

An Ecosystem for Research Excellence



TENNESSEE
STATE UNIVERSITY

Division of Research and Sponsored Programs

2020
Research Horizons



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

OFFICE OF
THE PRESIDENT

Greetings Friends:

Tennessee State University has achieved the **R2: Doctoral - High Research Activity** ranking as listed by the Carnegie Classification of Institutions of Higher Education. Only the top 6% of research universities have this distinction or better, and we are continually striving to reach the next level. As you know, external research funding provides scholarships, career-relevant jobs on campus and networking opportunities for our students. Scholarly research enhances the pedagogy of faculty and in turn, deepens the learning experience of their students. Within this year's annual report we are highlighting more exciting research taking place on campus, our new building for the College of Health Sciences and impactful initiatives in our departments.

Despite facing the challenge of an ever changing world of the COVID19 virus, our researchers have responded with the largest external funding amount raised in our history. We are pleased to report that the University secured an excess of \$55 million in external funding amidst an increasingly competitive environment. Just as impressive as the amount brought in, is the 200 research submissions by faculty. These facts speak to the dedication and commitment of our faculty, the quality of our students and continued growth in our culture of research excellence. The pandemic of 2020 has affected us all on many different levels. Most of us may have friends and family who are suffering at this time, so I implore you to remain vigilant in protecting yourselves and your loved ones. We will fight through this pandemic together!

Finally, faculty/student/staff/administration none of this happens without you. I believe in our collective abilities as well as your individual potential. I applaud you as your spirit remains unbreakable. Research is a juxtaposition of intelligence and creativity, where we are able to constantly create the unimaginable for the betterment of all. To the agencies, foundations, collaborators and companies that fund our research programs, I extend to you, on behalf of the campus community, a heartfelt "Thank you".

Sincerely,

A handwritten signature in cursive script that reads "Glenda Glover".

Glenda Glover
President



TENNESSEE STATE UNIVERSITY RESEARCH CAPACITY



Founded in 1912, Tennessee State University (TSU), a Historically Black College and University (HBCU), fosters scholarly inquiry and research, lifelong learning, and a commitment to service. This 1890 land-grant institution is Nashville's only urban, coeducational, and comprehensive public University, as well as Middle Tennessee's first public Carnegie Doctoral/Research institution. TSU has demonstrated expertise as a strong, robust, expanding educational and entrepreneurial research engine with a continuous positive impact on the economic tapestry of Nashville, the State of Tennessee, region and nation. Through coordination and an interdisciplinary approach, the university offers unparalleled research, produces workforce ready talent, and provides educational and technical assistance services to students, scholars, industries, communities, and business partners around the globe.

Strategic Research and Outreach Priorities

Tennessee State University delivers solutions to local, regional, national, and global challenges through strategic priority areas:

- Cybersecurity, Cyber Physical Systems
- Bioinformatics
- Renewable Energy
- Big Data Analytics
- Food Supply Security and Sustainability
- Critical Incident Preparedness
- Health Disparities, Chronic Disease Prevention and Treatment
- Early Childhood Education
- Rural Economic Development and Urban Planning
- Biotechnology and Nanosciences
- Astrophysics
- Transportation Systems
- Advanced Materials and Manufacturing
- Autonomous Drones and Vehicles
- Mechatronics

Key Partnerships

The University partners with government agencies, non-profits, private foundations, corporations, and other Universities to

conduct innovative research and provide technical assistance. Key funding partners include: USDA, NSF, DOD, ONR, ORNL, Administration for Children and Families, Rolls Royce, Clarkson Aerospace, Boeing, NIH, NIFA, ARL, DON, AFRL TVA, NASA, Vanderbilt University, and University of Tennessee.

Research and Technical Assistance Approach

The University offers an array of techniques, approaches, methodologies, and services for solving the world's most pressing issues and providing assistance to communities. Common approaches used include: Feasibility Studies, Economic Impact Modeling, Simulation Testing, Prototype Development, Data Mining, Trend Analysis, Market Analysis, Stress Testing, Automatic Target Recognition Testing, Learning and Behavioral Assessments, Confocal Imaging, Needs Assessments, etc.

Research and Technical Assistance Centers and Laboratories

The University hosts several centers and laboratories that provide innovative research and transformative technical assistance to communities.

