuesday, April 1, 2008. 2:30 p.m., RSP Second Floor

Guests: Dr. Thomas W. Hussey, Air Force Office of Scientific Research
Mrs. Evelyn Kent, Department of Defense, Research and Engineering Office
Mr. Ed Lee, Air Force Office of Scientific Research
U.S. Senator Lamar Alexander, Tennessee (Invited)
U.S. Representative Jim Cooper, Fifth District, Tennessee (Invited)



NASA EDUCATIONAL OPPORTUNITIES

JO ANN CHARLESTON

CHIEF, EDUCATION PROGRAMS OFFICE,
NASA GLENN RESEARCH CENTER, CLEVELAND, OHIO



Jo Ann Charleston is a woman of wide-ranging, diverse achievements both personally and professionally. As Division Chief of the Educational Programs Office (EPO) and the Center Education Director at the NASA Glenn Research Center in Cleveland, Ohio, she has the responsibility of developing, coordinating and administering all of the Center's education programs. She directs a staff of 25 professional and administrative personnel with an operating budget of \$19 million a year. The mission of her office is to develop and administer educational programs that would focus on strengthening NASA and the Nation's future workforce; attract and retain students in Science, Technology, and Engineering and Mathematics (STEM) disciplines and engage Americans in NASA's mission.

The educational programs she manages have been replicated both nationally and internationally. Specifically, the Science, Engineering, Mathematics, and Aerospace Academy SEMAA) serves underrepresented (K-12) youth, educators, and families in 47 states, the District of Columbia, U. S. Virgin Islands, and the Bahamas. NASA Explorer Schools (NES) grades 4-9 is a unique 3-year relationship between NASA and middle schools that provides an opportunity for educators, students and families to become involved in the excitement of NASA's content and meet the local schools' needs in mathematics, science and technology.

For the Higher Education community, Ms. Charleston's office provides internships like Lewis Educational Research Collaborative Internship/Fellowship Program (L.E.R.C.I.P.) for high school and college students and fellowships through Motivating Undergraduates in Science and Technology (M.U.S.T.) that allow students to become participants in the Vision for Space Exploration and NASA science and aeronautics research. She is also responsible for building strategic partnerships and linkages between STEM formal and informal education providers.

Ms. Charleston earned her Bachelor of Science Degree in Chemistry, Cum Laude, from Southern University. She also earned a Certificate from the Simmons Graduate School of Management, Boston, Massachusetts. In 1998 Ms. Charleston graduated with honors from Ashland Theological Seminary obtaining a Masters of Divinity.

NASA Science Education Luncheon

Wednesday, April 2, 2008. 11:30 a.m., Farrell-Westbrook Building, Room 118

Welcome

Dr. Maria Thompson, Associate Vice President, Research Administration

Lunch is Served

Introduction of Speaker

Dr. Decatur Rogers, *Distinguished Professor of Engineering*

Session Address

Jo Ann Charleston, *Chief, Education Programs Office, NASA Glenn Research Center*

Acknowledgements and Closing Remarks



AWARDS PRESENTATION LUNCHEON SPECIAL GUEST

DR. RUBY P. TORREY

FOUNDING CHAIR, TSU RESEARCH DAY, 1979

Dr. Rubye Mayette Prigmore Torrey, founding chair of Tennessee State University's Research Day in 1979, is Assistant Vice President for Research and Professor of Chemistry (Emeritus), Tennessee Technological University (TTU) in Cookeville, Tennessee. While active in this capacity, Dr. Torrey worked with faculty to develop proposals, and kept faculty apprised of agencies with available funds compatible with their research interests. She conducted proposal development workshops for faculty and administrators and served as the Executive Officer for the federally regulated institutional committees on "The Use of Human Subjects in Research" and "The Use of Experimental Animals in Research." Dr. Torrey applied for and received a grant from two federal agencies that sponsored a state-wide conference on "Human Subjects in Research" and included internationally acclaimed speakers. Under her guidance the campus Sigma Xi Club (a research honor society) became a valid chapter, and also at TTU she launched a successful Inaugural Student Research Day in 2005.



Dr. Torrey grew up in East Tennessee in the town of Sweetwater. She attended Swift Memorial Junior College and earned her Baccalaureate and Master of Science degrees at Tennessee State University (TSU) with honors. She earned her doctoral degree in radiation-electroanalytical chemistry at Syracuse University in Syracuse, New York, where she was elected to the Research Honor Society of Sigma Xi. After receiving her doctorate, Dr. Torrey returned to TSU to teach and conduct collaborative research in reaction mechanisms in gaseous media at Brookhaven National Laboratory in Long Island, New York in the Mass Spectrometry Division. At TSU, she established a research laboratory in gaseous ion chemistry with funds from the Atomic Energy Commission. Dr. Torrey was invited to be a Visiting Chemist at the National Bureau of Standards (now the National Institute of Science and Technology) and has held professorships in chemistry at TSU, the University of Tennessee-Nashville and TTU.

Dr. Torrey has for many years reviewed and evaluated proposals for Federal Government agencies such as the U.S. Department of Education and the National Science Foundation. Dr. Torrey has published articles in scientific journals and has been an invited speaker at numerous professional conferences. She has also achieved the illustrious status of 50+ years of continuous membership in the American Chemical Society.

Awards Presentation Luncheon

Wednesday, April 2, 2008. 11:30 a.m., Farrell-Westbrook Building, Room 118

Welcome	Dr. Melvin N. Johnson , <i>President, Tennessee State University</i>
Lunch is Served	
Introduction of Special Guest	Dr. Marcus W. Shute , <i>Vice President, Research and Sponsored Programs</i>
Remarks	Dr. Rubye P. Torrey , <i>former TSU faculty and founding chair, Research Day, 1979</i>
Presentation of Awards	Dr. Maria Thompson , <i>Associate Vice President, Research Administration</i>
Acknowledgements and Closing Remarks	Ms. Valerie Williams and Dr. Brenda McAdory , <i>2008 Research Symposium Co-Chairs</i>



T H E R E S E A R C H S Y M P O S I U M A T
T E N N E S S E E S T A T E U N I V E R S I T Y :

HOW IT ALL BEGAN

C O N T R I B U T E D B Y D R . R U B Y E P . T O R R E Y

A new president, Dr. Frederick Humphries, came to Tennessee State University in 1975; shortly after his arrival, many faculty committees were established. One such committee was a small university-wide Research Committee (“Committee”) whose duty was to work with Dr. Calvin Atchison, the Vice President of Research and Sponsored Programs. The Committee mainly reviewed proposals before they were submitted to an agency for funding. Dr. Rubye Torrey, who had received a continuation grant from the Atomic Energy Commission (in year 5+), was chosen to represent the College of Arts & Sciences on the university-wide Committee. Dr. Robert Hudson, Dean of the College of Arts and Sciences, then asked Dr. Torrey to establish and chair such a committee for the College of Arts and Sciences. The following faculty made up the committee: Dr. Richard Hogg, Biological Sciences; Dr. Jacqueline Martin, Biological Sciences; Dr. Harold Mitchell, Speech Therapy; Dr. Ernest Rhodes, Social Sciences; Dr. Rubye P. Torrey, Physical Sciences and chair of the committee.

Dr. Torrey was very concerned that the research experience be an intricate part of the training of all students. Furthermore, she was concerned over the fact that those students who participated in research did not have a platform to present their findings. She had tried on previous occasions to get University funding to take analytical chemistry students to meetings and to visit the then National Bureau of Standards (now The National Institute of Standards and Technology/“NIST”) — home of the measurement standards that are in use—to no avail. Dr. Torrey suggested to the College of Arts and Sciences Research Committee that they host a university-wide “Research Day” in an effort to give students a platform and proper environment for presenting their research findings. Each presenter must have a faculty sponsor-mentor, and a panel of appropriate judges would be assembled. First, second, and third prizes would be awarded in the Graduate and Undergraduate Divisions. Attire would be professional; a time-keeper would be employed, plus all other aspects of a session at a national professional meeting.

