

**Virginia STEM Education Advisory Board Meeting**  
**April 1, 2022**  
**Science Museum of Virginia**  
**RF&P Railroad Company Forum**



Board members present: Dr. Damodar Ambur, Gary Artybridge, Jr., Chris Dovi, Dr. Venicia Ferrell, Casey Roberts, Amy Sabarre, Dr. Padmanabhan Seshaiyer, Dr. Susheela Shanta, Zainia Tarafdar, Amy White, Charles English

Ex-officios and staff present: Dr. Brendon Albon, Richard Conti, Emily Salmon, James Blow, Aimee Rogstad Guidera, Sarah Spota, George 'Bryan' Slater, Angela Sailor, Harold Pyon, Elizabeth Schultz

Ms. Sabarre called the meeting to order at 10:06 and asked for a motion to approve the agenda. Ms. White made the motion, which was seconded by Dr. Seshaiyer. Ms. Sabarre called for a vote, which passed unanimously with no objections.

Ms. Sabarre then welcomed the board members and guests, then delivered an overview of the agenda before introducing Mr. English.

Mr. English introduced himself and reminded everyone to state their name when speaking for the audio recording of the meeting to assist with the writing of the minutes. Mr. English then introduced the Virginia Secretary of Education Aimee Rogstad Guidera.

Sec. Guidera introduced herself and delivered a few brief remarks on the importance of the board's work to advance STEM education across Virginia. She then introduced Ms. Elizabeth Schultz, Assistant State Superintendent for Public Instruction.

Ms. Schultz delivered a few brief remarks on the importance of STEM education in preparing students to join the modern workforce.

Mr. English then asked the members of the board and the guests and staff present to introduce themselves and describe their background.

Following the introductions, Mr. English asked the board to review the minutes from the October 1st, 2021 meeting and the December 3, 2021 meeting before asking for any corrections. With no corrections heard, Ms. Sabarre then asked for a motion to approve the October 1st minutes. Dr. Shanta made the motion which was seconded by Mr. Dovi. Ms. Sabarre then called for a vote which passed unanimously without objection. Ms. Sabarre then called for a motion to approve the minutes which was made by Mr. Roberts and seconded by Mr. Dovi. Ms. Sabarre then called for a vote which passed unanimously without objection.

**Year One Priorities**

Ms. Sabarre discussed the following details from the December 3rd, 2021 meeting:

- The legal details of the board's creation, its duties and charge were discussed.
- Several subcommittees were created, and four main "work buckets" were identified.

- The board carefully examined the State STEM Commission report and identified the recommendations that are within the scope of the board's responsibilities
- A 3 year transformation map was developed and amended to formalize the board's work plan.
- The board will only be voting to approve year one of the transformation map at this meeting.
- Current STEM education efforts around throughout the state are disjointed
- The year one priorities include:
  - Creation of the board's vision and mission statement as well and creation of a 4-year plan.
  - Defining VA STEM education accurately and succinctly
  - Categorizing STEM careers via a subcommittee.
  - Use the state STEM rubric to inform the board's efforts via a subcommittee.
  - Engage with stakeholders

Ms. Sabarre then briefly discussed the remaining two years on the three year transformation map, which will be refined and updated as the board's work progresses. The work plan for the remaining two years of the plan was taken directly from the State STEM Commission Report. The desired end state is equity and access to high quality STEM education throughout the Commonwealth. Ms. Sabarre then opened the matter for discussion on the floor.

Secretary Slater remarked that the Governor's staff needs the knowledge of people who are experts in their field to inform decisions, and added that any input that the board can provide would be good input.

Secretary Guidera added that the input of the board is critical to ensuring that the STEM education effort does not become siloed, and added that the broad experience of the board members is critical to ensuring that this does not happen.

Mr. Pyon remarked that the state STEM commission report was excellent, and added that the definition of STEM is still a work in progress which must be refined as soon as possible.

Ms. Sabarre added that the purpose of the STEM definition is to provide a baseline for the board to use going forward.

Ms. White asked when Year One would actually begin. Sec. Slater responded that there would need to be sufficient time for legislation to be prepared and reviewed by potential sponsors. Ms. Sabarre asked if the end of October would be enough time. Mr. English responded that there was only one additional meeting on September 9th scheduled for the remainder of the year.

Dr. Shanta recommended concentrating on delivering the first three Year One priorities by the end of October, and continuing to work on the remainder until December.

Ms. Sabarre then stated that Dr. Shanta had proposed concentrating on the board mission and vision, defining STEM education, and categorizing STEM careers for delivery by the end of October, and delivering the remaining Year One priorities in December. She then asked for a motion to approve this course of action. Dr. Seshaiyer made the motion which was seconded by Ms. White. Ms. Sabarre then called for a vote which was approved unanimously without objection.

### **Board Vision and Mission**

Mr. Roberts said that the subcommittee has proposed draft mission and vision statements as follows:

**Mission:** “The Virginia STEM Education Advisory Board provides continuous recommendations, establishes and aligns integrative STEM education efforts, and expands resources for all Virginians.”