Center of Excellence for Information Systems and Engineering Management (COE-ISEM)

Center of Excellence for Learning Sciences (COE-LS)

Center for Entrepreneurship and Economic Development (CEED)

Tiger Community Rehabilitation Clinic (TCRC)

Center for Micro-, Nano-, & Bio-Technology Research (CMNBTR)

For more information contact:

John Barfield

Director of Engagement and Visibility

615-963-2291 | jbarfield@tnstate.edu

A LETTER FROM AVP DR. FRANCES R. WILLIAMS

Greetings,

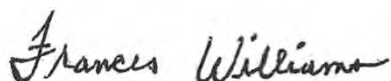
This report is a celebration of the high-quality research that was conducted at Tennessee State University (TSU) during the 2019-2020 academic year. Further, this past year, our faculty and staff were engaged in record-setting grantsmanship activities. The grant awards provide substantial resources to the university to support the performance of cutting-edge research, student scholarships, student and faculty development and training, capacity and infrastructure development, as well as outreach to the community. These include awards from the National Science Foundation (NSF), the U.S. Department of Agriculture (USDA), the Department of Defense, the U.S. Department of Health and Human Services, the National Aeronautics and Space Administration (NASA), the Department of Energy, Apple Inc. and various other agencies and corporations. These efforts demonstrate the university's research competitiveness and its focus on faculty and staff scholarship, which is also evidenced by TSU's Carnegie Classification as an R2: Doctoral University – High research activity.

The Division of Research and Sponsored Programs enables our research community, through support and development, to achieve research goals through external funding.

Our Division's mission is "to lead, support, conduct, and promote scholarly research and other sponsored projects at the university." TSU's strategic research areas include: cybersecurity, renewable energy, big data analytics, food supply security and sustainability, critical incident preparedness, health disparities, chronic disease prevention and treatment, advanced materials, workforce pipeline development, biotechnology, transportation systems, advanced manufacturing, autonomous vehicles, mechatronics, STEM Education, and astronomy.

We celebrate our faculty, staff, and student researchers and their scholarly accomplishments. We look forward to their new discoveries and innovations and the growing impact that their work makes globally.

Sincerely,



Frances Williams, Ph.D.

Associate Vice President for Research and Sponsored Programs and Chief Research Officer



TSU Research At A Glance



**Achieved High Research
(R2) Carnegie Status**



**417 Full-time
Academic Faculty**



**Undergraduate
Student-faculty
Ratio: 12 to 1**



**77 Majors in Eight
Undergraduate,
Graduate Colleges
And Schools**



**520 Campus Acres,
275,000 sq. ft.
Downtown Campus,
3 Farms**



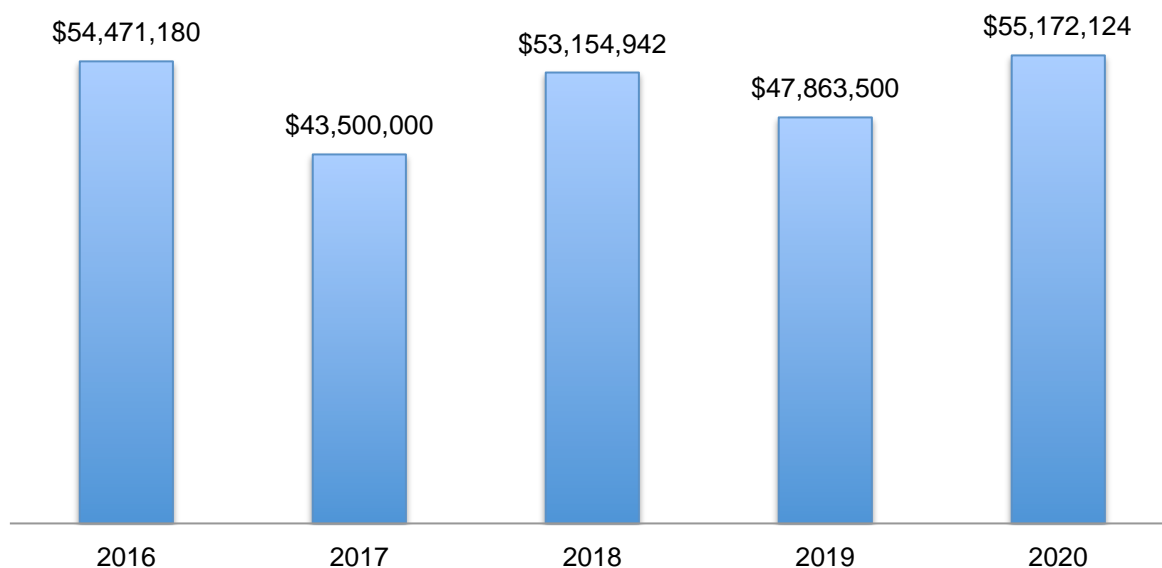
**Fall 2018
Undergraduate Student
Enrollment: 6,121**



