

**LOUISIANA SCIENCE, TECHNOLOGY, ENGINEERING
AND MATHEMATICS (LASTEM) ADVISORY COUNCIL**

**STATUS REPORT TO THE LOUISIANA
SENATE AND HOUSE COMMITTEES ON EDUCATION**



LOUISIANA BOARD OF REGENTS

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Executive Summary

Act 392 of the 2017 Regular Session, authored by Senator Sharon Hewitt, commissioned the Louisiana Science, Technology, Engineering, and Mathematics Advisory Council (LASTEM). Under the auspices of the Louisiana Board of Regents, the LASTEM Council is tasked to do the following:

- Coordinate and oversee the creation, delivery, and promotion of STEM education programs;
- Increase student interest and achievement in the fields of STEM;
- Ensure the alignment of education, economic development, industry, and workforce needs; and
- Increase the number of women who graduate from a postsecondary institution with a STEM degree or credential.

The Council, chaired by the Commissioner of Higher Education, is comprised of 29 members, including representatives of both K-12 and postsecondary education, state agencies, business and industry, professional organizations with links to STEM education, training, and workforce development, and economic development entities.

As required by Act 392, this report provides an update on the work of the Council, emerging initiatives, and recommendations for legislation and policy changes. During its first year, the Council was required by law to meet monthly; the Council began quarterly meetings beginning in February 2019. In the Fall of 2019, the Council selected nine Regional STEM Centers (RSCs) and allocated funds to support their operation. In 2023, all nine centers applied for continuation and were approved based on their impressive work over the first period and the strong partnerships established both throughout their regions and statewide. The RSCs are currently in the second year of their second three-year cycle.

During 2024, the network of nine Regional STEM Centers and LASTEM expanded their engagement of and services to populations across Louisiana, from K-12 students to upskilling

adults, helping to strengthen both educational opportunities and provide workforce pathways in STEM-focused fields. Notable achievements include:

- Implementation of the Engineering is Elementary curriculum, purchased with a \$1 million federal earmark, to give elementary-aged students a head start in learning engineering concepts. Once trained, teachers will be able to use the curriculum in their classrooms year after year
- Participation of thousands of students in every region in LASTEM programming offered through the regional centers, including summer camps, in- and after-school events, field trips, weekend family STEM days, parent-student outreach, and many other events
- Record attendance of students, parents, teachers, industry representatives, and others at the annual LASTEM Summit, held in Lafayette on October 9th
- NSF's holding its Education Advisory Committee meeting at Louisiana Tech University, providing unprecedented national recognition of Louisiana's unique STEM ecosystem
- Active engagement with stakeholders through quarterly Advisory Council meetings and expanded partnerships with industry and educational institutions across the state

During 2024, the network of nine Regional STEM Centers and LASTEM expanded their engagement of and services to populations across Louisiana, from K-12 students to upskilling adults, helping to strengthen both STEM-based education and training, as well as the workforce pipeline. As a result, STEM awareness, engagement, excitement, and opportunities in the state have never been greater.

List of Acronyms

BOR	Louisiana Board of Regents
CEA	Cooperative Endeavor Agreement
EiE	Engineering is Elementary Curriculum Support
LASTEM	Louisiana Science, Technology, Engineering, and Mathematics Advisory Council
LDOE	Louisiana Department of Education
NSF	National Science Foundation
PD	Professional Development
RSCs	Regional STEM Centers
STEM	Science, Technology, Engineering, and Mathematics

LASTEM Advisory Council Charge and Goals

This report, filed pursuant to Act 392 of the 2017 Regular Session of the Louisiana Legislature, highlights the significant progress made by the LASTEM Advisory Council in 2024. The law charges the LASTEM Advisory Council to:

- Create a comprehensive, statewide STEM plan that has clear objectives to guide the development of STEM education and STEM career opportunities and aligns elementary, secondary, and postsecondary STEM curricula, programs, initiatives and activities;
- Coordinate all state STEM education-related programs and activities;
- Create a new STEM culture and promote activities that raise awareness of STEM education and STEM career opportunities;
- Integrate employers and educators by engaging business and industry, employers, professional and community-based organizations, STEM education stakeholders, and career and talent programs and activities;
- Encourage industry and business entities to provide funding, resources, and technical assistance to elementary, secondary, and postsecondary schools to promote interest in STEM discipline courses and career opportunities;
- Connect STEM education resources, initiatives, and programs regionally and throughout the state;
- Establish an information clearinghouse, to be housed at the BoR, to identify and provide best practice resources for both the secondary and postsecondary educational systems and to review and acquire STEM education-related instructional materials;
- Empower STEM teachers and provide support for high-quality professional development for teachers of STEM subjects;
- As appropriate, join and participate in a national STEM network and collaborate with other states in STEM education program development; and
- Establish a competitive grants program to fund robotics competitions to provide students at all appropriate grade levels opportunities to improve STEM skills by participating in events sponsored by science and technology development programs.

The LASTEM Advisory Council and its subcommittees developed this broad-based charge from Act 392 into three goals that guide the work of the Council and support of the Regional STEM Centers (RSCs):

- **LASTEM Goal 1:** Build strong foundations for STEM literacy by ensuring that every American can master basic STEM concepts and become digitally literate.
- **LASTEM Goal 2:** Increase diversity, equity, and inclusion in STEM and provide all Louisianans with lifelong access to high-quality STEM education, especially those historically underserved and underrepresented in STEM fields and employment.
- **LASTEM Goal 3:** Prepare the STEM workforce for the future—both college-educated STEM practitioners and those working in skilled trades that do not require a four-year degree—by creating authentic learning experiences that encourage and prepare learners to pursue STEM careers.

The Council set purposeful and ambitious goals around the establishment of Louisiana RSCs and selection of their directors. The RSCs have now been operational for five years, addressing and implementing all three LASTEM goals. The rapid expansion of their work, serving thousands of students, parents, teachers, and other stakeholders, has grown awareness of STEM opportunities and the value of STEM learning in our increasingly tech-focused world, preparing our citizens to participate fully in 21st-century work and life. The following section will describe the work of the LASTEM Advisory Council over the past year.

Part II: Growth of STEM Education, Training, and Outreach in 2024

LASTEM Advisory Council Meetings

During its 2024 quarterly meetings, the LASTEM Advisory Council explored and discussed ongoing initiatives and learned about new trends and focuses in STEM education. Each meeting was held at a STEM-rich location in the state, providing attendees the opportunity to see facilities and work related to LASTEM priorities, and featured STEM organizations and champions discussing exciting work and opportunities for growth and development around the state. Quarterly meetings in 2024 included:

February 19, 2024 (East Baton Rouge Career and Technical Education Center)

- Hosted by Capital Area STEM Network Center (Region 2). The meeting focused on Ignite! program (LDOE collaboration). The meeting showcased the successful collaboration with LDOE on the Ignite! program, which provides computational thinking, block programming, and cyber safety professional development for teachers. Ochsner Clinical School provided a presentation related to its medical program partnership, which aims to address healthcare workforce shortages and provide a pathway to immediate employment for graduates. Finally, the Council received a report on the Louisiana Afterschool Network's Million Girls Moonshot Flight Crew initiative and the first Louisiana student to join the national Flight Crew, who serve as advocates for STEM across the country.

May 2, 2024 (SciPort Discovery Center)

- The meeting was cancelled due to a severe weather event.

August 15, 2024 (Laser Interferometer Gravitational-Wave Observatory)

- Hosted by Southeastern Louisiana University (Region 9) at the Nobel Prize-winning LIGO facility in Livingston, the Q3 meeting featured an extensive presentation from LDOE on Louisiana's new accountability system, Grow. Achieve. Thrive. The Council engaged in a robust discussion of this new approach, its alignment with Council goals,

and ways in which LASTEM and the RSCs could support the work of the Department. Also on the agenda was an update on Region 9's Computer Science initiatives, particularly Southeastern's Energize Project, providing Praxis training to Louisiana 6th-12th-grade public school educators. This program has been critical in preparing teachers for the computer science classroom and filling the gap in certified teachers in the field. Based on the two presentations, the Council discussed extensively the need to expand work-based learning opportunities and internship development across the state.

