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January 30, 2022

The Honorable John Bel Edwards
Governor, State of Louisiana

Dear Governor Edwards:

We are pleased to share with you an update on the work of the Louisiana Science, Technology, Engineering, and Mathematics (LaSTEM) Advisory Council, written in response to Act 392 of the 2017 Regular Legislative Session.

Act 392, authored by Senator Sharon Hewitt, created LaSTEM under the auspices of the Louisiana Board of Regents, and tasked it with 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.

As required by Act 392, this report provides an update on the work of the Council, emerging initiatives, and recommendations. Upon hiring of a new director in 2020, the Council aligned its goals with the federal government's five-year strategic plan, "Charting a Course for Success: America's Strategy for STEM Education." Its current goals include:

- Build strong foundations for STEM literacy by ensuring that every American has the opportunity to master basic STEM concepts and to become digitally literate.
- Increase diversity, equity, and inclusion in STEM and provide all Americans with lifelong access to high-quality STEM education, especially those historically underserved and underrepresented in STEM fields and employment.
- 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.

Nine Regional STEM Network Centers (RSNCs) have been established by the Council and these centers are operational. In addition, the annual LaSTEM Summit will be held at the Baton Rouge River Center on February 8, 2022 as an in-person event with full participation from stakeholders across the state.

The work of this Council continues to enhance the visibility of and access to STEM education across the state. I am grateful for the Council members' commitment to this vital work.

We welcome questions and look forward to working with you during the upcoming legislative session.

Sincerely,

A handwritten signature in black ink, appearing to read "Kim Hunter Reed". The signature is fluid and cursive, with the first name "Kim" being the most prominent.

Kim Hunter Reed, Ph.D.
Commissioner of Higher Education

cc. Chair Cleo Fields, Senate Education Committee
Chair Lance Harris, House Education Committee
Yolanda Dixon, Secretary of the Senate
Michelle Fontenot, Clerk of the House of Representatives
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**LOUISIANA SCIENCE, TECHNOLOGY, ENGINEERING
AND MATHEMATICS (LaSTEM) ADVISORY COUNCIL
STATUS REPORT TO THE LOUISIANA
SENATE AND HOUSE COMMITTEES ON EDUCATION**



LOUISIANA BOARD OF REGENTS

JANUARY 2022

TABLE OF CONTENTS

Executive Summary	3
List of Acronyms	5
Part I: Introduction	6
Part II: A Successful Year of Engagement in STEM Education in Louisiana.....	8
Advisory Council Meetings.....	8
Subcommittees and Workgroups	8
STEM Activities and Accomplishments	9
- Regional STEM Network Centers	9
- First Annual Directors' Retreat.....	10
- LaSTEM Annual Summit.....	11
Part III: Policy/Funding Recommendations and Summary	12
Regional STEM Network Centers and Directors	12
Summary	13

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 Council). 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 is chaired by the Commissioner of Higher Education and comprised of 29 members including presidents of the Louisiana State University, University of Louisiana, Southern University, and Louisiana Community and Technical College Systems, the Superintendent of Education, representatives from the ten-member Louisiana Association of Independent Colleges and Universities (LAICU) and its colleges and universities, a representative of the Louisiana Board of Elementary and Secondary Education (BESE), presidents of various teacher and educator associations, appointees from the Governor's Office, Louisiana Department of Economic Development (LED), the president of the Louisiana Workforce Investment Council, members of the Louisiana House and Senate, and business representatives.

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, as well as information on efforts to expand both Broadband access and related workforce, to build digital literacy and close the digital divide in Louisiana. The LaSTEM Council was required by law to meet every month for the first year, beginning in September 2017, and did so until October 2018. The Council began quarterly meetings beginning in February 2019. An executive leadership team of representatives from the Louisiana Board of Regents, Louisiana Workforce Commission (LWC), Louisiana

Department of Education (LDOE), Louisiana Economic Development (LED), and Senate has met monthly since September 2019 to handle all business between quarterly meetings. Despite the many challenges of 2021, this year of hard work and success, outlined in this report, culminated with the selection and seating of a regional director at each of the nine regional STEM centers. In addition, the first annual Directors' Retreat was held in November 2021, bringing together for the first time all nine LaSTEM regional directors and stakeholders to strategize development of a roadmap for the LaSTEM Regional Centers.

