

Alabama STEM Implementation

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Executive Director, Alabama STEM Council



The Alabama STEM Council

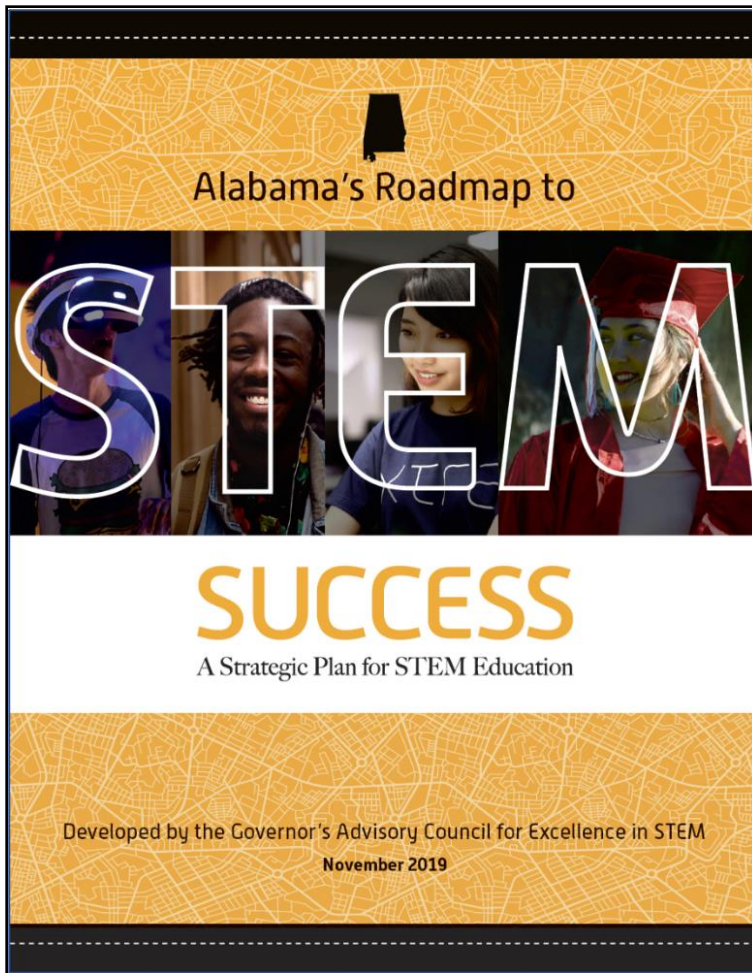
The new kid is doing well!



Existing Alabama STEM Programs & Current Funding

- Science in Motion: \$2.6 M
- AMSTI: \$33M
- A+ College Ready: \$11.4 M
- School of Science & Math: \$10M
- Technology in Motion: \$2.6
- Hudson Alpha Institute Education: \$1M
- Computer Science For Alabama (CS4AL) Program: \$6M
- Southern Research STEM Outreach: \$1M
- School of Cyber Technology & Engineering: \$10M

2019: STEM Strategic Plan



“Establish a STEM Council that serves as Alabama’s lead organization for STEM education and Alabama’s point of contact for interfacing with other state and national STEM initiatives. Council membership should be drawn from a cross-section of Alabama leaders representing STEM education, business and policy interests.”

September 2020: STEM Council Formed



EXECUTIVE ORDER NO. 721

ESTABLISHING THE ALABAMA STEM COUNCIL

WHEREAS our Nation has long been a world leader in the technology, engineering, and mathematics ("STEM");

WHEREAS, over the past decade, Alabama has emerged as a leader in STEM fields such as aerospace, biotechnology, biomedical, and advanced manufacturing;

WHEREAS these STEM fields—and indeed, over three quarters of all in-demand occupations—require sustained, quality STEM education at the secondary and postsecondary levels;

WHEREAS, in recognition of STEM's importance, I established the Governor's Advisory Council on Excellence in STEM in October 2018, which was led by STEM leaders and chaired by Dr. Neil Lamb;

WHEREAS, on November 8, 2019, this advisory council produced a plan to improve STEM education across Alabama and to create a pipeline critical to filling the more than 850,000 STEM-related jobs needed in the State by 2026;

WHEREAS this plan featured 24 recommendations across various STEM fields, including one to establish an "Alabama STEM Council" to improve STEM education in Alabama in a systemic, long-term manner;

WHEREAS Representative Terri Collins sponsored House Bill 293 to establish the Alabama STEM Council during the 2020 Regular Legislative Session;

WHEREAS, after achieving unanimous passage by the Alabama House of Representatives on March 5, 2020, House Bill 293 was unable to pass the Alabama Senate due to the COVID-19 pandemic; and