**Fall 2018
Graduate Student
Enrollment: 1,653**

ANNUAL RESEARCH AWARDS

Annual Research Awards: Year-to-Year Comparison

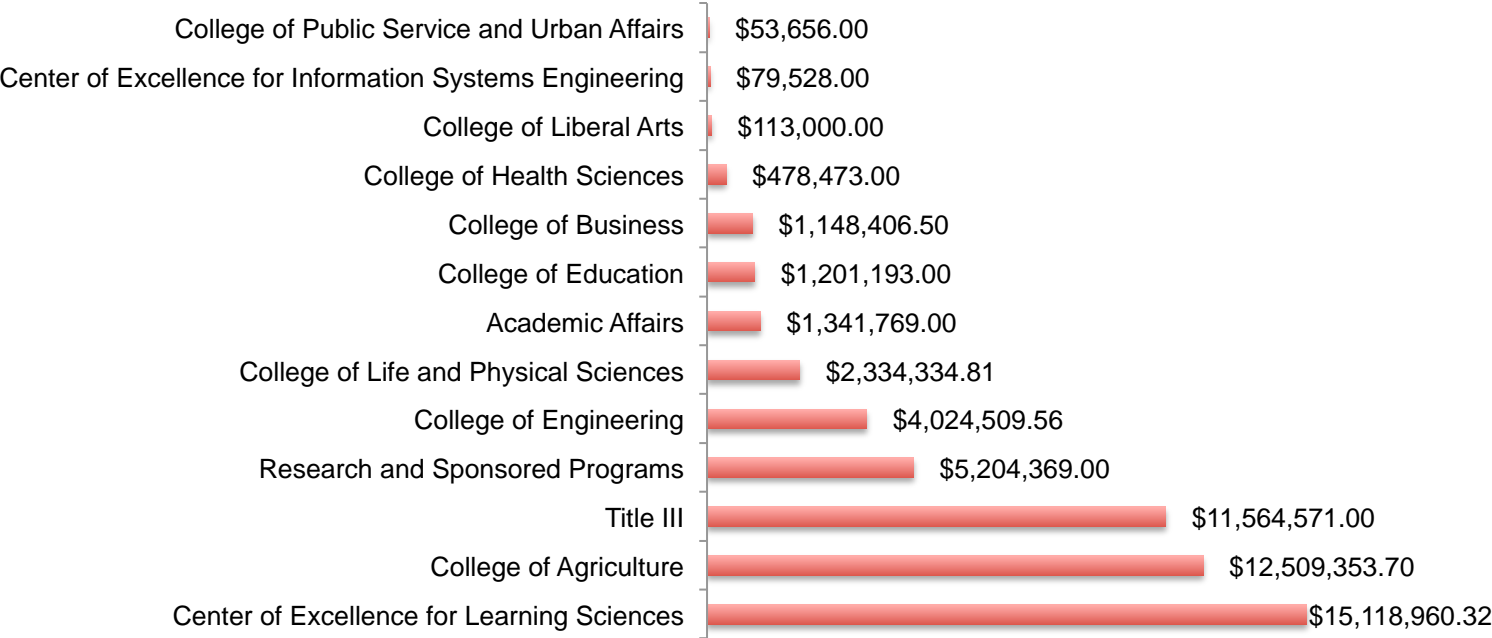


2020 Research Awards by Agency, Corporation, or Foundation

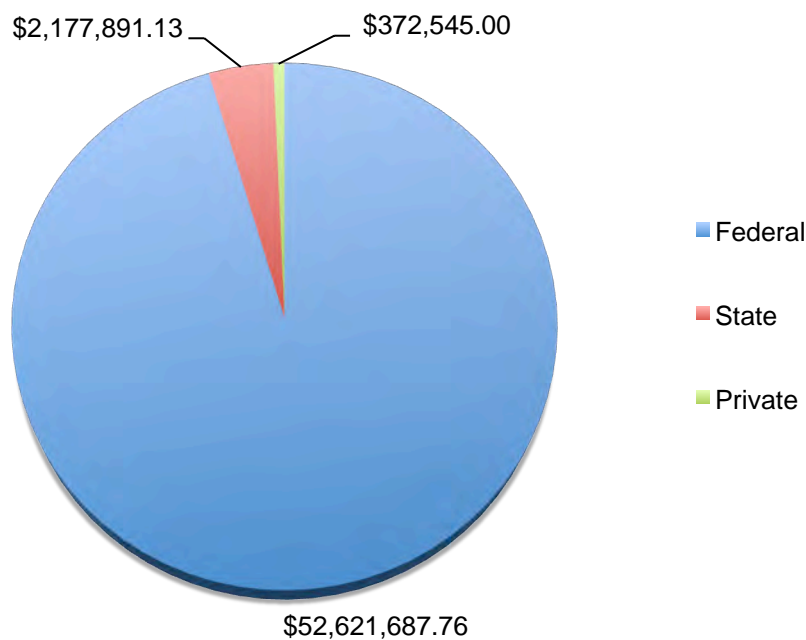
Award	# of Awards	Amount
US Department of Education	9	\$16,095,115.00
US Department of Health and Human Services	7	\$16,076,492.32
US Department of Agriculture	31	\$12,125,306.70
National Science Foundation	13	\$4,467,486.81
State of Tennessee	17	\$2,087,891.13
US Department of Energy	5	\$1,382,407.93
US Army	4	\$1,230,993.00
US Small Business Administration	4	\$729,400.00
NASA	5	\$268,044.00
United Negro College Fund	3	\$209,575.00
TVA	2	\$180,000.00
Virginia State University	1	\$90,000.00
National 4H Council	1	\$65,000.00
Centro Colombia Americano	1	\$42,420.00
National Institutes of Health	2	\$40,113.00
TN Soybean Promotion Board	1	\$27,000.00
USAID - University of Florida	1	\$21,329.00
Brance Alliance	1	\$12,000.00
The Community Foundation	2	\$7,550.00
Tensor Foundation	1	\$6,000.00
US Dept. of Interior/USGS - University of Tennessee	1	\$5,000.00
American Psychological Association	1	\$3,000.00
Total Awards	100.00%	113

