

SOUTH CAROLINA'S COALITION FOR MATHEMATICS & SCIENCE

SCCMS

- ACHIEVEMENT BY DESIGN -

THE SC STEM LEARNING ECOSYSTEM 2021

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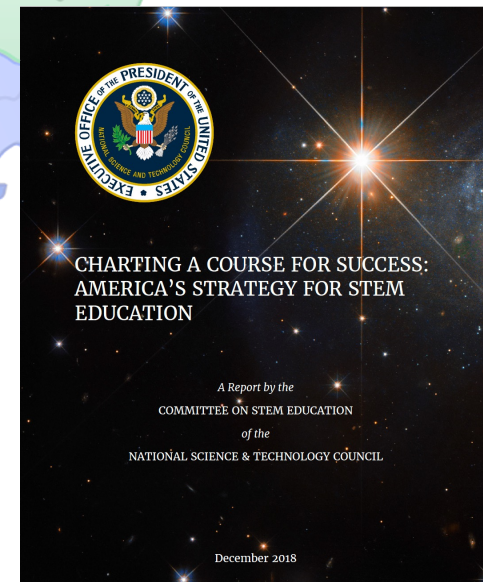
FOUNDING PARTNERS



The STEM Ecosystem in South Carolina

To ensure that all South Carolinians, especially those between the ages of 4 and 18, have access to a wide spectrum of enriching, individualized, and accelerated STEM learning opportunities in school by **improving teacher quality** with emphasis on **learning in the STEM content areas**.

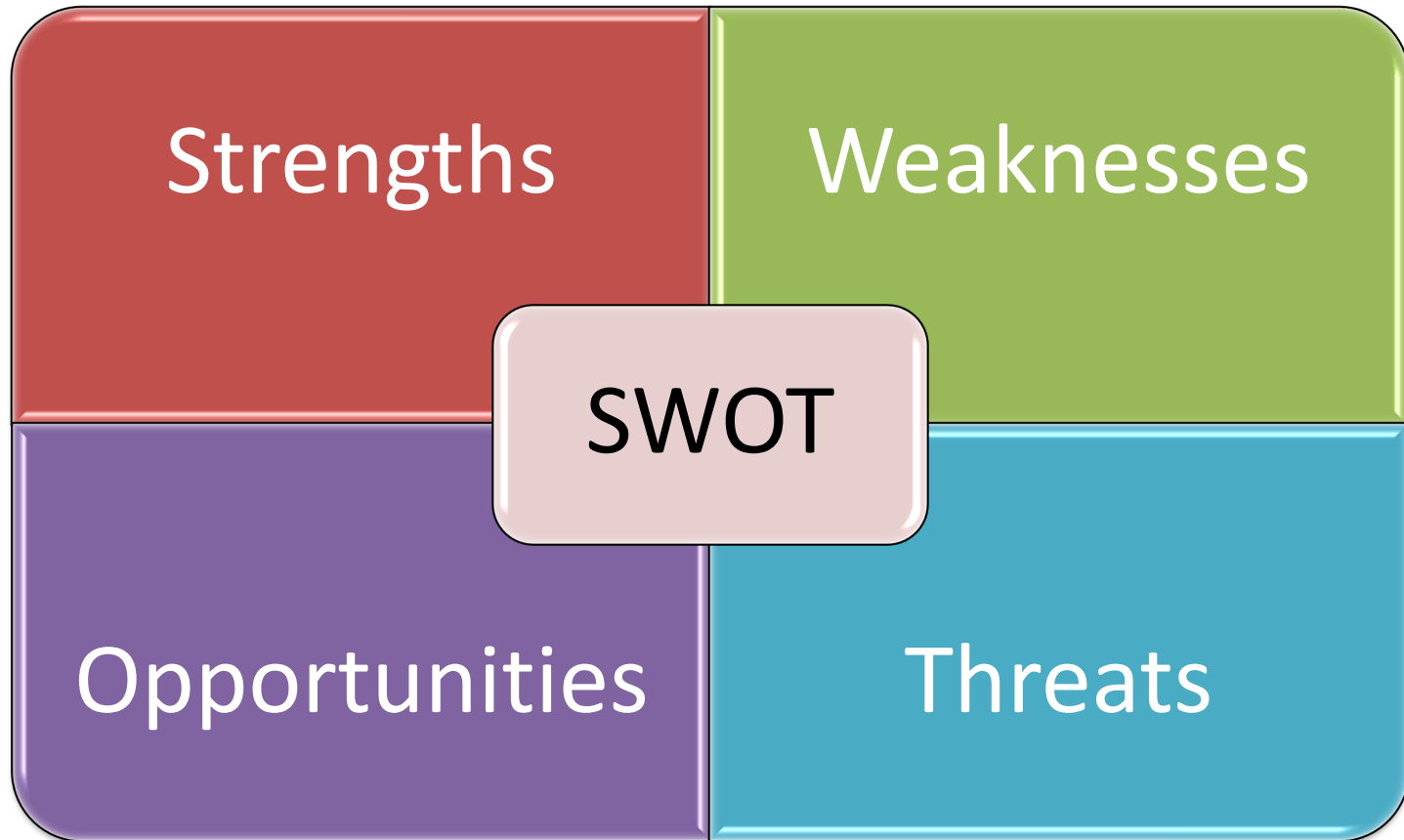
To foster a robust, sustainable, state-wide STEM learning ecosystem by **improving connections across K-12, Career, and Post-Secondary institutions**.