EXECUTIVE ORDER NO. 721

WHEREAS, in Act Number 2020-169, the Legislature appropriated funds from the Education Trust Fund to a "STEM Council" for use in Fiscal Year 2021 and hopefully will provide further such appropriations in future years;

NOW, THEREFORE, I, Kay Ivey, Governor of the State of Alabama, by the authority vested in me by the Constitution and laws of the State of Alabama, do hereby establish the Alabama STEM Council (the "Council"), effective immediately, as further set forth below:

1. **Purpose and duties.** The Council's purpose shall be 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 the State. Specifically, the Council shall do the following:
 - a. Serve as the primary point of contact for communicating with state and national STEM organizations;
 - b. Revise, as necessary, and, to the maximum extent possible, facilitate implementation of, the state STEM strategic plan, developed by the Governor's Advisory Council on Excellence in STEM;
 - c. Coordinate communication efforts to increase STEM awareness, illustrate the value of STEM learning, and highlight STEM careers, with particular emphasis on reaching under-represented segments of the population;
 - d. Develop and implement a Governor's STEM "seal of approval," using an evidence-based rubric to recognize individual programs or periodic events that advance STEM principles and learning across the State;
 - e. Collaborate with the Office of the Governor to incorporate a STEM Career Exploration and Discovery module into the Alabama College and Career Exploration Tool that allows stakeholders to identify STEM opportunities offered across the State including after-school, out-of-school, and summer programs and professional learning opportunities;

EXECUTIVE ORDER NO. 721

- f. Conduct comprehensive, external evaluations, as requested, of STEM-based curricula and educational initiatives that receive funding from the Education Trust Fund, beginning with the Alabama Mathematics, Science, and Technology Initiative and the Alabama Science in Motion program to track the implementation of the initiatives' continuous improvement plans;
- g. Develop assessment rubrics for STEM-based curricula and educational initiatives that incorporate criteria relevant to the goals and intended outcomes of each initiative, including impact on learning, effectiveness of human capital and organization performance, fidelity of implementation, and equitable access;
- h. Develop evidence-based interventions for improving STEM-based curricula and educational initiatives including those defined in the federal Every Student Succeeds Act (P.L. 114-95);
- i. Conduct comprehensive evaluations, as requested, of state pre-service preparation and in-service programs for educators teaching STEM subjects including both traditional and alternate pathways;
- j. Identify evidence-based and effective STEM initiatives, instructional and professional learning strategies, and scale their utilization across Alabama schools, after-school programs, and other educational settings, with particular emphasis on reaching under-represented segments of the population;
- k. Expand opportunities for STEM career exploration and discovery, especially among groups that are under-represented in the STEM professions;
- l. Collaborate with the State Board of Education and two-year and four-year institutions of higher education in the State to develop educational certifications and endorsements related to the STEM fields, as well as incentives for an educator to earn these certifications and endorsements;
- m. Collect and aggregate relevant STEM data to track progress against the state STEM strategic plan, including data from the



Mission

“to advise...on ways to improve STEM-related education, career awareness, and workforce development across the State”



Council Portfolio



- Annual Appropriation \$1 M
 - STEM Ecosystems/Hubs \$5 M
 - UTeach Alabama \$4.5 M (ACHE)
 - ARLA \$2 M (ALSDE)
- \$12.5 M

(\$500K pending for ANA Evaluation)



STEM Ops Team



Lee Meadows
Executive Director



Rene McNeal
STEM Learning Ecosystem Coordinator



Lawrence Cooper
Program Manager



Elizabeth Mohr
Program Support



Aba Holmes
Administrative Coordinator

STEM Council Initiatives

Finding our niche



ALABAMA STEM COUNCIL



[Home](#) | [What](#) | [? ▼](#) | [Programs ▼](#) | [STEM EcoSystem](#) | [STEM Near Me](#) |

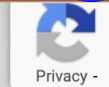
- UTeach in Alabama [Dates](#)
- STEM Scale-Up
- STEM Chief Science Officers
- STEM Industry Teacher Externship Program
- Alabama STEM Explorers ▶



