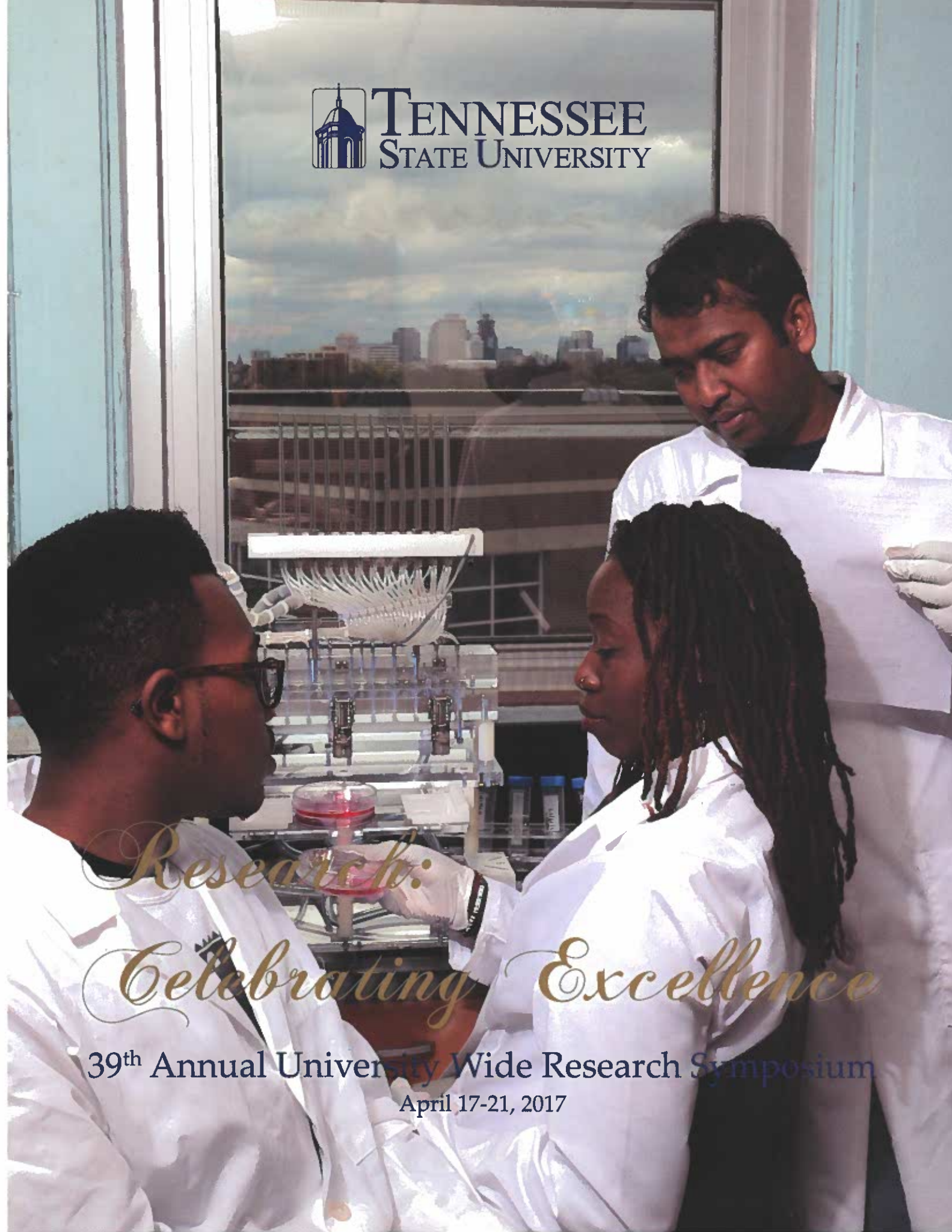




TENNESSEE
STATE UNIVERSITY



Research:
Celebrating Excellence

39th Annual University Wide Research Symposium
April 17-21, 2017

High Quality is Our Business!

The key to quality programs is the preparation of personnel with whom young children spend a significant portion of their time. The Center of Excellence for Learning Sciences continues to work to maintain high quality learning experiences during the early years with several programs to train and support child care providers including the Tennessee Early Childhood Training Alliance (TECTA) program, the Tennessee Early Childhood Program Administrator Credential (TECPAC), and the Tennessee CAREs Early Head Start program that serves children and their families in west Tennessee.



Building Capacities to Strengthen Communities through Education

Academic and Professional Development Programs

TENNESSEE EARLY CHILDHOOD TRAINING ALLIANCE (TECTA)

Since 1992, TECTA has provided high quality professional learning through free training and academic tuition support to thousands of Tennesseans in the early care and education workforce. Research shows that the experiences of children in the earliest years— including their interactions with care and education professionals— have profound effects, building the foundations for lifelong development and learning. (National Academies Press, “Transforming the Workforce,” AAP.edu)

Service Programs and Community Partnerships

SOCIAL SERVICES COMPETENCY BASED TRAINING (SSCBT)

SSCBT is a competency-based program designed to improve the knowledge and skills of human service workers in Head Start and community action programs and social service agencies across the nation. The Center awards the SSCBT Credential upon completion of the program.

TENNESSEE CAREs EARLY HEAD START PROGRAM

Since 1995, this Early Head Start program has provided coordinated comprehensive, intensive, and continuous support services to enable families to attain self-sufficiency, while recognizing the integrity and unique needs of these families and children. The program currently supports six child care centers across three counties in west Tennessee.

EARLY HEAD START-CHILD CARE PARTNERSHIP

The Tennessee State University Center of Excellence for Learning Sciences was one of the first in the nation to be awarded funding to partner Early Head Start programs with child care centers. The

partnership serves young children and their families in the Nashville community.

Training and Technical Assistance Programs

TENNESSEE CHILDCARE ONLINE TRAINING SYSTEM (TCCOTS)

The Tennessee Child Care Online Training System, or TCCOTS, is a learning portal designed by Early Childhood professionals that combines high-quality Early Childhood content with the convenience of an online training program.

TECTA ORIENTATION

TECTA Orientation is a free 30-hour training program with a curriculum centered on professional core competencies that provides an academic pathway to Early Childhood Education coursework at state colleges and universities.

CHILD DEVELOPMENT ASSOCIATE® (CDA) CREDENTIAL TRAINING

A CDA® assistance program is coordinated through TECTA local offices to provide academic instruction in core competency areas, supervised field experiences, and professional coaching and advisement to caregivers. The Council for Professional Recognition awards this national credential.

TENNESSEE EARLY CHILDHOOD PROGRAM ADMINISTRATOR CREDENTIAL (TECPAC)

The Tennessee Early Childhood Program Administrator Credential (TECPAC) is awarded to child care program Administrators, Directors, and Assistant Directors following an online training academy and assessments of the child care facilities. The Center awards the Administrator Credential upon completion of the Academy.

For more information visit www.tnstate.edu/learningsciences

or contact Valerie Williams, Interim Director • 615-277-1651 • learningsciences@tnstate.edu

TSU Main Campus • Research and Sponsored Programs Building • Suite 1B



39th Annual University-Wide Research Symposium
Official Symposium Program Booklet – Commemorative Issue

Research: Celebrating Excellence

Glenda Baskin Glover, Ph.D.
University President

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Tennessee State University Executive photography and inside book photography courtesy of John Cross, Media Services.

Photography for invited speakers courtesy of TSU colleges and guest speakers.

Cover (front) page photograph courtesy Vando L. Rogers Photography, Nashville, TN, 2017.

Cover: Biology majors, David Battle (left) junior student; Letimicia Fears (center) doctoral student; and Bipradas Roy (right) research assistant are engaged in the neuropharmacology group, led by Hugh Fentress, Ph.D., Assistant Professor of Biology.

April 2017 issue. This booklet is published by the Division of Research and Sponsored Programs and is published once a year. Copyright 2017 © Tennessee State University

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OFFICE OF
THE PRESIDENT

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



April 17, 2017

Dear Colleagues:

It gives me great pleasure to welcome each of you to our 39th Annual University-Wide Research Symposium, themed, "Research: Celebrating Excellence". I also want to extend a heartfelt welcome to our distinguished speakers, Dr. Wendell Fortson, Senior Director of Scientific and Regulatory Advocacy at Pharmaceutical Research and Manufacturers of America; and Mr. Mark Russ, Executive Assistant Director for the National Security Directorate of the Naval Criminal Investigative Service.

As we continue to enhance our initiatives and lead other HBCUs in STEM studies, we are enlightened by the research initiatives administered by Dr. Fortson and Mr. Russ. Their representation and engagement on various foundation boards and committees signifies the unwavering support for our students in all fields of study but especially in the field of science and engineering.

I am encouraged by the passion of our students and faculty as they continue to embrace multi-disciplinary research along with the advancement of technology in science, engineering, business, and the emerging humanities disciplines. This knowledge is transmitted to our students by the collaborative educational interactions and networking which this annual Symposium at TSU provides. Our students are offered a challenging and supportive arena for presenting their undergraduate and graduate research. I congratulate them all for their outstanding work – a celebration of excellence.

The 2017 Symposium continues to serve as a bridge to the TSU family and broader community. It also provides an additional opportunity for me to reach out to faculty, students, alumni, and the community of institutions and people for innovative ideas and inspiration.

The TSU family is committed to promoting and encouraging student and faculty researchers, who are striving and blazing trails for the next generation of *Think, Work, and Serve* ambassadors.

Sincerely,

A handwritten signature in black ink that reads "Glenda Glover".

Glenda Glover
President

"Think • Work • Serve"

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER M/F



"Think. Work. Serve."

**Office of the Vice President
for Academic Affairs**

3500 John A. Merritt Boulevard
Nashville, TN 37209

Office: (615) 963-5301 | Fax: (615) 963-5597
www.tnstate.edu/academic_affairs

April 17, 2017

Dear Colleagues:

I am excited to welcome you to the 39th Annual University-Wide Research Symposium. The theme, *Research: Celebrating Excellence* at Tennessee State University expresses our desire to be one of the top Historically Black Colleges and Universities (HBCUs) in the country in research and sponsored programming. I am also pleased to know that Dr. Wendell Fortson, Senior Director of Scientific and Regulatory Advocacy at Pharmaceutical Research and Manufacturers of America; and Mr. Mark Russ, Executive Assistant Director for the National Security Directorate of the Naval Criminal Investigative Service will be our symposium keynote speakers.

We are proud of our history and accomplishments in the research arena at Tennessee State University. Yet there is still work we must do to achieve the goals we have set for ourselves. Given the extraordinary opportunities that exist, our aspirations are attainable as we continue to pursue our goals and objectives allowing us to shape and mold our future. There is no doubt we will continue the rich legacy we have obtained given the success we have enjoyed and the work we continue to do through our strategic research agenda.

This week we celebrate the creative research our faculty and student researchers have generated this past year. There will be an exchange of knowledge and ideas through stimulating dialogue and collaborative interactions graduate and undergraduate students engage in during the symposium. It is through these sessions faculty and students engage in conversations specific to research topics investigated across the globe.

I extend my congratulations to Dr. Lesia Crumpton-Young and all of the TSU family for the effort that has been expended to sponsor this symposium. It is a capstone event that provides value not only to our student participants, but to the broader research community.

Sincerely,

Mark G. Hardy, Ph.D.
Vice President



"Think. Work. Serve."

Research and Institutional Advancement
3500 John A. Merritt Boulevard
Nashville, Tennessee 37209-1561
Office: (615) 963-7631
Fax: (615) 963-5068



Office of Vice President and Chief Research Officer

April 17, 2017

Dear Colleagues:

Welcome to the 39th Annual University-Wide Research Symposium at Tennessee State University.

The purpose of the Symposium is to highlight and celebrate the multi-disciplinary research experiences of TSU students. The oral and poster presentations of students from across the university spectrum help to foster a greater understanding of the core areas of knowledge central to their respective areas of study.

In the real world, presentation skills are a critical asset in a competitive environment of ideas. The Symposium gives students a great opportunity to present their ideas and to get feedback.