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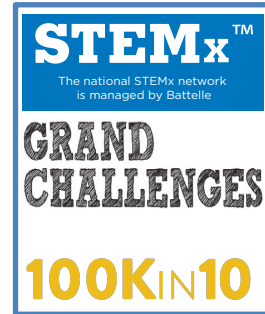
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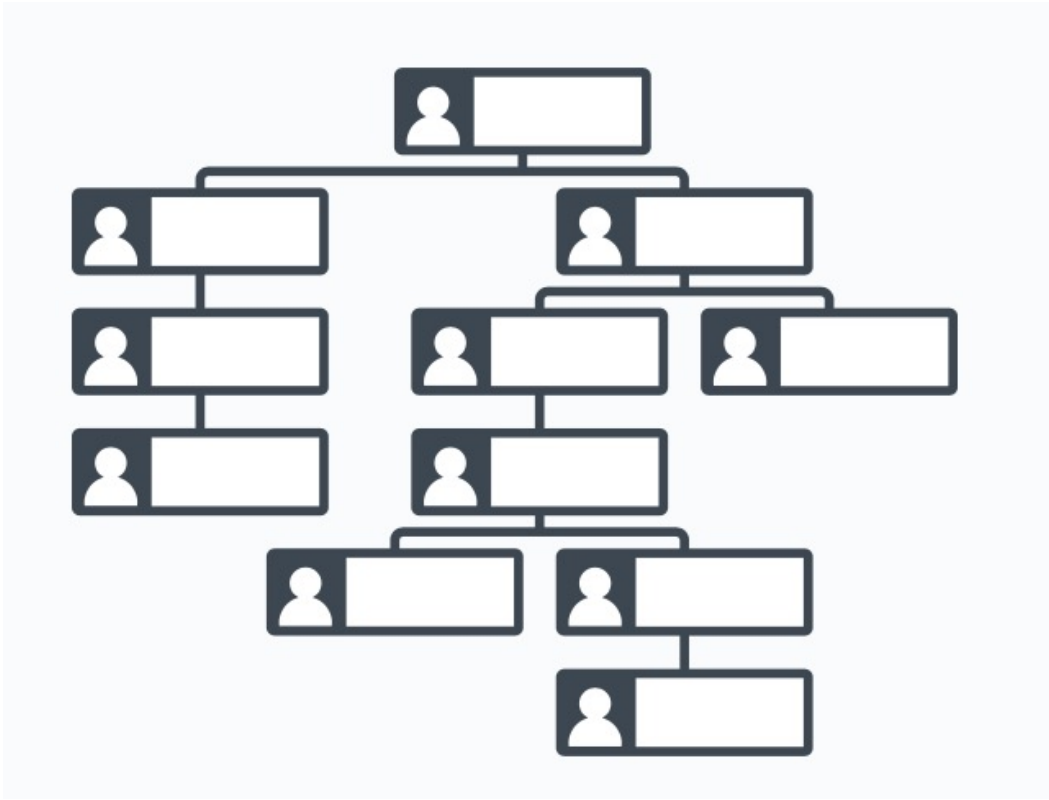


Strengths

- What we do better than anyone else.
- What makes us unique.
- Values that drive our work.



Weaknesses



What practices should we avoid?

What do we lack that limits our success?

Study shows SC student achievement impacted by COVID-19

On average, nearly seven out of ten South Carolina students in grades 3 through 8 are projected **not to meet grade level proficiency standards in mathematics** and English Language Arts in spring 2021.

Comparing fall 2019 to fall 2020 in ***mathematics* achievement**, the **COVID slide was most dramatic in grades 2 through 5**, with between 10% and 16% fewer South Carolina students expected to meet grade level proficiency.

South Carolina students declined in median percentile rank in all grades other than Kindergarten in mathematics compared to South Carolina students in the same grade in fall 2019. **The largest percentile declines were in mathematics.**

<https://www.eoc.sc.gov/news/2021-01/study-shows-sc-student-achievement-impacted-covid-19-0>

Opportunities

What trends are we paying attention to?