There were no funds available in the College of Arts and Sciences for such a function. Dr. Torrey approached TSU President Humphries who confirmed the fact that there were no funds in the University for such a function; however, he gave Dr. Torrey permission to solicit funds for the event in the name of the University. Dr. Torrey solicited funds from First American National Bank, Third National Bank and Citizens Savings Bank, all of whom responded very favorably, but there was still not enough to cover event expenses and the financial awards to the students. Everyone who attended received a souvenir—a six-inch ruler/letter holder with the name of the University on it and Research Day, 1979. The Committee members gave the prize money out of their pockets. “Research Day” was successful!

Due to the reviews received and the interest created, Dr. Torrey presented her future plans for expanding the program and requiring students to attend a research session for class credit. The second year (April, 1980), those recommendations were implemented and the program was expanded to cover two days. In that same year, Dr. Torrey applied for and received a grant from the National Science Foundation—designing a program to increase the population of students majoring in chemistry, physics, and mathematics. Since she was the Director of the grant, known as the “Technologically-Assisted Physical Science” program (“TAPS”), she served as consultant to the Research Day Committee until she left the university in 1983 to go to NIST.

Dr. Torrey is extremely pleased and honored that the “seed” of Research Day planted in 1979 has strongly flourished in the annual event of the University-Wide Research Symposium.

ORAL PRESENTATIONS

Monday, March 31, 2008

All presentations will be in the Research and Sponsored Programs building.

ENGINEERING

Graduate Students

Room 163

1:00 PM	A1	DEVELOPMENT OF A GPS-BASED MOBILE ROBOT OUTDOOR NAVIGATION SYSTEM Faruk Caglar*, ADVISOR: Dr. Ali Sekmen, Department of Electrical & Computer Engineering
1:15 PM	A2	DEVELOPMENT OF AN ADAPTIVE HUMAN-ROBOT INTERACTION SYSTEM Prathima Challa*, ADVISOR: Dr. Ali Sekmen, Department of Electrical & Computer Engineering
1:30 PM	A3	DESIGN OF A SOCIALLY INTELLIGENT TASK SELECTION MECHANISM FOR A MOBILE ROBOT Alice Diggs*, ADVISOR: Dr. Tamara Rogers, Department of Electrical & Computer Engineering
1:45 PM	A4	DEVELOPMENT OF SOFTWARE FOR LOCALIZATION OF STATIONARY WIRELESS SENSOR NODES. Vinayak Elangovan*, ADVISOR: Dr. Saleh Zein-Sabatto, Department of Electrical & Computer Engineering
2:00 PM	A5	DESIGN OF AN INTEGRATED ENVIRONMENT FOR OPERATION AND CONTROL OF ROBOT ARMS Jinchun Feng*, ADVISOR: Dr. Saleh Zein-Sabatto, Department of Electrical & Computer Engineering
2:15 PM	A6	DESIGN AND DEVELOPMENT OF A REAL-TIME GESTURE RECOGNITION SYSTEM Zannatul Ferdousi*, ADVISOR: Dr. Fenghui Yao, Department of Electrical & Computer Engineering
2:30 PM	A7	TARGET CLASSIFICATION OF SAR IMAGES Srinivas Arunteja Gottipati*, ADVISOR: Dr. Ali Sekmen, Department of Electrical & Computer Engineering
2:45 PM	A8	SYSTEM DESIGN FOR INSPECTION AND QUALITY CONTROL USING IMAGE PROCESSING Mohammad Serkhail Habibi*, ADVISOR: Dr. Amir Shirkhodaie, Dept. of Mechanical & Manufacturing Engineering
3:00 PM	A9	AUTOMATED VISUAL INSPECTION OF JET ENGINE AEROFOILS Naresh Hanchate*, ADVISOR: Dr. Amir Shirkhodaie, Department of Mechanical & Manufacturing Engineering
3:15 PM	A10	MATHEMATICAL DE-CONVOLUTION OF TRACER BREAKTHROUGH CURVES TO LOCATE USING THE POINT OF CONTAMINANT INJECTION Emmalyne K. Head*, ADVISORS: Drs. Roger Painter and Tom Byl, Dept. of Civil & Environmental Engineering
3:30 PM	A11	THE DESIGN OF A SECURE NETWORK SNIFFER FOR A LOCALIZATION AND TRACKING SYSTEM A DIRECTIONAL ANTENNAE ARRAY. Carlo Hyde*, ADVISOR: Dr. Decatur Rogers, Department of Electrical & Computer Engineering
3:45 PM	A12	DEVELOPING INTELLIGENT SCHEDULER FOR COORDINATED TASK PLANNING OF TELEOPERATED ROBOTIC SYSTEM Imran Shaik*, ADVISOR: Dr. Amir Shirkhodaie, Department of Mechanical & Manufacturing Engineering

Room 209

1:00 PM	A13	CONCEPTUAL MODEL OF SHALLOW GROUND-WATER RECHARGE IN MIDDLE TENNESSEE Baibai Kamara*, ADVISORS: Dr. Tom Byl & Dr. Jennifer Stewart-Wright, Dept. of Civil & Environmental Engineering
1:15 PM	A14	IMPROVED IMAGE PROCESSING ALGORITHMS FOR REGISTRATION OF VISUAL IMAGES CAPTURED BY MULTIPLE UNMANNED AERIAL VEHICLES Matthew I. McCartney*, ADVISOR: Dr. Saleh Zein-Sabatto, Department of Electrical & Computer Engineering
1:30 PM	A15	ONTOLOGY-BASED DISTRIBUTED INTELLIGENCE CONTROL FOR SYSTEM OF SYSTEMS Charles D. McCurry*, ADVISOR: Dr. Saleh Zein-Sabatto, Department of Electrical & Computer Engineering
1:45 PM	A16	SECURITY-BASED ROBUST ARCHITECTURE FOR MOBILE WIRELESS SENSOR NETWORKS McKenzie McNeal III*, ADVISOR: Dr. Wei Chen, Department of Electrical & Computer Engineering
2:00 PM	A17	LOCALIZATION AND TRACKING IN AIRCRAFT GROUND CONTROL UTILIZING RADIO FREQUENCY IDENTIFIERS (RFIDs) Matthew Murray*, ADVISOR: Dr. Fenghui Yao, Department of Electrical & Computer Engineering

2:15 PM	A18	THE DESIGN OF A CENTRAL ANALYSIS POINT AND APPLICATION FOR A LOCALIZATION AND TRACKING SYSTEM LaTisha Roberts*, ADVISOR: Dr. Decatur Rogers, Department of Electrical & Computer Engineering
2:30 PM	A19	A SURVEY OF UWB ANTENNAS AND APPLICATIONS Maysam Sarfaraz*, ADVISOR: Dr. Amir Shirkhodaie, Department of Mechanical & Manufacturing Engineering
2:45 PM	A20	HUMAN DETECTION AND LOCALIZATION IN THE OUTDOOR ENVIRONMENTS FOR THE MOBILE ROBOT NAVIGATION Prasanna Kumar Soanker*, ADVISOR: Dr. Ali Sekmen, Department of Electrical & Computer Engineering
3:00 PM	A21	ERROR CONTROL SCHEMES FOR VIDEO STREAMING OVER WIRELESS NETWORKS Radhika N Kammisetty*, ADVISOR: Dr. Liang Hong, Department of Electrical & Computer Engineering
3:15 PM	A22	HUMAN-ROBOT INTERACTION FOR COOPERATIVE TASK HANDLING Aditya Tella*, ADVISOR: Dr. Ali Sekmen, Department of Electrical & Computer Engineering
3:30 PM	A23	THE DESIGN OF A MULTI-SENSOR SNIFFER FOR A LOCALIZATION AND TRACKING SYSTEM UTILIZING A DIRECTIONAL ANTENNAE ARRAY Leonre Yarbrough*, Didar Sohi, ADVISOR: Dr. Decatur Rogers, Department of Electrical & Computer Engineering
3:45 PM	A24	ROBUST AND WORKLOAD BALANCED COMPUTATION ON NETWORKED COMPUTERS Sampath Kumar Shamantula*, ADVISOR: Dr. Wei Chen, Department of Electrical & Computer Engineering

ORAL PRESENTATIONS

Tuesday, April 1, 2008

All presentations will be in the Research and Sponsored Programs building.