November 14, 2024 (Louisiana Tech University)

- Hosted by Louisiana Tech's STEM Collective for Innovative Louisiana Stakeholders (SCILS) (Region 8) in the Davison Athletics Complex, this gathering was designed to capitalize on the meeting of NSF's Education Advisory Committee at Louisiana Tech, which both explored ideas for the Foundation's investment in STEM education initiatives and provided opportunities for Louisiana's education teams to learn about funding programs and talk with program administrators. The Council meeting highlighted SCILS' programs and success stories, including an appearance by the current Miss Louisiana's Teen, a passionate STEM advocate and long-time participant in SCILS programming. LDOE provided updates on the state's K-12 Computer Science Education Plan and its articulation with the accountability system and the work of LASTEM. Dr. Bonnie Green, Expert in the NSF Directorate for STEM Education, discussed with the Council NSF's approach to holistic STEM education, the importance of breaking down barriers that prevent student engagement and persistence, and the value of the network approach employed by LASTEM. Finally, Dr. Heather Kleiner, Region 7 STEM Center Director, presented her innovative "Museum in a Box" concept, supported by NASA, which provides STEM desktop activities to students wherever they are.

Notable National Recognition

The gathering in November 2024 of the National Science Foundation's (NSF's) Education Advisory Committee at Louisiana Tech University, the first time in its history that NSF hosted this meeting outside of Washington, D.C., marked a significant opportunity for Louisiana to bring national awareness to the power of its statewide STEM networks. The EAC meeting was accompanied by a three-day grant development workshop, which engaged over 100 researchers from Louisiana, Arkansas, and Mississippi, demonstrating the growing recognition of the urgent need to offer STEM research and education opportunities in rural areas.

During these sessions, NSF leadership specifically highlighted Region 7's "Bars without Barriers" program as an innovative model worthy of federal support. This program, a joint venture with the Caddo Parish Sheriff's Workforce Re-entry Facility, provides incarcerated individuals training to join the workforce and their families classes and supervised visits to learn STEM principles and ideas together. This approach both raises awareness among parents and children of the importance of STEM education and builds communications skills and strong relationships between incarcerated individuals and their children through shared learning. This recognition of a Louisiana-developed initiative that engages some of our most underserved populations, demonstrates the state's leadership in creating unique solutions to expand STEM education access to all populations.

The presence of national leadership and the LASTEM Advisory Council reinforced LASTEM's role in developing innovative STEM education approaches, particularly for rural and underserved communities. The success of these meetings has inspired NSF to consider holding future advisory committee meetings at other institutions outside the Washington, D.C. area, using Louisiana's regional model for STEM innovation and service to diverse communities.

Highlights from Regional STEM Centers

LASTEM is able to reach stakeholders in every corner of the state through its combination of centralized support through the Board of Regents and the work of the nine RSCs, which identify the priorities and unique needs of their regions and tailor their programming to address existing gaps. Below are highlights of the regional work happening across the nine centers.

Region 1 (New Orleans Region): Located within Greater New Orleans, Inc., the Greater New Orleans Region One Center for Science, Technology, Engineering, and Mathematics (GNOrocs) has demonstrated significant impact by advancing STEM education and workforce development opportunities. In 2024, the GNOrocs' flagship HBCU Innovation Internship Program engaged 58 students from Historically Black Colleges and Universities, bridging the gap between academic pursuits and workforce opportunities. Through the Women in the STEM Economy (WISE Women) Mentorship Program, the Center cultivated 50 women pursuing STEM careers, providing industry site visits to Chevron Oronite and Belle Chasse Naval Air Station. The Sons in STEM Mentorship Program engaged 80 young men from underrepresented backgrounds to receive training from experienced professionals. Mini-grants awarded to eight non-profit organizations impacted over 2,200 individuals. The Center secured \$150,000 in external funding from Boeing and Chevron, along with in-kind support from partners including the New Orleans Bioinnovation Center (NOBIC), OnPath Financial Credit Union, The Idea Village, and others.