Mathematical Readiness with Emphasis on Early Childhood Teaching and Learning

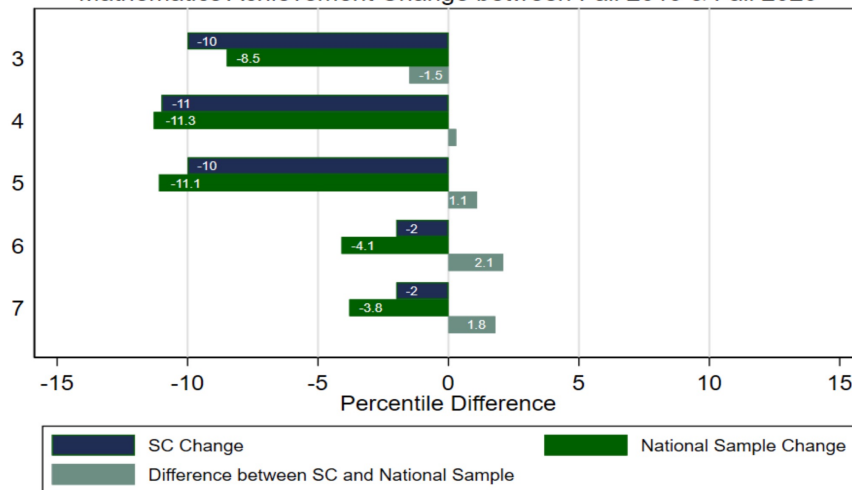
S²TEM Centers SC will engage 50 early childhood teachers in ongoing, face-to-face and virtual professional learning experiences and instructional coaching support to increase their knowledge of and ability to implement evidenced-based practices in mathematics instruction.

S²TEM Centers SC will also partner with EdVenture campuses in Columbia, Hartsville and Myrtle Beach to develop STEM messaging for caregivers to be included throughout the museums.

Additional funding request
for implementation
in 2022-2023 - \$180,000

<https://www.eoc.sc.gov/news/2021-01/study-shows-sc-student-achievement-impacted-covid-19-0>

Comparisons of Change in Math Scores By Grade Over Time
Mathematics Achievement Change between Fall 2019 & Fall 2020



Opportunities

What trends are we paying attention to?

Where are Tomorrow's STEM Teachers?

HINT: They are not from here...

0.43%

MATH EDUCATION

0.17%

SCIENCE EDUCATION

0.42% / 0.15%

N=96

N=33

Opportunities

What trends are we paying attention to?

Retention of STEM Teachers with Emphasis on Rural Communities

S²STEM Centers SC will engage 30 STEM Teacher Fellows (early career, secondary level STEM teachers with 5 – 7 years of classroom experience) in ongoing, face-to-face and virtual professional learning experiences and instructional coaching support to build STEM education leadership capacity in their communities.

Additional funding request for implementation in 2022-2023 - \$220,000

Estimated cost of turnover/teacher in rural schools = \$9,000

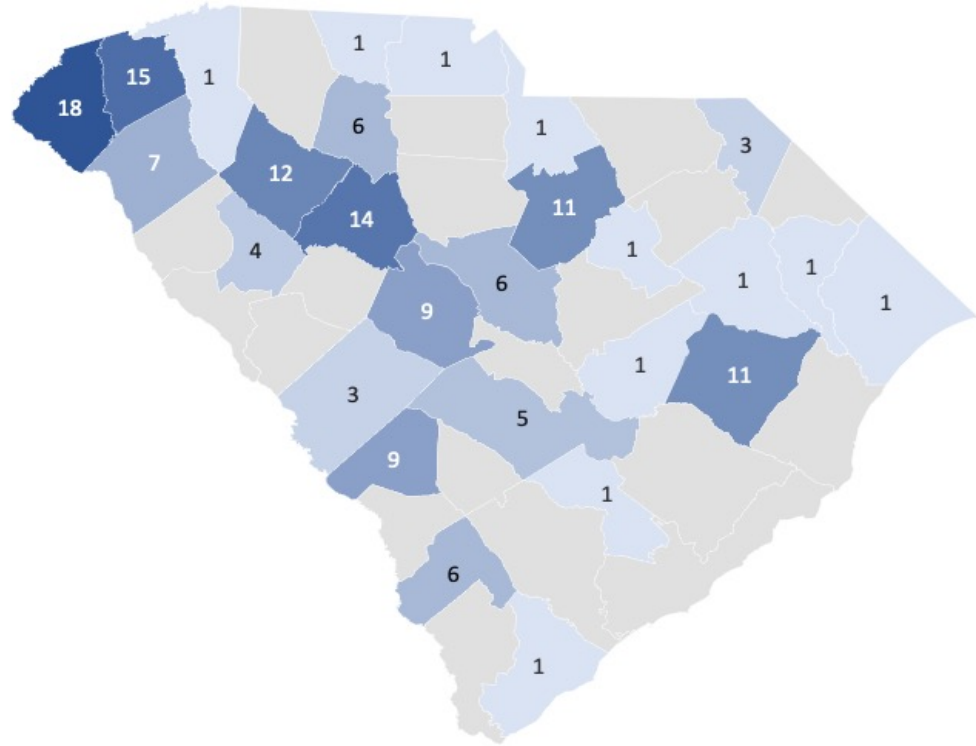
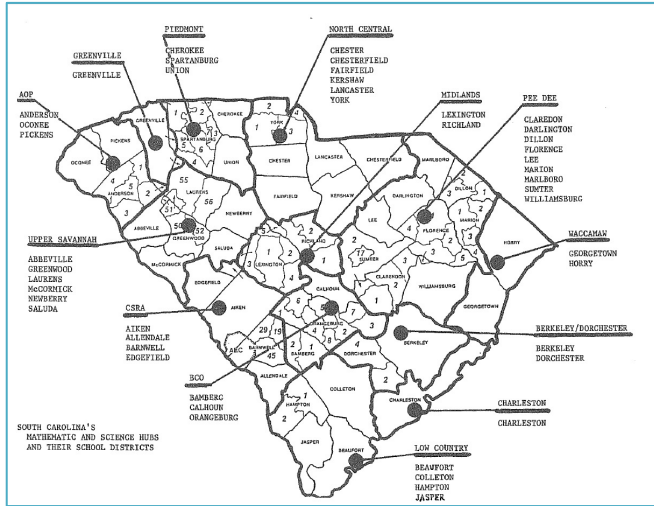


