

The Maine STEM Collaborative

2016 STEM Education Innovation Challenge Grant Competition for K-12 Educators

The Maine STEM Collaborative, with financial support from the Maine Space Grant Consortium, is pleased to announce the inaugural STEM Education Innovation Challenge Grant Competition. Our intention is to schedule a competition every other year in order to coincide with the Collaborative's signature event, the biannual *Maine STEM Summit*. The goal of this competition is to provide K-12 educators the opportunity to try out highly innovative ideas in STEM teaching and learning. Although we hope all funded ideas will be successful, we are more interested in stimulating an innovation culture within Maine's K-12 community that *"does not think out of the box, but thinks there is no box"*, and empowers educators to *"try fast, learn quickly, fail small, and evolve rapidly."* We also encourage ideas that combine the arts, humanities, and/or social sciences with STEM, as long as the outcomes focus on enhancing STEM teaching and learning.



The 2016 STEM Education Innovation Challenge Grant Competition culminates in a "Fast Pitch" presentation – a high energy, rapid-fire presentation event during which finalists share their vision and impact of their ideas with the audience and judges – *in just eight minutes!* - at the 2016 STEM Summit on Friday, November 18, 2016 at Colby College. After the presentations, we will announce grant awards ranging from \$2,000 to \$5,000 to the finalists to support implementation of their ideas.

Innovation means different things to different people, and comes in all shapes and sizes so we really do not want to get into this discussion because the mere attempt of defining innovation puts us in the *"there is a box"* realm which this competition is trying to avoid. Both in the applications and "Fast Pitch" presentations, applicants should tell us, with all their passions and emotions, why they believe that their ideas are truly innovative and unique. Applicants should ask themselves the following questions: Is the idea a breakthrough new way of STEM Teaching and Learning? Is the idea an improvement over current methods? Is the idea addressing an emerging STEM education issue or an old issue in a creative way? Will the innovation stand the test of time? Can the innovation distinguish itself from other approaches, and contribute significantly to student impact? Is the innovation replicable and scalable? There are many other questions that applicants should ask themselves about whether their ideas are innovative as long as the critical thinking process assumes *"there is no box."*

Eligibility

All K-12 teachers in STEM, arts, humanities, and social sciences are eligible to apply. The application must be submitted by the school which employs the teacher since the award will be made directly to the school. Informal educators, higher education faculty and staff, not-for-profit organizations and businesses are not eligible to apply but may participate as collaborators in the proposed activities.

Eligible Activities

In class and out-of-class teaching and learning STEM activities are eligible. Activities that combine the arts, humanities, and/or social sciences with STEM are also eligible as long as the outcomes focus on enhancing STEM teaching and learning.

Collaborations

K-12 teachers are strongly encouraged to collaborate with informal educators, higher education faculty and staff, not-for-profit organizations and businesses to strengthen their applications and to maximize opportunities for success. There is no limit on the number of applications a collaborator may participate in. Applicants may include funding for collaborators in their budgets but we prefer, however, that collaborators donate their time and perhaps materials and supplies in order to maximize the use of the award to support student activities.

Grade Categories, Award Levels and “Fast Pitch” Presentation

After reviewing all applications, the Selection Committee will select six finalists, two from each of the the following grade categories: K-5, 6-8, and 9-12. All six finalists will be invited to the 2016 STEM Summit on November 18, 2016 at Colby College to pitch their ideas to a panel of judges and to the audience. The winner, who will be chosen by the Summit audience, will receive a \$5,000 grant to support his/her project. The other five finalists will each receive \$2,000 to support their projects. All funded projects must be completed within two years of the award.

“Fast Pitch” Coaching and Mentoring

To prepare the finalists for their "Fast Pitch" presentations, we will schedule one-on-one coaching on their eight-minute elevator pitches and one-page executive summaries during the week of October 17, 2016. The coaching period will require no more than 2 hours of your time and we will schedule a time and place that accommodates your schedule in order to provide you advice and recommendations on how to improve your presentation at the 2016 STEM Summit. There is a possibility of scheduling a follow-on short 3-hour workshop to learn about the key elements of an effective presentation, and for additional instructions and coaching. All finalists will have access to valuable strategic advice and resources, and will have the opportunity to cultivate ongoing relationships. Finalists will also be assigned to work with volunteer coaches who will assist them in distilling the feedback and refining their pitch into a crisp eight-minute presentation.

Examples of “Fast Pitch” presentations can be viewed at <https://www.youtube.com/user/SIFastPitch>. These presentations were made by entrepreneurs at the Social Venture Partners' Annual Fast Pitch Competition. Very few of the presentations were by K-12 educators but they did it. We may not be that sophisticated but we will make every effort to make all finalists feel comfortable during their presentations.

Timeline

Application Due Date:	5 p.m., Friday, September 16, 2016
Notification of Finalists:	Week of October 3, 2016
Fast Pitch Coaching:	Week of October 17, 2016
Fast Pitch Presentation:	Friday, November 18, 2016 at Colby College

Restrictions on Use of Funds

The award may be used for travel, stipends for teachers and substitute teachers, small equipment, consultants, and materials and supplies. Indirect costs are not allowed.