The Symposium also showcases university-wide research that delivers academic value to TSU students. Education that includes research experiences is a key to having that extra edge necessary in a global economy. Student participation in research opportunities has tremendously impacted the learning environment for students, who promise to continue our legacy of personal perseverance and enduring excellence in their chosen endeavors.

Please join me in supporting our students, faculty, and research faculty as they continue to grow and embark upon future research activities.

It is hoped that you will encourage, inspire, and applaud our students as they prepare for a lifetime of achievement and service, with research as a cornerstone of their continuing accomplishments.

Sincerely,

Lesia L. Crumpton-Young, Ph.D.

Chief Research Officer

Vice President, Research and Institutional Advancement

DR. RUBY P. TORREY

FOUNDER OF RESEARCH DAY
AT TENNESSEE STATE UNIVERSITY, 1979

Dr. Rubye Mayette Prigmore Torrey, founder of Tennessee State University's (TSU) "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 for sponsoring a state-wide conference on "Human Subjects in Research" that included internationally acclaimed speakers. Under her guidance the campus Sigma Xi Club (a research honor society) became a valid chapter. Dr. Torrey launched a successful Inaugural Student Research Day at TTU in 2005.

Dr. Torrey grew up in East Tennessee in the town of Sweetwater. She attended Swift Memorial Junior College and earned both her Baccalaureate and Master of Science degrees at TSU with honors. Her Master of Science degree research was sponsored by the Tennessee Valley Authority, wherein she developed a chemical method for determining insipient spoilage in fruits and vegetables indigenous to the State of Tennessee. Dr. Torrey 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 did post-doctoral research 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 Standards & Technology). She 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 and workshop conductor at numerous professional conferences. She has also achieved the illustrious status of Emeritus membership in the American Chemical Society.



Celebrating Excellence
for
39
Years



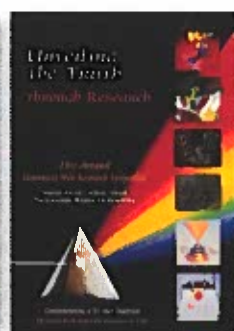
1996



1997



1998



1999



2000



2001

HOW IT ALL BEGAN

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.



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2006

2007



2008

2009

2010



2011

2012

2013



2014

2015

2016

The Research Symposium

The Annual University-Wide Research Symposium at Tennessee State University is celebrating 39 years of providing an opportunity for faculty, undergraduate, and graduate students to present their research. In 1979, the event started as Research Day and it was renamed University-Wide Research Day in 1981. During the early years, only oral presentations were given. Since 1995, both poster and oral presentations have been included. Also, in 1995, the number of presentations had increased so much that all activities could not be completed in one day. Consequently, the name was changed from Research Day to Research Symposium where there are now five days of activities, including presentations from several speakers from various disciplines. Dr. Rubye Torrey, Assistant Vice President for Research and Professor of Chemistry (Emeritus), was the first Research Day Chair (1979-1981). TSU has honored Dr. Torrey at milestone years during annual research symposia.

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

Over the previous 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), Brenda McAdory and Valerie Williams (2008-2010), Carolyn Caudle and Nannette Martin (2011-2013), and Nannette Martin (2011-present) and Tamara Rogers (2014-2016). Current symposium chairs are Nannette Martin (2011- present) and John T. Robinson, Jr. (2017).

The Deans of the College of Arts and Sciences (Wendolyn Bell, Bobby Lovett, William Lawson, and Gloria Johnson) have supported the research symposium from its inception. In 1995, Maurice Mills (Director, Office of Sponsored Research) embraced the vision of the research symposium being campus wide and being supported by, not only the College of Arts and Sciences, but also by the Office of Sponsored Research with increased financial and human resources. With Carolyn Caudle (Faculty Liaison, OSR) at the helm of the research symposium leadership, activities moved to a new level. She re-established the presentation times to 15 minutes and introduced concurrent sessions. The symposium reached a peak of 130 presentations during her chairmanship. Caudle instituted advertisements in the symposium booklet from schools, departments, and institutes throughout the University. Caudle's co-chair, Nannette Martin, and later Jovita Wells, assisted in the design of the Research Symposium booklets and many of the advertisement pages. In 2004, Marcus W. Shute, first Vice President for the Division of Research and Sponsored Programs, significantly increased the level of financial support for the Symposium and began the tradition of inviting TSU alumni engaged in research careers to speak to students during the awards luncheon. In 2009, as a part of TSU's grand recruitment campaign for students, the Division of Research and Sponsored Programs, under the leadership of Dr. Maria Thompson (Vice President) introduced unit research days for various disciplines and programs; and in 2010, she initiated the Spring Break Academy for high school students. The Research Symposium booklets were given to all attendees and 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 Symposium booklet (or program) also became a means to showcase various research activities at Tennessee State University.

Beginning in 2011, Interim Associate Vice President Dr. Michael Busby continued to support the Symposium with financial resources and by sanctioning the engagement of national and international acclaimed scientists to present Symposia keynote addresses and conduct faculty research team forums. In 2014, Chief Research Officer and Associate Vice President Dr. Lesia Crumpton-Young joined the Division of Research and Sponsored Programs, embracing the spirit and financial support of the Research Symposium, and continuing enhancement of partnerships with federal agencies for increasing research at the University.

OVERVIEW OF EVENTS

On-Site Registration Schedule					
Presentation Type	Location	Monday, April 17, 2017	Tuesday, April 18, 2017	Wednesday, April 19, 2017	Friday, April 21, 2017
Oral	RSP Building 1st Floor Lobby	8:30 a.m. – 1:00 p.m.	8:30 a.m. – 1:00 p.m.	8:30 a.m. – 1:00 p.m.	8:30 a.m. – 10:00 a.m.
Poster	Jane Elliott Hall Lobby	10:00 a.m. – 1:30 p.m.	9:00 a.m. – 3:00 p.m.		

MONDAY, APRIL 17, 2017

2:00 P.M. Opening Ceremony and Plenary Session
 E.T. Goins Recital Hall, Performing Arts Center
 Symposium Keynote Speaker Wendell S. Fortson, Ph.D., J.D.

TUESDAY, APRIL 18, 2017

Presentations:

9:00 A.M. – 12:00 P.M. Graduate Engineering I Orals, RSP 163
 9:00 A.M. – 12:00 P.M. Graduate Science I Orals, RSP 209
 1:00 P.M. – 4:15 P.M. Graduate Engineering II Orals, RSP 209
 1:00 P.M. – 4:00 P.M. Graduate Science II Orals, RSP 163

WEDNESDAY, APRIL 19, 2017

Presentations:

9:00 A.M. – 11:45 A.M. Undergraduate Engineering Orals, RSP 209
 9:00 A.M. – 12:00 P.M. Graduate Science III Orals, RSP TIGER Institute 009
 9:00 A.M. – 11:30 A.M. Undergraduate Science I Orals, RSP 163
 1:00 P.M. – 4:15 P.M. Graduate Science IV Orals, RSP 209
 1:00 P.M. – 3:30 P.M. Undergraduate Science II Orals, RSP 163

THURSDAY, APRIL 20, 2017

Poster Presentations: Posters will be displayed in the Jane Elliott Hall Auditorium, April 18, 2017 – April 20, 2017

9:00 A.M. – 11:00 A.M. Faculty Poster Session, Jane Elliott Hall Auditorium
 9:00 A.M. – 11:00 A.M. Graduate Poster Session and Judging, Jane Elliott Hall Auditorium
 1:00 P.M. – 3:00 P.M. Undergraduate Poster Session and Judging, Jane Elliott Hall Auditorium

3:30 P.M. – 6:30 P.M. Psychology Research Day: James E. Farrell – Fred E. Westbrook Building, 118
 Poster Presentations. Faculty Research Slam. Awards. Keynote Speaker, Vonetta Dotson, Ph.D.

FRIDAY, APRIL 21, 2017

Presentations:

9:00 A.M. – 11:00 A.M. Faculty Orals I, RSP 163
 9:00 A.M. – 11:00 A.M. Faculty Orals II, RSP TIGER Institute 009

12:00 P.M. – 2:00 P.M. Awards Luncheon and Closing Ceremony, James E. Farrell – Fred E. Westbrook Building, 118
 Luncheon. Awards. Awards Luncheon Keynote Speaker – Mr. Mark N. Russ

Posters will be displayed in the Jane Elliott Hall Auditorium from Tuesday, April 18, 2017 – Thursday, April 20, 2017

39TH ANNUAL UNIVERSITY-WIDE RESEARCH SYMPOSIUM

Research: Celebrating Excellence

Opening Ceremony and Plenary Session

Monday, April 17, 2017

2:00 P.M. – 4:00 P.M.

E. T. Goins Recital Hall, Performing Arts Center

Mistress of Ceremonies
Kimberly P. Johnson, Ph.D.
Assistant Professor
Communication Studies

Prelude	Soprano
Welcome and Greetings.....	Mark G. Hardy, Ph.D. Vice President for Academic Affairs
Occasion	Mrs. Nannette C. Martin Research Symposium Co-chair
Introduction of Keynote Speaker.....	E. Lewis Myles, Ph.D. Professor, Biology College of Life and Physical Sciences
Keynote Address.....	Wendell S. Fortson, , Ph.D., J.D. <i>Senior Director, Science and Regulatory Advocacy</i> PhRMA

Pursuing Your Dreams to Serve Others

Remarks and Presentation of Award.....	Mrs. Phyllis Danner, MBA Director, Research and Sponsored Programs
Closing Remarks.....	John T. Robinson, Jr., Ph.D. Research Symposium Co-chair
Special Music.....	Tennessee State University "Alma Mater", Laura M. Averitte, 1918

SYMPOSIUM KEYNOTE SPEAKER

Wendell S. Fortson, J.D., Ph.D.

Senior Director, Scientific and Regulatory Advocacy
Pharmaceutical Research and Manufacturers of America (PhRMA)



Wendell S. Fortson, J.D., Ph.D. is Senior Director of Scientific and Regulatory Advocacy at Pharmaceutical Research and Manufacturers of America (PhRMA). In this role, Dr. Fortson leads the organization's domestic and international scientific and regulatory advocacy activities related to biologics and biosimilars, and the implementation of the Biosimilar User Fee Act of 2012 (BsUFA).

Prior to joining PhRMA, Dr. Fortson was Associate Director of Regulatory Strategy and Policy at Lundbeck Pharmaceuticals. While at Lundbeck, he was mentored and trained by the Vice President of U.S. Regulatory Affairs and TSU alumni, Dr. Eric Floyd. It was during this time that Dr. Fortson gained invaluable experiences in drug development and the implementing Food and Drug Administration (FDA) laws and regulations.

Dr. Fortson completed a postdoctoral fellowship in the ethical, legal and social implications (ELSI) of genetics research at the University of North Carolina at Chapel Hill School of Medicine-Center for Genomics and Society. Particularly, Dr. Fortson focused on ELSI issues relating to genomics health disparities, pharmacogenomics-inspired litigation, bio-banking, and personalized/precision medicines. During this fellowship Dr. Fortson attended law school at night.

Prior to his fellowship, Dr. Fortson was a graduate student researching ets (E26 transformation specific)-related gene (ERG) and other ets oncogenes role in the development of prostate cancer. Specifically, he evaluated the molecular mechanism of histone deacetylase inhibitors (e.g. Trichostatin-A and Valproic Acid) ability to induce cell death (apoptosis) in ERG-positive prostate cancer cells.

Dr. Fortson volunteers as a scientific instructor to federal and state judges for the National Courts and Science Institute- based in Washington, D.C. He also mentors several high school, undergraduate, graduate, and medical students to help them achieve their personal, educational and professional goals.

Dr. Fortson attained a Bachelors of Science degree in Biology from Tennessee State University, Juris Doctor from North Carolina Central University School of Law (Evening Program), and Doctor of Philosophy in Biomedical Sciences-Cancer Biology from the Morehouse School of Medicine.

