

# STEM NOLA Ecosystem

Building Capacity through Building Community

## The National Academies Committee on PreK-12 STEM Education Innovations

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*STEM NOLA and STEM Global Action*

*Former Professor Mechanical Engineering*

***Critical Thinking • Collaboration • Communication • Creativity • Community***



# **Intentional, Consistent and Relevant Community-Based STEM Engagement**



# Our Model

Grow future **Innovators, Makers, and Entrepreneurs** through a community-centered model that provides **inspiration, engagement, and exposure** in the fields of STEM.





GROWING FUTURE INNOVATORS, CREATORS, AND MAKERS FOR THE 21ST CENTURY

**STEM NOLA**

SCIENCE • TECHNOLOGY • ENGINEERING • MATH



## **IMPACT / SCALE / Return On Investment**

- Engaged over **130,000+** K-12<sup>th</sup> students from over 3500 schools.
- Engaged over 3500+ STEM Professionals and College Student Volunteers
- Engaged over **25,000 Families**
- 87% Free and Reduced Lunch Participants / 47% Girls
- Paid **\$4 M+** in salary to College Students as Interns
- **\$20M+** Total Revenue since founding in 2013
- Provided Professional Development to 350+ Teachers
- Outcomes: **Collaboration, Communication, Critical Thinking, Creativity, and Community!**

# MAJOR SPONSORS

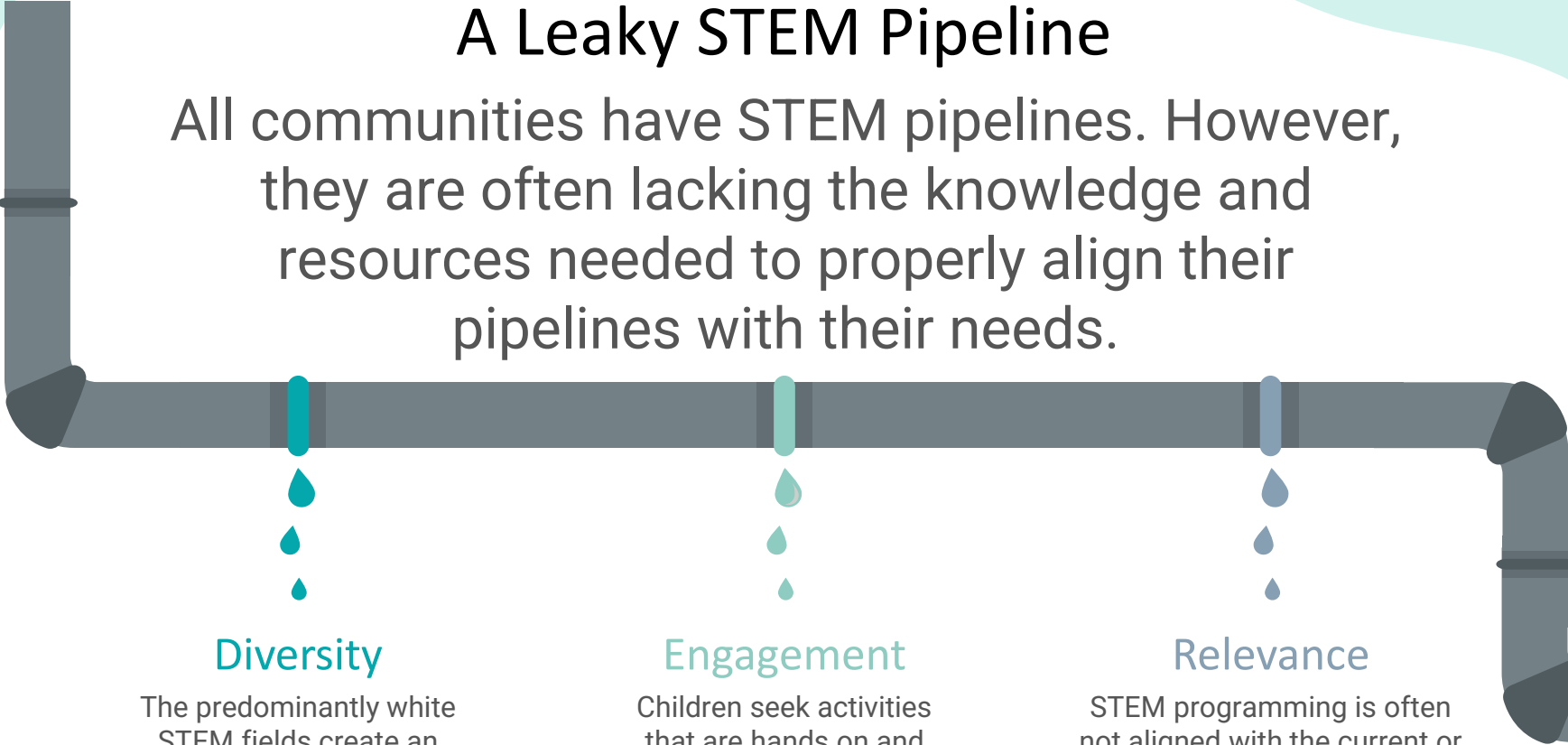


# MEDIA REPORT



# A Leaky STEM Pipeline

All communities have STEM pipelines. However, they are often lacking the knowledge and resources needed to properly align their pipelines with their needs.



