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THE MAINE SENATE  
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**Joint Standing Committee on Education and Cultural Affairs on  
LD 823, An Act to Establish a Grant Program to Provide for Statewide and  
Equitable Access to Experiential Science, Technology, Engineering and  
Mathematics Competition Programs  
May 5, 2025**

Senator Rafferty, Representative Murphy, and esteemed members of the Joint Standing Committee on Education and Cultural Affairs: I am Dave Haggan and I have the honor of representing the people of Senate District 10, which includes three municipalities in Hancock County and nine municipalities in Penobscot County.

I am pleased to present LD 823, "An Act to Establish a Grant Program to Provide for Statewide and Equitable Access to Experiential Science, Technology, Engineering and Mathematics Competition Programs."

Hands-on experiential STEM programs are considered the gold standard in their ability to teach technical skills that are transferable across multiple domains and lifelong universal skills such as collaboration, communication, problem-solving, and critical thinking. All of these are needed to launch a successful career in STEM or non-STEM sectors. As indicated in the "Maine Economic Development Strategy" and its "The 2024 Reset" update, talent, innovation and infrastructural strategies are incredibly important to accomplishing the plan's economic development goals.

Specific programs that contribute to this vision advance multiple strategies through a combination of actions. For example, programs that help students explore Maine careers, teach digital economy skills, nurture an entrepreneurial start-up culture, and help develop solutions in emerging and heritage industries contribute to this strategy. Ideally, these programs should be available in all Maine schools. Unfortunately, there are still great inequities in the distribution of these types of programs.

The solution to the problem of Maine students lacking equitable access to experiential STEM learning is a school-based program that supports knowledge building and skill development within the context of a student-selected research project, with support from a trained teacher and a network of professionals from the private sector

The Maine State Science Fair is the singular program that combines the scalability of a school-based curriculum with the personalization and impact of an internship. It provides a structure in which students can pursue their own projects across all STEM domains and Maine's industries. The Maine State Science Fair is available to students in all Maine schools, and students may pursue their own project without prerequisite coursework. Unlike typical science fairs, the Maine State Science Fair is an enhanced program including an

established professional development program that trains and supports teachers who choose to implement this research and engineering program in their classroom. In recent years, student scientists and engineers have:

- Designed and tested effective treatments for hoof disease in horses,
- Used nanocellulose from wood fibers to clean water and remove toxins from soil,
- Designed machine learning algorithms to help predict Alzheimer's disease,
- Developed an effective ski wax using non-petroleum-based ingredients,
- Used school-based equipment to design a more comfortable and form-fitting ballet shoe,
- Used freely available remote learning tools to access subject matter expertise at a Maine-based laboratory.

All of these research projects and many more have been made available to Maine's emerging STEM leaders through participation in the Maine State Science Fair (MSSF). In the last 5 years, over 1,100 Maine students have completed an independent or small group project and presented their work at the Maine State Science Fair.

And what a gem the Maine State Science Fair is. It was established in 1945 and led by the Maine Principals Association for many years. Conceptually, the Maine State Science Fair belongs to the state but is operated by Maine Math and Science Alliance based here in Augusta and The Jackson Laboratory in Bar Harbor.

And just weeks ago, we had Maine Robotics down in the Hall of Flags. Imagine what we could accomplish as a state if we unleash that creativity in our youth.

The appropriation outlined in this bill would be awarded in the form of a grant from the Maine Technology Institute. Organizations operating the fair shall submit an annual application to MTI articulating their plans to ensure mandatory programmatic elements including teacher training and ongoing affiliation with the International Science and Engineering Fair in addition to the other requirements stated in the language of the bill. MSSF and its coordinating organizations shall derive no revenue from either schools or students and will rotate its location at least every two years to ensure access by students from all regions of the state.

If we don't act to support experiential STEM research and learning opportunities like this available to Maine's students, I am confident that we would be doing a disservice to the young people of our state. They should be given the opportunities that students in other rural states have available to them – to figure out a solution to a problem, to work with their hands to create and build something important to them, to come up with an interesting research question and work toward answering it, to fail and fail again and then finally succeed - these are the kinds of learning experiences that stick with a person, just like it did for me.

Thank you for your consideration of this bill and I am happy to answer any questions.