

# Tennessee Louis Stokes Alliance for Minority Participation

The Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) is a strategic partnership comprised of 10 public and private institutions of higher education. TLSAMP partners share a collective interest in recruiting, cultivating, and developing the next generation of scientists, leaders, and a highly-skilled workforce to ensure not only Tennessee's economic prosperity but also America's global preeminence. The Alliance has made progress, achieved many notable accomplishments, realized positive results and outcomes, and institutionalized research-based strategies, like summer bridge programs and tutoring programs, which contribute to successful retention of undergraduate minority students in science, technology, engineering, and mathematics (STEM) fields. Tennessee State University is the lead institution for the Alliance. The Alliance is funded by a generous grant from the National Science Foundation (HRD-1826954).

## Goals and Objectives

The goal of TLSAMP is to significantly increase the quality and quantity of baccalaureate degrees awarded to underrepresented minority students in STEM disciplines. The objectives to achieve the Alliance's goal are to: 1) improve the recruitment of underrepresented students into STEM majors at TLSAMP institutions; 2) improve the retention and persistence of underrepresented STEM majors across the Alliance; and 3) increase the number of underrepresented undergraduate STEM majors who enter graduate programs.



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[www.tnstate.edu/tlsamp](http://www.tnstate.edu/tlsamp)

## TLSAMP at A Glance

Alliance-wide activities relate primarily to the recruitment, retention to graduation, and transition to graduate school of underrepresented STEM students. Alliance partners participate in some form in the following activities:

- Peer Mentoring pairs an upper-class STEM student with a freshman STEM student to serve as a guide and helpful resource to facilitate successful academic and social integration into the campus environment.
- Academic Tutoring provides supplemental support in core STEM courses.
- Undergraduate research introduces juniors, seniors and high performing sophomores to research for the purpose of bridging classroom learning and real-world experiences. STEM students also get an opportunity to build a professional mentoring relationship with a faculty researcher.
- Professional Development Seminars provides information about academic, scientific, professional or technical knowledge to support the growth and development of undergraduate STEM students. These seminars are held on a monthly basis.
- GRE Prep Workshops covers GRE test taking strategies, study skills, and problem concepts, to assist with applying to graduate school.

## MESSAGE FROM THE TLSAMP EXECUTIVE DIRECTOR



Greetings from the Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP). Despite the dynamic past two years we all have experienced and required navigate due to the ongoing COVID-19 pandemic, I am delighted that we can share some of the highlights of TLSAMP the past year. Despite the abrupt and necessary adjustments we all have been required to make over the past year for the sake of public health and public safety, I am most proud of the resilience and commitment of our partner institutions across the state of Tennessee to insure continuity of the incredible and important academic programming and work aimed at increasing the retention, progression and graduation rates of minority and all STEM students enrolled at our respective institutions across the state of Tennessee. Since its inception in 2002, our TLSAMP alliance has grown from six 4-year institutions to 10 public and private institutions that include two public community colleges. Individually and collectively, the goal of our alliance institutions is to positively impact the quantity and quality of students who earn an undergraduate STEM degree while preparing students to successfully enter and be successful in graduate STEM degree programs and the STEM workforce. It is our hope that you will appreciate and be inspired by the ongoing work and accomplishments of the TLSAMP alliance and the highlighted successes of our amazing STEM students across the state of Tennessee.

## CELEBRATING SUCCESS: BRIDGE TO THE DOCTORATE PROGRAM

In August 2018, TSU was awarded a grant from the National Science Foundation (HRD-1810991) in support of the second Bridge to the Doctorate (BD) Program awarded in the State of Tennessee. The first TLSAMP BD grant was awarded to Vanderbilt University in 2015 (HRD-1500320). The BD grant covers tuition and fees, and provides a stipend of \$32,000 a year, for 12 STEM students, interested in pursuing doctoral studies, to complete a master's degree in a STEM discipline.

The BD program selection committee at TSU initially selected four students (Cohort I) to participate in the program for fall 2018: **Aliyah Acala** (biology, University of Tennessee-Knoxville), **Brannndon Jones** (biomedical engineering, University of Tennessee-Knoxville), **Brittinee Miles-Colthirst** (biology, Middle Tennessee State University), and **Jayla Moore** (biology, Middle Tennessee State University). In the summer of 2020, all students in Cohort I graduated from TSU with their master's degrees. Two of these students are currently enrolled in doctoral programs at TSU:

### Aliyah Acala, MS, Biological Sciences



Aliyah graduated from the University of Tennessee-Knoxville with a Bachelor of Science degree in Biochemistry and Cellular and Molecular Biology in the Spring of 2018. She completed a Master of Science degree in Biological Sciences at Tennessee State University in the Summer of 2020. Aliyah is currently a Ph.D. student in the Biological Sciences Program at Tennessee State University. Following the completion of her Ph.D., Aliyah plans to further pursue her interests in cancer and autoimmune disease as a postdoctoral researcher.