*Opening Ceremony and
Plenary Session*

39TH ANNUAL UNIVERSITY-WIDE RESEARCH SYMPOSIUM

Research: Celebrating Excellence

Awards Luncheon and Closing Ceremony

Friday, April 21, 2017

12:00 P.M. – 2:00 P.M.

James E. Farrell-Fred E. Westbrook Building, 118

Mistress of Ceremonies, Ms. Valerie Williams

Prelude (Instrumental Music)

WelcomeMrs. Nannette Carter Martin, Symposium Co-chair

InvocationMr. Bryan Quarles

The Luncheon

Presentation of Speaker.....Lesia Crumpton-Young, Ph.D.
Chief Research Officer
Vice President for Research and Institutional Advancement

The Keynote Address.....Mr. Mark N.Russ
Executive Assistant Director
National Security Directorate
Naval Criminal Investigative Service (NCIS)

Research and Cyber Security: Advantages and Risks

Presentation of AwardsSymposium Co-chairs
Lesia Crumpton-Young, Ph.D.

Mrs. Phyllis Danner, MBA, Director
Research and Sponsored Programs

- Speaker Award
- Student Awards
- Research Mentor Award
- Million Dollar Club for Research Induction and Award(s)
- Blue Jacket Society Announcements

Acknowledgements and Closing RemarksJohn T. Robinson, Jr., Ph.D., Symposium Co-chair

AWARDS LUNCHEON KEYNOTE SPEAKER

Mark N. Russ

Executive Assistant Director
National Security Directorate
Naval Criminal Investigative Service



Special Agent Mark N. Russ is currently the Executive Assistant Director (EAD) for the National Security Directorate. In this capacity, he has program management oversight of a myriad of combatting terrorism/counterintelligence investigations and operations which include espionage, terrorism, compromise, technology transfer, cyber intrusion, and threats to research development and acquisition programs. He serves as the primary advisor and principal EAD to the Director and Deputy Director, NCIS on all national security investigations, operations and operational support services. He is responsible for the manning, training and equipping of agency personnel to protect Navy and Marine Corps forces, operations, information, facilities, equipment and networks from attacks and the intelligence activities of foreign governments and international terrorist organizations.

Special Agent Russ was appointed to the Senior Executive Service in February 2016 and has 26+ years of Federal Service.

Special Agent Russ joined the Naval Criminal Investigative Service (NCIS) in 1989, serving in the Washington, D.C. Field Office. He subsequently served tours of duty in Pusan, South Korea (1996-1998), and in the Counterintelligence Directorate at NCIS Headquarters, Washington, DC (1998-2000). He joined the supervisory ranks as a Supervisory Special Agent in Manama, Bahrain, (2000-2002). His subsequent management assignments included Executive Assistant to the Deputy Director and Director of NCIS, NCIS Headquarters, Washington, DC (2002-2004), Assistant Special Agent in Charge for Counterintelligence, Washington Field Office, Washington, DC (2004-2006); Deputy Assistant Director, Cyber Department, Washington, DC (2006-2008); Special Agent in Charge of the NCIS Middle East Field Office, Manama, Bahrain (2008-2009); and Special Agent in Charge of the NCIS Norfolk Field Office, Norfolk, VA (2009-2012).

Immediately prior to his appointment as Executive Assistant Director, Special Agent Russ served as the Acting Executive Assistant Director for the newly formed Cyber Directorate (2016). He served as the Assistant Director for Intelligence and Information Sharing (2014-2015); First Director, Joint Detachment Apollo-Afghanistan (2013), where he led, managed and executed strategic capabilities against the adversary. Special Agent Russ also served as the Assistant Director for Financial Management and Planning (2012-2013). In this role, he was responsible for the entire range of human capital management and process development.

His personal awards include two Secretary of Defense Medals, Global War on Terrorism (2002/2013); Non Article 5 North Atlantic Treaty Organization Medal (2013); and the Joint Civilian Commendation Award (2013).

Special Agent Russ graduated from American University with a Bachelor of Arts degree in Justice.

*Awards Luncheon
and Closing Ceremony*

PRESENTATION SCHEDULES

ORAL PRESENTATIONS - Tuesday, April 18, 2017

GRADUATE ENGINEERING I

9:00 A.M. - 12:00 P.M. - Presentations will be in the Research and Sponsored Programs Building, Room 163

9:00 AM	GR ENGR 1	CROSS LAYERS DECISION MAKING AND FUSION MODELS FOR AUTOMATED SENSOR EXPLOITATION IN LAYERED SENSING SYSTEMS Bakhita Salman*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Saleh Zein-Sabatto
9:15 AM	GR ENGR 2	POLARIZED BEAMFORMING FOR ENHANCED COUNTERMEASURE AGAINST INTERFERENCE IN WIRELESS SYSTEMS Ali Aldarraji*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Liang Hong
9:30 AM	GR ENGR 3	ATTACK SURFACE EXPANSION STRATEGY TO PROTECT VIRTUALIZED NETWORK INFRASTRUCTURE Tulha Al-Salah*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Liang Hong
9:45 AM	GR ENGR 4	FEEDING EVERYONE IF INDUSTRY IS DISABLED D. Dorothea Cole*, Michael Griswold, and Mohamed Abdelkhalik. <i>Civil and Architectural Engineering</i> , College of Engineering. Advisor(s): David Denkenberger and Joshua M. Pearce
10:00 AM	GR ENGR 5	CORRELATING ACCESS MANAGEMENT FEATURES TO PEDESTRIAN OPERATIONS Kevin Soloka*. <i>Civil and Architectural Engineering</i> , College of Engineering. Advisor(s): Deo Chimba
10:15 AM	GR ENGR 6	DEVELOPING CALIBRATION FACTORS FOR RURAL TWO WAY TWO LANE INTERSECTION FACILITIES HSM MODELS FOR USE IN TENNESSEE Wambura Chacha*. <i>Civil and Architectural Engineering</i> , College of Engineering. Advisor(s): Deo Chimba
10:30 AM - 10:45 AM BREAK		
10:45 AM	GR ENGR 7	DEVELOPMENT OF A TEST-BED FOR INTELLIGENT HUMAN MACHINE TEAMING Mohammed Thanoon*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Saleh Zein-Sabatto and Charles D. McCurry
11:00 AM	GR ENGR 8	THE EFFECTS OF VARIED INITIAL AGING TIMES ON SEI GROWTH AND DEVELOPMENT Adrian Parker*. <i>TIGER Institute</i> , College of Engineering. Advisor(s): Samuel Hargrove, Frances Williams, and Richard Mu
11:15 AM	GR ENGR 9	IMPACTS OF ACCESS MANAGEMENT ON VEHICLE EMISSIONS Henry Ajieh*. <i>Civil and Architectural Engineering</i> , College of Engineering. Advisor(s): Deo Chimba
11:30 AM	GR ENGR 10	EXPERIMENTAL IMPLEMENTATION OF NETWORK RESOURCE MANAGEMENT FOR CLOUD BASED NETWORKED CONTROL SYSTEMS Mohammad Arafatur Rahman*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Lee Keel and Liang Hong
11:45 AM	GR ENGR 11	MULTI-AGENT SYSTEMS FOR DETECTING FALSE DATA INJECTION ATTACKS AGAINST THE ELECTRIC POWER GRID Esther Amullen*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Lee Keel

GRADUATE ENGINEERING II

1:00 P.M. - 4:15 P.M. - Presentations will be in the Research and Sponsored Programs Building, Room 209

1:00 PM	GR ENGR 12	HOSTS-BASED ATTACK GRAPH AND RANKING APPROACH FOR RISK MANAGEMENT OF COMPUTER NETWORKS Tao Zhao*. <i>Computer Science</i> , College of Engineering. Advisor(s): Wei Chen
1:15 PM	GR ENGR 13	IMPROVED BOTTOM FRICTION, SURFACE ROUGHNESS, AND WIND STRESS IN A COUPLED WAVE AND STORM SURGE MODEL Kyra Bryant*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar
1:30 PM	GR ENGR 14	DESIGN OF AN ADAPTIVE CONTROLLER FOR FLIGHT CONTROL OF AIRCRAFT MODELS Kevin Terrell*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Saleh Zein-Sabatto

PRESENTATION SCHEDULES

1:45 PM	GR ENGR 15	AERODYNAMIC STUDY OF A MORPHING WING USING FLUID STRUCTURE INTERACTION TECHNIQUES Anwar Alsulami*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar and Woong Yeol Joe
2:00 PM	GR ENGR 16	DETERMINATION OF GAS DRIFT PARAMETERS IN MINICHANNELS USING VOLUME OF FLUID TECHNIQUES Benjamn Northington*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar and S. Mostafa Ghiaasiaan
2:15 PM	GR ENGR 17	A COUPLED ATMOSPHERIC AND CIRCULATION MODEL FOR ACCURATE HURRICANE STORM SURGE FORECASTING Abram Musinguzi*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar
2:30 PM	GR ENGR 18	INSTANT RESPONDER: A PROPOSAL OF SAFETY AND SECURITY SYSTEM ON TENNESSEE STATE UNIVERSITY MAIN CAMPUS Alghamdi Abdullah*, Thanoon Mohammed*, and Anwar Alsulami*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar and Mohamed Saleh Zein-Sabatto
2:45 PM - 3:00 PM BREAK		
3:00 PM	GR ENGR 19	PERFORMANCE EVALUATION OF HURRICANE STORM SURGE SIMULATION USING 2D AND 3D ADCIRC MODELS Simbarashe Kanjanda*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar
3:15 PM	GR ENGR 20	TRAJECTORY EXTRACTION FOR BEHAVIOR ANALYSIS IN LAYERED SENSING Quaker Manuel*. <i>Computer Science</i> , College of Engineering. Advisor(s): Fenghui Yao and Saleh Zein-Sabatto
3:30 PM	GR ENGR 21	DYNAMIC HUMAN FACIAL EXPRESSION RECOGNITION AND LEARNING Karthikeya Ravi*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Amir Shirkhodaie
3:45 PM	GR ENGR 22	MULTI-CAMERA MULTI-TARGET TRACKING, OBJECT AND ACTIVITY RECOGNITION IN VIRTUAL ENVIRONMENT Kalyankumar Bogi*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Amir Shirkhodaie
4:00 PM	GR ENGR 23	UTILITY BASED OBJECT RECOGNITION Durga Telagamsetti*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Amir Shirkhodaie

GRADUATE SCIENCE I

9:00 A.M. - 12:00 P.M. - Presentations will be in the Research and Sponsored Programs Building, Room 209

9:00 AM	GR SCI 1	TRIBUTYL TIN ALTERS INTERLEUKIN 1 BETA AND INTERLEUKIN 6 PRODUCTION AND MRNA EXPRESSION FROM HUMAN IMMUNE CELLS Shyretha Brown*, Mariam Boules, and Nafisa Hamza. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen
9:15 AM	GR SCI 2	TARGETED GENOME EDITING (CRISPR/CAS9) OF TRY AND CPC GENES IN SOYBEAN (GLYCINE MAX) PLANTS C M Sabbir Ahmed* and Mary Jane Espina. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ali Taheri and Korsi Dumenyo
9:30 AM	GR SCI 3	CRISPR-CAS9 EDITING OF THE CHICKEN GENOME Mary Shannon Byers*, Sherly Celada, and Duaa Babaer. <i>Biological Sciences</i> , College of Life and Physical Sciences. Advisor(s): Xioafei Wang Advisor(s): Xioafei Wang
9:45 AM	GR SCI 4	EVALUATION OF BIORATIONAL PRODUCTS AND FUNGICIDES FOR MANAGEMENT OF PHYTOPHTHORA ROOT ROT OF HYDRANGEA Md. Niamul Kabir*, Prabha Liyanapathirana, and Terri Simmons. <i>Otis L. Floyd Research Center</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Fulya Baysal-Gurel