Region 2 (Greater Baton Rouge Region): The Capital Area STEM Network Center at Louisiana State University and A&M College made significant progress in elevating STEM learning and workforce development. The Center's SPARK Event provided skill-building activities in electrical work, HVAC, and automotive technologies for single parents entering the workforce. Professional development offerings reached 750 elementary teachers through the Ignite Initiative. The Center secured \$500,000 in funding from LDOE for computer science expansion and engaged thousands of participants through library-based STEM events.

Region 3 (Bayou Region): Fletcher Technical Community College's BayouSTEM Center engaged 18,300 students through field trips, summer camps, and after-school activities. The Center established a FIRST Robotics Competition community team and implemented a Coastal Restoration Education project supported by ConocoPhillips. Through \$22,500 in additional grant funding, BayouSTEM expanded programming to 18 library branches, reached 156 students through Manufacturing Week, and engaged 233 students in Coastal Career Day.

Region 4 (Acadiana Region): The University of Louisiana at Lafayette's STEM Network Center continued innovative initiatives focusing on K-12 enrichment and teacher professional development. The STEMulating Summer Initiative brought together 600 students from five school districts. The Region 4 Novice Teacher Collaborative (R4NTC) expanded its statewide focus on new teacher retention. In partnership with LDOE and the National Math and Science Initiative, the Center developed the STEM Leadership Cohort learning series to prepare educators for leadership roles.

Region 5 (Southwest Region): Calcasieu Parish School Board's Regional STEM Center secured \$145,000 in industry funding and impacted 10,500 individuals through competitions, conferences, field trips, professional development, and summer camps. Partnerships with Sasol, Phillips 66, LyondellBasell, Northrop Grumman, Air Products, Citgo, and Cameron LNG strengthened regional workforce development. The Center's robotics program demonstrated particular success, with graduates securing industry internships and alumni returning to volunteer, creating a sustainable mentorship cycle.

Region 6 (Central Region): Northwestern State University's CenlaSTEM Center focused on rural STEM opportunities, doubling participation in its RECIPE for Rural STEM initiative to 1,403 students from nine parishes. The Center also expanded its Independent Inventor program through partnerships with the Henry Ford Museum and Central Louisiana Technical Community College, while advancing Youth Challenge Program STEM activities into their fourth rotation with new training components in the SeaPerch underwater robotics program.

Region 7 (Northwest Region): The Regional STEM Center at Sci-Port Discovery Center engaged 18,300 participants, providing hands-on STEM learning through 320 field trips. Summer programming included the AI Energy Camp, an onsite event serving 357 students, and "Be a Physicist" camps reaching 870 students across 30 sites. Of the participants in the innovative "Bars without Barriers" program at Caddo Correctional Center, 80% completed the six-class sequence. Community events included the Defenders of Liberty Airshow STEM exhibition, attracting 5,000 families. The Center conducted 63 teacher training programs reaching 342 educators and secured \$135,500 in additional funding to support its programming.

Region 8 (Northeast Region): For the second consecutive year Louisiana Tech University's SCILS Center earned recognition as an official Commitment-Maker for the global CSforALL organization, pledging to provide computer science experiences for 400 students in the rural Louisiana Delta region. The Center also provided professional development to 157 teachers, engaged 364 students in summer programming, distributed 600 STEM kits to rural parishes, and facilitated 1,178 Coursera career certification enrollments.

Region 9 (Northshore Region): Southeastern Louisiana University's Regional STEM Center led the statewide Energize Project, training 800 teachers in computer science education and preparing them for the classroom. Through monthly Community STEM Cafes and other initiatives, the Center served 6,000 youth and adults, connecting them with over 50 organizations to advance STEM workforce development, while its Brain Food Truck brought STEM learning to students wherever they were.