List of Acronyms

CEA	Collaborative Endeavor Agreement
BESE	State Board of Elementary and Secondary Education
LDOE	Louisiana Department of Education
LaSTEM	Louisiana Science, Technology, Engineering and Math
LAICU	Louisiana Association of Independent Colleges and Universities
LED	Louisiana Economic Development
RSNC	Regional STEM Network Center
STEM	Science, Technology, Engineering, and Mathematics

Part I: Introduction

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 2021. The law provides a list of tasks for the LaSTEM Advisory Council, including:

- 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 STEM Council and its Subcommittees developed this broad-based charge from Act 392 into three goals that guide the work of the Council and creation of the Regional STEM Network Centers (RSNCs). The LaSTEM goals are:

- **LaSTEM Goal 1:** Build strong foundations for STEM literacy by ensuring that every American can master basic STEM concepts and to become digitally literate.
- **LaSTEM Goal 2:** Increase diversity, equity, and inclusion in STEM and provide all Americans 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 ambitious and purposeful goals around the establishment of Louisiana RSNCs and Regional STEM Network Directors, and the 2021 calendar year saw the successful implementation of this vision. The following section will focus on the great success that the LaSTEM Advisory Council has achieved in its fourth full year.

Part II: A Successful Year of Engagement in STEM Education in Louisiana

Advisory Council Meetings

During the 2021 quarterly meetings, the LaSTEM Council highlighted the newly established RSNCs and their early successes. In addition, the LaSTEM Council hosted STEM organizations and STEM champions who presented the exciting ongoing work and opportunities for growth and development around the state. Though limited due to the ongoing pandemic, the LaSTEM Advisory Council meetings allowed members to visit STEM facilities in different regions and begin to experience first-hand some of the remarkable work going on across the state. The following presentations and discussions occurred at the quarterly meetings:

- **February (virtual due to COVID):** Cybersecurity Education Management Council and Microsoft TEALS Program
- **May (NASA Michoud Facility, New Orleans):** RSNCs Report-Out and Learning Blade
- **August (virtual due to COVID):** Collaborative Endeavor Agreements and Director Retreat Planning
- **November (Sci-Port Discovery Center, Shreveport):** LaSTEM Holiday Kits, NASA, RSNCs report out

Subcommittees and Workgroups

As outlined in previous status reports, the work of the Council is largely divided into three subcommittees – PK-12 Education and Teacher Training, Postsecondary – High School, and Workforce – with working groups convened as needed. All workgroup and subcommittee efforts are overseen and coordinated by the LaSTEM Program Administrator, Dr. Clint Coleman. Subcommittees have identified and defined SMART objectives and steps and timelines for implementation. Many objectives are complete, while others are ongoing.

The RSNC/Director workgroup completed its work in March 2021. This workgroup was tasked with assessing the establishment process of the Louisiana STEM Network, which consists

of nine RSNCs and their Regional STEM Network Directors, providing input to create a 'Request For Application' (RFA) and presenting a final RFA to the LaSTEM Advisory Council.

STEM Activities and Accomplishments

The fourth year of work for the LaSTEM Council saw successes for both the Council itself and the entities that make up the 29-member group. The following sections will highlight that work and the organizations and agencies that are vital to the Council's success.

Regional STEM Network Centers

2021 saw the successful launch of LaSTEM's nine (9) RSNCs. The LaSTEM Advisory Council selected the following locations to serve as RSNCs; regional directors, selected by RSNC host organizations, are listed for each.