**Vision:** “Breathing L.I.F.E. into STEM.” Lead, Inform, Formalize, Engage (L.I.F.E.)

Mr. Roberts added that the term “integrative STEM” was used to be as all-encompassing as possible with regard to what specific fields were included. He added that the acronym L.I.F.E. signifies that the board is engaged in the organic process of “Breathing L.I.F.E. into STEM.”

Mr. Roberts then opened the floor for discussion.

After some discussion among the board members it was decided to amend the vision statement to read “Breathing New L.I.F.E. into STEM” Ms. Sabarre asked for a motion to approve the mission statement as presented, and the vision statement with the updated language. Dr. Ambur made the motion, Dr. Shanta seconded the motion. Ms. Sabarre called for a vote which passed unanimously without objection

### **STEM Education Definition**

Mr. English discussed the following:

- A definition of STEM must include a few critical elements.
- It must be short, easy to understand, aimed at K-12 education, and leave room for growth.
- The subcommittee is considering using a base definition and adding audience-specific elements to the definition as needed.
- K-12 Integrated STEM Components:
  - STEM learning is hands-on, collaborative, and intentional
  - STEM prepares students for lifelong learning and meaningful employment
  - Integrated STEM education delivers excellent academic and technical content to all learners
  - Integrative STEM makes connections and associations between content areas

The subcommittee proposes the following definition:

“Science, Technology, Engineering, and Mathematics (STEM) education applies discipline-specific (or content-learning) experiences where (all the) academic and technical disciplines intersect in complex relationships, resulting in collaborative problem solving and communication of solutions to universal human challenges. The application of transferable STEM literacy concepts will prepare all learners for the current and future workforce.”

Mr. English then opened the floor for discussion. After an extended period of discussion among the board members where several concerns were raised, Ms. Sabarre asked for a motion to return the matter to the subcommittee for further discussion. Mr. Roberts made the motion which was seconded by Ms. White. Ms. Sabarre called for a vote which passed unanimously without objection.

### **June Meeting Dates**

Ms. Sabarre proposed that the board meet sometime during the summer. After some discussion the consensus among the members was that June 30th was the best date for a meeting, with the location to be determined. Ms. White made a motion for a June 30th meeting, seconded by Mr. Dovi. Ms. Sabarre called for a vote which passed unanimously without objection.

Ms. Sabarre adjourned the meeting for lunch at 11:55 am. The meeting reconvened at 12:30 pm.

### **Workforce Development in Virginia**

Sec. Slater presented an overview of the current state of the workforce in Virginia and then engaged in a brief discussion with the members of the board.

Ms. Sabarre thanked Sec. Slater for his presentation and turned the meeting over to the subcommittee chairs for their reports.

### **STEM Occupations subcommittee**

Mr. Dovi and Ms. Salmon discussed the following:

- STEM Workforce in Virginia is growing
- Virginia will add nearly 150,000 STEM jobs over the next 5 years.
- It is not always clear what counts as a STEM occupation.
- Identifying what should be counted as a STEM occupation is part of the subcommittee's charge.
- Alignment Legislation 2021 (SB 1314) established the Office of Education and Labor Market Alignment, branded as Virginia Office of Education Economics (VOEE).
- The legislation implements core recommendations from SCHEV's higher education and workforce alignment report.
- STEM Legislation 2022 (HB 217 / SB 261) directs the STEM Advisory Board to examine the classification of STEM jobs in Virginia.

- 74 percent of employed civilians aged 25-64 with at least a bachelor's degree in a STEM field are not employed in traditional STEM occupations.
- Less than a third (28%) of STEM-educated workers actually work in a STEM job.
- The subcommittees work will be done in alliance with agencies and secretariats that are relevant to its work.

### **STEM Rubric subcommittee**

Dr. Ferrell and Ms. Sabarre discussed the following:

- The goals of the STEM Rubric subcommittee are as follows:
  - Define purpose
  - Define audience
  - Define format and scope
  - Create rubric
- The subcommittee intends to meet monthly and develop in four phases
  - Phase 1 - research, information, and ideation
  - Phase 2 - rubric draft
  - Phase 3- present draft to full board for review and feedback
  - Phase 4 - revise and finalize for a vote in December 2022

### **STEM Summit subcommittee**

Mr. Artybridge and Dr. Seshaiyer conducted a practical exercise followed by a discussion about the possible structure of a STEM Summit and who the potential attendees should be. Examples included school counselors, business leaders, and economic developers. There was also some discussion about the logistical challenges of organizing a large-scale event.

### **Public comments**

As no members of the public were present, Ms. Sabarre continued with the published agenda.

### **Closing remarks**

With no further matters on the agenda, Ms. Sabarre delivered some closing remarks

### **Adjournment**

With no further business, Ms. Sabarre asked for a motion to adjourn the meeting. Dr. Seshaiyer made the motion, which was seconded by Dr. Ferrell. Ms. Sabarre called for a vote which passed unanimously without objection and the meeting was adjourned at 1:55 pm.

The next meeting will be held on June 30, 2022 at a time and place to be determined.