



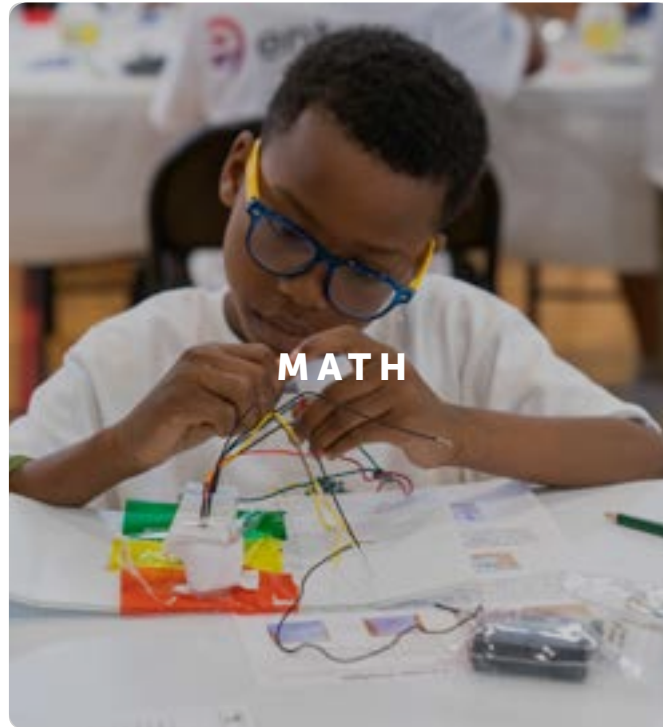
SCIENCE



TECHNOLOGY



ENGINEERING



MATH



— **STEM NOLA** —

POWERED BY  entergy

2022 CASE FOR SUPPORT

W E B E L I E V E in cultivating a world
that invites people and places to STEM, and
amplifies them through the field ● **W E**
B E L I E V E in the value of inquiry and
problem-solving ● **W E B E L I E V E** that
STEM is a viable, fulfilling career pathway
for our kids — a direction forward ● **W E**
B E L I E V E in a cradle to career pathway

INTRODUCTION

Whether a young person wants to one day hold a successful job in STEM, or dreams of pushing the boundaries of innovation, it all starts with three phases of talent development: **exposure, education, and connection.**

STEM NOLA embodies a life-long commitment to ensuring that all children have access to STEM learning opportunities that allow them to be the architects, innovators, makers and inventors of the future.

“[STEM NOLA] is a wonderful organization that provides kids an opportunity to learn and experience science hands-on. The activities encourage creativity and bring the standards to life, helping them connect it to the world around them.”

- STEM NOLA PARENT

Right: Chris works intently to build a house during a STEM NOLA STEM Saturday focused on teaching students all about structures and design.



OUR MISSION is to
grow future innovators, makers,
and entrepreneurs through a
community-centered model that
provides inspiration, engagement,
and exposure in the fields of
Science, Technology, Engineering,
and Math (STEM).



HISTORY & FOUNDING

STEM NOLA was founded in 2013 by **Dr. Calvin Mackie**, a New Orleans public school graduate who overcame his own struggles in math and science that resulted in low SAT scores and remedial coursework before graduating Phi Beta Kappa and completing four STEM degrees.

A former Tulane Engineering Professor, Dr. Mackie started STEM NOLA in his garage when one of his sons expressed frustration about the lack of engagement in his science. They began doing hands on experiments in his garage and inviting friends who were also disengaged and/or struggling.

Since 2014, STEM NOLA has delivered high-quality, developmentally appropriate STEM programs to **100,000 STUDENTS** in **5,150 SCHOOLS** across **47 STATES** and **FIVE COUNTRIES**.

our team includes **34 FULL-TIME STAFF**, **147 PART-TIME STAFF**, and over **1,462 PROFESSIONAL VOLUNTEERS**.

Left: Camryn enjoys testing the tetrahedron bubble wand she built during a STEM Saturday focused on teaching out tiny engineers about tensile designs.

CRADLE TO CAREER STEM

People of color make up more than 32% of our country's population, yet earn less than 15% of the nation's science and engineering degrees and hold less than 10% of the nation's science and engineering occupations¹. Just 2.2% of Latinos, 2.7% of African Americans, and 3.3% of Native Americans and Alaska Natives have earned a university degree in STEM fields².