ANNUAL RESEARCH AWARDS

2020 Research Awards by College, Division, or Center



2020 Research Awards by Type



COLLEGES OF THE UNIVERSITY

College of Agriculture

Department of Agriculture and Environmental Sciences

Department of Family and Consumer Sciences

The faculty of the College of Agriculture, Human, and Natural Sciences are engaged in conducting innovative research to solve global challenges. The focus is on finding solutions to problems faced by socially and economically disadvantaged groups and contribute to the prosperity of all. Research areas include childhood obesity prevention, food safety, climate change, meat and plant genetics, and renewable biofuels.

College of Business

The College of Business is uniquely poised as a strong, robust, and expanding educational, entrepreneurship and research engine, positively impacting the entrepreneurial and economic tapestry of Nashville, the State of Tennessee, and the world. The faculty are engaged in conducting applied, discipline-based, and pedagogical research in accounting, business management, economics, finance, and information systems and technology.

College of Education

The College of Education faculty are engaged in research that examines disparities in education and student learning. They strive for the development of innovative models of instruction such as; the integration of technology to influence student learning outcomes; strategies to increase representation of underserved populations engaged in science, technology, engineering, and mathematics (STEM education); and more inclusive models of student academic success that are designed to impact student retention.

College of Engineering

The College of Engineering faculty are conducting research in signal and image processing, intelligent control systems, robotics, artificial intelligence tools, bioinformatics, health monitoring, systems engineering, wireless communications, and cybersecurity.

College of Health Sciences

The faculty of the College of Health Sciences are engaged in conducting research that includes speech pathology and audiology, behavioral science approaches to reduce health disparities, obesity, diabetes, and breast cancer prevention and treatment.

College of Liberal Arts

The faculty of the College of Liberal Arts are engaged in conducting research in areas that reflect knowledge and potential of new interdisciplinary fields while continuing work in the traditional academic disciplines at the heart of a university. The research includes studies in geosciences and environmental justice; global perspectives on civil rights and justice issues; African American history, literature, and culture; education in music, history, literature, and language; global perspectives in art; and criminal justice.

College of Life and Physical Sciences

Department of Chemistry

Department of Chemistry research is focused on environmental

science, cancer, viruses, drug design, the synthesis of novel inorganic materials, and the interactions between different biological systems and membrane constituents.

Department of Biological Sciences

The faculty of the Department of Biological Sciences are engaged in research endeavors in the broad area of cellular and molecular biology. Research activities involve studies of plant extracts and the effect of cancer cell growth and function, studies of the role of D3 receptors in neuronal development, studies of collagen assembly and trafficking, and studies of global change ecology.

Department of Mathematical Sciences

Research interests from the faculty of the Department of Mathematical Sciences include applied mathematics, mathematical modeling, functional and numerical analysis, algebra, mathematics education, wavelets, physics, and astronomy.

University Honors College

The University Honors College (UHC) provides an especially rich and challenging set of academic offerings to talented and highly motivated students at Tennessee State University. Through special courses, a vigorous intellectual community, and emphasis on undergraduate research, the Honors College enables students to reach heights of excellence!

College of Public Service

The faculty of the College of Public Service are engaged in conducting research specific to leadership; intergovernmental relations, public finance, public policy; policy and economics of education; environmental policy and justice, urban planning and policy, economic development, gentrification, non-profit management and community revitalization; public administration and policy analysis; state lottery policy; health policy; social work; and aging.