Teacher turnover is costly, and not just in dollars. Studies show that student achievement suffers in schools with high turnover.

<https://learningpolicyinstitute.org/product/the-cost-of-teacher-turnover>

Opportunities

What trends are we paying attention to?



1993

2003

2012

2019

2021

\$6,049,928*

\$2,595,901*

\$2,072,091

52

26

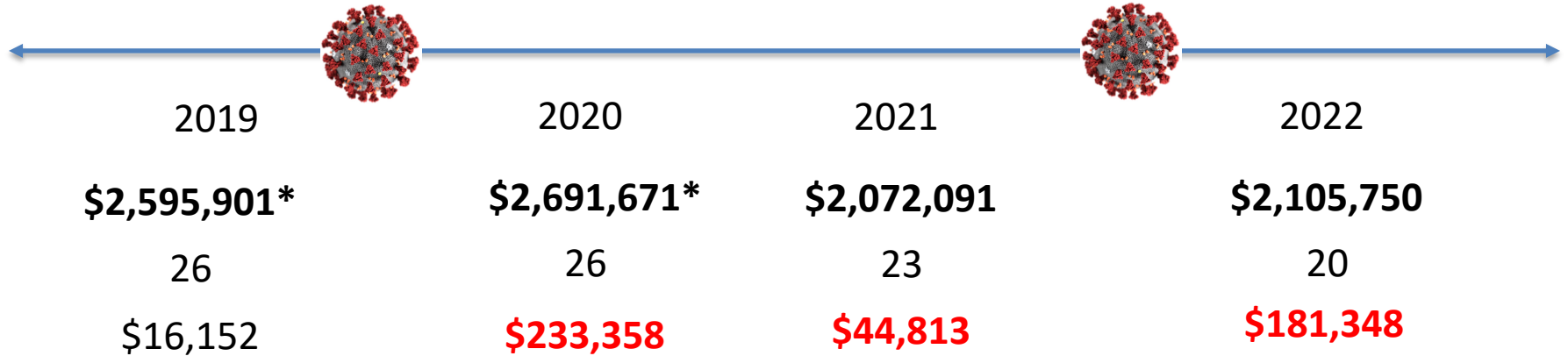
23

\$16,152

\$44,813

External challenges that cause our organization to be vulnerable.