PRESENTATION SCHEDULES

10:00 AM	GR SCI 5	PRODUCTION OF POLYHYDROXYBUTYRATE (PHB) BY NEW IDENTIFIED BACILLUS CEREUS TSU1 STRAIN WITH RAPESEED CAKE SUBSTRATES (RCS) Hui Li*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Suping Zhou and Johnson Terrance
10:15 AM	GR SCI 6	SIMULTANEOUS ENCAPSULATION OF ANTIBIOTIC ALTERNATIVES FOR PATHOGEN CONTROL IN POULTRY INTESTINAL TRACT Cosmas Mwendwa*. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ying Wu, Fur-Chi Chen, and Agnes Kilonzo-Nthenge
10:30 AM - 10:45 AM BREAK		
10:45 AM	GR SCI 7	DO TENNESSEE FRUIT AND VEGETABLE FARMERS LIKE ORGANIC FARMING? PERCEPTIONS AND ATTITUDES Kumuditha Hikkduwa Epa Liyanage*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Hiren Bhavsar, Dilip Nandwani, and Fisseha Tegegne
11:00 AM	GR SCI 8	RETENTION FACTORS IN AFRICAN AMERICAN ENGINEERING STUDENTS Tonya McKoy*. <i>Psychology</i> , College of Education. Advisor(s): Marie S. Hammond
11:15 AM	GR SCI 9	BIOLOGICAL CONTROL OF PHYTOPHTHORA BLIGHT OF TOMATO USING SELECTED ENDOPHYTIC BIOLOGICAL CONTROL AGENTS Afona Irabor*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Margaret Mmbaga and Emily Rotich
11:30 AM	GR SCI 10	PREDICTING SPATIAL DISTRIBUTION OF WOODY BIOMASS ACROSS THE STATE OF TENNESSEE Man Kumari Giri*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Bharat Pokharel
11:45 AM	GR SCI 11	SYNTHESIS, CHARACTERIZATION, AND CATALYTIC APPLICATIONS OF U3O8 SUPPORTED IN A SILICA GEL MATRIX Fatima Green*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Joshua Moore

GRADUATE SCIENCE II

1:00 P.M. - 4:00 P.M. - Presentations will be in the Research and Sponsored Programs Building, Room 163

1:00 PM	GR SCI 12	EVALUATION OF COWPEA GENOTYPES FOR DROUGHT TOLERANCES IN THE SAVANNAH ECOLOGY OF GHANA Damba Yahaya*. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Matthew Blair
1:15 PM	GR SCI 13	PHYTOCHEMICAL PROFILES, ANTIOXIDANT, AND ANTI-DIABETIC PROPERTIES OF TWO PIGEON PEA VARIETIES Rabia Syed*. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ying Wu
1:30 PM	GR SCI 14	LEADERSHIP BEHAVIORS IN AGRICULTURAL AND ENVIRONMENTAL SCIENCE UNDERGRADUATES: THE IMPACT OF PRE-COLLEGIATE AND COLLEGIATE LEADERSHIP EXPERIENCES Quintin Robinson*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): John Ricketts
1:45 PM	GR SCI 15	IDENTIFICATION OF SWEET SORGHUM BOOTING STAGE DEVELOPMENTS TO HARVEST EARLY UNINUCLEATE MICROSPORES Deependra Bhatta*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ahmad Aziz
2:00 PM	GR SCI 16	EXPRESSION AND CHARACTERIZATION OF IMMUNE FUNCTION GENES AND TOLL-LIKE RECEPTORS (TLR) IN ADULT GUINEA FOWL USING TRANSCRIPTOME ANALYSIS Gabriel Akerele*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Samuel Nahashon

PRESENTATION SCHEDULES

2:15 PM	GR SCI 17	SPEECH PATHOLOGY VS NON-SPEECH PATHOLOGY RATINGS OF FACULTY INTELLIGIBILITY Stephanie Dixon* and Cori Gonzalez*. <i>Speech Pathology and Audiology</i> , College of Health Sciences. Advisor(s): Iris Johnson-Arnold, Danielle Watson, and Owen Johnson
2:30 PM - 2:45 PM BREAK		
2:45 PM	GR SCI 18	TARGETED GENOME EDITING BY MICROINJECTION OF LENTIVIRAL VECTOR FOR GERMLINE TRANSGENIC CHICKENS Sherly Celada*, Mary Shannon Byers, and Duaa Babaer. <i>Biological Sciences</i> , College of Life and Physical Sciences. Advisor(s): Xiaoferi Wang
3:00 PM	GR SCI 19	EFFECT OF BIOCHAR AND NITROGEN FERTILIZER RATE ON SWITCHGRASS YIELD, NITROGEN AND CARBON IN BIOMASS HARVESTED FOR BIOENERGY PRODUCTION Priya Saini*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Jason de Koff
3:15 PM	GR SCI 20	TOXICITY OF COAL FLY ASH AND TOXICOLOGICAL RESPONSE OF SWITCHGRASS GROWN ON FLY ASH AMENDED SOIL Olushola Awoyemi*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Kudjo Dzantor
3:30 PM	GR SCI 21	SCREENING, CLONING AND EXPRESSION OF CELLULASE ENCODING GENES FROM THE GOAT RUMEN BACTERIAL METAGENOMIC LIBRARY Santosh Thapa*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Suping Zhou
3:45 PM	GR SCI 22	EFFECTS OF ELEVATED HYDROSTATIC PRESSURE AGAINST BACKGROUND MICROFLORA AND PLANKTONICALLY-GROWN SALMONELLA SEROVARS Abimbola Allison*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Aliyar Fouladkhah

ORAL PRESENTATIONS - Wednesday, April 19, 2017

GRADUATE SCIENCE III

9:00 A.M. - 12:00 P.M. - Presentations will be in the Research and Sponsored Programs Building, TIGER Institute-Room 009

9:00 AM	GR SCI 23	ANTI-MICROBIAL ACTIVITIES OF ENDOPHYTIC FUNGAL CRUDE EXTRACTS ISOLATED FROM FLOWERING DOGWOODS (CORNUS FLORIDA L.) Asha Maheshwari*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Margaret Mmbaga and Agnes Kilonzo-Nthenge
9:15 AM	GR SCI 24	REAL-TIME DETECTION AND SUBTYPING OF SALMONELLA BY SURFACE PLASMON RESONANCE Devendra Bhandari*. <i>Family and Consumer Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Fur-Chi Chen
9:30 AM	GR SCI 25	EVALUATION OF HEALTH BENEFITS OF ENCAPSULATED BITTER MELON JUICE Li Wang*. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ying Wu and Arvazena Clardy
9:45 AM	GR SCI 26	PATHOGENICITY OF RHIZOCTONIA SOLANI AND PHYTOPHTHORA NICOTIANAE TO BIOFUMIGATION COVER CROPS (BRASSICA SPP.) Prabha Liyanapathiranage*. <i>Otis L. Floyd Research Center</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Fulya Baysal-Gurel
10:00 AM	GR SCI 27	COMPARATIVE ECONOMIC ANALYSIS OF AMERICAN GINSENG PRODUCTION IN SOUTHEASTERN REGION Avis Ortiz*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Prabodh Illukpitiya, Enefiok Ekanem, and Fisseha Tegegne
10:15 AM	GR SCI 28	ESTABLISHING NEW CATALYST SYSTEM FOR FLUORINATION OF ORGANOTRIFLUOROBORATES Satheesh Thatiparti*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Mohammad Al-Masum
10:30 AM - 10:45 AM BREAK		

PRESENTATION SCHEDULES

10:45 AM	GR SCI 29	PENTACHLOROPHENOL ALTERS SECRETION OF INTERLEUKIN 6 (IL-6) FROM HUMAN IMMUNE CELLS Tamara Martin*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen
11:00 AM	GR SCI 30	CELLULOLYTIC THERMOPHILES ISOLATED FROM SPRAY GEYSER, AMPHITHEATER SPRINGS, AND WHITEROCK SPRINGS INSIDE YELLOWSTONE NATIONAL PARK Joshua O'Hair*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Suping Zhou and Terrance Johnson
11:15 AM	GR SCI 31	STUDENT RETENTION IN HIGHER EDUCATION: PUBLIC VS PRIVATE Eckton Chinyanga*. <i>Education Leadership</i> , College of Education. Advisor(s): Elen Elder
11:30 AM	GR SCI 32	INVESTIGATING THE EFFECTS OF CHROMOBACTERIUM VIOLACEUM VIOLACEIN AT THE HUMAN SEROTONIN 2C RECEPTOR Letimicia Fears*. <i>Biological Sciences</i> , College of Life and Physical Sciences. Advisor(s): Hugh Fentress and Terrance Johnson
11:45 AM	GR SCI 33	ANTI-CANCER EFFECTS AND MOLECULAR MECHANISMS OF PHYTOCHEMICALS IN BREAST CANCER CELLS Xiaoyong Wang*. <i>Family and Consumer Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Hongwei Si

GRADUATE SCIENCE IV

1:00 P.M. - 4:15 P.M. - Presentations will be in the Research and Sponsored Programs Building, Room 209

1:00 PM	GR SCI 34	PROTEOME CHANGES IN SWITCHGRASS EXPOSED TO ALUMINUM STRESS Mahesh Rangu*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Suping Zhou
1:15 PM	GR SCI 35	EFFECTS OF PRECIPITATION CHANGE ON SWITCHGRASS BIOMASS AND SOIL CO₂ EMISSION Sadiye Aras*, Qi Deng, Chih-Li Yu, Xiaotao Ding, and Jaquantey Bowens. <i>Biological Sciences</i> , College of Life and Physical Sciences. Advisor(s): Dafeng Hui
1:30 PM	GR SCI 36	DIBUTYLTIN ALTERS PRODUCTION OF INTERLEUKIN 1 BETA AND INTERLEUKIN 6 IN HUMAN IMMUNE CELLS Linda Sushak*, and Nafisa Hamza. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen
1:45 PM	GR SCI 37	SYNERGISTIC ANTI-INFLAMMATORY EFFECTS OF COMBINED PHYTOCHEMICALS IN HUMAN ENDOTHELIAL CELLS Lijuan Zhang*. <i>Family and Consumer Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Hongwei Si
2:00 PM	GR SCI 38	EVALUATION OF <i>BACILLUS SUBTILIS</i> ISOLATES AS POTENTIAL BIOLOGICAL CONTROL AGENTS AGAINST SOYBEAN CHARCOAL ROT CAUSED BY <i>MACROPHOMINA PHASEOLINA</i> Jeremiah Sumpter*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Margaret Mmbaga and Emily Rotich
2:15 PM	GR SCI 39	SEASONAL VARIATIONS AND STATISTICAL ANALYSIS OF THE PHYSICOCHEMICAL CHARACTERISTICS IN A DEVELOPING WETLAND IN NASHVILLE, TENNESSEE Mark Okafor*. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): De'Etra Young and Tom Byl
2:30 PM - 2:45 PM	BREAK	
2:45 PM	GR SCI 40	ANTIGENIC DIVERSITY OF FLAGELLIN AND ITS APPLICATION IN SUBTYPING OF <i>CAMPYLOBACTER</i> Shreya Hamal*. <i>Family and Consumer Sciences</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Fur-Chi Chen
3:00 PM	GR SCI 41	SCHIFF BASES AND HEMIAMINALS: SYNTHESIS, MECHANISM OF FORMATION AND BIOLOGICAL EVALUATION Md. Shafiqul Islam*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Mohammad Karim

PRESENTATION SCHEDULES

3:15 PM	GR SCI 42	GENERATING HIGH-RESOLUTION PROFILES OF HISTONE METHYLATED MODIFICATION IN PANICUM HALLII USING CHIP-SEQ Shohana Huq*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Suping Zhou
3:30 PM	GR SCI 43	ECONOMICS OF UTILIZATION OF LIGNOCELLULOSIC BIOMASS FROM SHORT ROTATION WOODY CROP OF SWEETGUM FOR BIOETHANOL PRODUCTION Firuz Yuldeshev*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Prabodh Illukpitiya and Fisseha Tegegne
3:45 PM	GR SCI 44	EVALUATION OF TRICLOSAN EXPOSURES ON INTERLEUKIN 6 SECRETION FROM HUMAN IMMUNE CELLS Wendy Wilburn*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen
4:00 PM	GR SCI 45	SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL FLUORINATED TACRINE HYBRIDS AGAINST ALZHEIMER'S DISEASE Chibuike Obi*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Cosmas Okoro