Application Package

The application package includes the cover sheet, the project description and budget, which are attached to this announcement. The word version for application package can be downloaded from the Competition’s webpage at <http://www.msgc.org/educators/k12/stem-education-innovation-challenge-grant-competition/>

The cover sheet must be completed and signed by the applicant and the school's principal. The project description should not exceed 2 pages of single spaced description of your project. All margins must be 1" inch all around, and the font size must not be smaller than 10. You may use smaller fonts for images and tables as long as they are readable. Email your signed cover sheet, project description, and budget as a single pdf document to mestemchallenge@gmail.com no later than 5 p.m., Friday, September 16, 2016. Please use the following electronic file naming convention when emailing your complete application:

Last Name of Teacher_School Name

Selection Criteria

The Selection Committee will review all applications and apply the criteria below to select the six finalists. Each criterion will be scored as follows: 1=Low; 3=Medium, 5=High.

1. The extent to which the idea represents *“does not think out of the box, but thinks there is no box”* innovation, and aligns with one or more of the STEM standards.
2. The adequacy of the applicant's discussion of what students will learn or benefit from the project, of student engagement, relevance and rigor, and of the anticipated benefits to the teacher and to the school.
3. The extent to which collaborators, teachers, parents, community persons and others in developing and carrying out the proposed project.
4. The extent to which the proposed project's key milestones and measurable objectives are appropriate and realistic, and in alignment with the proposed budget.
5. The adequacy of the applicant's discussion on how they will know their project is successful, how the results will be documented, and the extent to which the project is replicable and scalable.
6. The extent to which the applicant intends to continue his/her idea beyond project completion.

Judging “Fast Pitch” Presentations

Much of the “Fast Pitch” presentations depend on what the applicants can present in a short pitch. Strong pitches will tell a story that connects emotionally as well as rationally, and be presented with energy and conviction. Presentations should make good tradeoffs regarding what can be presented in the allotted time. Each presentation will be scored as follows:

1 (Low)	Weak Presentation with weak content
3 (Medium)	Good presentation with good coverage of key topics
5 (High)	Exceptional presentation with coherent story, depth beyond criteria, and that leaves a lasting impression.

Progress and Final Presentations

Each awardee will be expected to make a presentation on their progress next summer at a Maine STEM Collaborative event (time and location to TBD). A one-page summary should accompany the presentation that discusses the project's progress, lessons learned, and potential improvements to enhance success. If the project ends next summer, the presentation and one-page summary will constitute the final report. If the project ends in 2018, the awardee will be invited to make a final presentation at the 2018 STEM Summit.

Contact for Additional Information and Questions

Please do not hesitate to send your inquiries to mestemchallenge@gmail.com. All Frequently Asked Questions (FAQs) and responses will be posted on the competition's website and routinely updated.

The **Maine STEM Collaborative** is a statewide unincorporated partnership of over 60 individuals from education, research, business, government, and nonprofit sectors that was formed by the Maine Mathematics and Science Alliance in 2007 to help increase the quality of STEM education, student aspirations, and public awareness of STEM education. We work closely with the Maine STEM Council on outreach to promote STEM educational initiatives, and particularly, the Collaborative's signature statewide event – the Maine STEM Summit - to bring together those involved in these efforts.

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Cover Sheet

Please do not add to this page, which must remain a single page

APPLICANT INFORMATION

Name of Teacher	Email Address	Phone Number
Name of Principal	Email Address	Phone Number
Name of School	Address	Phone Number

PROJECT INFORMATION

Start Date:		End Date:	
Title of Project:			
Provide a concise overview of your project suitable for public use. (max of 100 words)			
NGSS or other STEM Standards to be Addressed			
Grade Category:			

SIGNATURES

If awarded this STEM Innovation Challenge Grant, I agree to meet the requirements and obligations of the award.

Name of Teacher	Signature	Date

If awarded this STEM Innovation Challenge Grant, I agree to support the teacher in order to meet the requirements and obligations of the award, and to ensure the success of the project.

Name of Principal	Signature	Date

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Project Description

Your project narrative is limited to 2 pages

1. Outline why you believe your idea is innovative, represents a “*does not think out of the box, but thinks there is no box*” thinking, and aligns with one or more of the STEM standards.
2. Summarize the engagement of and value to your students, what they will learn, the anticipated outcomes that better prepare them to meet the selected standards, as well as the anticipated benefits to you and to your school. Your response should summarize any differences in the number of student participants, and student learning and anticipated outcomes at the \$2,000 award and \$5,000 award levels.
3. List and describe the involvement of your collaborators, teachers, parents, community persons and others in developing and carrying out the proposed project.
4. Summarize the proposed project’s key milestones and measurable objectives for a \$2,000 award and for a \$5,000 award.
5. Describe how you will know your project is successful at both award levels, how the results of the proposed project will be documented, communicated to others, and the extent to which the project is replicable and scalable.
6. Discuss your plan to continue your idea beyond project completion.

You may attach up to 2 pages of other useful material or information. This will not count toward the 2-page limit for the project description.

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Sample Project Budget

Sample Detailed budget for a \$5,000 Award

Budget Item	Amount (not to exceed \$5,000)	Other Funding Sources		Total Budget
		Amount	Source	
Professional Plus (Pro Plus) Multiparameter Instrument	\$1,220			\$1,220
24 Clipboards	\$45			\$45
Allen Company Black River Bootfoot Hip Boot With Endura Upper	\$45			\$45
(6) Frabill PVC Baitwell Net	\$70			\$70
12 Bicycles for trips to local streams	\$3,200	\$1,600	ABC Foundation	\$4,800
Substitute Teacher	\$420			\$420
Assessment Assistance Time		\$5,000	University ABC	\$5,000
Total Expenses	\$5,000			\$11,600