EDUCATION, HEALTH AND SOCIAL SCIENCES

Graduate Students

Room 163

9:00 AM	B1	GETTING STUDENTS HOOKED ON ASTROBIOLOGY: USING CONWAY'S GAME OF LIFE AS A TOOL TO INCREASE HIGH SCHOOL STUDENTS' INTEREST IN ASTROBIOLOGY AND COMPUTER MODELS OF BIOLOGICAL SYSTEMS Leigh Arino de la Rubia*, T. Gary ADVISOR: Dr. Todd P. Gary, Institute for Understanding Biological Systems
9:15 AM	B2	GRASP: REFLECTIONS ON A TWO-YEAR NSF PROJECT TO INCREASE MINORITY HIGH SCHOOL STUDENT INTEREST IN THE GEOSCIENCES AND GEOSCIENCE CAREERS Leigh Arino de la Rubia*, T. Gary ADVISOR: Dr. Todd P. Gary, Institute for Understanding Biological Systems
9:30 AM	B3	THE EFFECTS OF PEER MENTORING IN A COLLEGE DEVELOPMENTAL CLASSROOM James B. Rubin*, ADVISOR: Dr. Charles Dickens, Department of Teaching and Learning
9:45 AM	B4	THINNESS OR PROPORTION? CULTURAL DIFFERENCES IN BODY IMAGE DISSATISFACTION Rebecca Wagner*, ADVISOR: Dr. Linda Guthrie, Department of Psychology
10:00 AM	B5	SELF-RATED HEALTH AND CANCER SCREENING BEHAVIOR Christina Barland*, ADVISOR: Dr. Pamela Hull ² , *Department of Psychology, 2 Center for Health Research
10:15 AM	B6	PATTERNS OF STRESS AMONG ADULTS IN TENNESSEE Alicia Cobb*, ADVISORS: Janice Emerson, M.S., Dr. Baqar Husaini ² , *Dept. of Psychology, 2 Center for Health Research
10:30 AM	B7	PATTERNS IN USE OF SPECIAL EQUIPMENT FOR ADULTS WITH DISABILITIES Meegan Lambert*, Dr. Pamela Hull ² *Department of Occupational Therapy, 2 Center for Health Research
10:45 AM	B8	ORTHOTICS FOR PLANTAR FASCIITIS: CUSTOM OR PREFABRICATED? Jay Sexton*, B. Dobner*, and D. Bergman*, ADVISOR: Dr. Natalie Housel, Department of Physical Therapy

* Presenter

EDUCATION, HEALTH AND SOCIAL SCIENCES

Undergraduate Students

Room 209

- | | | |
|----------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM | C1 | DIFFERENCE IN OPINION AND ATTITUDES OF UNDERGRADUATE AGRICULTURE MAJORS TOWARD AGROTERRORISM
Tanya Delancy*, Dr. Enefiok Ekanem, ADVISOR: Dr. Sammy Comer, Department of Agricultural Sciences |
| 9:15 AM | C2 | THE AFFECTS OF PHYSICIAN-PATIENT RELATIONSHIPS AND AFRICAN AMERICAN WOMEN
Catana Jones*, ADVISOR: Dr. Elizabeth Brown, Department of Health Administration and Health Sciences |
| 9:30 AM | C3 | FACTORS RELATED TO OVERWEIGHT AMONG HISPANIC ADULTS IN NASHVILLE
Rosalina Moore*, ADVISOR: Dr. Pamela Hull ² , *Department of Communications, 2 Center for Health Research |
| 9:45 AM | C4 | PERIODONTAL DISEASE AND ITS ASSOCIATION WITH HEART DISEASE FOR WOMEN
Jessica Poss*, Dr. Elizabeth Brown, Department of Health Administration and Health Sciences |
| 10:00 AM | C5 | BREASTFEEDING AMONG AFRICAN AMERICAN CULTURE; DOES CULTURAL NORMS AFFECT THE CHOICE TO BREASTFEED?
Megan Stancil*, ADVISOR: Dr. Elizabeth Brown, Department of Health Administration and Health Sciences |
| 10:15 AM | C6 | ELECTROMAGNETIC RADIATION AND ITS AFFECTS ON YOUNG WOMEN BETWEEN THE AGES 18-24
Jasmine T. Whitaker, ADVISOR: Dr. Elizabeth Brown, Department of Health Administration and Health Sciences |

ORAL PRESENTATIONS

Wednesday, April 2, 2008

All presentations will be in the Research and Sponsored Programs building.

Faculty

Room 163

- | | | |
|----------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM | F1 | ARE DISTRESSED PRODUCE FROM A FOOD RECOVERY PROGRAM SAFE FOR CONSUMPTION?
Fur-Chi Chen*, Sandria L. Godwin, Sean C. Siple, and Bhargavi Sheshachala, Institute of Agricultural and Environmental Research |
| 9:15 AM | F2 | A PLAN FOR INCREASING THE NUMBER OF AFRICAN AMERICAN MALE TEACHERS
Graham Matthews, Department of Family and Consumer Sciences |
| 9:30 AM | F3 | GEOSCIENCE AND HISTORY OF MAMMOTH CAVE: A UNIQUE COLLABORATION
Jennifer Stewart-Wright*, Tom Byl ² , Carlton Cobb ² , Baibai Kamara ² , Brandon Cobb ³ , Patrice Armstrong ⁴ , Rickard Toomey ⁵ , *Division of Research & Sponsored Programs, 2 Department of Civil & Environmental Engineering, 3 Department of Architectural and Facilities Engineering, 4 Department of Biology, 5 International Center for Science and Learning at Mammoth Cave National Park |
| 9:45 AM | F4 | AFRICAN AMERICANS AND CAUCASIANS WITH MULTIPLE SCLEROSIS: A COMPARISON OF PSYCHOSOCIAL PROFILES.
Bonnie Chakravorty, Department of Health Administration and Health Sciences |
| 10:00 AM | F5 | USE OF PREVENTIVE SERVICES AMONG MEDICAID CHILDREN
Pamela Hull*, Center for Health Research |
| 10:15 AM | F6 | WILL VISUAL, COGNITIVE, AND/OR AUDITORY STIMULATION DURING EXERCISE IMPACT THE EFFECTIVENESS OF AN EXERCISE PROGRAM FOR A PERSON WHO IS OBESE?
David A. Lehman, PT, PhD Martha Freeman, SPT, Marcus Haynes, SPT Stephanie Karleskint, SPT
Department of Physical Therapy |

SCIENCES

Graduate Students

Room 163

- | | | |
|---------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:30 PM | D1 | IN VITRO ANTICANCER ACTIVITY OF NIGERIAN ETHNOMEDICINAL PLANTS
Saudat Adamson* ¹ , Olugbeminiyi Fadeyi ² , ADVISORS: Dr. Cosmas Okoro ² , Dr. E. Lewis Myles ¹ ,
1 Department of Biology and 2 Department of Chemistry |
|---------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

* Presenter

1:45 PM	D2	BIOASSAY-GUIDED PURIFICATION OF THE ACTIVE COMPONENTS OF ERYTHROPHLEUM SAUVEOLEN (CAESALPINICEAE), GUILLEMIN & PERROTTET Oluropo Agbaje* ¹ , Saudat Adamson ² , ADVISORS: Dr. O. Cosmas Okoro ¹ and Dr. E. Lewis Myles ² , 1 Department of Chemistry, 2 Department of Biology
2:00 PM	D3	EFFECT OF TRIBUTYL TIN ON PROTEASOMAL ACTIVITY Anita R. Cato*, ADVISOR: Dr. Margaret M. Whalen ² , *Department of Biology, 2 Department of Chemistry
2:15 PM	D4	EFFECTS OF ZIRAM ON TUMOR CELL BINDING CAPACITY, CELL-SURFAC/FAC/STAFFE MARKER EXPRESSION, AND ATP LEVELS OF HUMAN NATURAL KILLER Taylor Thyneice*, Dr. Margaret Whalen ² , *Department of Biology, 2 Department of Chemistry

