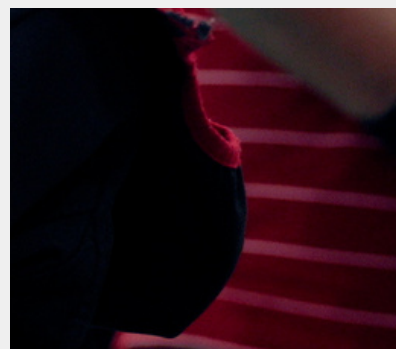
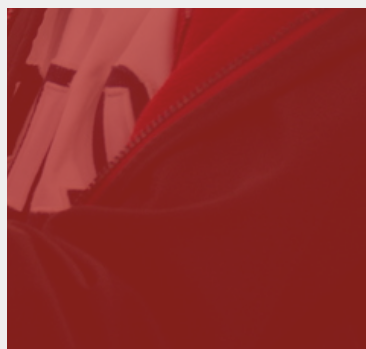
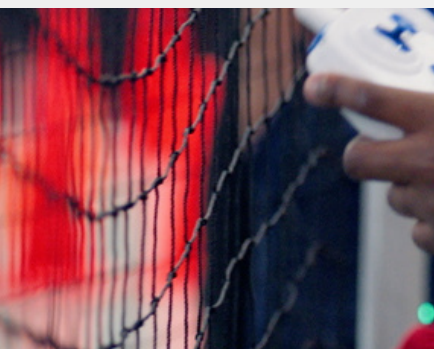
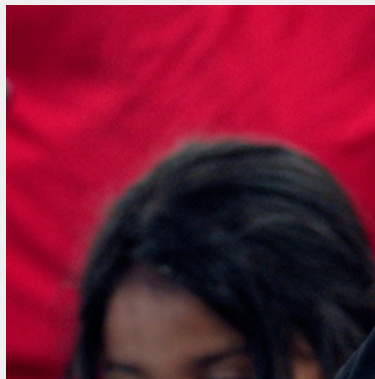
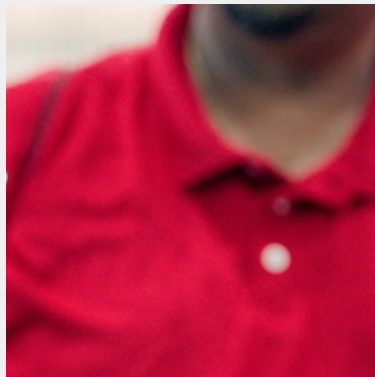




Annual Report 2023



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Letter to the Governor and Alabama Legislators

Dear Governor Ivey and Alabama Legislators,

The STEM Council completed its third year of operation with a number of significant educational and workforce initiatives in place. We've expanded opportunities for teachers to firsthand experience STEM skills in practice through our externship program. Our Scale Up initiative increased the number of high-quality in-school and out-of-school activities available to students and our STEM Near Me online database has made it easier for families to identify nearby STEM programs. Student STEM ambassadors are learning critical leadership skills through a partnership with the Chief Science Officer initiative. We're addressing Alabama's STEM teacher shortage with a massive statewide expansion of the innovative UTeach format for educator preparation.

These efforts align through our STEM Learning Ecosystem initiative. Together with Alabama stakeholders, we're building STEM ecosystems that link a community's STEM engagement, education, training, and industry partners. These networks align efforts to meet regional STEM workforce needs and identify gaps and areas of overlap.

The following pages offer a deeper dive into these and other STEM Council programs. On behalf of the nearly four dozen members of Alabama's STEM Council, we are proud to present this summary of 2023 activities and preview of our 2024 priorities. We are grateful Alabama has put a strong emphasis on highlighting and supporting STEM awareness, education, and workforce development. We are grateful Alabama has put a strong emphasis on highlighting and supporting STEM awareness, STEM learning, and workforce development.