ALABAMA STEM COUNCIL

We Have Begun Our Work

stemcouncil.alabama.gov



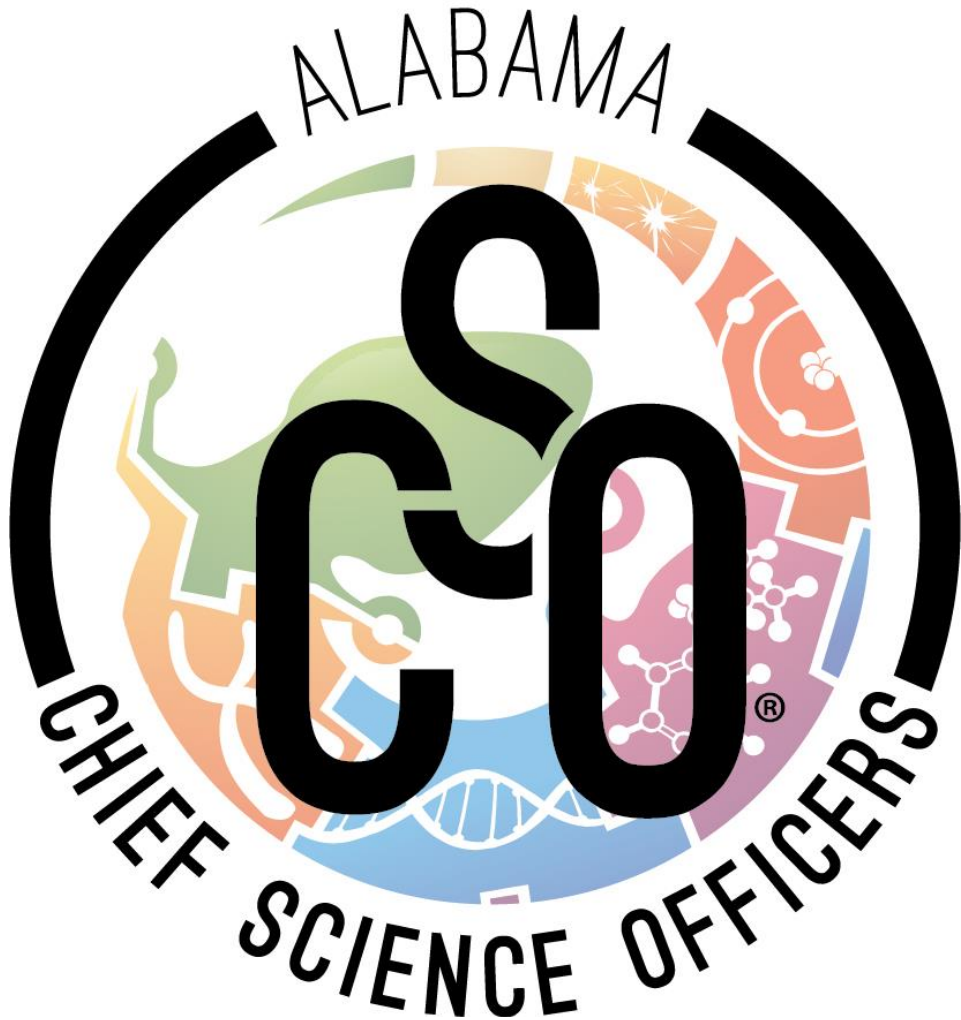
Niche: No connections between programs & families



- Online directory that connects Alabamians with STEM learning opportunities across the state!
- Camps/classes, field trips, citizen science projects, clubs, etc



Niche: No STEM student leadership



- 1 Create a network of diverse STEM leaders
- 2 Foster communication & collaboration
- 3 Enrich STEM culture and career awareness
- 4 Amplify student voice in STEM conversations

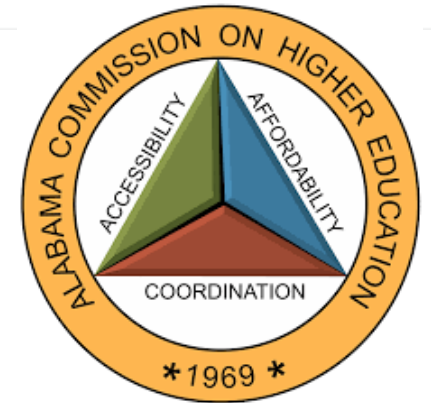
DON'T JUST HOPE IT HAPPENS-
MAKE IT HAPPEN!

