

Testimony in Support of LD 1740

We need engineers. From the cars we drive, to the phones and internet we rely on, to the buildings we live in—even down to the pen in your hand—an engineer helped design it.

We need engineers to develop the technologies that will address our greatest challenges: climate change, clean energy, food production, medical innovation, crumbling infrastructure, and so many other pressing crises.

We need engineers here in Maine—people who can maintain the systems we depend on and introduce new technologies and industries to keep our state competitive in the 21st century.

And yet, despite this need, engineering has the highest dropout rate of any college major. Only 30% of students who begin college intending to study engineering graduate with an engineering degree within four years.¹ One of the key reasons is that high schools do not adequately prepare students for the unique combination of design thinking, problem-solving, and academic rigor required in engineering programs.

When I left my job as a robotics engineer at Boston Dynamics in 2009 to return to Maine and teach high school engineering, I joined a small but exceptional community of engineering educators doing meaningful work across the state. Fifteen years later, most of those teachers have retired—and their positions have not been replaced. I'm not aware of a single high school in Maine today that offers a robust, four-year engineering program on par with what students can find in subjects like Math, History, or Art. At best, a school might offer a single-semester elective, often taught by a science teacher. But science and engineering are different disciplines, requiring distinct skills and approaches.

Despite this, there are a few small, vibrant programs where students are learning real engineering skills. One of the best examples is the STEM Coliseum, located in the Maine Mall. I've been working and volunteering there since it opened three years ago, and I've seen firsthand the exponential growth in student participation. On most nights this past year, the space was filled with 50 or more high school students from over 20 towns across southern Maine. They would come straight from school and work on their robots until 9 or 10 p.m.—and return on weekends to keep building or to mentor younger students in LEGO robotics.

Some of these students spend more time at the STEM Coliseum than they do at school. They are deeply engaged, learning through hands-on experience, collaboration, and problem-solving. As an educator, this is the dream: a space where students are genuinely excited to learn.

Each month, the STEM Coliseum continues to grow, offering new courses in machining, computer science, STEM tutoring, and engineering. So far, this incredible work has been driven almost entirely by a handful of passionate volunteers.

¹ <https://ira.asee.org/wp-content/uploads/2017/07/2017-Engineering-by-the-Numbers-3.pdf>

If we are serious about preparing Maine students for the future, we need more programs like the STEM Coliseum. We need to fund them, grow them, and treat them as essential parts of our education system. LD 1740 is a strong step in that direction.

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