Sincerely,

Lee Meadows, Ph. D.
Executive Director, Alabama STEM Council

Neil E. Lamb, Ph. D.
Chair, Alabama STEM Council



By the Numbers

1 Statewide STEM Learning Ecosystem Launched, Connecting Alabama to the National STEM Ecosystem Network

2 Regional STEM Learning Ecosystems in pilot state - I85 and NCAL STEM Learning Ecosystems

6 new UTeach sites successfully begun: Alabama A&M University, Athens State University, Auburn University, Auburn University in Montgomery, University of South Alabama, and University of West Alabama

10 Alabama STEM Learning Ecosystem partnerships established

24 companies/agencies representing various STEM industries served as a worksite host during the 2023 STEM Externship Program (STEP)

30 Alabama educators participated in the externship program

38 middle and high schools offered the Chief Science Officers initiative

50+ STEM program providers using “STEM Near Me” to connect with Alabama learners and their parents

124 Chief Science Officers trained and active within their schools

257 undergraduates majoring in STEM are currently exploring teaching through a UTeach Alabama introductory course

2,000 K-12 students participated in high-quality STEM learning experiences through 2023 Scale Up opportunities

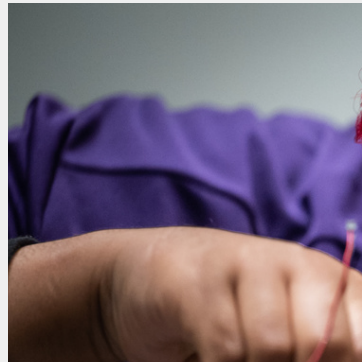


Accomplishments in 2023

Chief Science Officers Implemented

Alabama launched Chief Science Officers in early 2023. These middle and high school students serve as ambassadors about STEM opportunities with their peers and within their community. The program links students to an international network and builds STEM awareness and leadership skills. The program amplifies student voices related to STEM in Alabama.

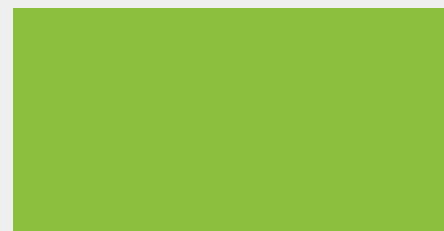
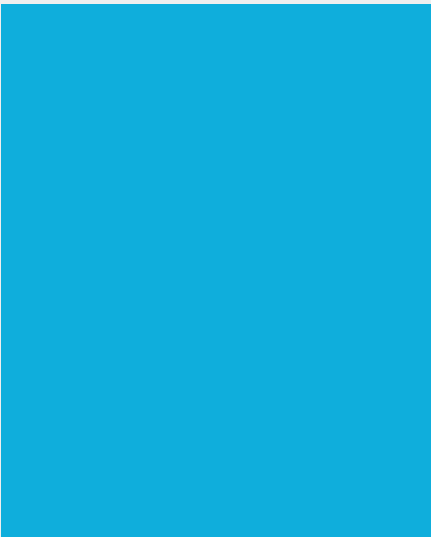
- 54 CSOs participated during the 2022-2023 school year
- 124 CSOs (Chief Science Officers) are active during the 2023-2024 school year
- 32 schools have active CSO programs across 6 of 7 Alabama Workforce regions
- One AL CSO was selected to attend the SLECoP Annual Convening to represent the Alabama CSO contingency



Alabama STEM Learning Ecosystem Launched

The Alabama STEM Ecosystem was selected to join the STEM Learning Ecosystems Community of Practice (SLECoP) as one of nine new ecosystems admitted into the global movement. Alabama's ecosystem brings together stakeholders from STEM industry, K-20 formal and informal STEM education and workforce development. The initiative supports Alabama communities as they identify and build their own STEM ecosystem, linking program that connect workforce needs to student engagement, learning and development programs and identifying and filling gaps within that network.

- The statewide initiative began with a series of Design Studios throughout the winter, emphasizing Innovation, Collaborative Partnerships and Leadership.
- The vision of the statewide STEM Learning Ecosystem is to provide accessible and transdisciplinary STEM education experiences and opportunities for all Alabama learners through effective and trusting cross-sector partnerships. In turn, this creates a sustainable statewide culture of entrepreneurship, innovation, and a thriving economic future.
- Two Regional STEM Learning Ecosystems are under design– I85 and NCAL STEM Learning Ecosystems. Additional ecosystems are in the formative stages, supported by STEM Council development funding.



STEM Industry Externship Program Impact

The 2023 cohort of the STEM Teacher Externship Program (STEP) expanded the connection of STEM and CTE educators with STEM-related careers and opportunities. The program pairs Alabama middle school, high school, and community college teachers with Alabama industry partners. It demonstrates the application of STEM content and skills within Alabama’s high-tech workforce. Educators return to the classroom with real-world examples to share with their students.

- 30 Alabama teachers participated
- These educators shared their learning experience with over 3,600 students.
- 24 companies/agencies hosted externship experiences.