ENGINEERING AND SCIENCES

Undergraduate Students

Room 209

1:30 PM	E1	THE VALUE OF URBAN WETLANDS ON WATER QUALITY Jameka Johnson*, Carlton Cobb, ADVISOR: Dr. Tom Byl, Department of Civil & Environmental Engineering
1:45 PM	E2	BACTERIA AND GEOCHEMISTRY OF SPRINGS IN NASHVILLE, TN Patrice Armstrong*, Carlton Cobb ² , Brandon Cobb ³ , ADVISORS: Dr. Tom Byl ² & Dr. Jennifer Stewart-Wright ⁴ , *Dept. of Biological Sciences, 2 Dept. of Civil & Environmental Engineering, 3 Dept. of Architectural Engineering, 4 Division of Research and Sponsored Programs
2:00 PM	E3	CAN ICE-BINDING PROTEINS ENHANCE SURVIVAL OF HUMAN EMBRYONIC KIDNEY CELLS AFTER FREEZING? Brittany Brooks*, ADVISOR: Dr. Michael Janeck ² , *Dept. of Chemistry, 2 Medical University of South Carolina
2:15 PM	E4	INCREASING THE FRUIT AND VEGETABLE CONSUMPTION OF LIMITED RESOURCE INDIVIDUALS THROUGH A FOOD GLEANING AND DISTRIBUTION Debra Collins-Biggs*, Dr. Sandria L. Godwin ² , Dr. Fur-Chi Chen, Dr. Fisseha Tegegne, Dr. Enefiok Ekanem, and Dr. Sean C. Siple, *Dept of Family and Consumer Sciences, 2 Institute of Agricultural and Environmental Research
2:30 PM	E5	EXAMINATION OF AFRICAN PLANTS TO DETERMINE THEIR CAPABILITY OF ANTI-BACTERIAL ACTIVITIES Faryal Farrukh*, ADVISOR: Dr. E. Lewis Myles, Department of Biological Sciences
2:45 PM	E6	OPTIMIZATION OF DMSO (DIMETHANOL SULFOXIMIDE) IN PRESERVING HUMAN CELL LINES Olukemi Gbemisola Jolayemi*, ADVISORS: Dr. E. Lewis Myles and Dr. Benny Washington, Department of Biological Sciences
3:00 PM	E7	THE EFFECT OF BITTER MELON ON CANCER CELLS Ikeia Holyfield*, Clifton Randell, ADVISORS: Dr. E. Lewis Myles and Dr. Benny Washington, Dept of Biological Sciences
3:15 PM	E8	ANTI-MICROBIAL EFFECTS OF GREEN AND BLACK TEAS ON SALMONELLA TYPHIMURIUM AND BACILLUS SUBTILUS Jonathan Marner* ¹ , Danaka J Hancock ¹ , ADVISORS: Dr. E. Lewis Myles ¹ and Dr. Todd Gary ² , 1 Department of Biological Sciences and 2 Institute for Understanding Biological Systems
3:30 PM	E9	TALL FESCUE ENDOPHYTE AFFECTS MEAT GOAT WEIGHT GAIN Latoya Moore*, ADVISOR: Dr. Richard Browning, Jr. ² , *Dept of Agricultural Sciences, 2 Institute of Agricultural and Environmental Research
3:45 PM	E10	PHENETIC ANALYSIS OF SIX FLOWERING CHERRY ACCESSIONS SravanthiS. Pallapothu* ADVISOR: Dr. Ahmad N. Aziz ² , *Dept of Biological Sciences, 2 Institute of Agricultural and Environmental Research
4:00 PM	E11	INVESTIGATION OF PHYSICS SELF-EFFICACY OF PHYSICS AND NON-PHYSICS STEM MAJORS Julie Rogers*, ADVISOR: Dr. Orville Bignall, Dept of Physics & Mathematics

* Presenter

FACULTY ORAL PRESENTATIONS

Thursday, April 3, 2008

All presentations will be in the Research and Sponsored Programs building.

Room 163

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|----------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM | F7 | COMPARISON OF STEP ACTIVITY PATTERNS BETWEEN TYPICALLY-DEVELOPING CHILDREN AND CHILDREN WITH CEREBRAL PALSY: INFLUENCE OF AGE
Sandy Stevens, MS*, and D. Morgan, PhD, Department of Occupational Therapy |
| 9:15 AM | F8 | “THIS GIVES LIFE TO THEE”: GENERATIVE POETICS IN SHAKESPEARE’S PRINTED POEMS
Melissa Hull*, Department of Languages, Literature & Philosophy |
| 9:30 AM | F9 | MEDIA AND MARRIAGE: PERCEPTIONS OF AFRICAN-AMERICAN MARRIAGE IN TELEVISION SITCOMS
Coreen Jackson*, Department of Communications |
| 9:45 AM | F10 | EXPLORING HEALTH PROMOTION AMONG MUSLIMS IN NASHVILLE
Mohamed Kanu*, Department of Health Administration & Health Sciences |
| 10:00 AM | F11 | HOW TO DRAW A MULTIPLIHEDRON
Stefan Forcey*, Department of Physics & Mathematics |
| 10:15 AM | F12 | CLONING CELLULASE GENES FROM A METAGENOMIC CDNA LIBRARY MADE FROM GOAT RUMINAL MICROFLORA
Suping Zhou*, Institute of Agricultural & Environmental Research |

POSTER PRESENTATIONS FACULTY AND STAFF

All presentations will be in the Research and Sponsored Programs building.

- | | |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P1 | EFFECT OF BLOOD MEAL SUPPLEMENTED WITH ISOLEUCINE ON PRODUCTION PERFORMANCE OF SINGLE COMB WHITE LEGHORN CHICKENS
Samuel Nahashon*, J. Tyus II, N. Adefope, and D. Wright, Institute of Agricultural & Environmental Research |
| P2 | SURVIVAL OF ANTIBIOTIC RESISTANT SALMONELLA IN PEANUT BUTTER
Kilonzo-Nthenge Agnes*, Emily Rotich, and Sandria Godwin, Institute of Agricultural & Environmental Research |
| P3 | DOWNY MILDEW IN LILAC
Margaret T. Mmbaga*, Institute of Agricultural and Environmental Research |
| P4 | MOLECULAR DETECTION OF BOTRYOSPHERA DOTHIDEA AS THE PATHOGEN OF DOGWOOD LEAF BLIGHT BY PCR-BASED MARKERS
Ainong Shi, Margaret T. Mmbaga*, and Frank Mrema, Institute of Agricultural and Environmental Research |
| P5 | A SURVEY FOR PHYTOPHTHORA AND OTHER PATHOGENS CAUSING PHYTOPHTHORA-LIKE SYMPTOMS IN TENNESSEE NURSERIES
Margaret Mmbaga*, Luisa Santamaria, Frank Mrema and Roger Sauve, Institute of Agricultural and Environmental Research |
| P6 | IDENTIFICATION OF NBS-LRR TYPE DISEASE RESISTANCE GENE ANALOGS IN DOGWOOD (CORNUS FLORIDA)
Ainong Shi, and Margaret Mmbaga*, Institute of Agricultural and Environmental Research |
| P7 | SURVEY OF IMPORTED FIRE ANT POPULATIONS IN TENNESSEE AND IMPLICATIONS FOR BIOLOGICAL CONTROL
Jason Oliver*, Institute of Agricultural & Environmental Research |
| P8 | COLLEGE STUDENT’S SHOPPING BEHAVIORS
Jung-Im Seo*, Department of Family and Consumer Sciences |
| P9 | AFRICAN AMERICANS AND CAUCASIANS WITH MULTIPLE SCLEROSIS: A COMPARISON OF PSYCHOSOCIAL PROFILES
Bonnie Chakravorty*, Department of Health Administration and Health Sciences |
| P10 | CHOLESTEROL, HEMOGLOBIN AND NEPHROPATHY SCREENING IN DIABETIC MEDICARE POPULATION
Owen Johnson*, College of Health Sciences, Department of Health Administration and Health Sciences |
| P11 | THE IMPACT OF CLIMATE CHANGE ON ASTHMA SYMPTOMS
E. Raynes*, N. Housel*, and E. Kunnu*, Department of Physical Therapy |
| P12 | CHILDREN ARE RESTRAINED FOR ENHANCED SAFETY PROJECT
Dexter Samuels* and Revlon Briggs, College of Health Sciences, Department of Health Administration and Health Sciences |