Threats



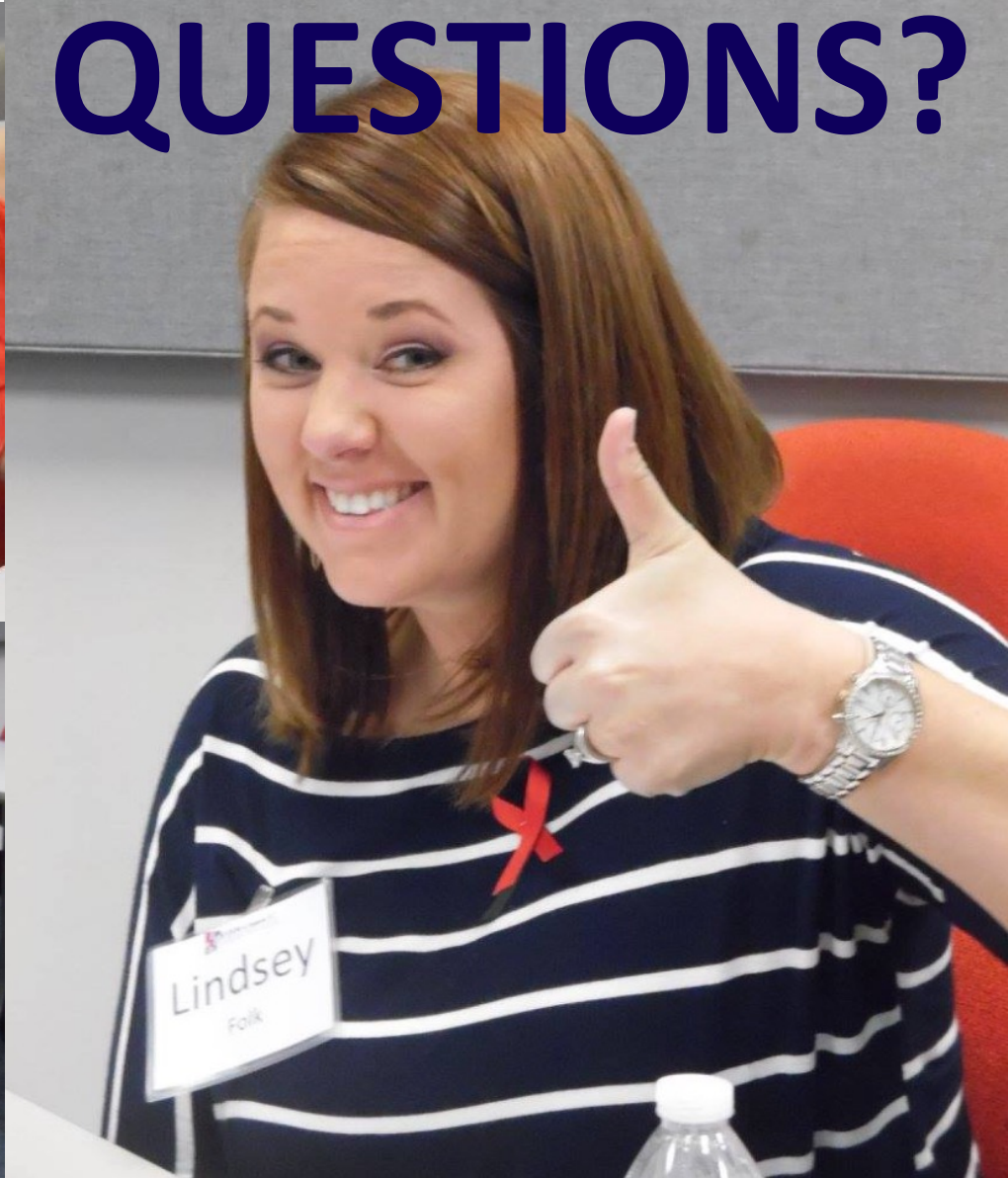
*https://www.bls.gov/data/inflation_calculator.htm

\$459,519

External challenges that cause our organization to be vulnerable.

Threats

QUESTIONS?



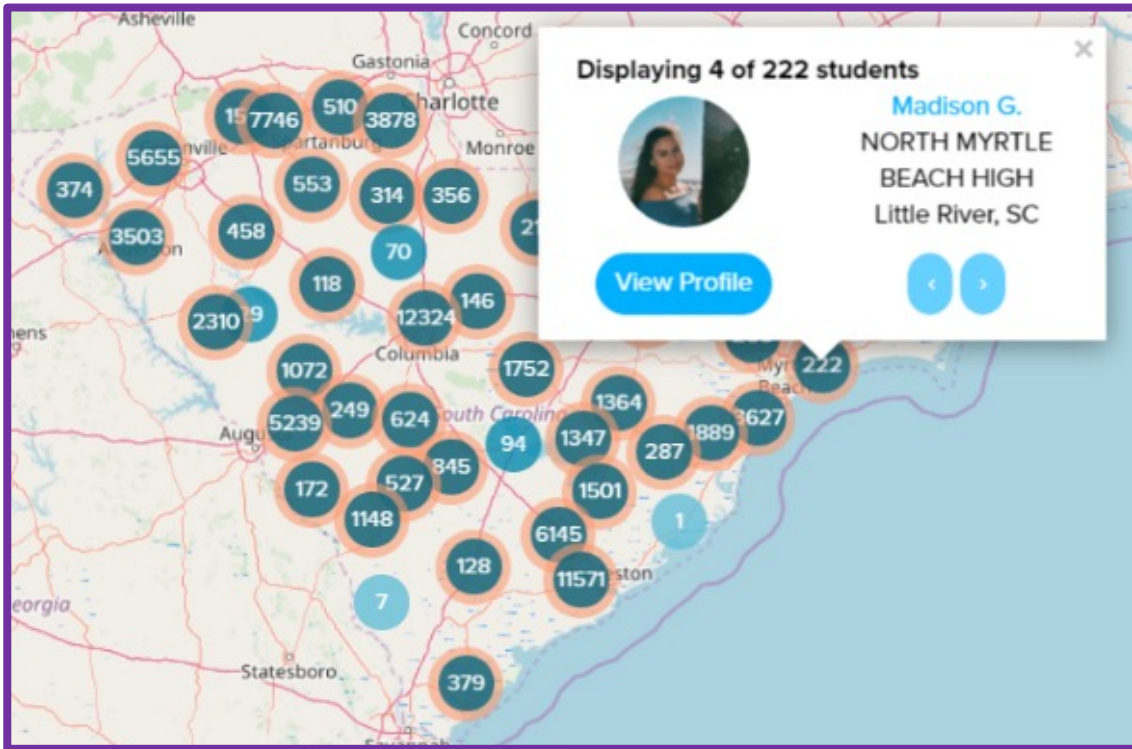
FOUNDING PARTNERS





THE SC WORKFORCE ECOSYSTEM

The Tallo Talent Base Consists of approximately 100,000 Talent Subscribers, 150 Corporations, and 20 colleges in South Carolina



ECOSYSTEM STAKEHOLDERS



SC Department of
Commerce



South Carolina
Manufacturers
Alliance



SC Department
of Education



SC Department of
Employment and
Workforce



SC Technical
College System



SC Council On
Competitiveness

WHAT IS STEM SIGNING DAY?