UTeach Alabama: \$4.5M annually



- Niche: Ending the STEM Teacher Shortage
- Existing Site
 - University of Alabama at Birmingham
- New Sites
 - Alabama A&M University
 - Athens State University
 - Auburn University (science only)
 - Auburn University at Montgomery
 - University of South Alabama
 - University of West Alabama

UTeach Institute



STEM Ecosystems: \$5M



“...An intentional, collaborative, **systems-thinking** approach to help communities **optimize STEM** as a tool advancing students, educators, educational systems, and business and industry towards a **dynamic**, responsive, nimble and **thriving workforce and local economy.**”

Newly Implementing: Evaluation of the Alabama Numeracy Act

- \$500K
- ANA targets improved math learning in all AL elementary school, especially through math coaching
- Executive Committee of the STEM Council tasked with securing an external evaluator
- RFP process selected HumRRO



Newly Implementing: Virtual co-teachers for hard-to-staff STEM classes

- \$2M
- Overall project oversight shifted to the STEM Council on October 1
- UAB STEM Education Center is leading the work & finding the solutions
- Current focus is Algebra 1
- High poverty rural and urban districts



Modern Learning for a Modern Economy

Rooted in workforce development

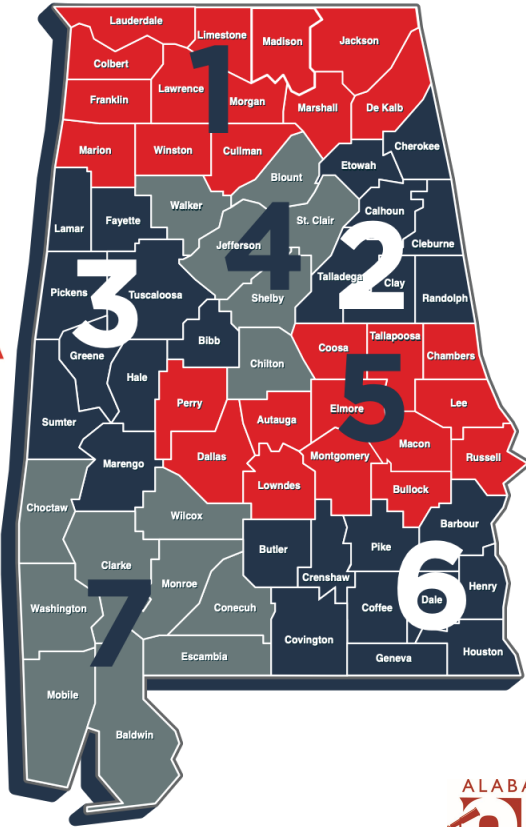


Purposely situated in Alabama's workforce development infrastructure

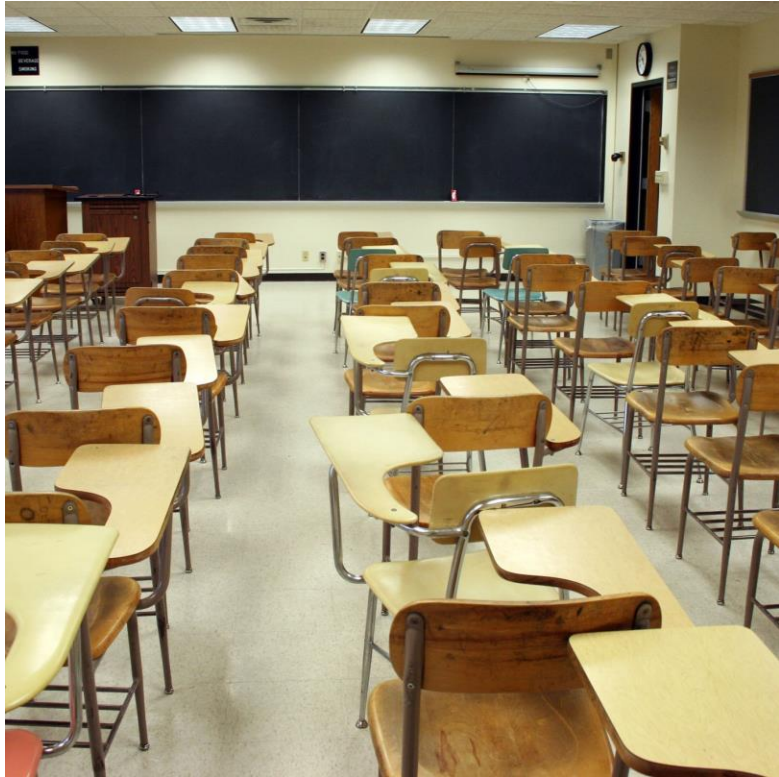


ALABAMA DEPARTMENT OF COMMERCE

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Which would I see at your school?