“I really enjoyed getting to see industries in our area that I didn't know existed or I didn't know what they did there. As well as learning about opportunities for our students while they are in school that were pathways to jobs and paid education.”

K. Shaw (UAH extern)



“Participating in the STEM Teacher Externship provided a great opportunity for me as a teacher to learn skills and information that I could bring back to my students in the classroom about the workforce. It also helped open my eyes to local agencies that provide workforce opportunities to students after graduation.”

A. Simpson (Alabama Power/Airbus)



STEM Near Me Improvements

STEM Near Me is a free online resource introduced in 2022 to help Alabama families quickly find opportunities to engage in all types of STEM events, projects, and programs near them, in person and online.

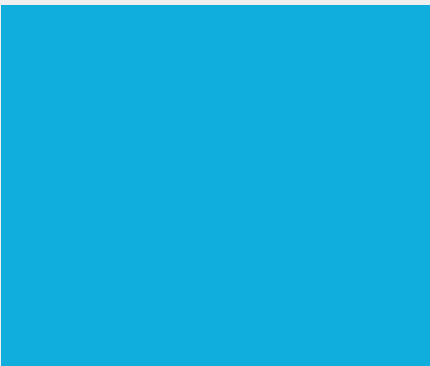
- 50+ STEM program providers are using “STEM Near Me” to connect with audiences across the state
- STEM Near Me a “Data Insights” dashboard that will aid the STEM Ops team in tracking use of the directory and guiding expansion to more families and programs.
- The national Science Near Me community is recognizing the Council’s use of STEM Near Me as a national model for other state-wide STEM program directories.

STEM Near Me can be accessed at <https://stemcouncil.alabama.gov/stem-near-me/>

UTeach Alabama Launch

The UTeach model increases the number of STEM educators through an innovative program that introduces and prepares STEM-focused undergraduates to pursue careers as STEM teachers. This year, 6 new UTeach Programs launched in Alabama, thanks to funding from the Alabama legislature. All six are on track to successfully complete Year 1 milestones and activities.

- New Locations: Alabama A&M University, Athens State University, Auburn University, Auburn University – Montgomery, University of South Alabama, University of West Alabama
- Existing Location: University of Alabama – Birmingham
- New Programs have selected Co-Directors, identified spaces for program operations and instructions, and begun student recruiting.
- New sites are supported by the AL STEM Operations team and the UTeach Institute at the University of Texas at Austin
- 257 undergraduate STEM majors began exploring teaching through a UTeach Alabama introductory course



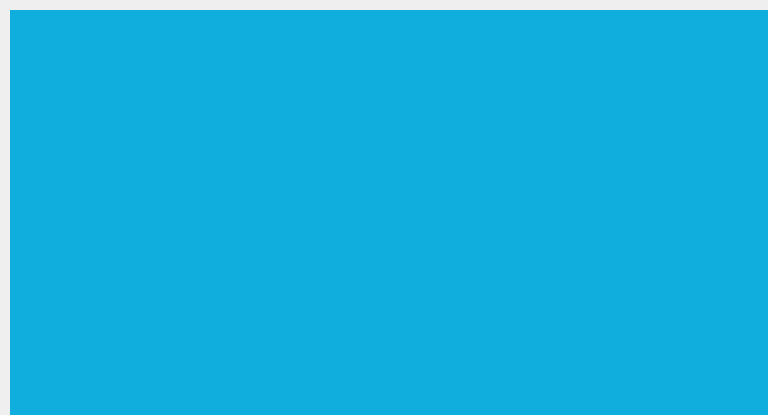
Scale Up Impact

The goal of the Scale Up program is to bring top STEM Education opportunities to all learners, especially those that are historically underserved. Funding allows existing activities to expand and reach new audiences. The inaugural implementation of Scale Up extended the reach and capacity of 6 Alabama-based STEM program providers.

- 2,000 K-12 students participated in high-quality STEM learning experiences both in-school and out-of-school programs
- 83% of the participating students attended Title 1 designated school
- 45% of the participants were female
- 74% were from demographic groups historically underrepresented in STEM programs and careers
- 48 educators were engaged in or were trained in STEM projects through their connection with a Scale Up program providers

“I would say our Scale-Up program was an absolute success! We were able to expose our entire school to robotics in one way or another. We represented the State of Alabama and the United States for five days at the World competition that consisted of nearly 800 teams from over 40 countries. What was extra special is that one of our third-grade teams qualified for the World competition, and it was comprised of 4 girls and one boy! It was a remarkable experience that our students and parents will not soon forget!”