## Diversity

The predominantly white STEM fields create an environment in which Black children and other children of color feel out of place, leading them to exit the pipeline or to not enter in the first place.

## Engagement

Children seek activities that are hands on and stimulating. Reading and lecture based STEM education leads many students to opt out of STEM.

## Relevance

STEM programming is often not aligned with the current or projected focuses of local STEM industries & universities, leading students to go elsewhere for their higher education and employment.





# Barriers to STEM Success



## Access

Lack of geographic and/or financial access to programming



## Relevance

Lack of cultural & environmental relevance of STEM programming



## Navigating the Field

Uncertainty around how to identify and navigate opportunities in STEM



## Stereotype Threat

Internalization of stereotypes around academic inferiority



## Distrust

Distrust in existing systems of education and support due to historical discrimination



## Exposure to Role Models

Lack of engagement, exposure and connection to STEM careers and role models



## Investment

Insufficient investment at the base of the economic development pyramid



# Create Build Make

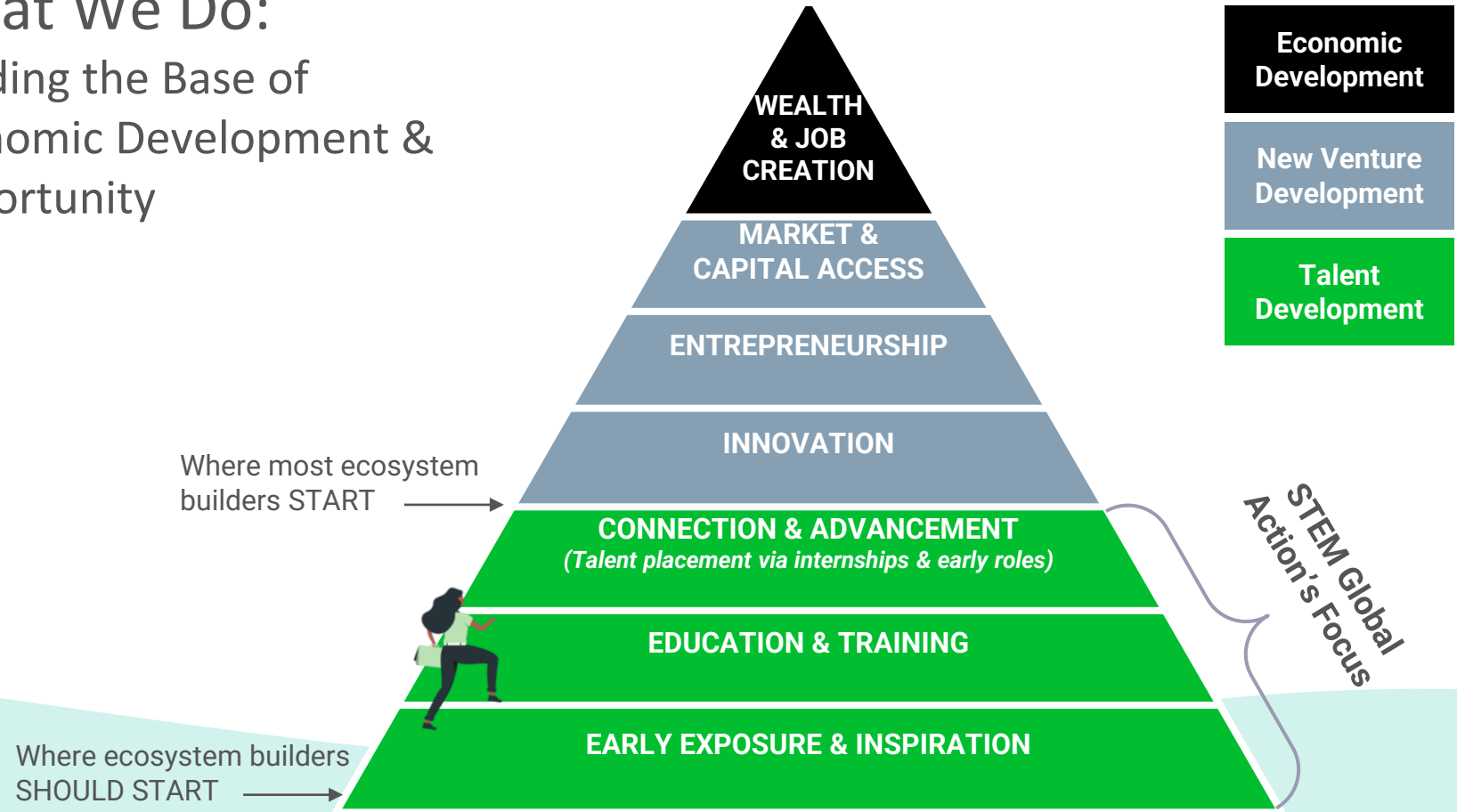


Through STEM NOLA, K-12 students are afforded the opportunity to see themselves as STEM-Based career participants.