Despite STEM jobs representing the fastest growing and highest wage sectors of South

Louisiana's economy, students from low-income backgrounds and students of color continue to be underrepresented along the career pipeline. Increasing representation requires ensuring students have hands-on, culturally relevant learning opportunities beginning in early childhood and cultivated throughout their education.

¹ According to the Joint Center for Political and Economic Studies

² A recent Pew Research Center report

“STEM NOLA is important to me because you watched me as a 7-10 year-old not knowing it, but I was able to build these complex machines with a fan and batteries, calling it a boat. STEM NOLA did something to me that spoke into my life.”

- STEM NOLA PARTICIPANT

Right: Wyatt smiles proudly as he finishes building the foundation of his house during a STEM Saturday event focused on teaching structures and design.



OUR PROGRAMMING

ADVANCED STEM IMMERSION CAMP

is offered to 3rd through 12th grade students. Through intensive in-person and virtual camps, students develop advanced science, engineering, technology and mathematics skills with real-world applications and receive mentoring from STEM professionals. STEM NOLA Hands-On Virtual Summer Camps and Virtual Technology Camps provide interactive live instructional sessions with independent practice times.

CURRICULUM, PROFESSIONAL DEVELOPMENT, AND MATERIALS FOR EDUCATORS

initiatives provide materials, training and support in integrating culturally-competent, developmentally-appropriate, standards-aligned STEM learning into classrooms, working directly with thousands of educators annually.

THE STEM FELLOWSHIP PROGRAM

was created for New Orleans high school students who have a strong interest in STEM fields. Fellows engage in hands-on learning designed to build skills to pursue a range of STEM careers. Fellows are connected to internships, innovation competitions, professional mentorships, and receive college application assistance and recommendation letters.

STEM FESTS are community-based STEM exploration events where youth interact with an array of STEM activities over the course of a half or full day. Fests feature over 60 hands on STEM Stations, keynote speeches and demonstrations, experiments, instructional videos, and live guidance from college student and professional volunteers. Virtual STEM Fests provide 1-2 full days of hands-on STEM activities for K-12 students, complete with dozens of breakout rooms for applying specific concepts and knowledge.

“Before STEM NOLA, I wanted to be an athlete, doing football, soccer, swimming... Once I started STEM NOLA, I started thinking about more possibilities.”

- STEM NOLA PARTICIPANT

STEM NOLA @HOME LIVE SESSIONS

are weekly live STEM events developed for children in pre-kindergarten through high school that engage in STEM activities with technology at home. STEM NOLA at School offers hands-on, inquiry-based activities and events designed to supplement STEM curriculum requirements at every grade level and teacher development packages.

STEM SATURDAYS are held monthly across the state. STEM Saturdays engage hundreds of students and their families and employ hands-on projects to help deepen their engagement with a particular STEM theme for that event.



STEM GLOBAL ACTION NETWORK

In September 2021, we launched **STEM Global Action**, a network of affiliates to pursue the advancement of STEM education for children, parents and communities. SGA prioritizes raising awareness of the benefits of STEM education and providing STEM learning opportunities to K-12 students from low-income backgrounds and in communities of color to address societal inequities by creating pathways to quality jobs and careers.

The SGA website is an activity hub and resource for each individual, organization, government agency and STEM enthusiast seeking to expand STEM education. The network provides a place for people to turn to learn more about the benefits of STEM, how

the accompanying skills can change one's life, and the ways they extend beyond to affect the lives of those in the community.

The SGA Internship database provides internship opportunities for high school and college students across the country. Working with the Fund II Foundation's keystone program internX, the initiative is uniquely positioned to bring precision, diversity, inclusion, and efficiency to the internship matching process for thousands of talented and skilled young adults across the country.

Another core component, the STEM Global Action Data Center, provides the STEM universe with actionable data.

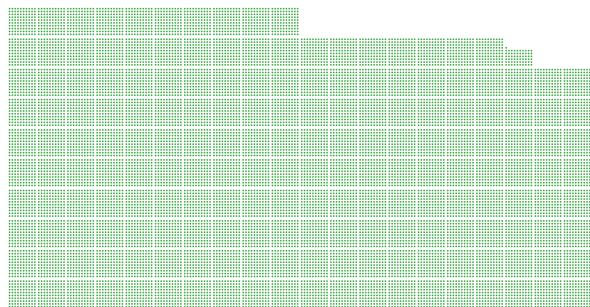
A pillar of our work to expand STEM exposure and engagement is ecosystem coordination and engagement. We work with community-based groups, educational institutions, local and state government, and related agencies to ensure a robust STEM cradle to career pathway.