### Brannndon Jones, ME, Mechanical Engineering



Brannndon graduated from the University of Tennessee-Knoxville with a Bachelor of Science degree in Biomedical Engineering in the Spring of 2018. He completed a Master of Engineering degree in Mechanical Engineering from Tennessee State University in the Spring of 2020. Brannndon is currently enrolled in the Ph.D. Program in Computational Science, in the College of Engineering, at Tennessee State University.

One participant in Cohort I, Jayla Moore, is enrolled in the Master of Science in Public Health (M.S.P.H.) program at Meharry Medical College and plans to later apply to an MD-PhD program. The fourth participant, Brittinee Miles-Colthirst, is still considering doctoral programs. Congratulations to Cohort I students who graduated with their master's degrees!

In spring 2019, the program selection committee chose eight additional students (Cohort II) to participate in the BD Program: **Maxine Beard** (mechanical engineering, Tennessee State University), **Erin Clark** (biology, Tennessee State University), **Natasshia Gaddes** (agricultural science, Tennessee State University), **Phyllicia Hemphill** (agricultural science, Tennessee State University), **Chase Richard** (biology, Tennessee State University), **Danelle Solomon** (agricultural science, Tennessee State University), **Dalancee Trabue** (biology, Tennessee State University), and **Terrill Wakefield** (biology, Tennessee State University). An update on these students will be featured in the next issue of the newsletter.



## **BLASTING THROUGH STANDARD MOLDS WHILE REALIZING A DREAM THAT ANCESTORS WERE BLATANTLY DENIED**

By Carlos M. Wells, Ph.D., Biomedical Engineering, The University of Memphis

Graduation: Fall 2020

Birthplace: Memphis, TN

The importance of obtaining a Ph.D. in any field or discipline depends on a person's goals, aspirations, needs, dreams, and, ultimately, desires. Individuals seeking advanced degrees appear to have a common trait that helps them throughout their journey, an ability to persevere. Most individuals will face numerous hurdles, roadblocks, setbacks, and disappointments as they matriculate through their doctoral programs. These challenges say more about the individual's ability to navigate them than their eventual solutions.

Following graduation from Ridgeway High School in Memphis, Tennessee, I was admitted to Rhodes College. After encountering several challenges, I took a few semesters off, then transferred to Southwest Tennessee Community College (STCC), primarily because I needed to work. When I enrolled at STCC, I met an advisor who told me that I could become "Dr. Wells", based on my interests and academic background. I credit that meeting with planting the seed that sprouted into my Ph.D. pursuit. After obtaining an Associate of Science and an Associate of Arts degree from STCC, I transferred to the University of Memphis (U of M). During my first semester at the U of M, I became aware of and engaged with the Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) program. TLSAMP provided me with mentorship, support, encouragement, and a chance to be with others that look like me. Being engaged with TLSAMP was a relief and provided an escape from the realities of being one of one or one of a few in your chosen discipline of study. TLSAMP participation provided additional motivation to press on when hurdles seemingly appeared from out of nowhere.

Access to education is, at times, reserved for those deemed as the majority with systemic efforts to exclude those designated as the minority. These past or present systemic barriers; in my opinion, are the primary reasons to utilize the education access you may have to the highest possible level. I did not allow the prospect of full-time employment to alter my academic plan because I believed that more opportunities would be available – federal government, industry, or academia -- upon completion of the doctoral degree. We must be the change that we desire. My mantra is rooted in a quote by Eugene Bell Jr., "Aspire to Inspire before you Expire!" This is a homage to those before me who made sacrifices for me to have the opportunity to obtain a Ph.D. Who am I not to honor, respect, and acknowledge them by embracing the opportunity they provided for us!



## **TRANSITION FROM COMMUNITY COLLEGE TO FOUR-YEAR UNIVERSITY:**

A STEM Student's Success Story

By Musa Touray, Junior, Data Science Major, Middle Tennessee State University

Like many students, the thought of going to college can be daunting, especially when you decide to major in a STEM field. My situation was far from easy. I remember telling my friends about my plan to study computer science. To my surprise, most, if not all, of my friends tried to talk me out of majoring in STEM. They were explicit in their position that a degree in a STEM field is not for people of color. Against all odds, I decided a STEM major was what I wanted to do, and I enrolled in the Associate of Computer Science degree program at Nashville State Community College (NSCC). In my first year, I received an email from the Dean of the Science and Technology Department inviting me to apply for the TLSAMP Program.