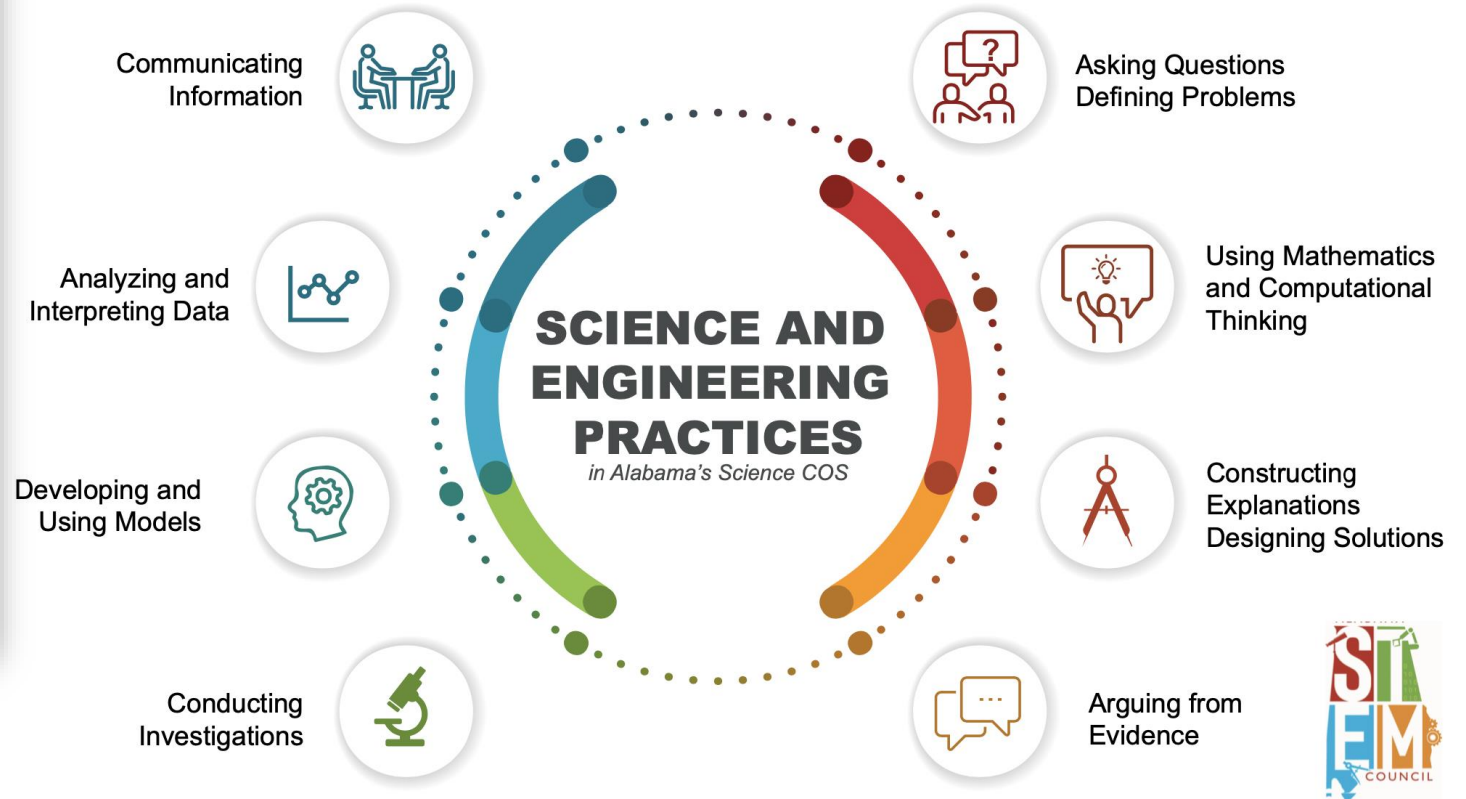
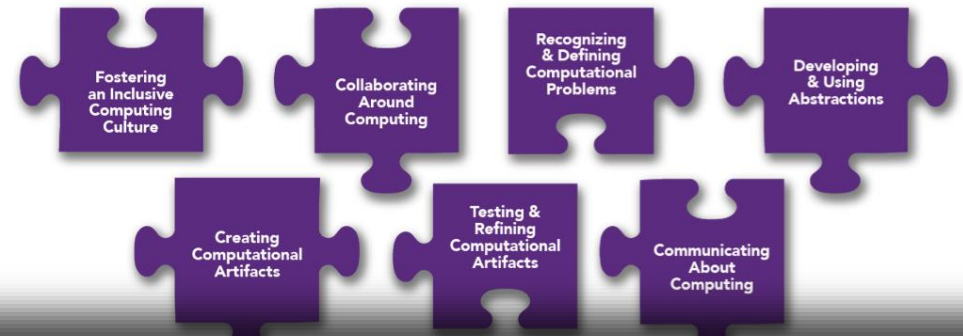
The Practices

MATHEMATICAL PRACTICES

In Alabama's Math COS



CORE PRACTICES



Alabama STEM Implementation

Hope & excitement!

Questions?