STEM Signing Day celebrates high school seniors who choose to pursue STEM (Science, Technology, Engineering, and Mathematics) education at technical programs, two- and four-year colleges and universities.

It's the STEM answer to the question: What if students had the same sort of fanfare accompany their decision to join the country's top colleges and universities? And many are powered by Boeing with help from companies like Nucor and BMW and local community organizations.



HISTORY OF SIGNING DAY IN SC

The South Carolina Department of Commerce, the SC Manufacturers Alliance, and Tallo have collaborated for the last five years to power STEM Signing Day each Spring.

Each year two high school seniors from each county are chosen as STEM Signing Day honorees.

The popularity of STEM Signing Days has become a major initiative for STEM-focused industries. Each year STEM Signing Day honorees are recognized by industry leaders across SC. Many participating industry partners recruit STEM Signing Day honorees for apprenticeship, internship, and scholarship opportunities.



Alijah, a Tallo user from Myrtle Beach, SC, made a connection with Boeing at the 2019 SC STEM Signing Day. This connection led to him being accepted into the Boeing Scholars program which provides scholarships for students interested in aerospace to attend Embry-Riddle Aeronautical University.

WHO SHOULD APPLY FOR STEM SIGNING DAY?

High school seniors from across the State who plan to pursue STEM education at technical programs, two-and four-year colleges and universities are invited to apply.

Examples of past honorees career paths:

- Health Science student at Trident Tech
- Engineering student at Clemson University
- Ford Apprentice
- Michelin Tech Scholar – Studying at Spartanburg Community College
- Science Education student at UofSC
- Pre-veterinary student at Lincoln Memorial University
- Welding student at Aiken Tech
- Radiologic Technology student at Technical College of the Lowcountry
- Pre-dentistry student at Howard University
- Mechatronics student at Piedmont Technical College
- Logistics student at UofSC – Upstate
- Computer Technology student at Francis Marion University
- Packing Science student at Clemson
- Biology student at Coker College
- Aerial Systems – Military commitment at Arizona State University
- Forensic Science student at College of Charleston



WHAT IS THE STEM SIGNING DAY MENTORSHIP PROGRAM?

The STEM Signing Day Mentor Program enables honorees from 2021 STEM Signing Day to connect with Boeing mentors directly on Tallo. This program was designed because 2020 STEM Signing Day Honorees asked for it!

Boeing mentors will stay in touch with honorees throughout their first year of college – engaging in meaningful conversations to support them on their journey to obtain a STEM degree.

The screenshot shows the Boeing Mentorship Program page on the Tallo platform. The header features the Tallo logo and navigation links: Activity, Categories, Discussions, Best Of..., and Groups. The main title is "Boeing Mentorship Program" with a search bar below it. The page content includes a "YOUR FUTURE IS BUILT HERE" banner, a "Boeing Mentorship Program" section with a description, and a list of categories and popular tags. The categories list includes: All Categories (66), Boeing Mentorship Program (2), Introductions, Networking Space, Boeing Mentorship Teams, Professional Organizations (1), Welcome to the Community (1), Celebrate Achievements (19), Career Exploration (33), Higher Education (3), High School Life (4), Financial Aid (3), and Reported Posts (3). The popular tags section shows: Slide 1, KQ 1, Alumni 1, and Career Prep 1. The main content area displays "Introductions" and "Networking Space" sections, each with a "Time To Make A First Impression!" button and a description of the program's purpose. The "Networking Space" section lists various topics: Business, Cybersecurity, Data Science and Analytics, Engineering, and Information Technology, each with a "Time To Make A First Impression!" button and a description. The "Boeing Mentorship Teams" section is also visible at the bottom.