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- P13 MEDIA AND MARRIAGE:PERCEPTIONS OF AFRICAN-AMERICAN MARRIAGE IN TELEVISION SITCOMS**
Coreen Jackson*, Department of Communications
-
- P14 FOOD STAMP RECEIPT AND FOOD SECURITY STATUS OF LOW INCOME HOUSEHOLDS**
Fisseha Tegegne*, Institute of Agricultural & Environmental Research
-
- P15 DYNAMICS AND PARTITIONING OF WHOLE ECOSYSTEM RESPIRATION IN A CONTROLLED GRASSLAND ECOSYSTEM**
Dafeng Hui*, Paul S. J. Verburg², John A. Arnone III², Yiqi Luo³, * Department of Biological Sciences, 2 Desert Research Institute, 3 University of Oklahoma
-
- P16 ACCUMULATION OF DIBUTYL TIN IN HUMAN NATURAL KILLER CELLS**
Margaret M. Whalen* and Robert W. Luebke, Department of Chemistry
-
- P17 PLANT REPELLENCY OF ESSENTIAL OILS TO JAPANESE BEETLE (POPILLIA JAPANICA NEWMAN)**
N. Youssef*, J. Oliver, M. Redding, C. Ranger and J. Moysenko, Institute of Agricultural & Environmental Research
-
- P18 MEASUREMENT OF TOTAL ANTIOXIDANT ACTIVITY FROM SPROUTS OF SELECTED LEGUMES**
Sarabjit M. Bhatti*, Suping Zhou and Christopher Catanzaro, Institute of Agricultural & Environmental Research
-
- P19 INSULIN-SIGNALING IN SPONTANEOUSLY HYPERTENSIVE RAT VASCULAR SMOOTH MUSCLE CELLS**
Carla Gardner-Jones, Brent Williams*, and Benny Washington, ADVISOR: Dr. Carla D. Gardner-Jones, Department of Biological Sciences
-

POSTER PRESENTATIONS GRADUATE STUDENTS

All presentations will be in the Research and Sponsored Programs building.

-
- P20 COMPARISON OF DIFFERENT LEGUMES FOR ANTIOXIDANTS**
Zhong Liu*, ADVISORS: Dr. Suping Zhou and Sarabjit Bhatti, Institute of Agricultural and Environmental Research
-
- P21 MOLECULAR CHARACTERIZATION OF THE DOMESTICATED GUINEA FOWL THROUGH PARTIAL GENE SEQUENCE CONSTRUCTS**
James Tyus*, Dr. Samuel Nahashon, Jessica Johnson and Gary Kelley, ADVISOR: Dr. Samuel Nahashon, Institute of Agricultural and Environmental Research
-
- P22 TV IS RAISING OUR CHILDREN: A COMPARISON OF LINGUISTIC CONTENT IN CHILDREN'S PROGRAMS**
Olivia Golchi* and Vanessa Buckley*, ADVISOR: Dr. Iris Johnson-Arnold, Department of Speech Pathology & Audiology
-
- P23 DESIGN OF SHOE INSERT FOR IMPROVING DIABETIC NEUROPATHY**
Jennifer Collins*, ADVISOR: Dr. Hamid Hamidzadeh, Department of Mechanical & Manufacturing Engineering
-
- P24 DESIGN OF A SOCIALLY INTELLIGENT TASK SELECTION MECHANISM FOR A MOBILE ROBOT**
Alice Diggs*, ADVISOR: Dr. Tamara Rogers, Department of Electrical & Computer Engineering
-
- P25 MATHEMATICAL DE-CONVOLUTION OF TRACER BREAKTHROUGH CURVES TO LOCATE THE POINT OF CONTAMINANT INJECTION**
Emmalynne K. Head*, ADVISORS: Dr. Roger Painter and Dr. Tom Byl, Department of Civil & Environmental Engineering
-
- P26 DYNAMIC RESPONSE OF OSTEOPOROTIC FEMUR TO HUMAN GAIT**
Parisa Heydari*, ADVISOR: Dr. Hamid Hamidzadeh, Department of Mechanical & Manufacturing Engineering
-
- P27 IMPROVED IMAGE PROCESSING ALGORITHMS FOR REGISTRATION OF VISUAL IMAGES CAPTURED BY MULTIPLE UNMANNED AERIAL VEHICLES**
Matthew I. McCartney*, ADVISOR: Dr. Saleh Zein-Sabatto, Department of Electrical & Computer Engineering
-
- P28 NITROGEN CYCLES IN KARST CONDUITS**
Bryant Griffith*, ADVISOR: Dr. Tom Byl, Department of Civil & Environmental Engineering
-
- P29 WHAT IS THE MOST EFFECTIVE FORM OF MOTIVATION FOR PROMOTING HEALTHY LIFESTYLE CHANGES IN CHILDREN?**
Clay Callahan*, ADVISOR: Dr. Edilberto Raynes, Department of Physical Therapy
-
- P30 THE PATIENT'S PERCEIVED BENEFITS OF AQUATIC EXERCISE FOR GERIATRIC INDIVIDUAL'S DIAGNOSED WITH ARTHRITIS**
Heather Russell* and Carrie Foster*, ADVISOR: Dr. Larry Snyder, Department of Occupational Therapy
-
- P31 THINNESS OR PROPORTION? CULTURAL DIFFERENCES IN BODY IMAGE DISSATISFACTION**
Rebecca Wagner*, ADVISOR: Dr. Linda Guthrie, Department of Psychology
-

* Presenter

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- P32 THE ROLE OF MEK IN TBT-INDUCED ACTIVATION OF P44/42 IN HUMAN NATURAL KILLER CELLS**
Abraham Abraha*, ADVISOR: Dr. Margaret M. Whalen, *Department of Biological Sciences, 2 Department of Chemistry
-
- P33 BIOASSAY-GUIDED PURIFICATION OF THE ACTIVE COMPONENTS OF ERYTHROPHLEUM SAUVEOLEN (CAESALPINICEAE), GUILLEMIN & PERROTTET**
Oluropo Agbaje*¹, Saudat Adamson², ADVISORS: Dr. O. Cosmas Okoro¹ and Dr. E. Lewis Myles²,
*¹ Dept of Chemistry, ² Department of Biological Sciences
-
- P34 ACTIVATION OF P44/42 BY PMA AND TBT IN HUMAN NATURAL KILLER (NK) CELLS RESULTS IN LOSS OF CYTOTOXIC FUNCTION**
Fred Dudimah*, ADVISOR: Dr. Margaret Whalen², *Department of Biological Sciences, 2 Department of Chemistry
-
- P35 INTER-ANNUAL VARIABILITY (IAV) IN NET ECOSYSTEM EXCHANGE (NEE) OF THE HARDWOOD SITE IN DUKE FOREST, NC**
Diana Kiser*, ADVISOR: Dr. Dafeng Hui, Department of Biological Sciences
-
- P36 ALTERATION OF NK CELL SIGNALING PATHWAYS BY EXPOSURE OF HUMAN NATURAL KILLER CELLS TO DIBUTYLTIN**
Sabah O. Odman-Ghazi*¹, Erica Taylor Isom¹ and Margaret M. Whalen², *Department of Biological Sciences,
2 Department of Chemistry
-

POSTER PRESENTATIONS UNDERGRADUATE STUDENTS

All presentations will be in the Research and Sponsored Programs building.