UNDERGRADUATE ENGINEERING

9:00 A.M. - 11:45 A.M. - Presentations will be in the Research and Sponsored Programs Building, Room 209

9:00 AM	UG ENGR 1	VITAMINS IN AGRICULTURAL CATASTROPHES Michael Griswold*, D. Dorothea Cole, and Mohamed Abdelkhalik. <i>Civil and Architectural Engineering</i> , College of Engineering. Advisor(s): David Denkenberger, Joshua M. Pearce, and A. Ray Taylor
9:15 AM	UG ENGR 2	A PROOF OF CONCEPT OF COUNTERMEASURES TO GPS SPOOFING Chris Clegg*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Lee Keel and Liang Hong
9:30 AM	UG ENGR 3	PROVIDING NON-FOOD NEEDS IF INDUSTRY IS DISABLED Mohamed Abdelkhalik*, Michael Griswold*, and D. Dorothea Cole. <i>Civil and Architectural Engineering</i> , College of Engineering. Advisor(s): David Denkenberger and Joshua Pearce
9:45 AM	UG ENGR 4	GPS SPOOFING DETECTION VIA INDEPENDENT LOCALIZATION Elliot Steen*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Lee Keel and Liang Hong
10:00 AM	UG ENGR 5	MULTIPLE-INPUT SINGLE-OUTPUT RECONFIGURABLE COMMUNICATION SYSTEM Ebhola Ijeh*. <i>Electrical and Computer Engineering</i> , College of Engineering. Advisor(s): Liang Hong
10:15 AM - 10:30 AM BREAK		
10:30 AM	UG ENGR 6	DETERMINATION OF HYDRODYNAMICS PARAMETERS FOR MICROPOROUS CRYOCOOLER REGENERATOR FILLERS UNDER STEADY FLOW CONDITIONS Abdulelah Alhejaili*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar and S. Mostafa Ghiaasiaan
10:45 AM	UG ENGR 7	CONVECTION COOLING A SOLAR CONCENTRATING PHOTOVOLTAIC-THERMOELECTRIC HYBRID SYSTEM TO MAXIMIZE POWER GENERATION Said Alamri*, Saud Almutairi*, and Turki Alamri*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Muhammad Akbar, Fatemeh Hadi, and Matthew J. Traum
11:00 AM	UG ENGR 8	DESIGN OF AN EXPERIMENTAL MACRO-SCALE HYDRO TESLA TURBINE TO REPLICATE PERFORMANCE OF A MEMS-SCALE TURBINE RUNNING PRODUCTS OF COMBUSTION Mubarak Alrabie*, Muhammad Altarrgemy*, and Faisal Altamimi*. <i>Mechanical and Manufacturing Engineering</i> , College of Engineering. Advisor(s): Fatemeh Hadi, Muhammad Akbar, and Matthew J. Traum
11:15 AM	UG ENGR 9	FIRST RESPONSE DRONE SQUAD Melvin Mason*, and Paxtyn Wright*. <i>Aeronautical and Industrial Technology</i> , College of Engineering. Advisor(s): Ivan T Mosley, Sr. and Carlos Beane
11:30 AM	UG ENGR 10	REAL-TIME ROOT MONITORING AND IMAGE ANALYSIS OF HYDROPONIC CROP PLANTS Timothy Darrah* and Caleb Joshua Blankenship. <i>Computer Science</i> , College of Engineering. Advisor(s): Erdem Erdemir

PRESENTATION SCHEDULES

UNDERGRADUATE SCIENCE I

9:00 A.M. - 11:30 A.M. - Presentations will be in the Research and Sponsored Programs Building, Room 163

9:00 AM	UG SCI 1	DNA MARKERSâ€™™ BASED ANALYSES OF INDIVIDUAL MICROSPORES FROM SWEET SORGHUM VARIETIES Alexius Dingle*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ahmad Aziz and Deependra Bhatta
9:15 AM	UG SCI 2	QUANTIFICATION OF COTTONSEED GOSSYPOL LEVELS USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY Aron Felts*, and Micah Blake-Smith. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ahmad Aziz and Sarabjit Bhatti
9:30 AM	UG SCI 3	VARIABILITY OF FREE FATTY ACID CONTENT WITHIN WINTER CANOLA VARIETIES Raheem Kosoko*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Jason de Koff
9:45 AM	UG SCI 4	GREEN HOUSE MAINTENANCE OF SWEET SORGHUM VARIETIES FOR BIOFUEL APPLICATIONS Aron Felts*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Ahmad Aziz and Deependra Bhatta
10:00 AM	UG SCI 5	COMPARATIVE EVALUATION OF APOLIPOPROTEIN A1 RELATIONSHIP WITH FATNESS IN POULTRY AND OTHER MAMMALIAN SPECIES Phyllicia Hemphill*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Samuel Nahashon and Thyneice Taylor
10:15 AM - 10:30 AM BREAK		
10:30 AM	UG SCI 6	IDENTIFICATION AND CHARACTERIZATION OF VIMENTIN IN THE GUINEA FOWL (NUMIDA MELEAGRIS) Justin McKinnie*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Samuel Nahashon and Thyneice Taylor
10:45 AM	UG SCI 7	EVALUATION OF METHIONINE AND CYSTEINE REQUIREMENTS ON FRENCH GUINEA FOWL BROILERS Amaris Daniels*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Nahashon Samuel and Samuel Nahashon
11:00 AM	UG SCI 8	CHARACTERIZATION AND ANALYSIS POTENTIAL OF BIOLOGICAL CONTROL AGENTS ON PHYTOPHTHORA CAPSICI IN PEPPERS Justus Watson*. <i>Agricultural Sciences and Environmental</i> , College of Agriculture, Human and Natural Sciences. Advisor(s): Margaret Mmbaga and Emily Rotich
11:15 AM	UG SCI 9	PROTEIN STRUCTURE MODELS ASSESSMENT Christopher Jones* and Kiara Armstrong. <i>Computer Science</i> , College of Engineering. Advisor(s): Kamal Al Nasr

UNDERGRADUATE SCIENCE II

1:00 P.M. - 3:30 P.M. - Presentations will be in the Research and Sponsored Programs Building, Room 163

1:00 PM	UG SCI 10	TRANSITIONAL LEADERSHIP USING STIMULATION IN NURSING EDUCATION Meghan Lambert*. <i>Nursing</i> , College of Health Sciences. Advisor(s): Kwaghdoo Bossuah
1:15 PM	UG SCI 11	EVALUATION OF EXPOSURES TO THE ENVIRONMENTAL CONTAMINANT DDT ON INTERLEUKIN 6 SECRETION FROM HUMAN IMMUNE CELLS Margarita Peete*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen
1:30 PM	UG SCI 12	TRICLOSAN-INDUCED ALTERATIONS OF INTERLEUKIN 1 BETA SECRETION FROM HUMAN IMMUNE CELLS Dylan Brooks*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen
1:45 PM	UG SCI 13	NOVEL TARGETED NANOVACCINE FOR THE TREATMENT OF CANCER Danielle Johnson*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen

PRESENTATION SCHEDULES

2:00 PM	UG SCI 14	THE ROLE OF NOTCH SIGNALING IN T LYMPHOCYTES Kalyann Parks*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Margaret Whalen and Anil Shanker
2:15 PM	UG SCI 15	THALAMIC CONNECTIONS OF AREA 6V IN THE MARMOSET MONKEY Elisabeth Stansberry*. <i>Psychology</i> , College of Education. Advisor(s): Lisa de la Mothe
2:30 PM - 2:45 PM	BREAK	
2:45 PM	UG SCI 16	GENERATION AND CHARACTERIZATION OF THE PROLINE108SERINE SINGLE NUCLEOTIDE POLYMORPHISM IN THE HUMAN SEROTONIN 2C RECEPTOR Gerald Nwosu*, Mia Krout*, and Quzonna Reed*. <i>Biological Sciences</i> , College of Life and Physical Sciences. Advisor(s): Hugh Fentress and Michael Ivy
3:00 PM	UG SCI 17	A NOVEL PROCESS FOR HIGHLY SUBSTITUTED ESTERS FROM TERTIARY ALCOHOLS AND ARCOPDCL SPECIES Carsyn Snagg*. <i>Chemistry</i> , College of Life and Physical Sciences. Advisor(s): Sara Chrisman and Mohammad Al-Masum
3:15 PM	UG SCI 18	STUDENT RATINGS OF THE INTELLIGIBILITY OF FACULTY WITH FOREIGN ACCENTS Ayana McWoods*, Nicole Halcin*, and Faith D'Amato*. <i>Speech Pathology and Audiology</i> , College of Health Sciences. Advisor(s): Iris Johnson-Arnold, Danielle Watson, and Owen Johnson

ORAL PRESENTATIONS - Friday, April 21, 2017

FACULTY I

9:00 A.M. - 11:00 A.M. - Presentations will be in the Research and Sponsored Programs Building, Room 163

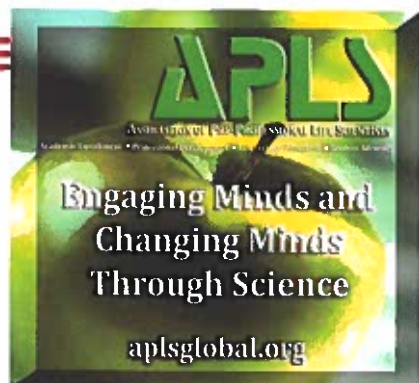
9:00 AM	FAC O 1	SERRATIA SPP. FROM CORNUS FLORIDA AS A BIOLOGICAL CONTROL AND ITS POTENTIAL USES Emily Rotich*, Margaret Mmbaga, and Jacqueline Joshua. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences
9:15 AM	FAC O 2	PARKINSON'S DEMENTIA Kwaghdoo Bossuah*. <i>Nursing</i> , College of Health Sciences
9:30 AM	FAC O 3	GREEN KABARET: LINKING ENVIRONMENTAL ADVOCACY TO THE HUMANITIES Marsha Williams*. <i>English</i> , College of Liberal Arts
9:45 AM	FAC O 4	DETERMINING SUSCEPTIBILITY OF AMARANTH SPECIES TO COMMON PATHOGENS IN MIDDLE TENNESSEE Lucas Mackasmiel*, Margaret Mmbaga, Matthew Blair, and Emily Rotich. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences
10:00 AM	FAC O 5	BENEFITS OF PARTICIPATING IN SMALL FARMERS' GROUP NETWORK Fisseha Tegegne*, Hiren Bhavsar, Enefiok Ekanem, and Mary Mafuyai. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences
10:15 AM	FAC O 6	ADSORPTION OF ANTIMONY (V) ON HEMATITE: A MACROSCOPIC AND IN SITU ATR-FTIR STUDY TO DETERMINE THE SURFACE COMPLEXATION MECHANISM Jerzy Mierzwa* and Sudipta Rakshit. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences
10:30 AM	FAC O 7	ENHANCEMENT OF BIOMASS PRODUCTION BY BIOENERGY FEEDSTOCK IN DEGRADED SOIL USING AMENDMENT AND INOCULATION STRATEGIES Ekundayo Adeleke* and Kudjo Dzanor. <i>Agricultural and Environmental Sciences</i> , College of Agriculture, Human and Natural Sciences
10:45 AM	FAC O 8	COMPUTER COMPETENCIES NEEDED BY AERONAUTICAL AND INDUSTRIAL TECHNOLOGY STUDENTS FOR THE 21ST CENTURY Ivan Mosley* and Carlos Beane*. <i>Aeronautical and Industrial Technology</i> , College of Engineering

PRESENTATION SCHEDULES

FACULTY II

9:00 A.M. - 11:00 A.M. - Presentations will be in the Research and Sponsored Programs Building, TIGER Institute-Room 009