I was among the few students lucky enough to be selected to participate in the program. The program offered to pay for my books every semester and provided an opportunity for me to attend conferences every year. In addition, I received coaching from the TLSAMP team at my school. I feel blessed to be part of such a wonderful program. The TLSAMP team helped to advise me in picking the right classes every semester, offered to coach for my career goals, and inspired me throughout my journey to transfer to the university. Because of the TLSAMP program, I was privileged enough to get a chance to develop a close relationship with Dr. Sarah Roberts, the Dean, who happens to be the head of the TLSAMP program at NSCC. She made it her responsibility to make sure that I received financial support through the program. She also opened her doors for me to talk about everything. She made me feel confident in my ability to graduate from NSCC in my major and transfer to a university.

Through the program, she made it her responsibility to open the channels for TLSAMP Program participants to talk to various university representatives at the conferences and helped me with my application to apply to a university. In the fall of 2020, I enrolled at Middle Tennessee State University (MTSU), an Alliance partner institution, where I am majoring in Data Science in the Department of Computer Science. The beauty about the TLSAMP Program is that at the end of obtaining my Associate Degree in Computer Science from NSCC, I was able to transfer into the TLSAMP Program at MTSU and continue to receive all the benefits and coaching that I received at NSCC.

I would like to say thank you to the TLSAMP Program and to Nashville State Community College for standing by me throughout this journey. Special thanks to Dr. Sarah Roberts at NSCC for her tireless efforts in helping me and all the other college students through our academic journey. Thanks also to Mrs. Mimi Thomas, Coordinator of the TLSAMP Program at MTSU, for continuing to work with me where Dr. Roberts left off. I am a proud member of the TLSAMP Program and plan to graduate in the spring of 2022.





## **WORKFORCE DEVELOPMENT -- FOUR-YEAR TLSAMP VET BUILDS HER RESUME WITH UNDERGRADUATE RESEARCH INVOLVEMENT**

By Harry Ingle, Director of Diversity, Recruitment, & Student Success  
College of Engineering  
Tennessee Technological University

Viviana Cruz is a senior in the Chemical Engineering program at Tennessee Tech University. She has been a member of TLSAMP since her freshman year, earning a scholarship, and continuing as TLSAMP began actively supporting student research.

She supplements her regular coursework with her participation in undergraduate research under the supervision of her faculty advisor and chair of the Chemical Engineering program Holly Stretz. Viviana's research is focused on Humic Acid aggregation in increasing ionic strength, which measures the time it takes for particles to settle when increasing the amount of saltwater. As a member of the Nanofactory Research group at Tech, she previously led a more senior team of students studying the dynamic fate of decay products in surface water. This work has important implications in a fundamental understanding of how to control the expensive fouling of membranes used in water purification.

Dr. Stretz describes Viviana as “an excellent orator, having won regional and national awards in presentations from LSAMP and AIChE.” She states, “Viviana’s professional contribution to the research team is at an extremely high level, and she leads the work on her project for the team at the same level as graduate researchers. She is an exemplar researcher, and it continues to be my pleasure to work with such a bright young engineer.”

She is a native of Smyrna, TN, and hopes to work as an engineer at Nissan, North America, when she graduates.

### **ALLIANCE SALUTES DR. LONNIE SHARPE, JR.**

After 18 years of serving as Executive Director of the Tennessee-LSAMP Project, Dr. Lonnie Sharpe, Jr., Ph.D., PE, Massie Chair of Excellence in Environmental Science, and Professor, Mechanical Engineering, retired from Tennessee State University on December 31, 2020. Dr. Sharpe has been a staunch advocate of LSAMP since he first became involved with the program as Interim Dean of the College of Engineering at North Carolina A&T University. When Sharpe came to TSU in 2001, he saw the opportunity to get the State of Tennessee involved in the mission and goals of LSAMP. Under Sharpe's leadership, the Alliance grew from six institutions to 10 institutions, which includes two community colleges. In addition, enrollment of minority students in STEM disciplines at Alliance institutions has grown from 2955 in fall 2002 to 5,632 in fall 2019. During his tenure at TSU, Sharpe has also served as the Interim Deans for the College of Engineering, and the College of Life and Physical Sciences.

In addition to Sharpe's retirement, two long-time supporters of TLSAMP also retired from TSU in December 2020 -- Sam Comer, Professor, Agricultural Sciences, and Dwight Martin, Instructor, Architectural Engineering. For 18 years, Comer served as the TLSAMP Liaison for the College of Agricultural Sciences, and Martin served as the TLSAMP Liaison for the College of Engineering.