- P37 CLONING CELLULASE GENES FROM A METAGENOMIC CDNA LIBRARY MADE FROM GOAT RUMINAL MICROFLORA**
Jing Zhou*, ADVISORS: Dr. Roger Sauve and Dr. Suping Zhou, Institute of Agricultural and Environmental Research
-
- P38 ENVIRONMENTAL RISKS ASSOCIATED WITH NEW BIO-FUELS**
Carlton Cobb*, Keyshon Bachus, ADVISOR: Dr. Tom Byl, Department of Civil & Environmental Engineering
-
- P39 MEASURING NON-POINT SOURCE POLLUTION IN TSU'S SPRINGS AND WETLANDS**
Brandon Cobb*, Carlton Cobb & Patrice Armstrong, ADVISOR: Dr. Tom Byl, Dept. of Civil & Environmental Engineering
-
- P40 BIODEGRADATION OF E-85 FUEL BY GROUNDWATER BACTERIA**
Loreal Spear*, ADVISOR: Dr. Tom Byl, Department of Civil & Environmental Engineering
-
- P41 LEVELS OF SELF-ESTEEM IN RELATION TO ACADEMIC SUCCESS IN AFRICAN AMERICAN FEMALE UNDERGRADUATE STUDENTS**
Fredrica Piphus*, ADVISOR: Dr. Prem Kahlon², *Department of Psychology, 2 Department of Biology
-
- P42 EFFECTS OF GLUTATHIONE (GSH) ON TRIBUTYLTIN (TBT)**
McLisa V. Davis*, ADVISOR: Dr. Margaret M. Whalen, Department of Chemistry
-
- P43 DECREASES IN ATP LEVELS OF HUMAN NATURAL KILLER CELLS INDUCED BY EXPOSURE TO PENTACHLOROPHENOL**
Ugochukwu Nnodu*, ADVISOR: Dr. Margaret M. Whalen, Department of Chemistry
-
- P44 AUTOMATION OF DATA ANALYSIS AND NOISE SUBTRACTION OF DATA FROM RTBT WIRE SCANNERS**
Nicholas Reynolds*, Dr. O. Bignall, and K. Ward, ADVISOR: Dr. Orville Bignall, Department of Physics & Mathematics
-
- P45 INHIBITION OF HUMAN NATURAL KILLER CELL LYTIC FUNCTION BY THE BROMINATED FLAME RETARDANTS, HEXABROMOCYCLODODECANE AND TETRABROMOBISPHENOL**
A. Krishna Stephen* and Margaret M. Whalen, ADVISOR: Dr. Margaret Whalen, Department of Chemistry
-

* Presenter



SCHEDULE OF EVENTS

All presentations will be in the Research and Sponsored Programs Building.

Time	Monday, March 31		Tuesday, April 1		Wednesday, April 2		Thursday, April 3	
8:00 AM								
8:15 AM								
8:30 AM								
8:45 AM			ROOM 163	ROOM 209	ROOM 163	Room 209	ROOM 163	
9:00 AM			B1	C1	F1		F7	
9:15 AM			B2	C2	F2		F8	
9:30 AM			B3	C3	F3		F9	
9:45 AM			B4	C4	F4		F10	
10:00 AM			B5	C5	F5		F11	
10:15 AM			B6	C6	F6		F12	
10:30 AM			B7					
10:45 AM			B8					
11:00 AM								
11:15 AM								
11:30 AM			LUNCHEON GUEST SPEAKER: DR. THOMAS HUSSEY, CHIEF SCIENTIST, AIR FORCE OFFICE OF SCIENTIFIC RESEARCH		NASA SCIENCE EDUCATION LUNCHEON GUEST SPEAKER JO ANN CHARLESTON, CHIEF, EDUCATIONAL PROGRAMS OFFICE, NASA		AWARDS PRESENTATION LUNCHEON GUEST SPEAKER, DR. RUBY TORREY, FOUNDER OF TSU'S RESEARCH DAY 30 YEARS AGO	
11:45 AM								
12:00 NOON								
12:15 PM								
12:30 PM								
12:45 PM	ROOM 163	ROOM 209						
1:00 PM	A1	A13						
1:15 PM	A2	A14						
1:30 PM	A3	A15			D1	E1		
1:45 PM	A4	A16			D2	E2		
2:00 PM	A5	A17			D3	E3		
2:15 PM	A6	A18			D4	E4		
2:30 PM	A7	A19	LABORATORIES DEDICATION DEPARTMENT OF DEFENSE RESEARCH AND ENGINEERING AIR FORCE OFFICE OF SCIENTIFIC RESEARCH			E5		
2:45 PM	A8	A20				E6		
3:00 PM	A9	A21				E7		
3:15 PM	A10	A22				E8		
3:30 PM	A11	A23				E9		
3:45 PM	A12	A24			E10			
4:00 PM						E11		
4:15 PM								
4:30 PM								

A = Engineering Graduate Students

B = Health, Education, Social Sciences Graduate Students

C = Health, Education, Social Sciences Undergraduate Students

D = Sciences Graduate Students

E = Engineering and Sciences Undergraduate Students

F = Faculty and Staff



STUDENT AWARDS RESEARCH SYMPOSIUM 2007

ORAL PRESENTATIONS

- 1st Place - \$250
- 2nd Place - \$100
- 3rd Place - \$50

POSTER PRESENTATIONS

- 1st Place - \$150
- 2nd Place - \$75
- 3rd Place - \$25

-
- **Undergraduate Student Oral Competition - All Disciplines**
First Place - **Jeralyn Powell**
Second Place – **Derek Lovett and Nkechi Chieke**
Third Place – **Earnest Anthony, III**
-
- **Graduate Student Oral Competition – Life Sciences, Allied Health, Agriculture, Biological Sciences and Chemistry**
First Place – **Thyneice Taylor and James Tyus, II**
Second Place – **Antoinette Gaston**
Third Place – **Lauren Scott and Collin White**
-
- **Graduate Student Oral Competition – Computer Science, Engineering, Math & Physics**
First Place – **Matthew Murray and Didar Sohi**
Second Place – **Charles D. McCurry**
Third Place – **Kelly Ray**
-
- **Graduate Student Oral Competition – Education, Social Sciences & Humanities**
First Place – **Leigh S. Arino de la Rubia**
Second Place – **Pernella R. Singleton-Deams**
Third Place – **Brook Sutton**
-
- **Graduate Student Poster Competition – Life Sciences, Allied Health, Agriculture, Biological Sciences and Chemistry**
First Place – **Denisha Griffey**
Second Place – **Nicole Null, K. Smith and J. Southers**
Third Place – **Emeka Eyisi and Sabah Ghazi**
-
- **Undergraduate Student Poster Competition – Life Sciences, Allied Health, Agriculture, Biological Sciences and Chemistry**
First Place – **Dana Ivory**
Second Place – **Brandolyn Johnson**
Third Place – **Ugochukwu Nnodu**
-
- **Graduate Student Poster Competition – Computer Science, Engineering, Math & Physics**
First Place – **Farida Forouzon**
-
- **Undergraduate Student Poster Competition – Computer Science, Engineering, Math & Physics**
First Place – **Kendra Smith, Kris Adams, Jameka Johnson and Carlton Cobb**
Second Place – **Donovan McClain**
-



JUDGES

Mr. Eduardo Arino de la Rubia, *Ingram Industries/
Lightning Source, Inc.*

Dr. Anthony Baucum, *Vanderbilt University*

Dr. Sanika Chirwa, *Meharry Medical College*

Dr. Elvis Cherry, *Tennessee State University and
Metro Nashville Public Schools*