Questions? Email: etodd@tallo.com

Community Engagement & Outreach Overview

Project Leads

- Carmelina Livingston
clivingston@s2temsc.org
- Dallas Thomas
dthomas@imagineupstate.org

Collaborations & Projects

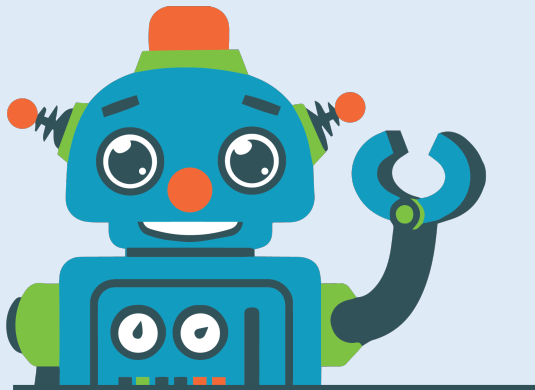
- Million Women Mentors SC
- DIG (STEM Theatre – Sept. 25)
- EE Just Foundation
- STEMLinx.org
- STEM Month
- IMAGINE STEAM Festivals



iMAGINE STEAM Festivals

IMAGINE Upstate

- April 2, 2022
- Seeking Sponsorships
- Downtown Greenville (Main Street)



IMAGINE Lakelands

- October 16, 2021
- 11:00 am – 3:00 pm
- Uptown Greenwood (Oregon Avenue)

Learn more



STEM Education Month (March 14-April 11)

- Theme: Where's Your STEM?
- Seeking Action Partner Team members

STEM Education Day at the Capitol

- March 17, 2022
- Hybrid event

Growing in STEM Grants for Educators

- Applications are open NOW
- Applications are due by January 14, 2022



Visit our website



STEM Educator of the Year

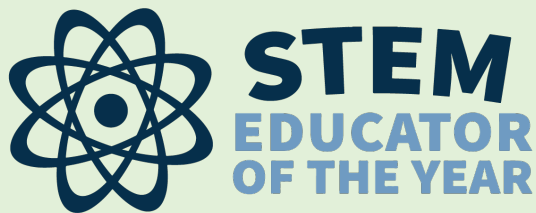
SC STEM Educator of the Year Nominations

- SC Council on Competitiveness
- Applications - TBD

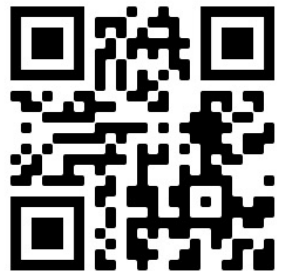
NEW!

SC STEM Educator of the Year Cohort

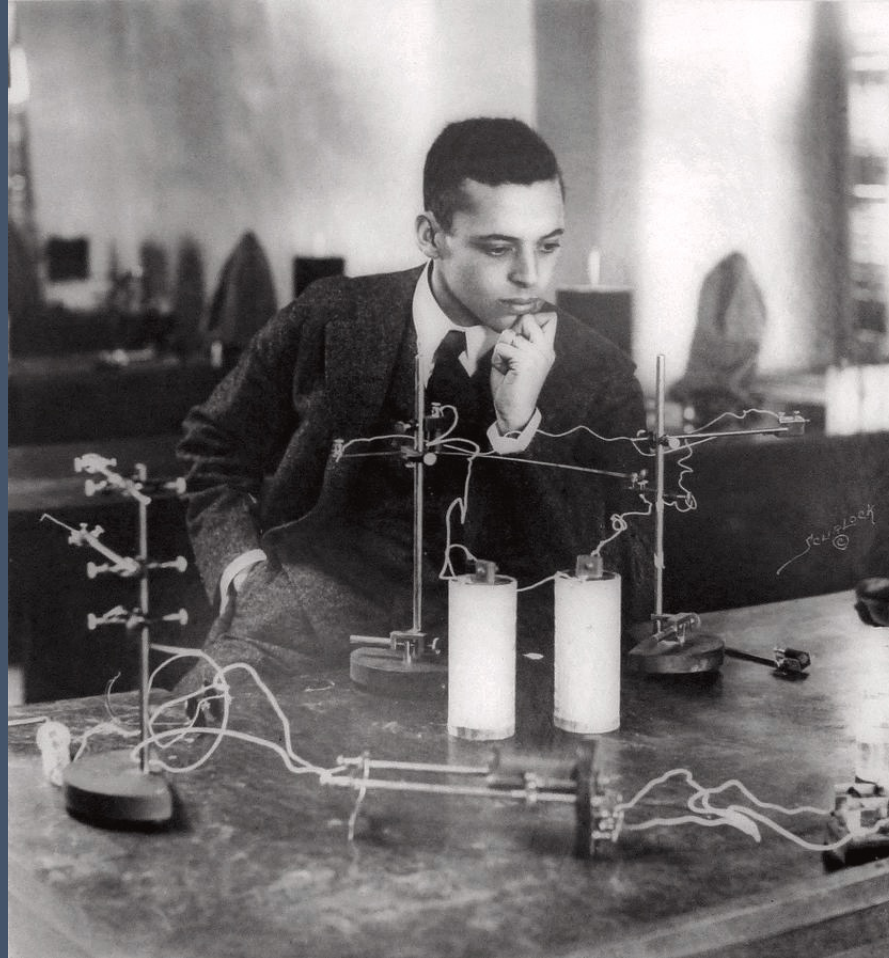
- Meet once a month
- K-12 STEM Lessons



Stay Involved



Ernest Everett Just Foundation Charleston Chapter
Founded in 2019
September 14, 2021



Ernest Everett Just, Ph.D.

