

BULLETIN

CREATIVITY • INNOVATION • SERVICE

Hallmarks of excellence in higher education. Keys to success in life. Be a part of it. Ask how.

Retired astronaut tells MTSU students how research can influence a career

Randy Weiler, MTSU News and Media Relations

Murfreesboro resident **Robert "Hoot" Gibson** offered an astronaut's perspective of research recently at MTSU's inaugural **Undergraduate Research Experience and Creative Activity (URECA)** luncheon.

Gibson, a retired **NASA** astronaut and former U.S. Navy officer and pilot, spoke to about 80 current and previous URECA scholars, mentors, administrators, and staff. Also in attendance were alums as part of the MTSU **Alumni Spring Showcase**.

The event also was held in conjunction with National Undergraduate Research Week and to celebrate the success of undergraduate research.

"Research is fun," Gibson said to a group of students he met before the luncheon began. "Research is exciting to do, and sometimes we get more out of it than the research we produce. And it can be instrumental in your career. It certainly was in mine. It's very much a worthwhile thing to be doing."

Story continued on page 4

VOLUME 1, NUMBER 4

IN THIS ISSUE

URECA Luncheon	1
Upcoming Funding Opportunities	2
Faculty News	3
Workshops and Training	3
From the Desk of . . .	3
Undergraduate Research Center	4
URECA Recipients	5
Student Research Spotlight	6

UPCOMING FUNDING OPPORTUNITIES

Funding opportunities can be challenging. To help faculty stay informed, MTSU's Office of Research and Sponsored Programs (ORSP) maintains a subscription to the comprehensive funding opportunity search engine, GrantForward. If you have not yet set up a researcher profile for opportunity notifications, please do so at grantforward.com.

Here are several future opportunities that we encourage faculty to consider.

NIH Exploratory/Developmental Research Grant Program R21 Cycle II

Deadline: June 16

grants.nih.gov/grants/guide/pa-files/PA-19-053.html

The NIH Exploratory/Developmental Grant supports exploratory and developmental research projects by providing support for the early and conceptual stages of these projects. These studies may involve considerable risk but may lead to a breakthrough in a particular area or to the development of novel techniques, agents, methodologies, models, or applications that could have a major impact on a field of biomedical, behavioral, or clinical research.

NIH Small Research Grant Program R03 Cycle II

Deadline: July 16

grants.nih.gov/grants/guide/pa-files/PA-19-052.html

The NIH Small Research Grant Program supports small research projects that can be carried out in a short period of time with limited resources. This program supports different types of projects including pilot and feasibility studies; secondary analysis of existing data; small, self-contained research projects; development of research methodology; and development of new research technology.

NSF: Faculty Early Career Development Program (CAREER)

Deadline: July 17, 18, or 19 (*program-specific, see solicitation*)

nsf.gov/funding/pgm_summ.jsp?pims_id=503214

This program offers the National Science Foundation's most prestigious awards for early-career faculty who have the potential to serve as academic role models in research and education. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research. CAREER awards are available in most NSF program areas. Eligible applicants must be non-tenured and hold a title of assistant professor in a tenure-track appointment.

CAREER FAQs: nsf.gov/pubs/2017/nsf17050/nsf17050.jsp

NIH Academic Research Enhancement Award for Undergraduate Focused Institutions (AREA) R15 Cycle II

Deadline: June 25

grants.nih.gov/grants/guide/pa-files/PA-18-714.html

The purpose of this Academic Research Enhancement Award (AREA) for Undergraduate-Focused Institutions is to support small scale research grants at institutions that do not receive substantial funding from the NIH, with an emphasis on providing biomedical research experiences primarily for undergraduate students and enhancing the research environment at these applicant institutions.

Southern Appalachian Cooperative Ecosystems Studies Unit

Did you know that MTSU is a member of the Southern Appalachian Cooperative Ecosystems Studies Unit? The SA-CESU is a group of federal and private sector partners that have joined together with a mutual mission to promote and provide effective and efficient research, technical assistance, and education to federal land management, environmental, and research agencies in the Southern Appalachian Mountain Region. The SA-CESU was one of the original four CESU established in 1999, at the start up of the national CESU network.