# What We Do:

## Building the Base of Economic Development & Opportunity



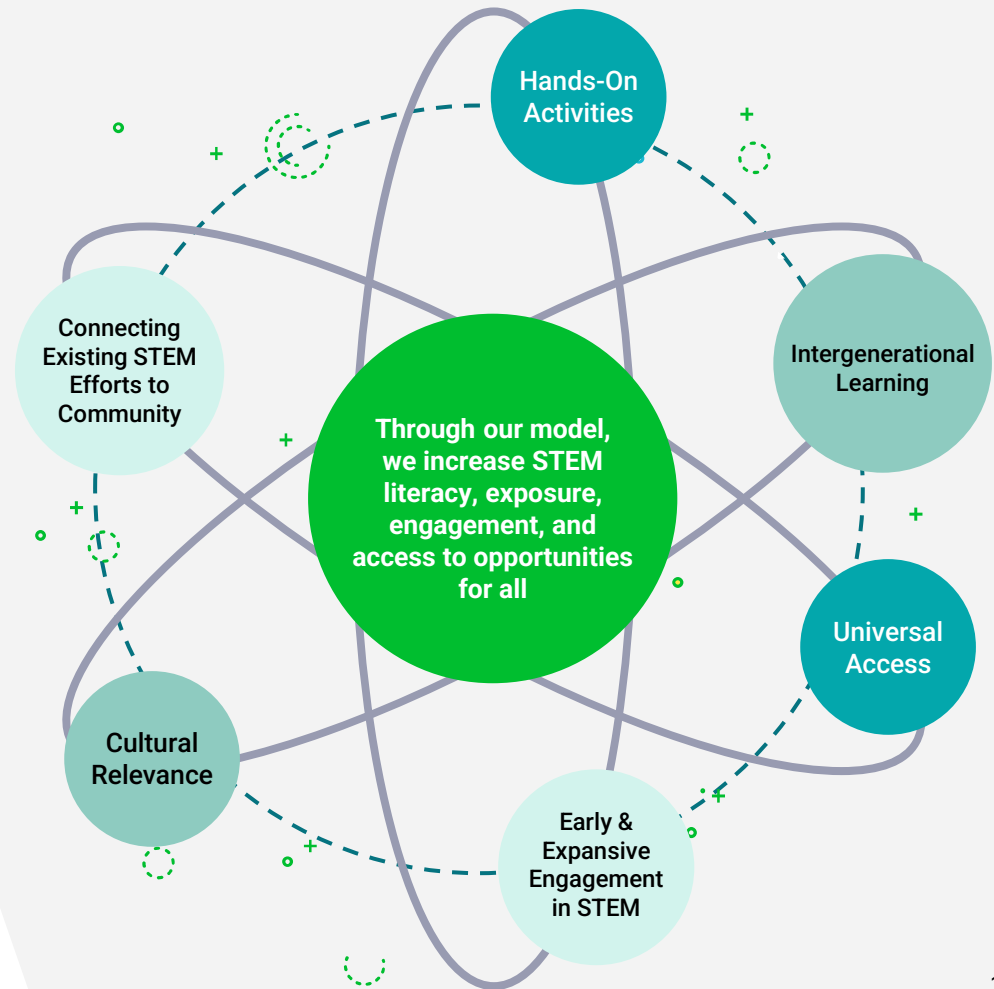
## How We Do It:

### The Core Components of Our Model

**Our *community engagement model* prioritizes young people, their families, and the community above all else.**

We serve as a trusted partner to families and communities, bringing them high quality STEM programming and **helping them navigate** the STEM ecosystem.

In doing so, we shift the way students approach and engage with STEM, and we shift the way that STEM institutions engage with students.



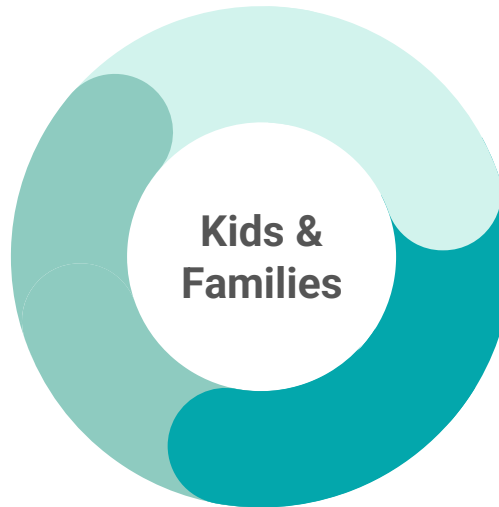
# Creates Value for Our Partners, Volunteers, & Funders

We center **kids & families** in our programming, while also providing **substantial benefits to partners, volunteers & funders** who help bring our programming to life. This value keeps the ecosystem rich with financial and human resources.

