2025 VIRGINIA STEM EDUCATION ADVISORY BOARD LEGISLATIVE REPORT

THE VIRGINIA SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) EDUCATION ADVISORY BOARD (THE BOARD) IS ESTABLISHED AS AN ADVISORY BOARD, WITHIN THE MEANING OF § 2.2-2100, IN THE EXECUTIVE BRANCH OF STATE GOVERNMENT. THE PURPOSE OF THE BOARD IS TO ADVISE THE GOVERNOR, CABINET MEMBERS, AND THE GENERAL ASSEMBLY ON STRATEGIES TO ALIGN STEM EDUCATION EFFORTS AND REPORT STEM EDUCATION CHALLENGES, GOALS, AND SUCCESSES ACROSS THE COMMONWEALTH.

ABOUT
THE BOARD

Marking the completion of its fourth year, the Virginia STEM Education Advisory Board remains focused on its legislated purpose to advise the Governor, Cabinet members, and the General Assembly on strategies to align STEM education efforts and report STEM education challenges, goals, and successes across the Commonwealth. The Board's 2025 quarterly sessions facilitated vital collaboration between Governor-appointed citizen members and representatives from several state offices, including the Secretariats of Education, Labor, and Diversity, Opportunity, and Inclusion, SCHEV, the Science Museum of Virginia, and the Virginia Department of Education (VDOE).

Seat Name	Current Member	End Date
Member of the General Public	Victoria Chuah	June 30, 2026
Member of the General Public	Edward W. Monroe	June 30, 2026
Member of the General Public	Rashid E Farrell	June 30, 2027
Member of the General Public	Amy Thompson	June 30, 2027
Member of the General Public	Terry L. Whipple	June 30, 2028
Member of the General Public	Amy White	June 30, 2028
Member of the General Public	Rajbans Joshi	June 30, 2028
Member of the General Public	Padmanabhan Seshaiyer	June 30, 2029
Member of the General Public	Shaina Srivastava	June 30, 2029
Member of the General Public	Yu-Shen Lin	June 30, 2029

The 2025 annual report provides an overview of our achievements, efforts, and plans for the upcoming years.

HIGHLIGHTS

FEDERAL CONGRESSIONALLY DIRECTED FUNDING

The STEM Board secured $1,028,000 in funding from the United States Congressional Consolidated Appropriation Act of 2024 to support the creation of a state STEM ecosystem and the creation of regional STEM hubs. The Virginia Department of Education (VDOE) served as the fiscal agent for these funds. In 2025, the STEM Advisory Board and VDOE worked together to create the infrastructure to support STEM education in Virginia.

2025 – 2030 VIRGINIA STEM EDUCATION STRATEGIC PLAN

A priority of the Board was the development of a 2025–2030 Virginia STEM Education Strategic Plan. This plan outlines a proposed five-year, statewide roadmap with goals and outcomes to strengthen K–12 STEM education. The proposed plan was developed through collaboration among the Governor's STEM Education Advisory Board, the Virginia Department of Education, and diverse stakeholders representing educators, businesses, industry, parents, and institutions of higher education. The plan responds to Virginia's growing workforce demands and tech-talent gap by advancing an integrated STEM Ecosystem model that connects schools, higher education, industry, and communities through regional hub networks. It establishes three core goals: building a lead public-private partnership to coordinate the ecosystem, increasing stakeholder engagement and visibility of STEM opportunities, and expanding instructional resources, and professional development opportunities for educators. Through clear action steps and measurable outcomes, the plan aims to ensure equitable access to high-quality STEM learning, improve STEM literacy, and prepare all Virginia students for postsecondary education, employment, and civic participation in a technology-driven economy.

BOARD - VDOE COLLABORATION

The year began with the Virginia STEM Advisory Board, in collaboration with the Virginia Department of Education (VDOE), advancing statewide STEM initiatives by developing the Virginia State STEM Education Definition and establishing guiding principles for a Virginia State STEM Education Metric, including how the metric informs Virginia STEM instruction. The Board also worked with VDOE on a Virginia STEM Event Grant Application, Virginia STEM Ecosystem proposal development, and the development of the Virginia STEM Network website.

Virginia State STEM Education Definition: *Science, Technology, Engineering, and Mathematics (STEM) education applies and/or integrates discipline-specific, content-learning experiences where academic and technical disciplines intersect. In STEM experiences, students engage in the design thinking process to create and communicate solutions to a spectrum of universal human challenges*. The process of design thinking includes but is not limited to:

- defining and refining the problem or challenge;
- research and collecting information;
- brainstorming and analyzing solutions and ideas;
- develop solutions and build models or prototypes;
- present ideas, test solutions and collect feedback;
- collect and analyze data to evaluate the model or solution; and
- improve the design based on analysis.

Virginia State STEM Education Metric: The guiding principles for the Virginia STEM Education metric, included integrating STEM discipline concepts and practices when developing solutions to relevant, meaningful, and authentic human challenges; utilizing design thinking as an iterative approach to problem-solving and inquiry; and incorporating workforce competencies (the 6 C's) as best practices for education, 3E Readiness High School framework and workforce readiness. These principles should be evident in both instruction and group and individual design-thinking processes.

Virginia STEM Instruction: The metric informing STEM instruction emphasizes that program and classroom instructors design and select learning experiences that incorporate grade-level–appropriate content knowledge and processes aligned with the Virginia Science, Mathematics, and Computer Science SoL, as well as Career and Technical Education (CTE) competencies. In addition, programs and schools provide STEM instructors with opportunities for professional development and collaboration with community stakeholders to strengthen discipline-specific content knowledge and the skills necessary to enhance STEM learning experiences.