- Region 1: GNO, Inc., Daphine Barnes
- Region 2: LSU Gordon Cain Center, Kim Fossey (Interim)
- Region 3: Fletcher Technical Community College, Christie Landry
- Region 4: University of Louisiana, Lafayette, Dr. Peter Sheppard (Interim)
- Region 5: Calcasieu Parish School Board, Mark Arsenault
- Region 6: Northwestern State University, Jennifer DePriest
- Region 7: Sci-Port Discovery Center, Beonica Frazier
- Region 8: Louisiana Tech University, Cathi Cox
- Region 9: Southeastern Louisiana University, Dr. Wendy Conarro

A Collaborative Endeavor Agreement (CEA) for each RSNC was completed in the second quarter of 2021. The 2020-21 budget allocated \$1,000,000 for LaSTEM, with \$100,000 of the state allocation provided to each of the RSNCs via this CEA. The 2021-22 budget allocated \$2,000,000 to LaSTEM. This increase in LaSTEM's state support raised the funding to the RSNCs to \$170,000 for the 2021-22 fiscal year.

It is anticipated, in coordination with their host organizations and the LaSTEM staff, that the regional directors will implement their plans as outlined in their executed CEAs. This network is

vital to our success in establishing strong, meaningful, and easily navigated STEM pathways across Louisiana. Additional information can be found on the [LaSTEM website](#).

First Annual LaSTEM Directors' Retreat

The selection of the RSNC host organizations and their subsequent hiring of the regional directors provided LaSTEM leadership with the opportunity to host the First Annual LaSTEM Directors' Retreat (Retreat). The intent of the Retreat was to bring all LaSTEM directors and leadership together to review Act 392 and discuss goals developed by the LaSTEM Advisory Council and *America's Strategy for STEM Education*. The Retreat was hosted by LaSTEM Region 6 at Northwestern State University's CenLA Campus in Alexandria, Louisiana on November 11th, 2021. The Retreat was facilitated by Fletcher Technical Community College's Chancellor, Dr. Kristine Strickland.

The retreat focused on identifying the particular educational needs of each region, with LaSTEM RSNC Directors recognizing that balance between regional autonomy with the statewide structure of LaSTEM. Such balance will allow each region to identify and meet unique area needs while addressing the larger goals of the statewide program. Regional and statewide leadership then worked together to develop a crosswalk between the original goals of LaSTEM and proposed specific goals for each region. At the conclusion of the Retreat, the LaSTEM RSNC Directors unanimously supported adoption of the following established LaSTEM goals, around which regional goals will be adopted:

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

by creating authentic learning experiences that encourage and prepare learners to pursue STEM careers.

The Retreat was highly productive and successful, as attested by all attendees. Plans are in place to reconvene in 2022 and beyond as we work collectively to strengthen the STEM ecosystem across the state, focusing on both the education and employment partners who are critical to make this happen.

LaSTEM Annual Summit

The annual LaSTEM Summit for 2021 was originally scheduled to be held in-person at the Raising Cane's River Center on October 26, 2021. Due to COVID issues, the 2021 Summit was postponed to February 8, 2022.

The purpose of this event is to grow Louisiana's STEM network and showcase many of Louisiana's dynamic STEM programs and the talented individuals invested in this work. This year's Summit, with its theme of '*Working Together for a Future That Works*', focuses on industry need and responsibility to create a successful cradle-to-career STEM pipeline. Dr. Steven Pearlman, author of '*America's Critical Thinking Crisis, The Failure and Promise of Education*', will provide the keynote address. Other highlights of this year's LaSTEM summit include: three moderated panels focused on listening AND responding to the workforce needs of business and industry and promoting engagement of more women and girls in STEM; breakout sessions that will focus on successful college and career readiness practices and programs provided by businesses, education, and/or community organizations that are producing results; live robotics and E-sports demonstrations by high school and college students; and professional development presentations for STEM teachers. Overall, 40 presenters, robotics and Esports demonstrations, teacher workshops, and several dozen vendors have confirmed for the event. Presentations and video recordings will be housed on the [LaSTEM website](#) after the event, to provide on-demand access to anyone unable to attend the Summit in person.