## • Professional Volunteers

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Connection to other STEM professionals  
Opportunities to give back and engage civically  
Connection with community  
Engagement with other children and families  
Experience of joy and hope



## • STEM Employers

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Opportunity to support community  
Brand enhancement  
Corporate Social Responsibility in action  
Long-term workforce development  
Connection to STEM college interns  
Connection to K12 STEM students

## • College Interns & Volunteers

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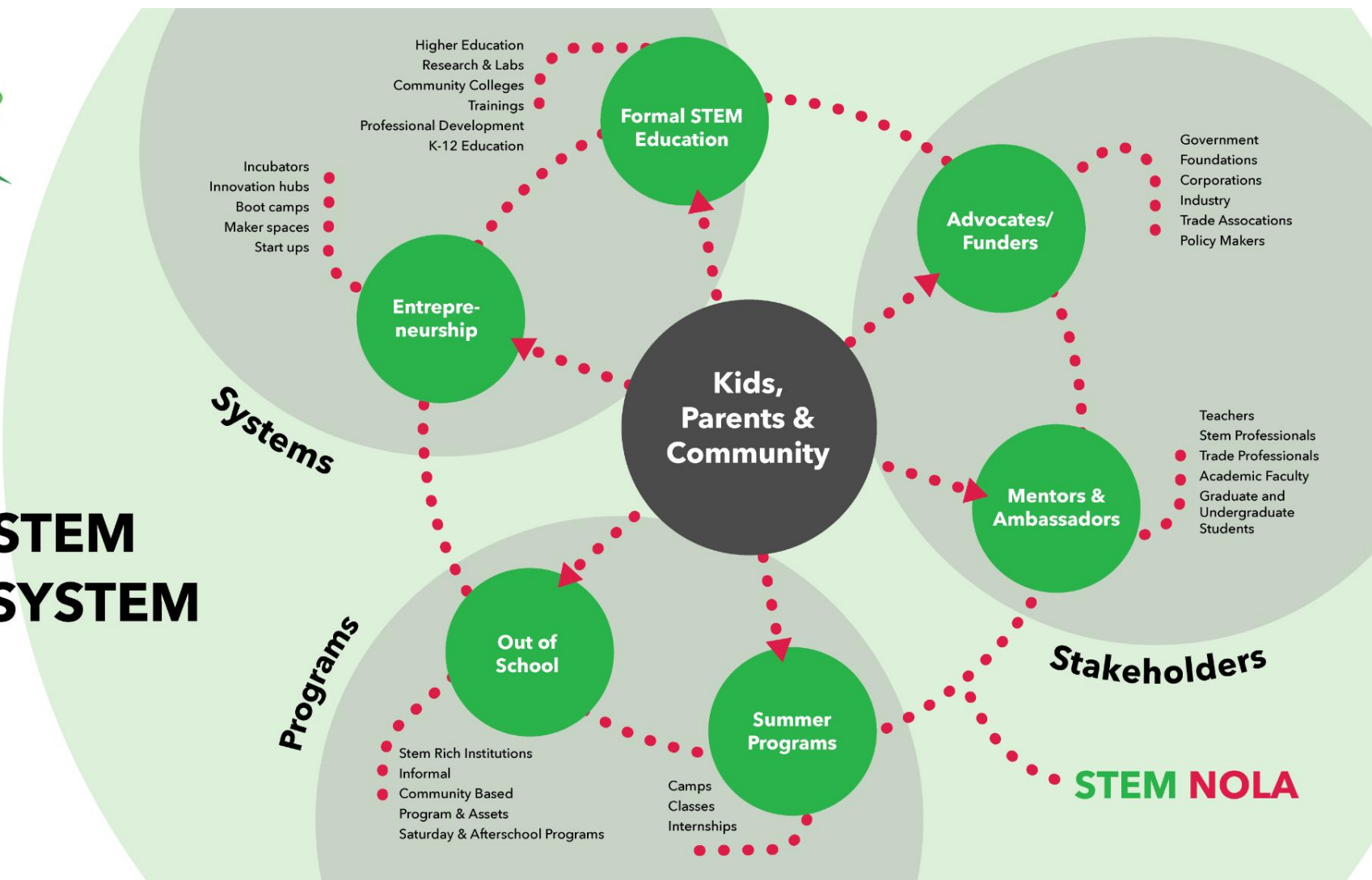
Exposure to community  
Training  
Mentoring & real word experience  
Civic engagement  
Connection to employers  
Paid internship experience in STEM