9:00 AM	FAC O 9	POLYMER NANOFIBERS - A POTENTIAL ADVANCED MATERIAL TO ADDRESS ENGINEERING CHALLENGES Richard Mu*, Frances Williams, Samuel Hargrove, and Deyu Li. <i>TIGER Institute, College of Engineering</i>
9:15 AM	FAC O 10	EXPANDING FIELD-BASED FOREST INVENTORY USING MAP MODEL APPROACH Bharat Pokharel*. <i>Agricultural and Environmental Sciences, College of Agriculture, Human and Natural Sciences</i>
9:30 AM	FAC O 11	WHAT IS BEHIND THE GROWING DEMAND FOR GOAT MEAT AMONG TENNESSEANS Mary Mafuyai*, Enefiok Ekanem, and Mary Mafuyai. <i>Agricultural and Environmental Sciences, College of Agriculture, Human and Natural Sciences</i>
9:45 AM	FAC O 12	ELECTRONIC STRUCTURE PROPERTIES AND STABILITY OF CZTS/CZTSE (CU₂ZNSNS₄XSE₄-4X) SOLID SOLUTION Sita Ram Aryal*, Jing Xu, Ranganathan Parthasarathy, and Lizhi Ouyang. <i>Physics, College of Life and Physical Sciences</i>
10:00 AM	FAC O 13	RESISTANCE-TEMPERATURE EFFECT OF CARBON BLACK / POLYDIMETHYLSILOXANE COMPOSITE Jing Xu* and Lizhi Ouyang. <i>Physics, College of Life and Physical Sciences</i>
10:15 AM	FAC O 14	MIXING AND CHEMICAL KINETICS INTERACTIONS IN TURBULENT REACTING FLOW SIMULATIONS Fateme Hadi*. <i>Mechanical and Manufacturing Engineering, College of Engineering</i>
10:30 AM	FAC O 15	SEPARATED TEMPORAL AND SPATIAL (SETS) FRAMEWORK FOR STRESS CALCULATIONS IN ATOMIC MODELS Ranganathan Parthasarathy*, Sita Ram Aryal, Anil Misra, and Lizhi Ouyang. <i>Physics, College of Life and Physical Sciences</i>
10:45 AM	FAC O 16	SCREENING OF COMMON BEAN FOR MULTIPLE DISEASE RESISTANCE UNDER NATURAL INFECTION BY COMMON BACTERIAL BLIGHT AND CHARCOAL ROT Lucas Mackasmiel*, Daniel Ambachew, Margaret Mmbaga, and Matthew Blair. <i>Agricultural and Environmental Sciences, College of Agriculture, Human and Natural Sciences</i>



APLS

The Association of Pre-Professional Life Scientists contributed the moderators and time keepers for the Symposium.

PRESENTATION SCHEDULES

POSTER PRESENTATIONS

Posters will be displayed in the Jane Elliott Hall Auditorium, April 18, 2017 – April 20, 2017

FACULTY POSTERS

- FAC-P 1 **THE ESCALATION OF PHARMACEUTICAL DRUG PRICES: A POLICY BRIEF**
Elizabeth Brown*. *Public Health, Healthcare Administration and Health Sciences*, College of Health Sciences
- FAC-P 2 **THE RISING COST OF PRESCRIPTION DRUGS IN THE UNITED STATES: PATHS TO REFORM (POLICY MODIFICATIONS)**
Adaku Onyekwere*, Lakasha Price, and Laxmi Shrestha. *Public Health, Healthcare Administration and Health Sciences*, College of Health Sciences
- FAC-P 3 **HUD HOUSING REDEVELOPMENT POLICY: NASHVILLE IMPACT**
Elizabeth Brown*, Mon-Cheri Robinson, and Regina Bell. *Public Health, Healthcare Administration and Health Sciences*, College of Health Sciences
- FAC-P 4 **UTILIZATION OF PIGEON PEA (CAJANUS CAJAN) FOR ERADICATION OF JOHNSON GRASS RHIZOMES (SORGHUM HALEPENSE)**
Vanaja Kankarla*, Fitzroy Bullock, and Shahidullah Choudhary. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences
- FAC-P 5 **LETHAL AND SUBLETHAL EFFECTS OF FIELD-AGED INSECTICIDE RESIDUES ON GREEN LACEWINGS (NEUROPTERA: CHRYSOPIDAE)**
Kaushlya Amarasekare*, Preston Brown (Oregon State University), and Peter Shearer (Oregon State University). *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences
- FAC-P 6 **THE DRUG CRISIS WITH DRUG PRICES: THE DANGERS OF UNREGULATED PHARMACEUTICAL COMPANIES A POLICY BRIEF**
Angelique Carney*, Elizabeth Brown, Fitzgerald Tochukwu, and Hanan Altimimi. *Public Health, Healthcare Administration and Health Sciences*, College of Health Sciences
- FAC-P 7 **MAXIMIZING OUR STUDENTS' POTENTIAL: A PLAN FOR UTILIZING THE SKILL SET OF TECHNOLOGICALLY INCLINED STUDENTS TO PROVIDE EFFECTIVE CARE FOR THE PATIENT**
Pinky Noble-Britton*. *Nursing*, College of Health Sciences
- FAC-P 8 **BUPRESTID AND CERAMBYCID TRAPPING: THE PROGRESSION OF 13 YEARS OF TRAPPING**
Nadeer Youssef*, Jason Oliver (Otis L. Floyd Research Center), Joshua Basham (Otis L. Floyd Research Center), and Joseph Lampley (Otis L. Floyd Research Center). *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences
- FAC-P 9 **BUILDING HEALTHY FAMILIES FROM THE INSIDE OUT: A COMBINATION OF KNOWLEDGE, ATTITUDE, AND SKILLS IN A COMMUNITY NUTRITION EDUCATION PROGRAM.**
Leslie Speller-Henderson*, Natalie Owens, Deborah Goddard, and Chizoba Anyimukwu. *Cooperative Extension*, College of Agriculture, Human and Natural Sciences
- FAC-P 10 **ENHANCING GOAT MEAT MARKETING WITH ONLINE RESOURCES**
Mary Mafuyai*, Enefiok Ekanem, Fisseha Tegegne, and Prabode Illukpitiya. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences
- FAC-P 11 **DIVERSIFICATION, CAPITAL STRUCTURE, AND FARM INCOMES AMONG FARM BUSINESS HOUSEHOLDS: HOW DOES TENNESSEE COMPARE?**
Aditya Khanal*, and Suraj Adhikari. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences
- FAC-P 12 **ENHANCING FOOD SAFETY GAPS FOR EXTENSION EDUCATORS AND GROWERS IN LIMITED RESOURCE PRODUCE FARMS**
Agnes Kilonzo-Nthenge*, John Ricketts, and Jessica Dompreeh. *Family and Consumer Sciences*, College of Agriculture, Human and Natural Sciences
- FAC-P 13 **DO CHANGES IN CLASSROOM ERGONOMICS EFFECT STUDENT LEARNING?**
Cathleen St. Dennis*, and Guinevere Bennett*. *Occupational Therapy*, College of Health Sciences
- FAC-P 14 **THE IMPACT OF DIALOGIC READING ON STORY RETELLING SKILLS**
Danielle Watson*. *Speech Pathology and Audiology*, College of Health Sciences
- FAC-P 15 **UNIAXIAL COMPRESSION OF COOKED SWEET POTATOES (ORGANIC) AND EFFECT OF THERMAL TREATMENTS AND TEXTURAL CHARACTERISTICS**
Ramasamy Ravi*, Dilip Nandwani, and Sochinwechi Nwosisi. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences

PRESENTATION SCHEDULES

GRADUATE POSTERS

GRADUATE POSTER JUDGING – THURSDAY, APRIL 20, 2017

9:00 A.M. – 11:00 A.M. in Jane Elliott Hall Auditorium

- GR-P 1 **SYSTEMATIC REVIEW OF KINESIOTAPING TO PREVENT SHOULDER IMPINGEMENT SYNDROME IN BASEBALL PITCHERS WHO PERFORM REPETITIVE OVERHEAD MOVEMENTS**
Jennifer Duncavage*, Kendall Keeton*, Josh Melchior*, Josh Wilson*, and Zach White*. *Physical Therapy*, College of Health Sciences. Advisor(s): Karen Coker
- GR-P 2 **MULTIDIMENSIONAL FACTORS AFFECTING FUNCTIONAL OUTCOMES AFTER AMPUTATION**
Keshia Agazuma*, Kay Bachman*, Lindsay Cox*, Erin Keyes*, and Muthuraman Venkataraman*. *Physical Therapy*, College of Health Sciences. Advisor(s): Edilberto Raynes
- GR-P 3 **INVOLVEMENT OF MAPK SIGNALING PATHWAYS IN TRIBUTYL TIN-INDUCED INCREASES OF INTERLEUKIN 1 BETA AND INTERLEUKIN 6 MRNA IN HUMAN LYMPHOCYTES**
Shyretha Brown*, Mariam Boules, and Nafisa Hamza. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Margaret Whalen
- GR-P 4 **PREVALENCE OF ULNAR COLLATERAL LIGAMENT TEARS IN PREBUTESCENT MALE BASEBALL PITCHERS WHO SPECIALIZE IN BASEBALL YEAR ROUND**
Shelby Blankenship*, Cristin Cotter*, Justin McGee*, Houston Newman*, and Cara Gray*. *Physical Therapy*, College of Health Sciences. Advisor(s): Deborah Edmondson, Shelby Blankenship, Cristin Cotter, Justin McGee, and Houston Newman
- GR-P 5 **SYNTHESIS OF CU(II), NI(II) AND CO(II) COMPLEXES AS ANTICANCER DRUGS**
Md. Shafiqul Islam*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Mohammad Karim
- GR-P 6 **DEVELOPMENT OF A PRELIMINARY CLINICAL PREDICTION RULE FOR IDENTIFYING SLAP LESIONS IN PATIENTS**
Chasiti Smith*, Kelly Glymph*, Grayson Lambert*, Katie Rigney*, and Andrew Fuqua*. *Physical Therapy*, College of Health Sciences. Advisor(s): Richard Clark
- GR-P 7 **DEVELOPMENT OF A RAPID, LOW-COST PROTOPLAST ISOLATION METHOD FOR SWITCHGRASS USING PECTOBACTERIUM CAROTOVORUM**
Ekundayo Adeleke*, and Mary Jane Espina. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Ali Taheri, Korsi Dumenyo, and Christine Ondzighi-Assoume
- GR-P 8 **EFFECT OF SACCHROMYCES CEREVISIAE AND BIFIDOBACTERIUM LONGUM ON SALMONELLA REDUCTION AND GROWTH PERFORMANCE IN POULTRY**
Joy Igbafe*. *Family and Consumer Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Agnes Kilonzo-Nthenge and Samuel Nahashon
- GR-P 9 **KINETIC INACTIVATION OF FOOD BORNE PATHOGENS IN MILK USING UV-C TECHNOLOGIES**
Danielle M. Gunter-Ward*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Ankit Patras
- GR-P 10 **COLD PLASMA INACTIVATION OF ESCHERICHIA COLI AND SALMONELLA ON GOLDEN DELICIOUS APPLES**
Siqin Liu*. *Family and Consumer Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Agnes Kilonzo-Nthenge, Patras Ankit, and Sudheer Yannam
- GR-P 11 **COLD HARDINESS AND SOIL COVERAGE OF INDUSTRIAL OILSEED CROPS FOR BIOENERGY PRODUCTION**
Shivam Chawla*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Jason de Koff and Prabodh Illukpitiya
- GR-P 12 **COMPARISON OF NEAR INFRARED SPECTROSCOPY AND OILPRESS EXTRACTION FOR OIL CONTENT DETERMINATION IN WINTER CANOLA VARIETIES**
Edmund Tetteh*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Jason de Koff
- GR-P 13 **FOR PATIENTS WITH CHRONIC MUSCULOSKELETAL PAIN, DOES THERAPEUTIC NEUROSCIENCE EDUCATION (TNE) COMPLEMENT EXERCISE AND/OR MANUAL TREATMENT IN DECREASING THE PERCEPTION OF PAIN?**
Alexandria Bryant*, Jacob Gamper*, Joshua McCallum*, and William Wilson*. *Physical Therapy*, College of Health Sciences. Advisor(s): David A. Lehman