Part III: Policy/Funding Recommendations and Summary

Regional STEM Network Centers and Directors

The recommendation set forth in the 2020 LaSTEM Council report to support the creation and implementation of the Regional STEM Network was accomplished in 2021. The evolution of the Network will be measured as the Centers grow in effectiveness and impact, and need will continue to grow as they expand their work. Progress will be assessed through self-evaluations of regional stakeholders, which will assist in identifying existing and future demand for STEM-related occupations. Innovative solutions and resources to meet expanding Center needs will be the focus of the Regional STEM Network and the LaSTEM Advisory Council in 2022.

During 2021 the statewide work of LaSTEM, as well as each of the regional centers, was focused on building strong foundations for achieving the goals of establishing a comprehensive cradle-to-career STEM pipeline and building STEM literacy for all Louisianans going forward. As the centers became fully operational, each launched projects designed to meet specific local and regional needs. In Region 3, for example, in the wake of the devastation caused by Hurricane Ida, the center developed and distributed STEM kits to students and families during holiday-themed events, to continue engagement and learning during a challenging time. These kits were such a success that they could serve as a model for other centers as they seek additional ways to bring STEM learning to students in entertaining ways. Similar initiatives are being piloted in every region, with the expectation that LaSTEM will continually build a portfolio of best practices to share on a statewide basis.

Based on the remarkable success of this and other LaSTEM initiatives to date, Louisiana should maintain and build upon the support provided. Continuation of support for the Regional STEM Network is critical, but additional resources are needed to establish programs and adopt best practices to bridge gaps in STEM literacy, education, training, and workforce opportunities throughout the nine regions of Louisiana.

In addition,, we have identified two promising opportunities to accelerate our efforts. The Board of Regents partnership with the Office of Broadband and Connectivity to expand digital literacy across the state is directly tied to LaSTEM goal one and offers an opportunity to engage STEM Network Centers in program coordination and outreach in every region of the state. Further, the Governor’s FY 2023 Executive Budget includes funding to build Louisiana talent directly to support Broadband expansion across our state, providing a path to grow our STEM workforce while improving connectivity for all Louisianans.

Summary

As charged in Act 392 of the 2017 Regular Session of the Louisiana Legislature, the LaSTEM Council continues its work to advance STEM efforts across Louisiana. Events and presentations, such as the annual LaSTEM Summit and STEM topics presented to the Advisory Council, have allowed champions for STEM to discuss regional and statewide needs, showcase best practices, and network with key stakeholders. In addition, the selection of RSNC host organizations and their subsequent hiring of regional directors marks a major step forward in institutionalizing STEM leadership in every region of the state, allowing the LaSTEM Council to increase its understanding of both region-specific and collective STEM education needs in the state. LaSTEM’s achievements in raising awareness and promoting STEM pathways for all of Louisiana citizens would not have been possible without the collective efforts of those involved, along with the Council’s coordination and leadership.

The foundation laid by the LaSTEM Advisory Council through its executive team, working groups, and subcommittees has provided the roadmap to creating a sustainable, effective, efficient, and fully engaged Regional STEM Network. This network is vital to the success of STEM initiatives, enabling leaders and participants in every corner of the state to share resources, communicate best practices, raise awareness throughout communities, strengthen educational and business/industry partnerships, meet the needs of tomorrow’s workforce, and elevate Louisiana as a leader in STEM.

2021 was a significant as the foundational year for the nine regional STEM centers, as they hired directors and staff and launched their priority efforts. As we move into 2022, the critical

work of pulling the regions together in support of LaSTEM’s statewide goals and begin developing within this context their regional ecosystem-building goals. It is the hope and desire of the LaSTEM Advisory Council that all stakeholders understand the value of the LaSTEM initiatives and support their efforts to achieve long-lasting impacts on Louisiana throughout 2022 and beyond.