Dr. Eric Kirkman, Director
Kilby Laboratory School, 2022-2023 Scale Up Awardee



Priorities for 2024

- Increase the number of students serving as Chief Science Officers in each Workforce Region by 20%
- At least 2 community organizations in each Workforce Region are supporting Chief Science Officers
- 15 Regional STEM Learning Ecosystems are established, serving as centralized hubs throughout Alabama
- All UTeach Sites continue to meet program milestones, receive formal certification approval from the Alabama State Department of Education, and clearly demonstrate success with recruiting numbers.
- 10 STEP externs in each Workforce Regions
- Scale Up awards are distributed across Alabama to a mix of urban, suburban and rural audiences.
- 100 STEM providers post their learner opportunities on STEM Near Me
- Institute a “STEM Day at the Capital”
- With guidance from the STEM Evaluation Director, the Alabama Rural Learning Accelerator project implements an evaluation plan demonstrating clear metrics of success and opportunities for improvement.
- With oversight by the Council’s Executive Committee, the external evaluator of the Alabama Numeracy Act launches a fully articulated evaluation plan to stakeholders and evaluation participants to understand, support, and help implement.
- Implement a communications strategy, that builds on the outcomes from the 2022 Market Research study.
- Identify and onboard the next STEM Council Executive Director, in preparation for Dr. Lee Meadow’s upcoming retirement.

Mission

The Alabama STEM Council was formed by Governor Ivey under Executive Order No. 721 in September 2020. The purpose of the Council is “to advise the Legislature, the Governor, the Lieutenant Governor, and the State Department of Education on ways to improve STEM-related education, career awareness, and workforce development” across Alabama. The Council builds on Alabama’s Roadmap for STEM Success and is administratively within AIDT in the Department of Commerce.

Who We Are

Leadership to the Council during the reporting period was provided by its 9-member Executive Committee, chaired by Neil Lamb, President at the HudsonAlpha Institute for Biotechnology. Executive Committee members and the Congressional Districts they represented were as follows:

- Terry Burkle, Executive Director, Baldwin County Education Coalition (1)
- Neil Lamb, President, HudsonAlpha Institute for Biotechnology (5)
- Kathryn Lanier, Director of STEM Education Outreach, Southern Research (at large)
- Vicki Karolewics, President, Wallace State Community College (4)
- Dawn Morrison, Computer Science State Administrator, Alabama State Dept of Education (2)
- Charles Nash, Senior Vice Chancellor Emeritus, University of Alabama System (at large)
- Adrienne Starks, Founder and CEO, STREAM Innovations (7)
- Charisse Stokes, Executive Director, TechMGM (3)

The Executive Committee was fully engaged in the Council's work, chiefly in setting the strategic direction of the Council. The Executive Committee met three times by Zoom and once in person, and the Council maintains records of each of those meetings. Neil Lamb led the Executive Committee in his role as chair. For part of the reporting period, Liz Huntley represented Congressional District 6 and RaSheda Workman represented CD7.

The Council had 45 total members, drawn from the 5 sectors of STEM industries, K-12 & higher education, CTE/post-secondary training, informal STEM education, and public officials/leaders. A full listing of the current members and their affiliations is given on the Council's homepage. The full Council met three times - once by Zoom, once in a hybrid format, and once in person. The Council maintains records of each of those meetings.

The STEM Operations Team leads the work of the Council forward and manages its day to day operations:

- Lee Meadows, Executive Director
- Aba Holmes, Administrative Coordinator
- Lawrence Cooper, STEM Programs Manager
- Liz Mohr, STEM Project Support
- Rene McNeal, STEM Ecosystems Coordinator

Hope Trego served as STEM Communications Specialist for part of the reporting period.

AIDT supported the STEM Operations Team, especially in the areas of financial management, hiring, IT, and communications support. The Governor's Office of Education and Workforce Transformation supported in the areas of strategy and guidance.

We extend our sincere gratitude to our partners, especially the Alabama Commission on Higher Education (ACHE), The UTeach Institute, Teaching Institute for Excellence in STEM (TIES), The SCITech Institute, and Sci Starter. Our partners' efforts and support have been instrumental in advancing STEM education and innovation in Alabama. We look forward to continuing these impactful partnerships for the benefit of our communities and the future of STEM in Alabama.