Right: A young engineer shows his enthusiasm during a weekly STEM @Home event.

IMPACT

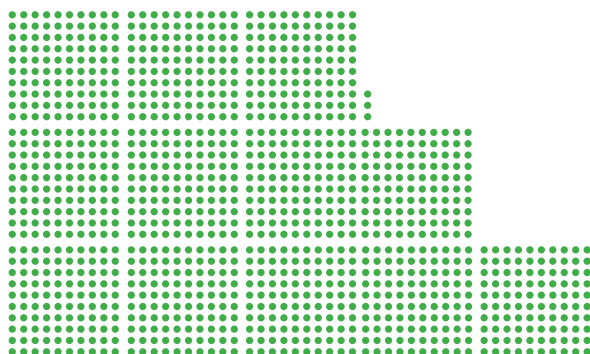
In 2021, our programs engaged

23,245 STUDENTS



across

2,786 SCHOOLS

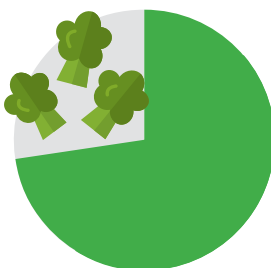


“

I appreciate that there is no cost associated with [STEM NOLA]. The program has people to engage him who look like him. It's important to me that children have role models and people who care who look like them.

”

STEM NOLA PARENT

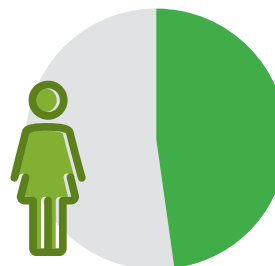


72%

of participants qualified for **free or reduced lunch** programs

48%

of participants identify as **female**



Of the youth and families engaged in STEM NOLA programming,

6,824

participated in STEM Saturdays

9,856

participated in Hands-On Virtual Summer Camps and Virtual Technology Camps

4,648

participated in STEM @Home Live Sessions

5,492

participated in In-School Sessions

RECENT NEWS HEADLINES

NOLA.COM

[A \\$10M education hub and global reach: STEM NOLA has come a long way from Saturdays in the garage](#)

FOX 8

[Mackie brothers bring multi-million dollar projects to expand arts and sciences in New Orleans East](#)

WGNO

[Pandemic leads to STEM NOLA going global](#)

WDSU

[STEM NOLA Building an Innovation Hub in New Orleans](#)

BLACK STAR NEWS

[STEM NOLA Founder Works on Increasing STEM Education Among Blacks](#)

NOLA NEWS WIRE

[Mackie wins Coveted Louisiana Association of Educators President's Award](#)



Above: Malaya (left) and Ani (right) Mitchell have participated in STEM NOLA events since age 9 and were awarded the inaugural STEM Fellows full tuition scholarships from Texas A&M University.

ANI AND MALAYA

Ani and Malaya were eight years-old when they attended their first STEM Saturday in 2014. Prompted by a feature their grandmother saw on the news, their mom registered the twins for a session – which turned into years of full family engagement. While their mom and grandmother became avid volunteers, Ani and Malaya participated in STEM Saturdays, STEM Fests and summer camps. Together, the twins have appeared and presented STEM on local broadcasts of FOX 8 WVUE-TV multiple times.

The aspiring medical doctor and environmental engineer are both STEM NOLA Fellows, Summa

Cum Laude graduates, student researchers, and SGA President and Secretary, each with over 20 AP credits.

There remains no limit in sight for the Mitchell twins' dedication and achievements. In June 2022, Texas A&M University issued these star STEM NOLA Fellows inaugural full-tuition STEM scholarships. Each scholarship provides \$40,000 annually for four years, awarding a total of \$320,000 in pursuit of STEM education to the family.

An example of what is possible when the village comes together around STEM, we are proud of and thrilled for the entire Mitchell family.

RALEIGH

Raleigh began participating in STEM NOLA's programming as a first grader. As an eighth grader at Alice Harte Charter School, Raleigh devised a plan to modify the solar-powered car she built during a STEM Saturday event to test how the position of solar panels would affect the speed of the car. Raleigh's project won first place at the school science fair and the Greater New Orleans Science Fair.