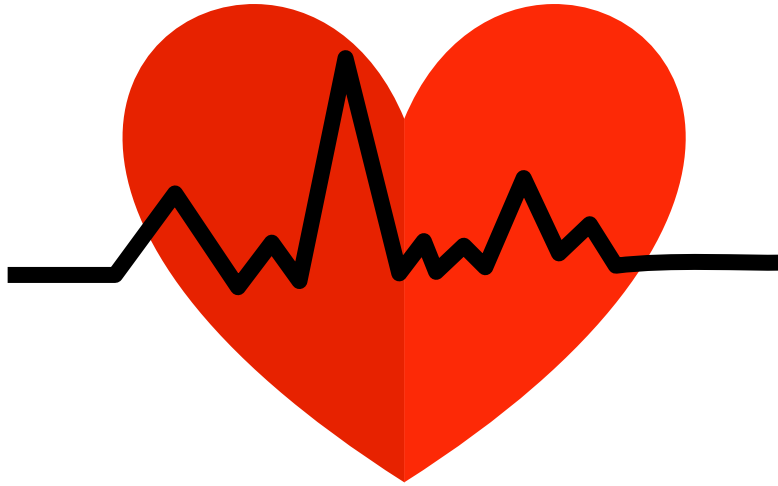


# THE STEM ECOSYSTEM



# STEM NOLA Solution

## Intentional and Consistent



Engagement

Accessibility

Relevancy







# Our Services



Summer Camps

In School

Out of School

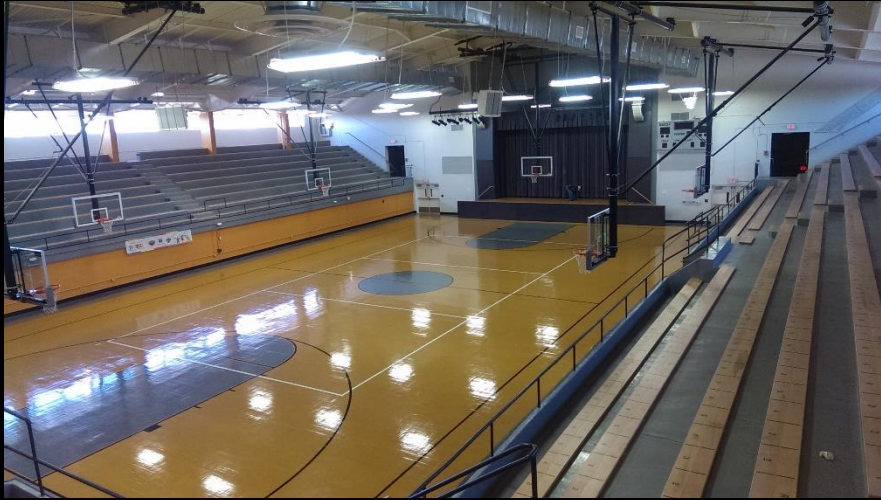
Private Label

STEM Kits & Curricula