Research Centers and Institutes at Tennessee State University

Center for Aging: Research and Education Services (CARES)

Center for Entrepreneurship and Economic Development Center for Prevention Research

Center of Excellence for Battlefield Sensor Fusion Center of Excellence for Learning Sciences

Center of Excellence in Information Systems Engineering and Management

Cooperative Extension Program (CEP)

Institute of Food, Agricultural, and Environmental Research (IFAER) Institute of Government

Nanoscience and Biotechnology Core Facility

Otis L. Floyd Nursery Research Center at McMinnville TSU

Interdisciplinary Graduate Engineering Research (TIGER) Institute

- Advanced Visualization and Computing
- Bioinformatics
- Cybersecurity
- Mechatronics
- Nano-materials
- Renewable Energy Systems



STUDENT-RUN HEALTH SCIENCES CLINIC



The new Health Sciences Building will be the new home of the TSU Tiger Community Rehabilitation Clinic. The clinic is a pro bono service operation; providing the community free physical therapy and occupational therapy treatments in a clinical environment with treatments performed by students under mentored supervision as well as health and wellness education to address the health disparities of TSU students, staff, faculty, and community residents. Created and managed by Dr. Richard “Rick” Clark, PT, DScPT, the clinic promotes applied learning through early integration and exposure to real clinical experiences with mentoring by clinical faculty and/or volunteer clinicians from the local community and alumni.

The student-run clinic complements existing therapy services in Nashville and does not compete with clinics. The Clinic works in conjunction with community health clinics and local therapy practices to identify patients who are turned away from local therapy clinics due to their uninsured statuses as well as those discharged from local therapy clinics to due exhausted insurance benefits for therapy. The Clinic provides traditional therapy services at no cost by physical and occupational therapy students under the direct supervision of licensed clinical therapists. The Clinic also serves as a center for other physical and occupational therapy student initiatives that could positively influence the health and wellness of the TSU community.



Dr. Richard “Rick” Clark,
PT, DScPT

With early hands-on clinical experience, students learn to apply concepts learned in the didactic portion of the academic curriculum much sooner in order to address patient needs and develop a professional identity as a clinical practitioner. Students are better prepared for their formal clinical fieldwork, demonstrating increased confidence, clinical aptitude and judgment, and time management while simultaneously meeting the core values of the Tennessee State University, the American Physical Therapy Association, and the American Occupational Therapy Association.

Dr. Clark’s current research interests include assessing clinical performance assessments in students participating in the clinic when compared to traditional learning models. Another interest is the integration of an electronic medical record; which will allow data collection associated with patient diagnosis, demographics, etc., creating the potential for future data-driven research.

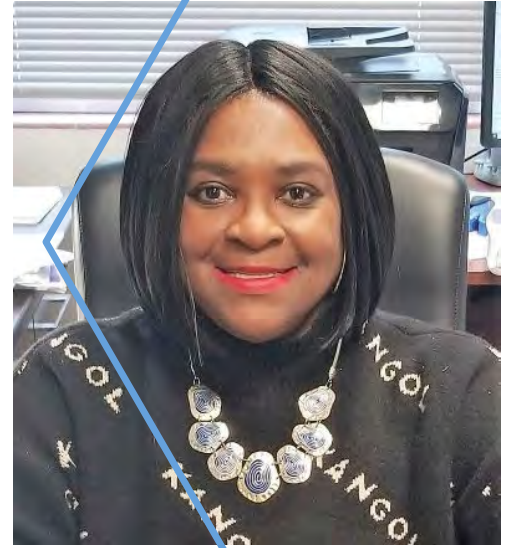


SAFETY FIRST AT TSU



EDUCATIONAL LEADERSHIP EXCELLENCE

Since August of 2019 the College of Education has been under the leadership of Dean Jerri Haynes, Ed.D. A leader who serves and leads by example. When asked about her leadership style Dr. Haynes was quoted as saying, “In all I do, I aim to be a transformative leader while maintaining relevance in a world that continues to expect much from educators. The transformation begins with faculty, staff, students, and stakeholders translating the nature and the content of education. Therefore, my career experiences have prepared me for this opportunity to effect change educationally, economically, socially, and technologically. As an educational leader, I must meet the local and global communities’ changing needs through a systemic data-driven continuous improvement model, continually evolving and refocusing on program learning outcomes, course learning outcomes, and assessments. My educational leadership philosophy begins with being responsive to the needs of faculty, staff, students, and stakeholders. My knowledge, experience, leadership skills, and ability to create new partnerships will help the University continue its quest for academic excellence. These attributes maintain and enhance the college’s quality in support of accreditation efforts; strategic planning and advancement, and implementation of the University’s strategic plan.



Dean Jerri Haynes, Ed.D.