PRESENTATION SCHEDULES

- GR-P 14 **DISTRIBUTED NETWORKED CONTROL SYSTEM FOR TURBINE ENGINES**
Khadijeh Wehbi*. *Electrical and Computer Engineering*, College of Engineering. Advisor(s): Saleh Zein-Sabatto
- GR-P 15 **ASSESSMENT OF IMPACTS OF HEAVY METAL IN COAL FLY ASH AMENDED SOILS AND BIOENERGY FEEDSTOCK, SWITCHGRASS**
Olushola Awoyemi*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Kudjo Dzantor
- GR-P 16 **EFFECT OF MULCHES ON YIELD PERFORMANCE OF ORGANICALLY GROWN SWEETPOTATO**
Sochinwechi Nwosisi*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Dilip Nandwani
- GR-P 17 **A COMPARISON OF DRY CUPPING AND DRY NEEDLING IN REDUCING PAIN ASSOCIATED WITH MYOFASCIAL TRIGGER POINTS**
Trey Hudgins*, Josh MacNaughton*, Eric Newman*, Joanne Tan*, and Mike Wigger*. *Physical Therapy*, College of Health Sciences. Advisor(s): Derek Charles
- GR-P 18 **OPERATIONAL EVALUATION OF FREIGHT INTERMODAL CONNECTORS**
Emmanuel Masindoki*, and Jeremiah Afolabi*. *Civil and Architectural Engineering*, College of Engineering. Advisor(s): Deo Chimba
- GR-P 19 **EMISSIONS ALONG FREIGHT INTERMODAL CONNECTORS**
James Mbilinyi*, and Jeremiah Afolabi*. *Civil and Architectural Engineering*, College of Engineering. Advisor(s): Deo Chimba, Roger Painter, Woong Joe, and Xiaoming Li
- GR-P 20 **SIZE DIFFERENCES IN IMPORTED FIRE ANT SPECIES, PATTERNS IN GEOGRAPHICAL DISTRIBUTION AND POTENTIAL IMPLICATIONS FOR BIOLOGICAL CONTROL**
Manoj Pandey*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Jason Oliver, Karla Adesso, Reginald Archer, and Philip Ganter
- GR-P 21 **SENSITIVITY AND INACTIVATION OF SALMONELLA SEROVARS IN APPLE CIDER DURING HIGH PRESSURE PASTEURIZATION**
Eleonora Troyanovskaya*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Aliyar Fouladkhah
- GR-P 22 **RESPONSE OF HYDRANGEA CULTIVARS TO POWDERY MILDEW AND EFFECT OF BIORATIONAL PRODUCTS AND FUNGICIDE ON POWDERY MILDEW DISEASE OF HYDRANGEA**
Prabha Liyanapathiranaage*, Md. Niamul Kabir, and Terri Simmons. *Otis L. Floyd Research Center*, College of Agriculture, Human and Natural Sciences. Advisor(s): Fulya Baysal-Gurel
- GR-P 23 **THE INHIBITION OF CELLULAR GROWTH USING DIOSCOREA VILLOSA ON VARIOUS COLORECTAL CANCER CELL LINES**
Carey Johnson*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): E. Lewis Myles
- GR-P 24 **THE EFFECT OF CHINESE-BITTER MELLON ON BREAST CANCER CELLS LINES**
Ashley Blair*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): E. Lewis Myles
- GR-P 25 **TOXICITY ANALYSIS OF CANCER CELL LINE A549 AFTER A 24 HOUR EXPOSURE TO PSIDIUM GUAJAVA**
Heba Alhamdi*, Christopher Davis*, and Chanel Alford*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): E. Lewis Myles
- GR-P 26 **A NEUROSCIENCE STUDY IMPLEMENTING THE METRONOME TO AFFECT READING FLUENCY**
Show Mei Lin*. *Teaching and Learning*, College of Education. Advisor(s): Sylvia Driggins and Show Mei Lin
- GR-P 27 **THE EFFECT OF VIOLACEIN AND RHAMNUS EXTRACTS ON BREAST AND LUNG CANCER CELLS**
Alaa Bahannan*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Terrance Johnson and E. Lewis Myles
- GR-P 28 **SCREENING BACILLUS THURINGIENSIS STRAINS FROM MIDDLE TENNESSEE FOR BACTERIOCIN ACTIVITY**
Fahdah Alshammari*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Anthony Ejiolor and Terrance Johnson
- GR-P 29 **THE EFFECT OF ANTIBIOTICS ON THE GROWTH OF CHROMOBACTERIUM VIOLACEUM**
Jawaher Khoja*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Terrance Johnson and Anthony Ejiolor
- GR-P 30 **CORRELATION ON AHL N-ACYLHOMOSERINE PRODUCTION TO THAT OF VIOLACEIN IN CHROMOBACTERIUM VIOLACEUM STRAINS**
Mahmoud Gaballa*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Terrance Johnson and Anthony Ejiolor

PRESENTATION SCHEDULES

- GR-P 31 **SCREENING BACILLUS THURINGIENSIS STRAINS OBTAINED FROM MIDDLE TENNESSEE FOR CHITINASE ACTIVITY**
Rasha Alsamadani*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Anthony Ejiolor and Terrance Johnson
- GR-P 32 **IDENTIFICATION OF AMIDASE NEGATIVE STRAINS OF BACILLUS THURINGIENSIS**
Sarah Filfilan*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Terrance Johnson and Anthony Ejiolor
- GR-P 33 **GENOMICS VERSUS PHENOMONICS CLASSIFICATION OF BACILLUS THURINGIENSIS STRAINS ISOLATED FROM MIDDLE TENNESSEE**
Wejdan Aljafar*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Terrance Johnson and Anthony Ejiolor
- GR-P 34 **SOIL RESPIRATION, MICROBIAL BIOMASS AND EXOENZYME ACTIVITY IN SWITCHGRASS STANDS UNDER NITROGEN FERTILIZATION MANAGEMENT**
Siyang Jian*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Jianwei Li and Jason de Koff
- GR-P 35 **EFFECT OF DIFFERENT LEVELS OF LYSINE ON EXPRESSION OF GENES ASSOCIATED WITH FAT ACCRETION IN BROILER CHICKENS**
Boniface Kimathi*. *Agricultural Sciences and Environmental*, College of Agriculture. Advisor(s): Samuel Nahashon and Thyneice Taylor
- GR-P 36 **EXPERTS, CAREGIVERS, AND THE NEED FOR SEXUALITY EDUCATION FOR YOUNG ADULTS WITH DOWN SYNDROME**
Allison Katsantonis*, Rebecca Russell*, Becky DeKock*, and Kate Nelson*. *Occupational Therapy*, College of Health Sciences. Advisor(s): Christine Watt
- GR-P 37 **SCALABLE DDOS ATTACK DETECTION ON CLOUD COMPUTING PLATFORM**
Sabah Alzahrani*. *Computer Science*, College of Engineering. Advisor(s): Tamara Rogers
- GR-P 38 **EVALUATION OF CONVENTIONAL AND COVER CROPPED MAPLE PRODUCTION SYSTEMS ON TREE GROWTH AND INCIDENCE OF FLATHEADED APPLE TREE BORER ATTACK**
Sujan Dawadi*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Karla Adesso
- GR-P 39 **TREATING POWDERY MILDEW ON BITTER MELON THROUGH BIOLOGICAL CONTROLS**
Nia Gordon*. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Arvazena Clardy and Margaret Mmbaga
- GR-P 40 **HOW DO SENSORY BASED THERAPEUTIC ACTIVITIES AFFECT SHORT TERM MEMORY IN YOUNG ADULTS?**
Amanda Wallach*, Jeremiah Ogunmola*, Emily Dunleavy*, Tori Ragan*, and Sharon Scott*. *Occupational Therapy*, College of Health Sciences. Advisor(s): Christine Watt
- GR-P 41 **WHAT IS THE EFFECT OF INFORMATION PRESENTATION FORMAT ON SHORT TERM RECALL IN GRADUATE STUDENTS?**
Christina Dionne*, Amber Alexander*, Emily Barnett*, Cat Stavola*, and Courtney Strickland*. *Occupational Therapy*, College of Health Sciences. Advisor(s): Christine Watt
- GR-P 42 **ESTERS FROM CARBOXYLIC ACID THROUGH RCOOPDH SPECIES AND ARCO PDCL SPECIES**
Musa Aman*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Mohammad Al-Masum
- GR-P 43 **A COMPARISON OF DRY CUPPING AND DRY NEEDLING IN REDUCING PAIN ASSOCIATED WITH MYOFASCIAL TRIGGER POINTS**
Trey Hudgins*, Joanne Tan*, Eric Newman*, Josh MacNaughton*, and Mike Wigger*. *Physical Therapy*, College of Health Sciences. Advisor(s): Derek Charles

PRESENTATION SCHEDULES

UNDERGRADUATE POSTERS

UNDERGRADUATE POSTER JUDGING – THURSDAY, APRIL 20, 2017

1:00 P.M. – 3:00 P.M. in Jane Elliott Hall Auditorium

- UG-P 1 **ROLE OF MAPKs AND NF- κ B IN TRIBUTYLTIN-STIMULATED INTERLEUKIN 1 BETA SECRETION AND PRODUCTION FROM HUMAN IMMUNE CELLS**
Mariam Boules* and Shyretha Brown. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Margaret Whalen
- UG-P 2 **SIGNALING PATHWAYS INVOLVED IN TRIBUTYLTIN-INDUCED INCREASES IN INTERLEUKIN 6 PRODUCTION BY LYMPHOCYTES**
Nafisa Hamza* and Shyretha Brown. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Margaret Whalen
- UG-P 3 **MODULATION OF PHOSPHO TENSIN HOMOLOG (PTEN) BY THE FLAVONOIDS QUERCETIN, KAEMPFEROL AND GENISTEIN IN 3T3-L1 AND VARIOUS CANCER CELLS**
Alekszander Garcia* and Md. Shafiqul Islam. *Chemistry*, College of Life and Physical Sciences. Advisor(s): William Boadi and E. Lewis Myles
- UG-P 4 **STUDY OF THE FACTORS AFFECTING THE SYNTHESIS OF MELANIN-LIKE PIGMENT FROM HOMOGENITISIC ACID**
Juan Knight*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Koen Vercruyse
- UG-P 5 **SYNTHESIS OF WATER-SOLUBLE MELANIN-LIKE PIGMENTS FROM VARIOUS PRECURSORS**
Shelby Russell*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Koen Vercruyse
- UG-P 6 **COMPARISON OF THE FTIR AND HPLC METHODS FOR COTTONSEED GOSSYPOL MEASUREMENTS**
Micah Blake-Smith* and Aron Felts. *Agricultural and Environmental Sciences*, College of Agriculture, Human and Natural Sciences. Advisor(s): Ahmad Aziz, Nsoki Phambu, and Sarabjit Bhatti
- UG-P 7 **VIABILITY ANALYSIS OF ADENOCARCINOGENIC CELL LINES AFTER EXPOSURE TO NATURAL COMPOUNDS**
Aje Walton*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): E. Lewis Myles
- UG-P 8 **TOXICITY ANALYSIS OF CANCER CELL LINE A549 AFTER A 24 HOUR EXPOSURE TO COSTUS SPECIOSUS**
Chanel Alford*, Heba Alhamdi* and Christopher Davis*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): E. Lewis Myles
- UG-P 9 **CELLULAR VIABILITY ANALYSIS OF COSTAS, RHAMUS, AND FENUGREEK**
Chanel Alford*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): E. Lewis Myles
- UG-P 10 **SYNTHESIS OF 7-(TRIFLUOROMETHYL)-7,8-DIHYDROQUINOLIN-5(6H)-ONE. A NEW TRIFLUOROMETHYL BUILDING BLOCK FOR THE SYNTHESIS OF BIOLOGICALLY ACTIVE COMPOUNDS**
Jacquantey Bowen*, Kenya Collins* and Chibuiki Obi*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Cosmas Okoro
- UG-P 11 **EFFECTS OF BIOCHAR AND NITROGEN APPLICATION ON SWITCHGRASS PHOTOSYNTHESIS AND SOIL CO₂ EMISSION**
Kenya Collins*, Qi Deng, and Chih-Li Yu. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Dafeng Hui and Jason de Koff
- UG-P 12 **DESIGN OF A SOLAR POWERED EMERGENCY DRONE**
Raed Batawi*. *Aeronautical and Industrial Technology*, College of Engineering. Advisor(s): Carlos Beane
- UG-P 13 **EFFICIENT PROCESS FOR THE SYNTHESIS OF FLUORINE SUBSTITUTED AROMATIC KETONES**
Grady Clopton*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Mohammad Al-Masum
- UG-P 14 **EXPLORING N-ARYLATION OF DIHALIDES & THREE COMPONENT COUPLING BY USING DIHALIDES, AMINES, AND TRIFLUOROBORATES**
Maria Dabshee*. *Chemistry*, College of Life and Physical Sciences. Advisor(s): Mohammad Al-Masum
- UG-P 15 **THE PHYSIOLOGICAL PROCESS THEORY OF ARTIFICIAL INTELLIGENCE**
Juanita Richmond* and David Johnson*. *Biological Sciences*, College of Life and Physical Sciences. Advisor(s): Lois Wofford Harlston
- UG-P 16 **PHYTOCHEMICAL PROFILES AND ANTIOXIDANT ACTIVITY OF DIFFERENT ORGANIC TOMATO CULTIVARS**
CheKenna Fletcher* and Dilip Nandwani. *Agricultural and Environmental Sciences*, College of Agriculture. Advisor(s): Ying Wu and Yvonne Myles