You can see funding opportunities within the CESU network here:

cesu.psu.edu/fundopps/fundopps.htm

Faculty are encouraged to add your name and area of expertise to the SA-CESU database:

cesu.utk.edu/expert_database/add

HERE TO HELP!

For assistance with finding and preparing for funding opportunities, please contact your ORSP pre-award specialist:

Samantha Cantrell

samantha.cantrell@mtsu.edu

615-494-8751

Behavioral and Health Sciences, Liberal Arts, Media and Entertainment, Jones College of Business, Walker Library, University College, non-academic units

Jolene Gordon

jolene.gordon@mtsu.edu

615-898-5894

Basic and Applied Sciences, College of Education

FACULTY NEWS



Jing Kong

Jing Kong, professor of Chemistry, specializes in computational chemistry. His research seeks to improve the efficiency of simulation methods for applications in fields including biology, chemistry, and materials science. Kong is currently funded by a \$399,982

grant from the National Science Foundation for his project "New Density Functional Solution for Non-dynamic and Strong Correlation," which aims to enhance the quality of computational simulations in many application areas in molecular and material sciences. His research also has been funded by a grant from the National Institutes of Health for the project "Fast and Accurate Simulations of Biological Systems" and an industry subcontract to MTSU funded by the Air Force Research Laboratory regarding modeling for improved manufacturing.



Ariana Postlethwait

Ariana Postlethwait, associate professor of Social Work, is providing program evaluation services for a Rutherford County project funded by a grant from the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration,

"Provide Evidence- Based Comprehensive Interventions for the Treatment of Substance Use and Serious Mental Illness for Justice Involved Adults." Postlethwait's insights will support the project objectives to improve the effectiveness of interventions through the county's drug court and increase the level of service available to the rapidly growing county.

WORKSHOPS AND TRAINING

The federal Small Business Innovation Research (SBIR) Grant Workshop on April 17 was presented by experts from LaunchTN. Attendees included David Butler, Stephanie Dean, Tiffany Saul, Jasmin Vu, Jennifer Woodard, and Qiang Wu.

GRANT WRITING ENHANCEMENT PROGRAM

- Succeed in the pursuit of external funds to support your scholarship
- Integrate sponsored programs in your career

To join the D2L class, email Jamie Burriss at Jamie.Burriss@mtsu.edu

FROM THE DESK OF . . .



Julie Gannon, Award Manager

When your sponsored project includes funding for personnel time, please remember to work with the department chair or other supervisors in advance to ensure the necessary release time is available during the project period. When we accept a new award, we are making a commitment to the sponsor that project personnel will devote time to the project as budgeted and that that time (and money) is necessary to achieve the proposed outcomes. Reduction of planned effort requires prior approval from the sponsoring agency. Please keep this in mind when planning your summer workload in order to ensure that you can make your paid summer grant commitments a priority.

UNDERGRADUATE RESEARCH CENTER

Retired astronaut tells MTSU students how research can influence a career

Continued from page 1

Gibson shared how he was involved in several research projects, one of which included a 300-page paper, when he was a budding scientist and future pilot.

“My life was influenced an awful lot by research,” he said. “It can have a big bearing on job opportunities and careers.”

Gibson’s presentation featured photos, a number of which he took himself, from space. Gibson shared how he was involved in several research projects, one of which included a 300-page paper, when he was a budding scientist and future pilot.



During a recent luncheon at MTSU to celebrate undergraduate research, Murfreesboro resident and retired NASA astronaut Robert “Hoot” Gibson (r), listens as students discuss their research experiences. This trio of Biology researchers includes senior Merna Ghobrial (l), and juniors Marina Ibrahim and Madonna Ghobrial. The Ghobrials are sisters.

(MTSU photo by Randy Weiler/MTSU News and Media Relations)



Retired NASA astronaut Robert “Hoot” Gibson (l), of Murfreesboro, listens as Ngozi Omatu, an MTSU senior Computer Science major, shares about her research experience. They talked before a luncheon to recognize undergraduate research at MTSU. Gibson was the keynote speaker.

(MTSU photo by Randy Weiler/ MTSU News and Media Relations)

been “impressed by MTSU’s strong legacy of engaging undergraduate students in mentored research and creative activity outside the classroom.”