Dr. Vernat Exil, *Vanderbilt University Medical Center*

Dr. James J. Farmer, *U.S. Geological Survey*

Dr. Carla Gardner, *Tennessee State University*

Dr. Shannon Hardie, *Vanderbilt University*

Dr. Lois Harlston, *Tennessee State University*

Dr. Helen Houston, *Tennessee State University*

Dr. George Hull, *Professor Emeritus, Fisk University*

Dr. Justus Ike, *Fisk University*

Dr. Candace A. Jones, *Emory University School of Medicine*

Dr. Lee-Hyun Keel, *Tennessee State University*

Dr. Mohammed A. Maleque, *Meharry Medical College*

Dr. Heinrich Matthies, *Vanderbilt University Medical Center*

Dr. Dawn Matthies, *Vanderbilt University*

Mrs. Laurene McLemore, *TN Department of Education (retired)*

Dr. Samantha Morgan-Curtis, *Tennessee State University*

Dr. Stacie Putman, *Tennessee State University*

Dr. Aramandla Ramesh, *Meharry Medical College*

Dr. Decatur Rogers, *Tennessee State University*

Dr. Kaye Savage, *Vanderbilt University*

Dr. Marcus W. Shute, *Tennessee State University*

Dr. Willard Smith, *Professor Emeritus, Tennessee State University*

Dr. Marilyn E. Thompson, *Meharry Medical College*

Dr. Rubye Torrey, *Tennessee Tech University (retired)*

Dr. Conan Young, *Biomimetics Therapeutics, Inc.*

2008 RESEARCH SYMPOSIUM COMMITTEE

Mrs. Deborah Alexander, *Research and Sponsored Programs*

Ms. Sara Bhatti, *Institute of Agriculture and
Environmental Research*

Ms. Karen Burke, *Biological Sciences, Graduate Student*

Mrs. Phyllis Danner, *Research and Sponsored Programs*

Dr. Todd Gary, *Center of Excellence: Information Systems*

Dr. Linda Guthrie, *Psychology*

Ms. Ann Harris, *Research and Sponsored Programs*

Dr. Pamela Hull, *Center for Health Research*

Dr. Michael Ivy, *Biological Sciences*

Dr. Owen Johnson, *Health Science*

Dr. Deborah Long, *Institute of Agriculture and
Environmental Research*

Dr. Margaret Machara, *Family and Consumer Science*

Dr. Mohan Malkani, *Engineering, Technology, and
Computer Science*

Dr. Brenda McAdory, *Biological Sciences, Co-Chair*

Dr. E. Lewis Myles, *Biological Sciences*

Mrs. Yvonne Myles, *Biological Sciences*

Mrs. Marilyn Parks, *Center of Excellence: Information Systems*

Dr. Decatur Rogers, *Distinguished Professor of Engineering*

Dr. Jennifer Stewart-Wright, *Research and Sponsored Programs*

Dr. Moinuddin M. Sarkar, *Physics and Mathematics*

Dr. Maria Thompson, *Research and Sponsored Programs*

Dr. Ramaprasad Unni, *College of Business*

Dr. Verla Vaughan, *School of Nursing*

Ms. Valerie Williams, *Center of Excellence:
Learning Sciences, Co-Chair*

Dr. Wosene Yefru, *Africana Studies*

EX-OFFICIO MEMBERS

Dr. Robert L. Hampton, *Provost and Executive Vice President*

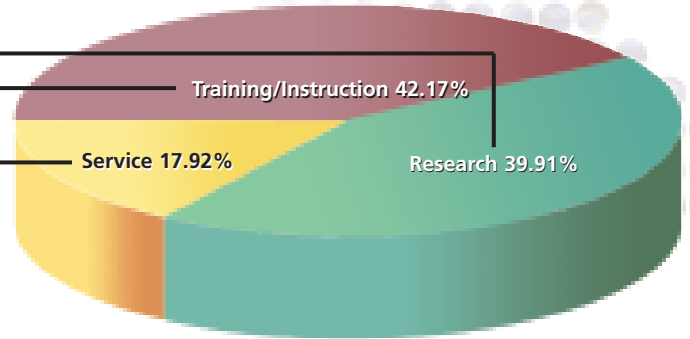
Dr. William Lawson, *Dean, College of Arts and Sciences*

Dr. Marcus W. Shute, P.E., *Vice President, Research and Sponsored Programs*

Annual Report Fiscal Year 2007

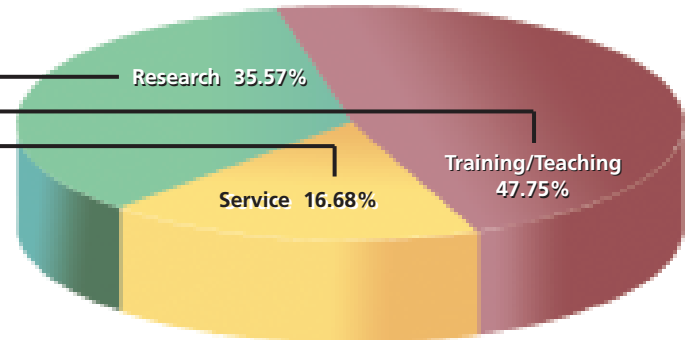
SUBMISSIONS BY PROJECT TYPE

Research \$20,423,239 (88)
Training/Instruction \$21,579,216 (35)
Service \$9,170,483 (17)
TOTAL \$51,172,938 (140)



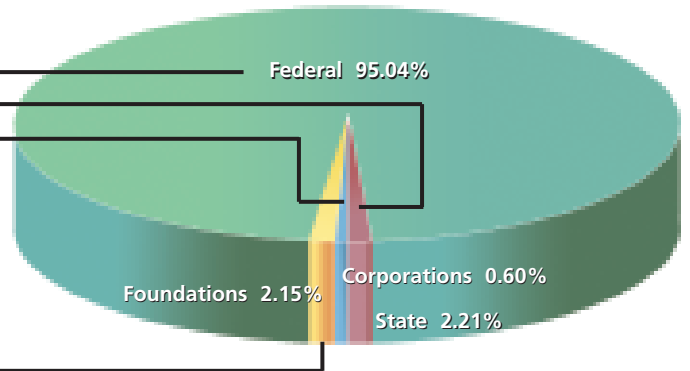
Awards By Project Type

Research \$11,705,303 (40)
Training/Teaching \$15,715,458 (63)
Service \$5,491,242 (13)
TOTAL \$32,912,003 (116)



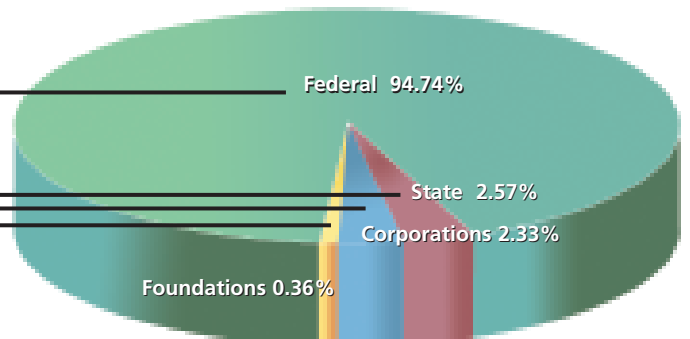
SUBMISSIONS BY SOURCE

Federal \$48,673,414 (110)
State \$1,103,816 (6)
Industry/Corporate \$297,991 (9)
Private Foundations \$1,097,717 (15)
TOTAL \$51,172,938 (140)



Awards By Source

Federal \$31,180,375 (103)
State \$847,106 (5)
Corporations \$776,214 (4)
Private Foundations \$118,308 (4)
TOTAL \$32,912,003 (116)



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- CENTER FOR EXTENDED EDUCATION
- ACADEMIC INTERVENTION CENTER

Dr. Robert L. Hampton
Provost and
Executive Vice President
615-963-5301



TENNESSEE STATE UNIVERSITY

College of Arts & Sciences

PROGRAMS

Africana Studies

Art

Biological Sciences

Chemistry

Communications

Criminal Justice

History

**Geography and Political
Science**

**Languages, Literature,
and Philosophy**

Music

Physics and Mathematics

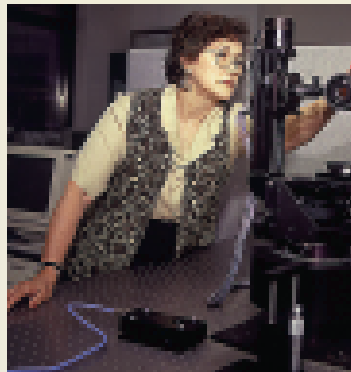
Social Work

Sociology

Interdisciplinary Studies

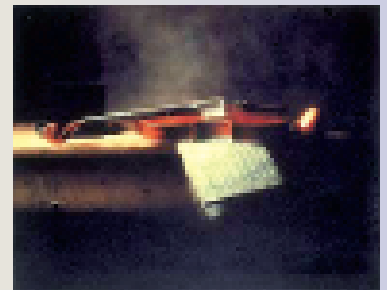
Teacher Certification

The College of Arts and Sciences is committed to excellence in teaching and advising, research and creative activity, and public service. The College aims to provide students with a solid academic foundation upon which to pursue lifelong learning and build successful lives and careers.