With more than 28 years’ experience as a leader in diverse academic settings, Dr. Haynes has been well prepared to lead in teaching and research excellence. She facilitates transparent and open communication, manages colleagues, and enables efficient management of resources by engaging others in structured planning and providing innovative solutions to challenges.

In FY2020, Dr. Haynes received a \$600,000 grant from the State of Tennessee Department of Education for a program entitled Professional Development for the Aspiring Assistant Principal Network to develop teachers into positions of leadership across the state.

Dr. Haynes’ research interests include the following:

- Social Justice Leadership
- Cultural Responsive Teaching
- English Speakers of Other Languages
- Literacy
- Racial Injustice





NEW CIVIL ENGINEERING AWARDS

Fiscal year 2020 was a particularly productive year for Professor and Department Chair of Civil and Architectural Engineering, Dr. Lin Li. After taking over as department chair in 2018, Dr. Li didn't waste time before he began applying for and receiving grant funding for his projects and programs. Some of Dr. Li's successful grant efforts are listed below:

NSF S-STEM 5yr/\$1,000,000 With a team of Engineering and Mathematics researchers at TSU as Co-PIs, Dr. Li is the Principal Investigator of the million-dollar Scholarships in Science, Technology, Engineering and Mathematics (S-STEM) award. The main goal of the S-STEM program is to enable low-income, talented domestic students to pursue successful careers in promising STEM fields. Ultimately, the S-STEM program wants to increase the number of low-income students who graduate and contribute to the American innovation economy with their STEM knowledge. The grant award, "Promoting Recruitment and Retention of Minority Transfer Students in Science and Engineering (PROMISE)" will provide 45 scholarships over 5 years to successful candidates who want to pursue their bachelor's degrees.

National Science Foundation MRI 3 year/\$140,000 Dr. Li acquired a liquid chromatography paired with triple quadrupole mass spectrometry (LC-MS/MS) to analyze multiple compounds and their chemical structures in complex mixtures. The advantage of triple quadrupole MS is the greatly increased specificity of the analysis over single stage mass analysis. This tandem technique makes the LC-MS/MS be an ideal instrument to analyze biochemical, organic, and inorganic compounds commonly found in complex samples of environmental contaminants. Determination of complex samples of environmental contaminants at ng/l level and characterization of their chemical structure are essential for the study of environmental impact, waste toxicity characterization, and waste treatment. Many environmental samples are time-sensitive and often in small quantities, but a large number of complex mixtures within the same sample often need to be analyzed. Therefore, an instrument that can analyze the mixtures simultaneously in small sample volumes is highly desirable. The objective of this project is to acquire a LC-MS/MS to improve environmental studies at Tennessee State University (TSU). The proposed equipment will be housed in the Environmental Laboratory in the Center for Micro-, Nano- and Bio-Technology Research of the Research and Sponsored Programs Building at the TSU main campus.

The acquisition of LC-MS/MS equipment provides multidisciplinary research teams a state-of-the-art tool to conduct current and planned research projects at TSU. The acquisition of the equipment at TSU will benefit the local US Geological Survey agency, state agencies, and environmental consulting firms who need assistance in the analysis of some special environmental samples.

The implementation of the enhanced instrumentation infrastructure and will aid graduate students' research experiences and instrumentation skills in conducting their Master thesis and Ph.D. dissertations. It will provide training opportunities for underrepresented undergraduate and graduate students. The introduction of LC and MS and application of the LC-MS/MS in the analysis of environmental mixtures during class projects will be integrated into four courses. The instrument promotes partnerships and collaborative activities among faculty, students, researchers, and industrial professionals from universities, governmental agencies, and private companies.

Lin Li began his academic career achieving B.S. and M.S. degrees from Zhongshan University in Guangzhou, China and his Ph.D. in Civil Engineering from the University of Wisconsin-Madison. His career has been ensconced in research since his days as a research assistant.



Dr. Lin Li



No food or drink
to be stored in
this refrigerator

0 to 6°C FRIDGE

For all samples placed in this freezer please label as follows:

- 1. Label the TOP and SIDE of sample with your initials and DATE
- 2. Fill in the NAME, DATE, NUMBER OF SAMPLES, and STORAGE DATE on the Log Sheet located on the freezer door
- 3. DO NOT leave freezer door open after handling samples