Dr. John Robinson, a professor in the Department of Biological Sciences, assumed the role of Executive Director of TLSAMP on January 1, 2021. Since 2002, Robinson served as the TLSAMP Liaison for the Colleges and Arts and Sciences, and more recently for the College of Life and Physical Sciences.

## Impact Statement

TLSAMP is described as the single best collaboration among institutions across the State of Tennessee. TLSAMP continues to make a significant impact on underrepresented undergraduate STEM education, and the Alliance continues to produce graduates that are prepared for entry into the STEM workforce or graduate school. TLSAMP has a 96% persistence rate of Level I students (e.g., undergraduate STEM students that actively participate in campus TLSAMP Programs as a Peer Mentor, Peer Tutor or a Research Assistant) in STEM disciplines.

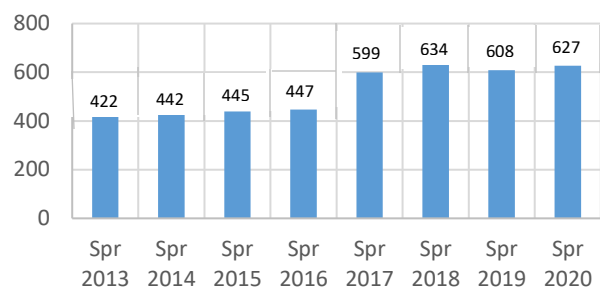
## Accomplishments 2020-2021

- **TLSAMP Annual Research Conference.** The Annual Research Conference is the venue that brings the Alliance partners and STEM undergraduate students together. The conference provides an opportunity for students to present research, gain presentation experience, network with other students and faculty, and participate in workshops and panels. The conference also sponsors a Graduate School Fair. In 2021, the Research Conference was hosted by the Middle Tennessee State University, and over 150 students, faculty and staff participated in the virtual conference.
- **GEM/TLSAMP GRAD Lab.** In partnership with the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc., (GEM), the virtual GRAD Lab was hosted by Vanderbilt University in sponsorship with TLSAMP on October 17, 2020. Drs. Lonnie Sharpe (TLSAMP) and William H. Robinson (Vanderbilt) gave remarks on behalf of TLSAMP and the University. Sharpe also shared information with the participants about the Bridge to the Doctorate Program.

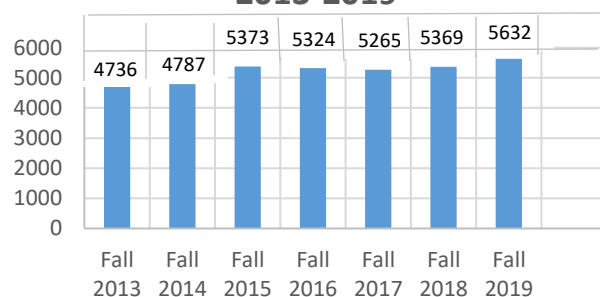
The Virtual GRAD Lab proved to be an insightful online symposium where participants received an overview of graduate school information. The Grad Lab offered a series of workshops on "Why Pursue Graduate School," "Application Processes," "How to Fund Your Program," and "Voices from the Field." In addition, a "Virtual Graduate School Resource Fair" was included for students to learn about various graduate programs. Approximately 150 TLSAMP students participated in the GEM Grad Lab.

- **International Summer Research Experiences.** Each year STEM faculty from Alliance partner institutions submit proposals to lead an international research experience with a foreign institution as the co-host. This four-week experience engages TLSAMP students in conducting research with appropriate foreign expert mentorship. The research experience enables 2-3 students to work within an established collaboration between the awardee of the proposal and a foreign collaborating research group. The first international summer research experience was co-hosted by Tennessee State University with Sichuan University in Chengdu, China. The second international summer research experience was co-hosted by Middle Tennessee State University with Zamorano University, Honduras. The third international summer research experience was co-hosted by the University of Memphis with Donghua University, Shanghai, China; and the fourth international summer experience was cohosted by Tennessee State University with Vivekananda Global University, Jaipur, India. Due to COVID-19 and travel restrictions, the International Summer Research Experience was cancelled for the summer of 2020 and 2021.

## STEM Degrees Awarded to Underrepresented Students 2013-2020



## TLSAMP Minority Student Enrollment in STEM Degrees 2013-2019



## UPCOMING EVENTS

March 23-24, 2022 – TLSAMP Annual Research Conference, hosted by LeMoyne-Owen College, Memphis, TN (virtual)

March 29, 2022 -- STEM Transfer Day for Community College Students, hosted by the Southwest Tennessee Community College, Memphis, TN (in-person)

## BLASTS FROM THE PAST...



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