Encouraged by Dr. Mackie, Raleigh competed in

the NAACP Afro-Academic, Cultural, Technological and Scientific Olympics (ACT-SO). After winning first place in the engineering division competition, she is now selected to represent New Orleans at the national NAACP ACT-SO in July 2022.

Raleigh's parents credit STEM NOLA with increasing and advancing her STEM knowledge and helping her become more natural at problem-solving.

TROY

Troy first met Dr. Mackie in elementary school and participated in STEM programming as a freshman in high school. In 2018, he reflected, "I am so grateful to have had the educational experiences with Dr. Mackie. It encouraged me and my peers to become STEM majors and taught us that there are more careers in STEM than doctors or math teachers. Without STEM NOLA, we would not have been exposed to cool

stuff such as drones, alternative energies, magnetic levitation, and hands-on builds, like cars and boats."

Today, Troy has a degree in Mechanical Engineering and is employed at Lockheed Martin. He served as an intern with STEM NOLA during college, and he returns periodically to volunteer and to mentor young students as a STEM professional.

STUDENT SPOTLIGHTS

Our success is ultimately demonstrated by the accomplishments of the young people who have participated in our programs and the expanded heights that they have since reached. Their stories further the story of STEM across New Orleans and across the country.

“I am so grateful to have had the educational experiences with Dr. Mackie. It encouraged me and my peers to become STEM majors and taught us that there are more careers in STEM than doctors or math teachers.”

TROY, STEM GRADUATE

“

I love watching my daughter's love for science grow. STEM is magical if presented in the right way. I wish STEM NOLA existed when I was a child.”