# Transforms a Recreation Facility into a Laboratory









# Professional Volunteers and College Student Interns

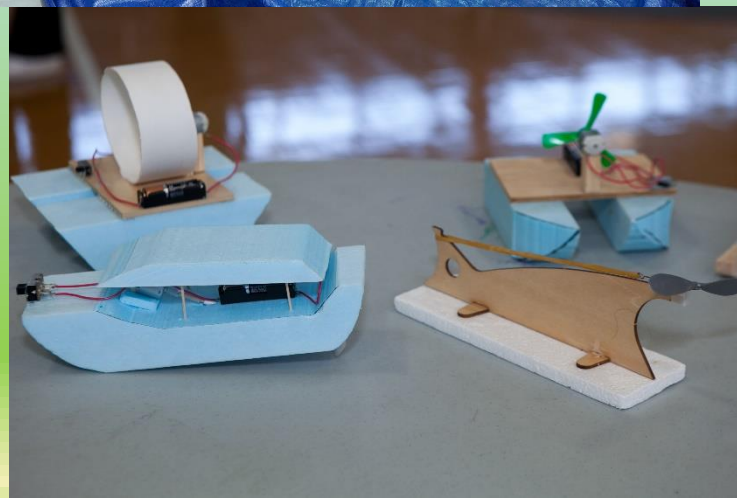




# Hands-On Engagement





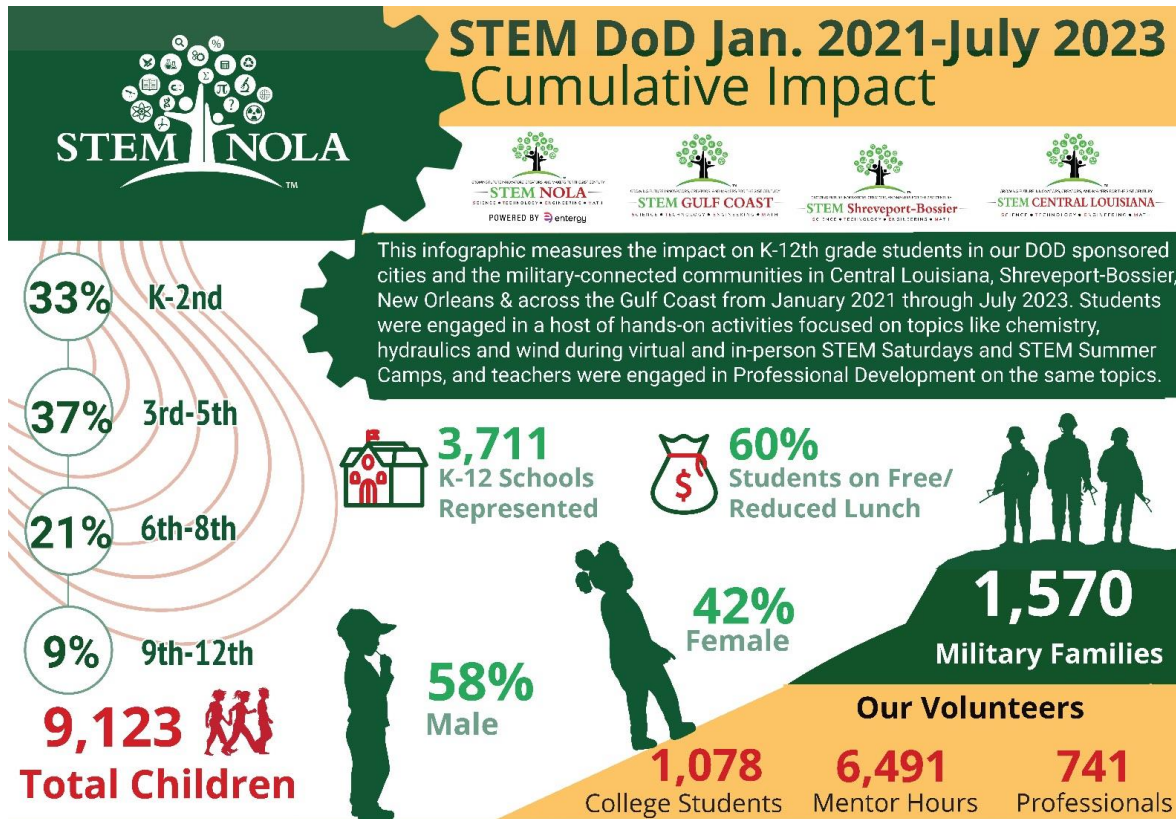




# STEM FEST

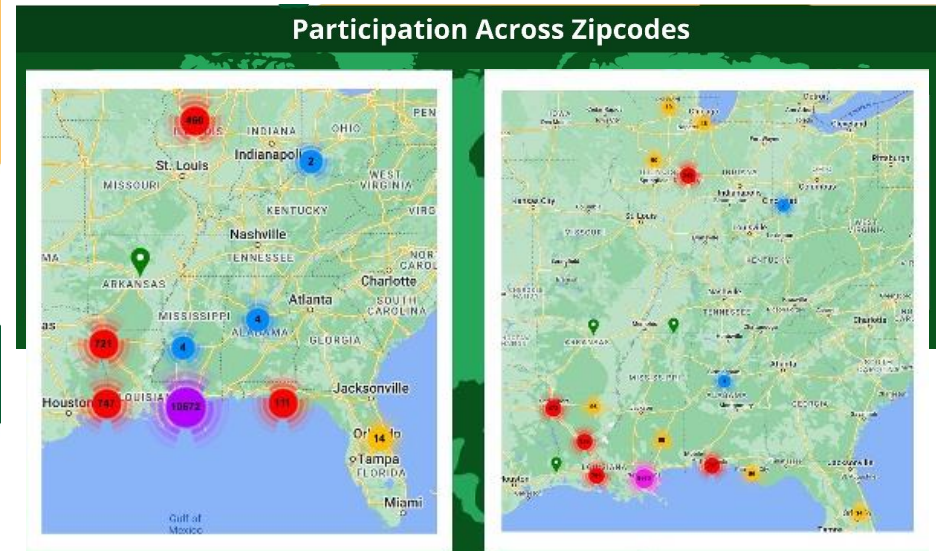
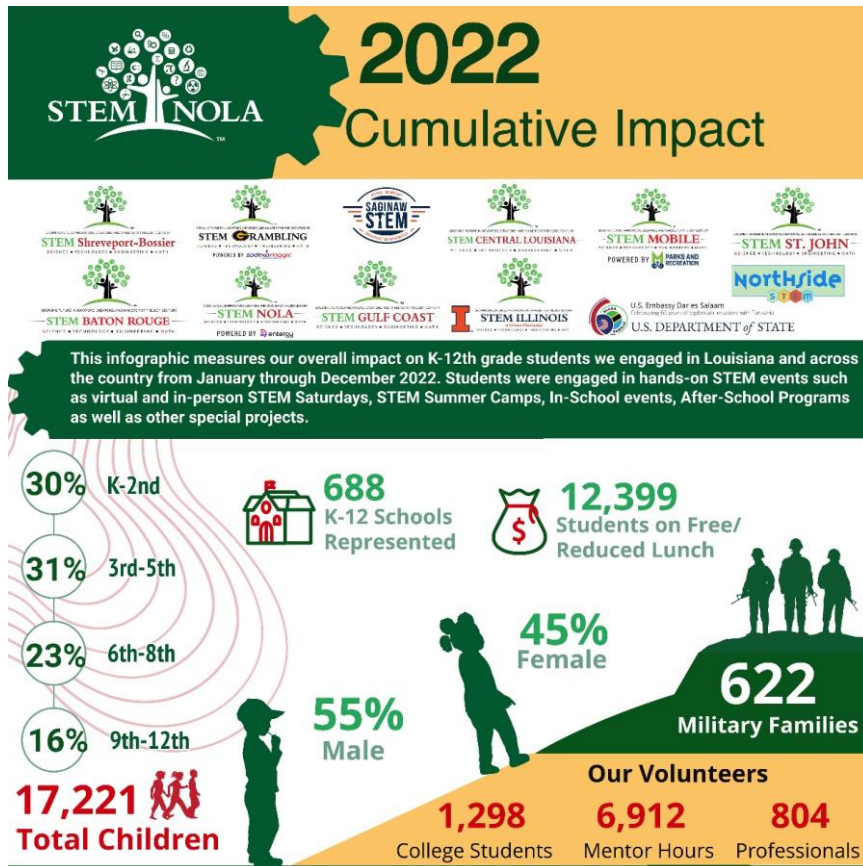