We believe that the promotion of active, inquiry-based learning communities, revolving around faculty and student research is paramount in the preparation of students for careers in the 21st century. In building these learning communities, we are proud of the work of our faculty in securing external funds to support their research and to provide research training opportunities for students.

As the College of Arts and Sciences continues to build on a legacy of scholarly excellence and service, we are indebted to the faculty and students who present research papers to scholarly audiences, publish books and journal articles and apply research findings to advance public policy. The scholarly contributions of these faculty and students will help to sustain this University for future generations.



William Lawson, Ph.D.
Dean

Degrees Offered

B.A. • B.S.

M.A. • M.S. • M.C.J.

Ph.D.

Cooperative Extension Program Salutes

The University-Wide Research Symposium
on the 30th Anniversary

Educating People for Better Living

Tennessee State University

PROGRAMS

Agriculture and Natural
Resources

4-H and Youth
Development

Small Farms and Integrated
Pest Management

Forestry

Goats and Small Ruminants

Family and Consumer
Sciences

Community Resource and
Economic Development

Nutrition Education
and Food Safety

OUR MISSION AND VISION

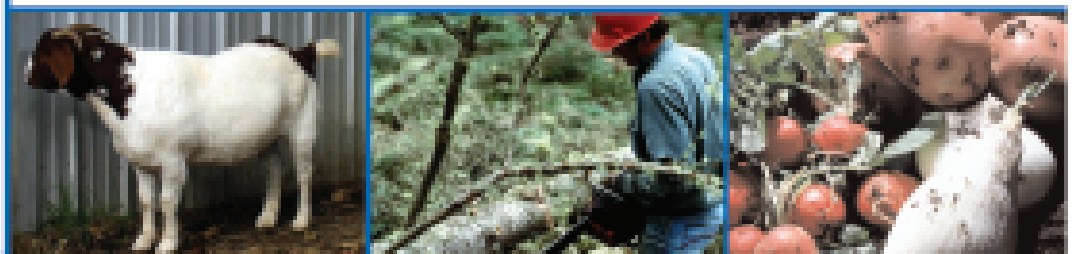
The mission of the Cooperative Extension Program (CEP) is to help educate and provide information to limited-resource urban and rural families, small farmers, individuals, other groups and community organizations. We use research-based information and technology to focus on priorities and needs which help improve quality of life.

Our vision is to be a leader in outreach educational programs for continuous learning opportunities. We provide educational programs in agriculture and

natural resources, family and consumer sciences, 4-H and youth development, and community resource and economic development.

We use a variety of program delivery strategies to contact our clientele. We also provide appropriate educational programs, including county extension agents, on-farm applied research and demonstrations,

the Tennessee Small Farms Expo & Small Farmers Recognition Program, Third Friday workshops and distance education programs.



Clyde E. Chesney, Ph.D.

Administrator

Latif Lighari, Ph.D.

Associate Administrator

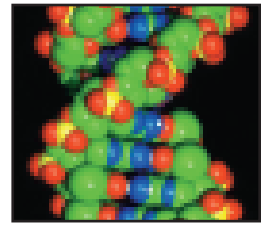
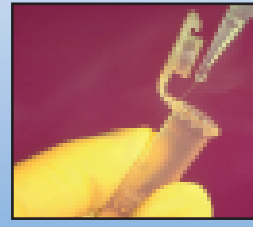
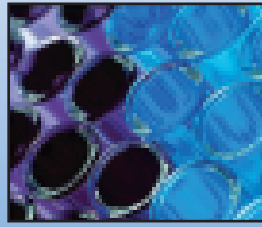
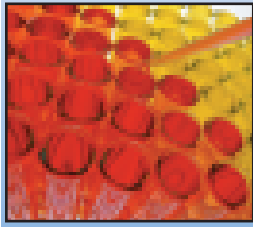
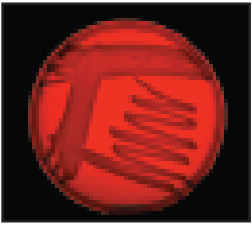
Office: (615) 963-1351

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Rosalyn Pitt, PT, PE, Ed.D.
Department Chair

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- Early Childhood Educator Professional Development
- P-16 Instructor and Administrator Professional Development
- Student Learning Measurement
- Birth to Three Curriculum, Program and Professional Development
- Educational Funding Analysis
- Geospatial Analysis

Programs and Projects

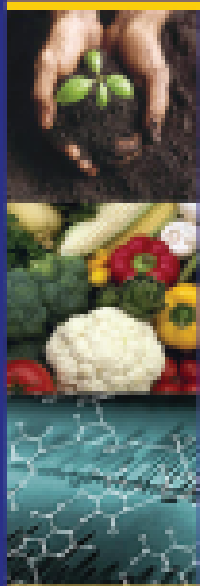
- Academic Achievement and Teacher Development in Science (AATDS)
- Historically Black College and University Partnership for Academic Training with Head Start (HBCU-PATHS)
- Social Service Competency Based Training (SSCBT)
- TSU-TN CAREs Early Head Start
- Tennessee Early Childhood Training Alliance (TECTA)
- Child Development Associate (CDA) Credential Development
- Davidson County Child Care Resource and Referral (CCR&R)
- Tennessee Child Care Provider Training (TN-CCPT)
- A Center for Technology Based Decision Making in Education

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Tennessee State University
School of Agriculture and Consumer Sciences

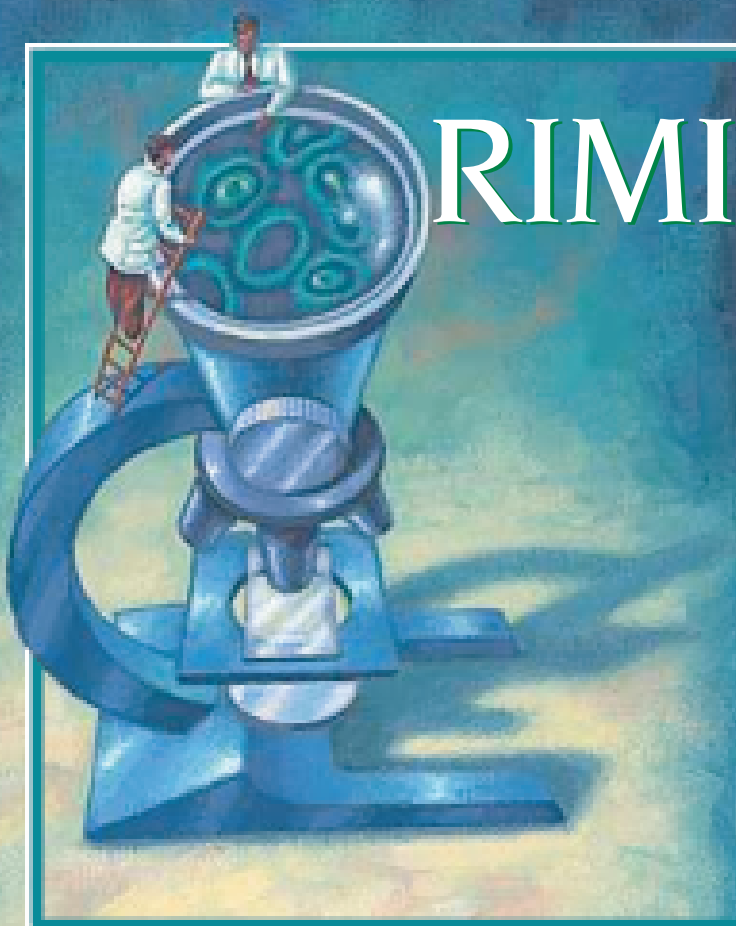


Agribusiness
Agricultural Biotechnology
Agricultural Education
Animal Science/Pre-Veterinary Medicine
Applied Geospatial Information Systems
Child Development & Family Relations
Design
Early Childhood Education
Fashion Merchandising
Food Service Management
Food Technology
Foods & Nutrition
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