“The benefits to both students and faculty of these partnerships is evident,” Butler added. “I personally promote the opportunity as a hallmark of MTSU’s student-centered learning practices and our growing research enterprise, through letters to the parents of our high-ability undergraduate applicants, and only see demand for opportunities growing. Each year, the number and quality of undergraduate research projects grow as word of such a successful program at MTSU is shared.”

To learn more about the **Undergraduate Research Center** and URECA, call 615-898-5010 or visit mtsu.edu/urc/ online.

MTSU has more than 300 combined undergraduate and graduate programs.

“My life was influenced an awful lot by research,” he said. “It can have a big bearing on job opportunities and careers.”

Gibson’s presentation featured photos, a number of which he took himself, from space.

Hannah Hall, 22, a Biology major nearing graduation, said undergraduate research has been “an extremely positive” experience.

“It has given me a lot of chances to work on project development,” said Hall, a Murfreesboro resident and **Central Magnet School** graduate. She plans to take a gap year, or about a 12-month break from her studies, and then pursue a doctorate in Plant Biology.

David Butler, dean of the **College of Graduate Studies** and vice provost for research, said since his 2017 appointment and hiring he has

URECA GRANTS AWARDED FOR SUMMER SEMESTERS

To support its vision of nurturing a culture of research and creative activity at MTSU through support for undergraduate students and their faculty mentors, the Undergraduate Research Center (URC) offers Undergraduate Research Experience and Creative Activity (URECA) grants to students three times a year.

The URC's commitment to excellence in research, scholarship, and creative projects is exemplified through the URECA program, which presents an opportunity for undergraduate students to work alongside distinguished faculty mentors through a structured mentored program. The application process is competitive, but the benefits are rewarding.

Congratulations to our Summer 2019 URECA recipients:

NAME	LEVEL	PROJECT TITLE	MENTOR(S)	DEPARTMENT
Anwar, Avraz	Platinum	Synthesis of B-lactone Analog of Belactosin A as Potential Proteasome Inhibitors	Norma Dunlap	Biochemistry
Arnold, Dillon	Assistant	Effect of switch trimming on fly avoidance behaviors, udder cleanliness, and milk quality in lactating Holstein and Jersey dairy cows	Maegan Hollis	Agriculture
Berry, Kaitlyn	Platinum	Using ERP to Explore the Relationship Between Letter-Speech Sound Associations and Reading Ability	Timothy Odegard and Emily Farris	Psychology
Bowe, Kylie	Platinum	The endosymbiotic community of the causative agent of White Nose Syndrome (<i>Pseudogymnoascus destructans</i>) of bats	Donald Walker	Biology
Clippard, Elizabeth	Gold	Evaluating Nutrient Deficiencies for Ginseng Plants Grown With Hydroponics	Nate Phillips	Agriculture
Elkins, Lindsey	Platinum	A Survey of the Impact of Dissolved Phosphorous on Sterol Composition of the Lotic Diatom, <i>Didymosphenia geminata</i>	Jeff Leblond	Biology
Frazier, Jared	Platinum	Fast Screening of Explosives by Direct Analysis in Real Time Mass Spectrometry	Mengliang Zhang	Chemistry
Khan, Nibraas	Gold	Automatic Feature Association and Dynamic Threshold for the Combined Observable and Non-observable Task Switching Model	Joshua Phillips	Computer Science
Matchinske, Miles	Platinum	Heritability of bioluminescence of <i>Armillaria mellea</i>	Sarah Bergemann	Biology
Peters, Olivia	Platinum	Effect of Magnetic Field in Radio Dosimetry at a Cellular Level by a Laser Trap	Daniel Erenso	Physics and Astronomy
Phulwani, Richa	Assistant	Evaluating Volume Reduction of Municipal Solid Waste by Anaerobic Digestion	Mina Mohebbi	Engineering Technology
Pugh, Olivia	Platinum	The Digital Holy Roman Empire	Molly Taylor-Poleskey	History
Reece, Ashton	Platinum	Endosymbiotic bacteria impact the function of an important wildlife pathogen of bats.	Donald Walker	Biology
Remedios, Lucas	Gold	Enabling Multi-Task Learning in Partially- and Non-observable Environments with Keras	Joshua Phillips	Computer Science
Sessler, Robyn	Platinum	The Examination of Neural Connectivity with Resting-State EEG	Timothy Odegard and Emily Farris	Psychology
Yancey, Jordan	Gold	Print and Online Health Information Resource Efficacy in the Senior Population	Stuart Bernstein	Integrated Studies
Parsley, Mary	Team	The Isolation of Protozoa for Use as Mosquito Larvae Biocontrol Agents	Anthony Farone	Biology
Cooper, Emerniece	Team	The Isolation of Protozoa for Use as Mosquito Larvae Biocontrol Agents	Anthony Farone	Biology
Shamdeen, Sauleen	Team	The Isolation of Protozoa for Use as Mosquito Larvae Biocontrol Agents	Anthony Farone	Biology
Smith, Nathan L.	Team	The Isolation of Protozoa for Use as Mosquito Larvae Biocontrol Agents	Anthony Farone	Biology
Poroshkava, Radina	Team	The Isolation of Protozoa for Use as Mosquito Larvae Biocontrol Agents	Anthony Farone	Biology
McGuire, Lucas	Team	Increasing Literacy for Elementary School Children by Bringing Their Stories to Life	Jette Halladay	Theatre and Dance
Varden, Keaton	Team	Increasing Literacy for Elementary School Children by Bringing Their Stories to Life	Jette Halladay	Theatre and Dance
Boyd, Kamryn	Team	Increasing Literacy for Elementary School Children by Bringing Their Stories to Life	Jette Halladay	Theatre and Dance
Woodall, Cassidy	Team	Increasing Literacy for Elementary School Children by Bringing Their Stories to Life	Jette Halladay	Theatre and Dance
Williams, Magen	Team	Middle School Students' Reasoning with Technological Mathematical Tasks	Jennifer Lovett	Mathematical Sciences
Dobbins, Ciera	Team	Middle School Students' Reasoning with Technological Mathematical Tasks	Jennifer Lovett	Mathematical Sciences
Bowmer, Emma	Team	Middle School Students' Reasoning with Technological Mathematical Tasks	Jennifer Lovett	Mathematical Sciences
Lanier, Gracy	Team	Middle School Students' Reasoning with Technological Mathematical Tasks	Jennifer Lovett	Mathematical Sciences
Belcher, Hannah	Team	Middle School Students' Reasoning with Technological Mathematical Tasks	Jennifer Lovett	Mathematical Sciences
Vogt, Kassandra	Team	360 Video Augmented Reality Campus Tour	Todd O'Neill	Media Arts
Smith, Keneshia	Team	360 Video Augmented Reality Campus Tour	Todd O'Neill	Media Arts
Evans, Alvin	Team	360 Video Augmented Reality Campus Tour	Todd O'Neill	Media Arts
Carter, Katherine	Team	360 Video Augmented Reality Campus Tour	Todd O'Neill	Media Arts
Peerson, Jacob	Team	360 Video Augmented Reality Campus Tour	Todd O'Neill	Media Arts

STUDENT RESEARCH SPOTLIGHT

Jared Frazier, a URECA Assistant Scholar for Spring 2019, has been selected to present at the American Society of Mass Spectrometry in Atlanta in June. His research titled “Fast Screening of Explosives by Direct Analysis in Real Time Mass Spectrometry” was co-authored by Virginia Benefield and Mengliang Zhang, Ph.D., Department of Chemistry.

Frazier and Benefield also placed second in the College of Basic and Applied Sciences Scholars Week poster presentation (Faculty Mentor: Mengliang Zhang).

THANK YOU to our 2018–2019 URECA Committee members for their time and commitment to undergraduate research. These dedicated committee members review every student proposal submitted to the URECA program and offer feedback to students who are not selected to receive funding. In the 2018–2019 academic year, the URECA committee reviewed 169 student proposals, a significant increase compared to 97 submitted during the 2017–2018 academic year.

2018-2019 COMMITTEE MEMBERS

NAME	PROGRAM	COLLEGE
Michelle Boyer-Pennington (Chair)	Psychology	College of Behavioral Health Sciences
Margaret Brooker	Dance	College of Liberal Arts
Mary Farone	Biology	College of Basic and Applied Sciences
Andrew Owusu	Health and Human Performance	College of Behavioral Health Sciences
Mark Abolins	Geosciences	College of Basic and Applied Sciences
Ryan Seth Jones	Womack Educational Leadership	College of Education