14th

Tennessee State University
Annual Psychology Research Symposium



Implications of Clinical and Neurobiological Heterogeneity for the Diagnosis and Treatment of Late-life Depressive Disorders

Vonetta Dotson, Ph.D.
Associate Professor
Department of Psychology
Georgia State University

Vonetta Dotson, Ph.D. is a tenured associate professor in the Department of Psychology at Georgia State University (GSU) having joined the university in 2017. She is also a licensed psychologist in the state of Florida. Previously, Dr. Dotson earned associate professor rank in the Department of Clinical and Health Psychology and the Department of Neuroscience at the University of Florida (Gainesville) while performing clinical, teaching, and research responsibilities during 2009 through 2016.

In 2004, Dr. Dotson began to build her record of grantsmanship. This scholarly account and her leadership as a principal investigator extend to the current research program centering on understanding the underlying neurobiology of depression and its relationship to cognitive changes and functional deficits in older adults. This work is translational in nature, with the goal of improving the diagnosis and treatment of mood disorders. She is also interested in health disparities and in increasing the representation of ethnic minorities in neuropsychological and neuroscience research.

Dr. Dotson's excellence in research has yielded peer-reviewed publications cited in respected journals, including *Geriatrics & Gerontology International*; *Aging, Neuropsychology and Cognition*; *Translational Psychiatry*; *International Journal of Geriatric Psychiatry*; *Journal of Frailty and Aging*; *Clinical Neuropsychology*; and *American Journal of Geriatric Psychiatry*. She has received several awards and honors for her research and her professional affiliations include membership in the American Psychological Association, the Society for Neuroscience, and the International Neuropsychological Society.

Dr. Dotson earned the B.A. degree in psychology from St. Mary's University, and the M.S. and Ph.D. degrees in clinical neuropsychology from the University of Florida in Gainesville, Florida. She completed a postdoctoral fellowship with the National Institute on Aging Intramural Research Program, Baltimore, MD.

PROGRAM

Thursday, April 20th, 2017

James E. Farrell-Fred E. Westbrook Building, 118

3:30 P.M. – 4:45 P.M. Poster Session and Reception

4:45 P.M. – 5:00 P.M. Welcome Address

5:00 P.M. – 5:30 P.M. Awards Ceremony

5:30 P.M. – 6:30 P.M. The Address: Dr. Vonetta Dotson, Keynote Speaker

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Marie S. Hammond, Ph.D., LP, HSP, MCC, NCC

Associate Professor • Department of Psychology • College of Education

Dr. Hammond is a core faculty member in the Counseling Psychology concentrations, Department of Psychology. She is currently Principle Investigator on a \$1.42M National Science Foundation grant entitled "Career Commitment and Retention in STEM: the Intersection of Professional Identity and Career Management Skills among Minority and Women STEM Students". She has written/collaborated on over \$3.4 million in grant funding since coming to Tennessee State University, bringing over \$2.7 million in research funding directly to the university. Dr. Hammond's research focuses on developing theory and interventions to facilitate the persistence of African American and women STEM students. Her grants have provided funding to support over 50 undergraduate, masters' and doctoral students at TSU.

Currently, Dr. Hammond teaches Research, Statistics, Evaluation, and Career Development courses in the Masters' and APA-accredited Doctoral Concentrations in Counseling Psychology. She has 20+ years of experience in the field of Vocational Psychology, including over 15 years of experience as a career counselor and 10 years training/supervising graduate students in career development and counseling. She completed both her graduate degrees from the University of Missouri-Columbia.

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*College of Agriculture, Human, and
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Million Dollar Club

Congratulations to the 41 members of the Million Dollar Club. This is an exclusive club populated by scholars who, due to their commitment to excellence, are on the cutting edge in research, teaching, and service. The steady increase in sponsored research and program support is a direct result of the million dollar projects awarded to these 41 distinguished scientists, engineers, and educators. Their efforts, although measurable in dollars, are immeasurable in terms of the positive impact their work has had on the University's ability to achieve its mission.

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Dr. Carlos Virgous, *Meharry Medical College*
Dr. Bryan Kent Wallace, *Fisk University*

STUDENT AWARDS

from the 38th Annual University-Wide Research Symposium 2016

The Division of Research and Sponsored Programs congratulates researchers, faculty advisors, and student researchers for excellence in research and announces the student awards in oral and poster presentation competitions during the 38th Annual University-Wide Research Symposium held April 4-8, 2016. There were 184 student presentations (89 orals and 95 posters).

ORAL PRESENTATIONS

Oral: Graduate Engineering I

3rd Place GR ENGR 8 Kyra Bryant
 2nd Place GR ENGR 6 Esther Amullen
 1st Place GR ENGR 1 Abram Musinguzi

Oral: Graduate Science I

3rd Place GR SCI 12 Isabella Kearney, Stephanie Dixon, Marcela Beals, Lindsey Slaughter, and Stephanie Austin
 2nd Place GR SCI 10 Shanieek Lawrence
 1st Place GR SCI 2 Hui Li

Oral: Undergraduate Science

3rd Place UG SCI 10 Elisabeth Stansberry
 2nd Place UG SCI 3 Alexius Dingle
 1st Place UG SCI 5 Jolynn Franklin and Devendra Bhandari

Oral: Graduate Science II

3rd Place GR SCI 19 Boniface Kimathi and Ali Alsogair
 2nd Place GR SCI 22 Tiara Smith
 1st Place GR SCI 21 Sherly Celada and Siyang Jian

Oral: Graduate Engineering II

3rd Place GR ENGR 18 Taiwo Oyedare and Ashraf Al Sharah
 2nd Place GR ENGR 20 Bashir Alsaidi
 1st Place GR ENGR 19 Pavanasirisha Kallakuri

Oral: Graduate Science III

3rd Place GR SCI 25 Zhujia Ye
 2nd Place GR SCI 34 Mohammad Shahidul Islam and Wejdan Shaban
 1st Place GR SCI 28 Asha Maheshwari

Oral: Graduate Science IV

3rd Place GR SCI 38 Li Wang
 2nd Place GR SCI 47 Eric Nazareno
 1st Place GR SCI 49 Jeronimo Silva

Oral: Undergraduate Engineering

2nd Place UG ENGR 4 Brent Warner
 1st Place UG ENGR 1 Timothy Darrah and Robert Turner

POSTER PRESENTATIONS

Poster - Graduate: Applied Science and Engineering

3rd Place GR-P 32 Hellen Maziku
 2nd Place Tie GR-P 24 Xiaoyong Wang
 2nd Place Tie GR-P 66 Bryan Sallman
 2nd Place Tie GR-P 67 Manisha Dolui
 1st Place GR-P 70 Lijuan Zhang

Poster - Graduate: Natural Science and Education

3rd Place Tie GR-P 45 Shyretha Brown and Wendy Wilburn
 3rd Place Tie GR-P 48 Sharia Yasmin
 2nd Place GR-P 43 Roba Alzahrani and Azzah Baashirah
 1st Place GR-P 62 Okoye Cothrine, Ashunte Heard, Nicole Jones, Ray Lora and Linda Luinetti

Poster - Undergraduate

3rd Place UG-P 15 Loni Parrish
 2nd Place UG-P 9 Jared Brodeur and Hillary Cartmell
 1st Place UG-P 23 Brittaney Hogan and Calandrea Williams

AWARDS

Oral Presentation: 1st place = \$250; 2nd place = \$100; 3rd place = \$50
Poster Presentation: 1st place = \$150; 2nd place = \$75; 3rd place = \$25

2016 Research Mentorship Awards



Muhammad Akbar, Ph.D.
 Assistant Professor
 Department of Mechanical and
 Manufacturing Engineering
 College of Engineering

Dr. Akbar was awarded (in a tie) the research mentorship honor for serving as mentor and/or advisor to the greatest number (3) of winning student research entries during the Symposium. He received \$1,000 cash in recognition for his research mentorship.



Margaret Whalen, Ph.D.
 Professor
 Department of Chemistry
 College of Life and Physical Sciences

Dr. Whalen was awarded (in a tie) the research mentorship honor for serving as mentor and/or advisor to the greatest number (3) of winning student research entries during the Symposium. She received \$1,000 cash in recognition for her research mentorship.

AWARDS

FISCAL YEAR 2016

AWARDS BY AGENCY/CORPORATION/FOUNDATION

Agency/Corporation/Foundation	Awards
National Aeronautics and Space Administration	(4)
National Science Foundation	(15)
U.S. Agency for International Development	(2)
U.S. Air Force	(8)
U.S. Army	(1)
U.S. Department of Agriculture	(69)
U.S. Department of Defense	(1)
U.S. Department of Education	(17)
U.S. Department of Energy	(5)
U.S. Department of Health and Human Services	(11)
U.S. Department of HHS - National Institutes of Health	(5)
U.S. Department of Homeland Security	(2)
U.S. Department of Transportation	(1)
U.S. Department of Veterans Affairs	(1)
U.S. Federal Highway Administration	(2)
U.S. Navy	(2)
U.S. Small Business Administration	(2)
United Soybean Board	(1)
Private	(21)
Public	(2)
State	(28)
Total	(200)

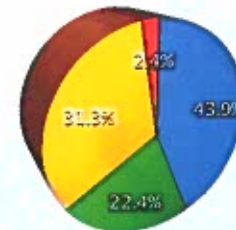
AWARDS BY FUNDING SOURCE

Funding Source	Awards	Dollars	Percent
Federal	(149)	\$ 45,917,243.37	84%
Private	(21)	1,514,429.58	3%
Public	(2)	347,278.00	1%
State	(28)	6,692,228.60	12%
Grand Totals	(200)	\$ 54,471,179.55	



AWARDS BY PROJECT TYPE

Project Type	Awards	Dollars	Percent
Research	(114)	\$ 23,928,220.80	43.9%
Institution	(47)	12,192,113.88	22.4%
Service	(38)	17,050,844.87	31.3%
Construction	(1)	1,300,000.00	2.4%
Physical Plant	(1)	1,300,000.00	2.4%
Grand Totals	(200)	\$ 54,471,179.55	



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The goals of the Annual Research Symposium, now in its 39th year, exemplify the educational philosophy and mission of the College, which seeks to elevate the life of the mind

presentation of both student and faculty research, the Symposium also reflects the College's vision of a genuinely collaborative intellectual and creative community in which its faculty and students work, discover, and learn together.



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