# What data demonstrates the impact of your program?

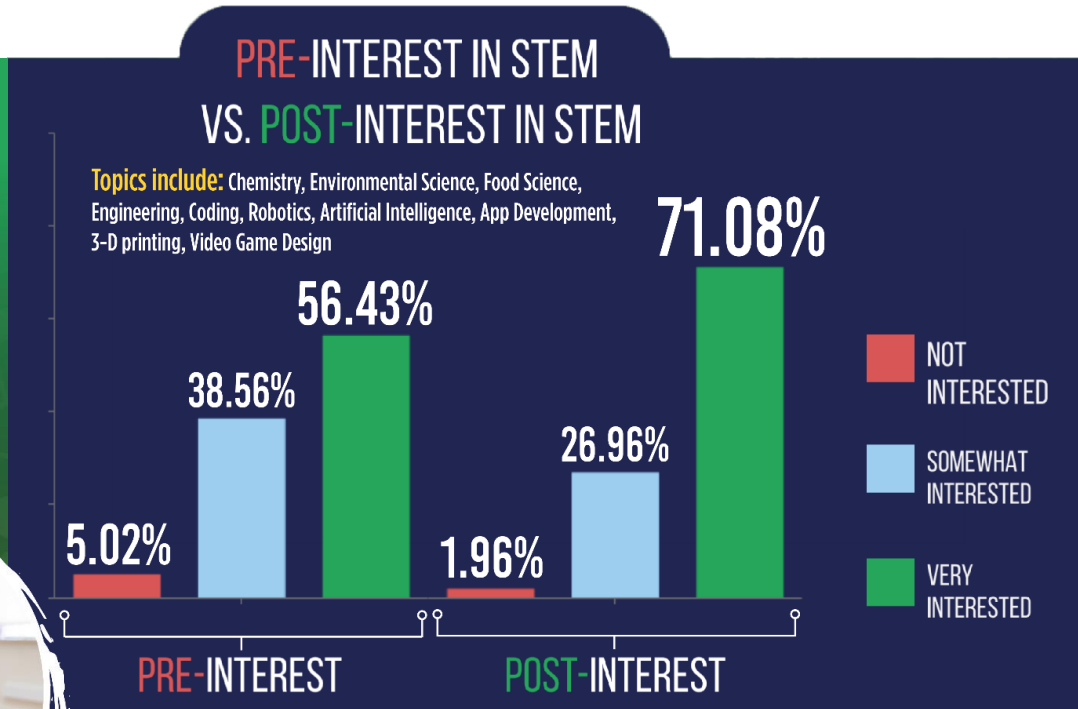




# LARGE SCALE IMPACT



# SUMMER IMPACT





# Scale Our Core Programming

**STEM Saturdays and STEM Fests** are the tip of the spear in our growth strategy. We enter all new communities with this core programming, energizing the community and creating immediate impact.