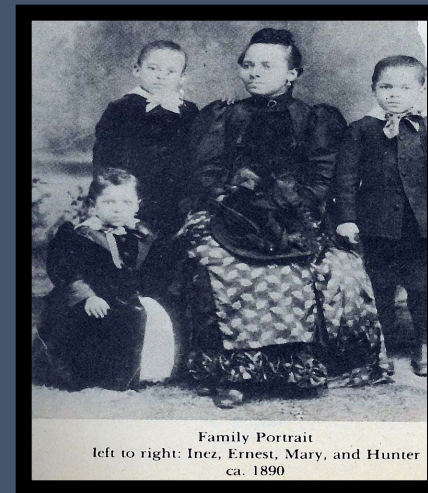
Charleston, South Carolina

1883-1941



Mary Mathews Just
ca. 1882

Charles Fraser Just
ca. 1882



Family Portrait
left to right: Inez, Ernest, Mary, and Hunter
ca. 1890



Ernest

Mary Mathews and Charles Frazer Just

Mary Just with Children: Inez, Ernest,
Hunter

Ernest earned “Licentiate of Instruction” South Carolina State University in 1899

16 years old



Ernest began teaching in the
black public schools in SC



← SC State
University



Life of EEJust

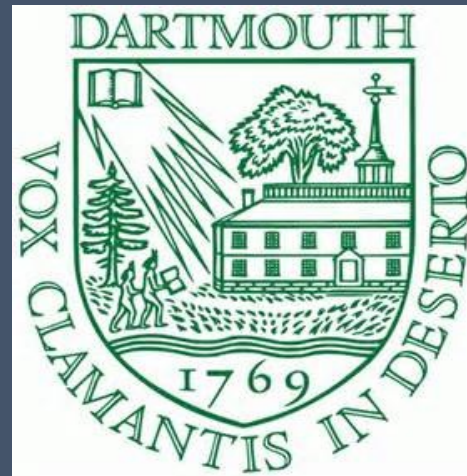
Goals:

Kimball Union Academy; writing awards; athletic awards

Dartmouth College; B.A. Degree *magna cum laude* (honors in a variety of subjects)

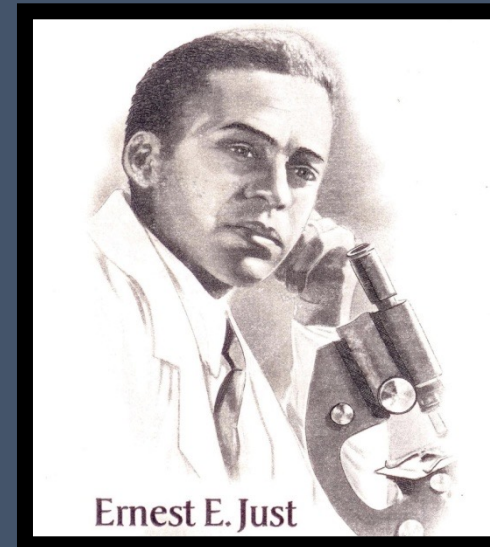
Howard University; English and Biology 1908-1910 (Chair of Zoology [1910-1941])

University of Chicago; Ph.D. Experimental Embryology



Marine Biological Laboratory at Woods Hole

Summer Researcher 1909-1930



Ernest Just was a pioneer in the methods and procedures for research on the embryology and general physiology of egg cells, which became a benchmark for others to follow.

Research Abroad

Naples Zoological Station
1929-1930



Naples, Italy

Kaiser Wilhelm Institute
1930-1933



Berlin, Germany

Marine Biological Station
1938-1940



Roscoff, France

Accomplishments

Marriage
offspring
Margaret

Ethel Highwarden
Highwarden, Maribel,

offspring

Hedwig Schnetzler
Elizabeth

Two Books

“Biology of the Cell Surface”
*“Basic methods for experiments
of marine Animals”*

manuscript

50 peer review papers

US postage stamp

1996



ERNEST
EVERETT
JUST
FOUNDATION

SOUTH CAROLINA
CHAPTER

OUR VISION

STEM for now
and Future Generations

OUR MISSION

To inspire the youth to
develop a science and
math mentality through
education that will enable
them to pursue science,
technology, engineering and
mathematics (STEM) careers
and make the world better

P.O. Box 20805
CHARLESTON, SC 29413

Vision: STEM for now and Future Generations

Mission: to inspire the youth to develop a science and math mentality through education that will enable them to pursue STEM careers and make the world better

Goals: Focus on middle and high school students. In particular, we will sponsor field trips to museums, medical research laboratories at the Medical University of South Carolina and at the Fort Johnson Marine Biological Research Laboratory

Provide scholarships to colleges and universities both regional and National

Ernest Everett Just Foundation-Charleston Chapter

P.O. Box 20805

Charleston, SC 29413

EE.Just.Foundation.cha.chapter@gmail.com

10 executive/managing board members

5 advisory board members

4 honorary board members

1 Ambassador

Titus A. Reaves (reaves@musc.edu)