NEW HEALTH SCIENCES BUILDING

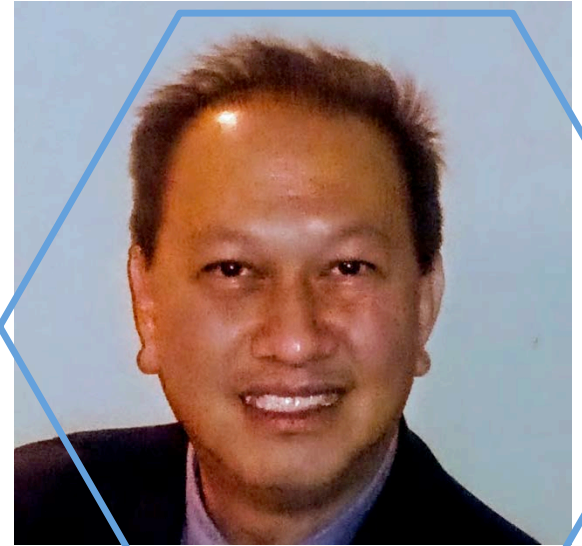
Tennessee State University (TSU) has expanded its research and service capacities with the recent addition of the Health Sciences Building (HSB). Secured with an initial \$39 million in funding from the state of Tennessee, the HSB houses the largest college at TSU. With new classrooms, lab space, equipment, study halls and meeting spaces this building will propel the College of Health Sciences to new heights.

The Health Sciences departments housed within the HSB are:

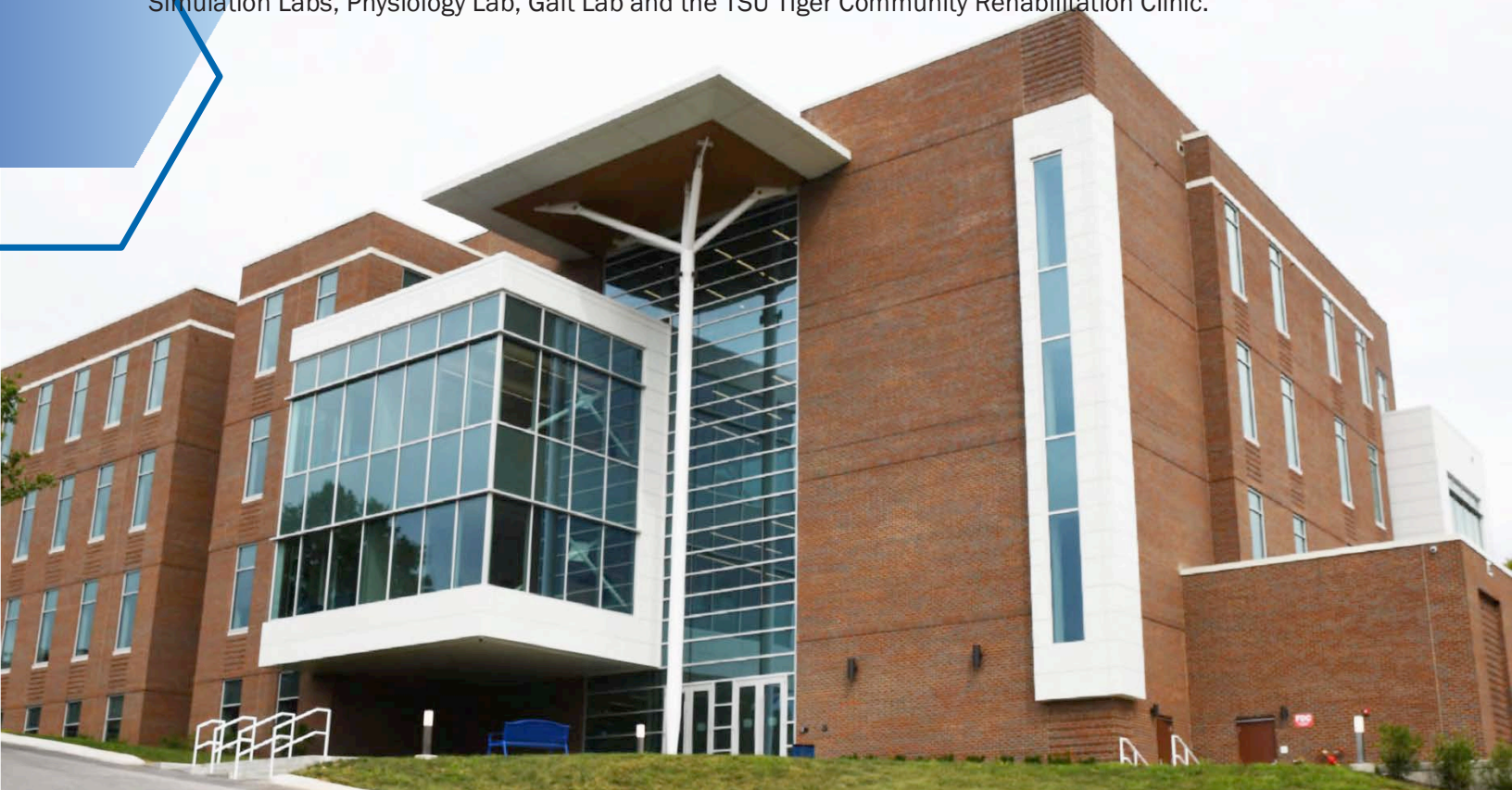
- School of Nursing
- Physical Therapy
- Occupational Therapy
- Cardio-Respiratory
- Health Information Management
- Human Performance and Sports Science (HPSS)