Along with developing definition, metric and instructional practices for Virginia STEM Education, the Board also collaborated with VDOE on a framework for selecting principal STEM partners and hub organizations, and the associated processes and materials for principal and regional STEM hub selection. In parallel, a preliminary grant and funding research effort was conducted to identify potential future funding sources that regions may utilize to sustain funding for STEM Ecosystems. The VDOE also facilitated a comprehensive professional development initiative through both virtual and in-person modalities. This included four regional, day-long summer sessions for Grade K–8 educators titled *Building Discipline Mastery Through Integrated STEM Instruction*, alongside a specialized K–5 virtual professional learning series designed to scale effective STEM integration statewide.

Virginia STEM Event Grant Application: October 2025, a STEM Event Grant application was announced by the VDOE with $100,000 of available funding. This one-time grant provided funds to Virginia school divisions to conduct STEM Events that cultivate students, educators, parents, and community awareness of STEM academic and career opportunities, while also supporting STEM competitions. The 51 applications submitted by schools and divisions requested a total of $235,097. Based on established review criteria, including rubric scores, regional representation, and the total number of students impacted, 19 applications were awarded, resulting in $100,799 in grant funding distributed. Members from the STEM Board collaborated with the VDOE on this selection process.

Virginia STEM Ecosystem Proposal Development: At the September Board meeting, a STEM Ecosystem Network Grant application funded through the federal appropriation was reviewed by the Board. The purpose of this grant was to support the development of regional STEM networks composed of school divisions, higher education, and industry partners to strengthen K–12 STEM education in Virginia. Regional STEM Network Ecosystems will prioritize localized workforce and educational requirements by equipping K–12 students and educators with essential STEM literacy. These networks will foster academic and career awareness, ensuring graduates are uniquely prepared to meet the specialized labor demands of their regional and state economies. The Virginia STEM Network Ecosystem grant has $436,000 of dedicated funding. This funding is intended to support four regional hub grants with $84,000 of funding each and $100,000 for a lead network that will both implement its own network and provide comprehensive support to the other funded regional networks. While the grant offers initial startup funding, funded networks are expected to establish sustainable programs to

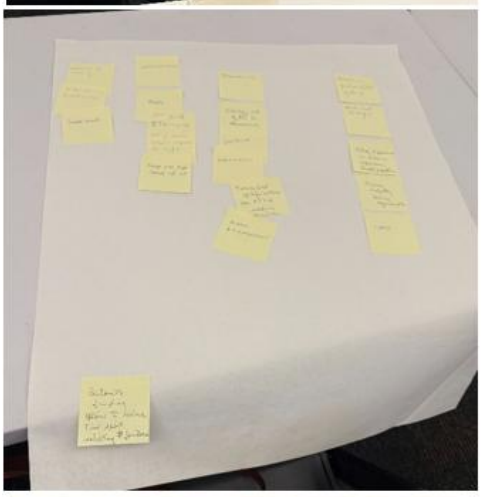
continue supporting K–12 STEM education. The proposed deadline for this grant application is January 16, 2026.

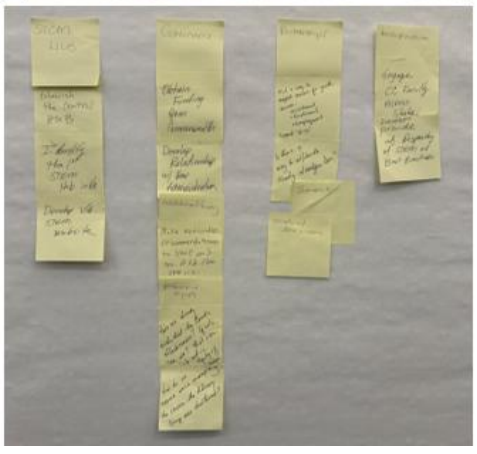
- An information session on the STEM Ecosystem Network Grant opportunity was presented by the VDOE in December 16, 2025 by the Division of Teaching and Learning.
- Members from the Board will work with VDOE in the application review and selection process. They will help select the lead partner and the regional STEM hub organizations.
- In March 2026, regional start-up funds from the STEM Ecosystem Grant are anticipated to be allocated. Facilitated planning sessions will be conducted to clarify hub responsibilities and support coordinated implementation. The designated lead partner will develop a monthly meeting schedule.

STEM Network website Development: Two STEM Advisory Board members participated in training on a new STEM website piloted by the VDOE. The STEM network website will be launched in January 2026 as a virtual hub that serves to communicate STEM programs and opportunities to both educators and students, and provides instructional resources that support educators with integrated STEM instruction. As of December 2, 2025, Phase I of the testing of the platform was completed. Phase II will be completed with a live date to be released on January 29, 2026. Board members helped to identify key components and information to include on the STEM Ecosystem website to ensure it serves as a comprehensive resource for educators, students, industry partners, and the public.

STEM BOARD ENGAGEMENT

In July 2025, several Board members rotated off the board, and new applications for board membership were received by the Secretary of the Commonwealth. At the September 2025 Board meeting, the Board elected a new Chair, Dr. Padmanabhan Seshaiyer, who was reappointed, and a new Vice-Chair, Dr. Terry Whipple. During the same meeting, the newly appointed members of the board were formally announced. The board identified key “Big Themes” to drive future work and set objectives for the coming year, focusing on collaboration, governance, and best practices. A primary goal was to gain a clearer understanding of gaps in STEM needs across the state, serving as a foundational step toward developing effective, targeted recommendations to the Governor, Cabinet members, and the General Assembly on strategies to align STEM education efforts and report STEM education challenges, goals, and successes across the Commonwealth.





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