LASTEM Annual Summit

The 2024 LASTEM Summit, held on October 9, 2024, at the CAJUNDOME and Convention Center in Lafayette, adopted the theme, "Unlocking Potential, Launching Success." The purpose of this event was to showcase the dynamic Science, Technology, Engineering and Math programs offered throughout Louisiana, the talented individuals who engage students and trainees every day, and the opportunities that STEM affords to all Louisianians. A record total of 795 participants joined in the day's activities, which included a keynote address, breakout sessions, esports demonstrations, a robotics competition, a large number of exhibitors, and the RSC directors.

Captain Barrington Irving, recognized for his achievement as the youngest person and first Black pilot to fly solo around the world, provided a moving and inspiring keynote address. His presentation focused on the transformative power of STEM education and mentorship, illustrated through insights from his current work with the Flying Classroom, a supplemental PK-12, digital STEM+ curriculum aligned to national and state standards and based on Captain Irving's global expeditions. The LASTEM Regional STEM Centers are currently exploring opportunities to build lasting partnerships with this innovative program.

Throughout the day, more than 40 breakout sessions offered insights in four distinct tracks: Preparing Students for the Future of Work, Teacher Professional Development and Support, Access in Education, and Innovations in Education. Teachers and other STEM professionals gained important insights and tools to help them as they engage students in the transformative world of STEM.

The highlight of the Summit, as always, is the opportunity for participants to engage and stakeholders to witness interactive demonstrations of some of the STEM activities happening all over Louisiana, including robotics competitions and eSports exhibitions. These demonstrations highlight the hands-on application of STEM concepts, but also the incredible excitement that so many students experience when they bring these ideas to life.

With demonstrations happening in the background throughout the day, the "Playground" area buzzed with activity as attendees explored interactive exhibits from nine Regional STEM Centers, toured mobile STEM units – our "labs on wheels", and engaged with dozens of industry

partners. In this dynamic space, participants could engage in hands-on activities, discover innovative teaching methods, and forge valuable connections across Louisiana's STEM ecosystem.

Support from corporate sponsors including Central Creativity, CITGO, and the REC Foundation enabled broad participation and engagement from stakeholders and the general public, uniting participants from education, industry, and workforce development in a shared goal of propelling Louisiana's future through STEM education and training. This year's record attendance and expanded industry participation demonstrated the growth of Louisiana's STEM ecosystem and attracted new participants to the collaborative spirit that drives STEM engagement and advancement across the state.

Part III: Conclusion

The continual progress and impactful achievements of the Louisiana Science, Technology, Engineering, and Mathematics Advisory Council and the nine RSCs throughout 2024 showcase their sustained commitment to advancing STEM education, workforce development, and opportunity across the state. The Council has diligently worked to achieve the statutory goals of Act 392 through its high-level engagement with STEM issues and ideas, in tandem with the implementation work ongoing at the RSCs. This approach, enabling both innovative conceptual discussions with a group of dedicated, regionally focused, outreach-oriented centers, is the key to LASTEM's success, ensuring that ideas can be studied, tested, implemented, and scaled in ways that serve the unique environments in which the ideas will take root.

As LASTEM moves into 2025, its work will both continue and adapt to recent changes in STEM education and training. Expanding computer science education initiatives and preparing teachers to instruct in this essential discipline will be a central focus, as LASTEM extends its partnership with LDOE. It is also clear that work-based learning is increasingly pivotal in bringing students into the workforce, and LASTEM will support internship and training

opportunities through collaborations with LDOE, business and industry, and its already-powerful cross-regional networks as Louisiana grows its STEM footprint.

The remarkable achievements of LASTEM and the RSCs would not be possible without the collective efforts of those involved and the statewide commitment to collaboration and resource-sharing. It is the hope and desire of the LASTEM Advisory Council that this work continues to produce long-lasting impacts for Louisiana throughout 2025 and beyond.