According to Dean Ronald De Vera Barredo, PT, DPT, EdD, FAPTA, the HSB will have research thrusts in the following areas: (1) Interprofessional education and practice – which occurs when two or more professions work together to achieve desired clinical outcomes. The new building allows for increased collaboration among current programs; and (2) Evidence-based practice – which occurs when research is applied or translated into practice, taking into consideration patient/client goals and clinician expertise.

The Health Sciences Building is also ripe for faculty research from the labs in the building: Clinical Simulation Labs, Physiology Lab, Gait Lab and the TSU Tiger Community Rehabilitation Clinic.



**Dean Ronald De Vera Barredo,
PT, DPT, EdD, FAPTA**



ASTRONOMY RESEARCH AT TSU

The Tennessee State University Automated Astronomy Group within the TSU Center of Excellence in Information Systems concentrates on stellar astrophysics of cool giants, magnetically active and highly spotted stars, Sun-like stars, extra-solar planets, binary and multiple stars, and pulsating variables. Data for these programs are acquired with TSU's automated photometric, spectroscopic, and imaging telescopes located at Fairborn Observatory in southern Arizona. Astronomy staff at the Center during this past year were Gregory Henry, Frank Fekel, and Michael Williamson.

Henry currently is concentrating on the long-term brightness variability of Sun-like stars, the discovery and characterization of extra-solar planets, and the role of solar brightness variability on Earth's climate. Henry co-authored a paper with P. Judge and R. Egeland, both from the National Center for Atmospheric Research, on the analysis of 72 Sun-like stars for which Henry has collected precise, nightly brightness measures for the past 25 years with TSU's automatic photometric telescopes (APTs). This ensemble

dataset can place statistical limits on our Sun's own brightness variability over the past century and eventually reveal what portion of Earth's climate warming is due to brightness variability in the Sun. Henry began a new collaborative program with Debra Fischer and her colleagues at Yale University, who, with support from the National Science Foundation, has designed and constructed a new precision spectrograph for extrasolar planet research.

For the first time, this EXPRES instrument gives astronomers the sensitivity to detect Earth-like planets around Sun-like stars and determine whether the properties of our own solar system are common or rare, informing us of the prospects for life elsewhere in the galaxy. Henry has also continued his collaboration with other national and international groups to continue the discovery of new planets (many dozens) and make the first measurements of the exoplanet atmospheres in combination with the robotic telescopes and the Hubble Space Telescope. Fekel continued his work on basic properties of stars, their masses, sizes, and evolutionary status, using spectroscopic data from the TSU 2 meter automatic spectroscopic telescope (AST). Results were published for several eclipsing binary systems and two systems that combined our spectroscopic data with interferometric or speckle observations of visual binaries, the latter obtained by collaborators at other institutions. Fekel, Henry, and J. Sowell (Georgia Tech) discovered an interesting triple system in which two of the stars eclipse each other every 2.1 days and the third star orbits the eclipsing pair with a period of 1.92 years.

Work on new systems continues with Henry, Williamson, and additional collaborators at the National Optical Astronomy Observatory on highly evolved binaries that have neutron stars as companions. Williamson continued to maintain and oversee the operation of TSU's automatic imaging telescope (AIT) and the AST in Arizona. He has collaborated with Henry and others at various institutions to combine TSU's brightness measurements of planet hosting stars with spectra of those stars obtained with the Hubble Space Telescope to measure, for the first time, the properties of extrasolar planet atmospheres. A dozen papers have been published describing planetary atmospheres with and without clouds as well as atmospheres with and without various chemical species such as water vapor, methane, carbon monoxide, carbon dioxide, hydrogen cyanide, ammonia, hydrogen sulfide and others. He has continued collaboration with Fekel on the operation and analysis of the data from the AST. Williamson has also completed construction of a new 0.80-meter APT that is undergoing final checkout in Arizona. This telescope features a new automated control system developed by Williamson that should provide higher reliability and better brightness precision than our existing telescopes, which we hope to retrofit with Williamson's new control system. The new telescope will be used by Henry to further the research described above.



Dr. Gregory Henry

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 north Nashville and Rutherford county.

Training and Technical Assistance Programs

TENNESSEE CHILD CARE 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 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 Dr. Kimberly I. Smith, Director • ksmith81@tnstate.edu
TSU Main Campus • Research and Sponsored Programs Building • Suite 1B



Tennessee State University

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