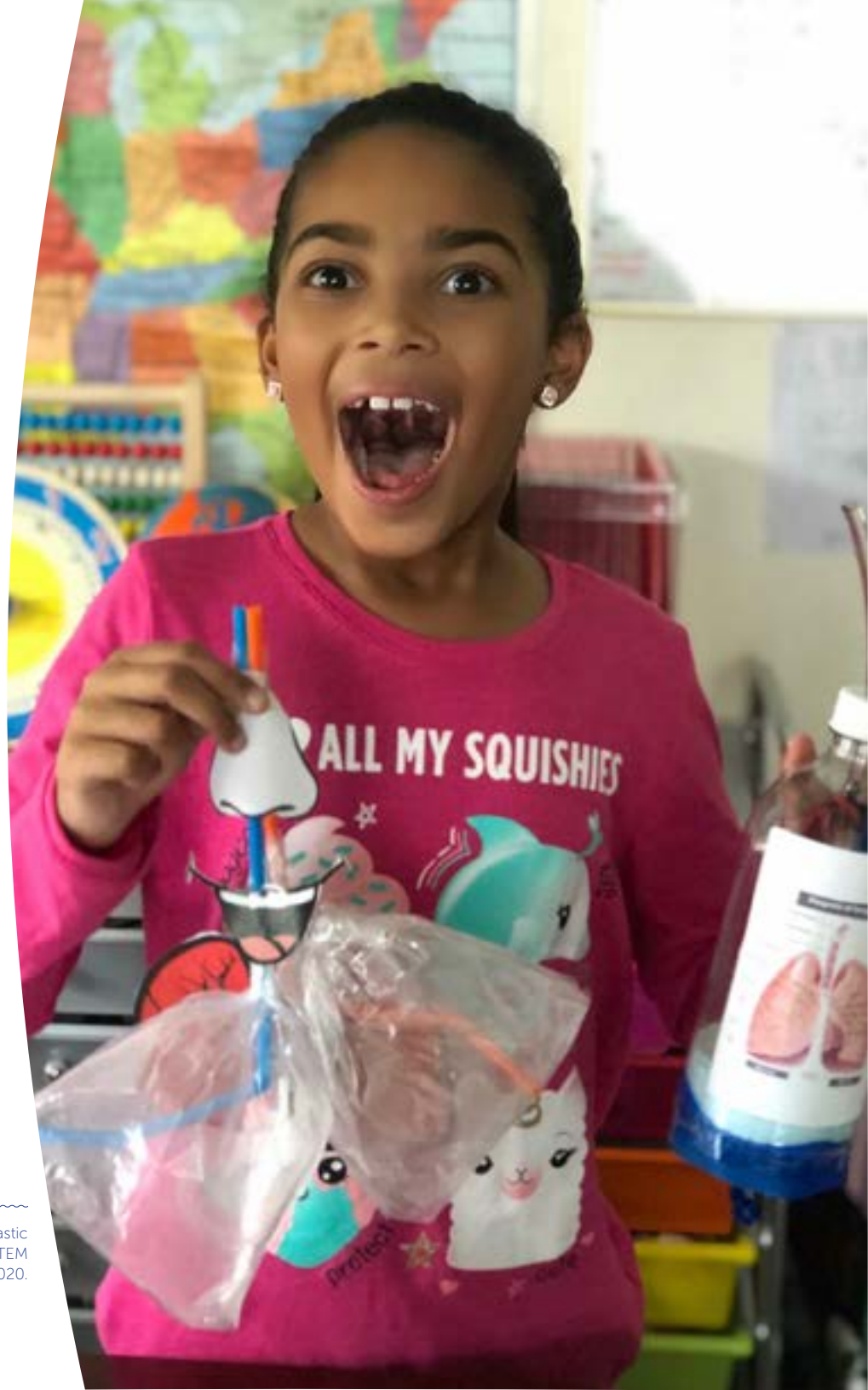
- STEM NOLA PARENT

PARTNERSHIPS

STEM NOLA's work across Louisiana relies on partnerships with numerous community-based organizations, corporations, government entities, and nonprofits that help bring STEM learning to the places where children, families and educators already gather. They include Agenda for Children, Brothers Empowered to Teach, 100 black men, Boys Town, Kingsley House, the New Orleans Recreation Department, Son of a Saint, and TrainingGrounds.

STEM NOLA maintains partnerships with more than 100 schools across Louisiana that engage students in virtual activities, host STEM Fests, purchase STEM kits, and/or rely on our high-quality professional development and instruction. In addition, we regularly provide professional development for their teachers. Since 2020, we have partnered with schools to offer virtual programming for students in response to the pandemic.

Right: Kyleigh Gilbeaux became a regular and enthusiastic STEM Saturday and STEM @Home participant when STEM NOLA began virtual programming in 2020.



FORWARD MOMENTUM

In partnership with Ochsner Health System, STEM NOLA is presently building the **STEM Innovation Center**, a new 42,000 square-foot headquarters and innovation center in New Orleans East. The Innovation Center will allow STEM NOLA to

reach even more students and make New Orleans a national leader in innovation, workforce development and entrepreneurship. We expect the STEM Innovation Center to reach 33,000+ community members in its inaugural year.

We anticipate the following regional socioeconomic and environmental impacts:

- Prepare hundreds of high school and college students annually for success in STEM careers each year for decades to come, fueling the growth of high-wage high-growth STEM industries in the region.
- Provide high-quality free STEM educational programming for more than 10,000 students from low-income backgrounds from Southeast Louisiana in pre-kindergarten through high school each year.
- Support the growth and sustainability of the region's STEM ecosystem- This project will advance the growth and sustainability of STEM NOLA and other regional STEM-focused nonprofit

organizations and programs that partner with STEM NOLA and use the new Innovation Hub.

In line with our vision, reaching and impacting more young people is at the heart of our plan forward. While we recently grew to an annual reach of 20,000 students in our virtual, in-person, and self-directed experiences, we envision more. By 2024, we expect to engage 100,000 students annually in our programming, ramping up each year as we expand.

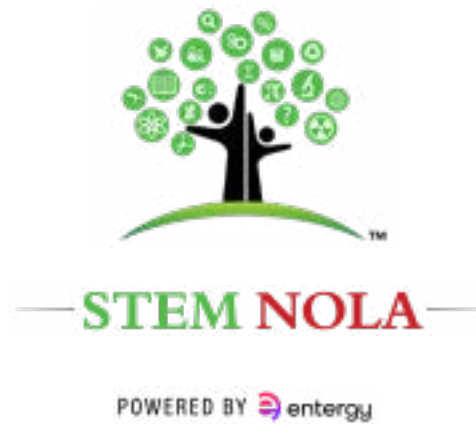
Momentum is inherent to the field of STEM, and thereby encompasses the core of our work.

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**Right:** Renderings of the future Ochsner and STEM NOLA Innovation Hub





**THANK YOU** for adding to this momentum through your interest and investment in regional and national STEM education. Together, let's continue to inspire, engage, and expose our present and future New Orleanian K-12 learners to explore and reach their vast potential.



MAKE YOUR CONTRIBUTION