**3.5 hours** of engaging, hands-on STEM learning.



**100s of K-12 students**, primarily students of color, separated into four age groups.



**Free attendance** for students who qualify for free or reduced lunch.



**70+ racially and technically diverse volunteers** from local STEM employers and colleges. 4:1 K-12 student to college student ratio.

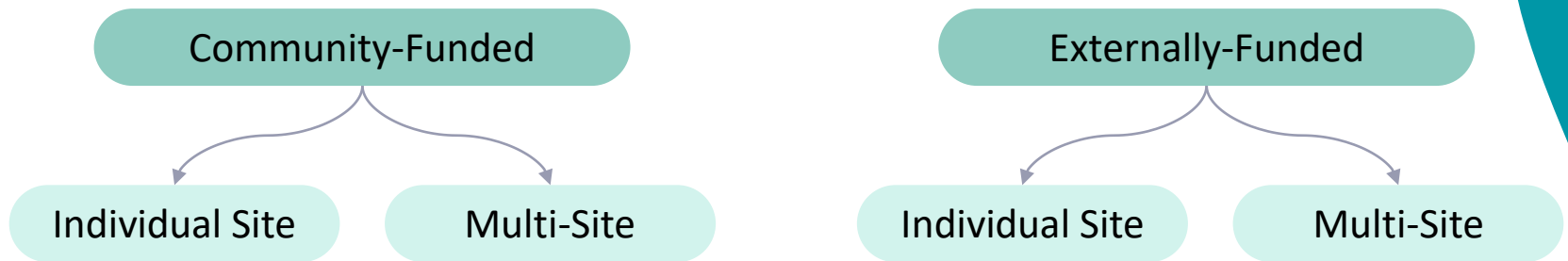


**A culminating, functional build (kit)** that students can take home after. Examples include rockets, catapults, cars, boats, circuits, & more!

# Our Approach to Scaling

Our network launched in New Orleans and has scaled to include sites and affiliates across the Gulf South and across the country. This growth has primarily been organic, fueled by outreach from interested cities and social marketing.

Depending on the needs and the resources available in different communities, STEM Global Action can enter a community via community funding or external funding, and can deliver services in one site or across many. It all depends on what the community needs.





# Scaling Our Model

The strength of the our model lies in its versatility and ability to deploy anywhere.

We can deliver pop-up events in any community around the world, we build out staff on the ground in cities that fit certain criteria, and we license our model to affiliate partners who join our learning network.

STEM  
Ecosystem  
Maturity

## Affiliate

Actors in expansion license the model for STEM Activation - with a focus on STEM Saturdays and STEM Fest. All Affiliates receive on-boarding support from centralized team member, and some affiliates choose to retain and fund ongoing staff support.

Requires: Local Organization Funding & Owning Implementation

## STEM Site

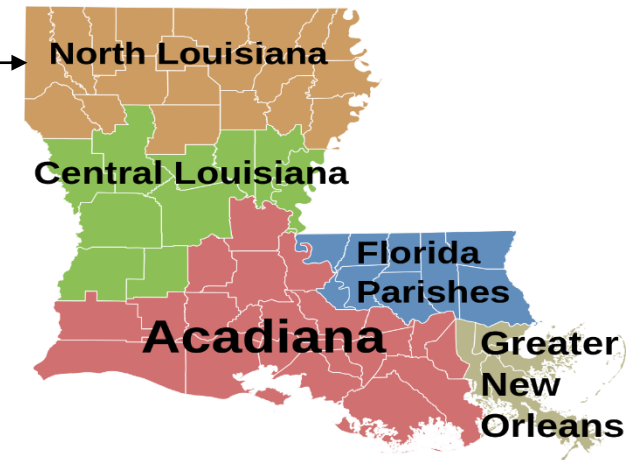
Full-Time staff members delivering STEM Activations, supplemented by a targeted set of offerings such as teacher training, and ecosystem acceleration.

Requires: Funding Sponsor & Industry Partner

## Pop-Up Events

One-time events, with centralized team managing and delivering in-person or virtual programming nationally and internationally.

Requires: Local Organization Supporting Recruitment



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**STEM CITY**

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**STEM NOLA**

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**STEM MOBILE**

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GROWING FUTURE INNOVATORS, CREATORS, AND MAKERS FOR THE 21ST CENTURY

**STEM BATON ROUGE**

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**STEM GULF COAST**

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**STEM GRAMBLING**

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POWERED BY **sodexo**  
**MAGIC**



GROWING FUTURE INNOVATORS, CREATORS, AND MAKERS FOR THE 21ST CENTURY

**STEM ILLINOIS**

SCIENCE • TECHNOLOGY • ENGINEERING • MATH





**If you do not  
intentionally,  
deliberately and  
proactively  
include, you  
unintentionally  
exclude.**



## CONTACT US

[www.stemnola.com](http://www.stemnola.com)

On social media @stemnola



Interested in bringing STEM NOLA programs to your school or community?  
Get in touch with us!



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**Help Us Bring STEM to Your  
Community!**