Maine STEM Landscape Analysis:
EXECUTIVE SUMMARY

In 2014, Maine Campus Compact (MCC), with support from Maine Experiential Program to Stimulate Competitive Research (EPSCoR), conducted a statewide landscape analysis to assess ways to advance science, technology, engineering, and math (STEM) education through collaborative opportunities between higher education, K-12 schools, and community partners in Maine. Seventy school districts and twenty higher education institutions throughout the state received one of two surveys: one for secondary schools and the other for higher education. In total, surveys were sent to 573 secondary school (SS) and higher education (HE) educators, administrators, and staff with a 29% response rate. Central findings from the SS and HE surveys revealed:

- SS respondents consider the top three challenges facing STEM education in Maine to be: insufficient funding for K-12 STEM education (96%), lack of good professional development for STEM educators (88%), and inadequate links within the K-20 pipeline (87%).
- 90% of SS respondents believe not enough collaboration with higher education institutions exist.
- 90% of SS respondents and 91% of HE respondents believe that collaboration between K-12 and higher education would help strengthen STEM education.
- 93% of SS respondents believe that community engagement strengthens STEM efforts.
- Most effective collaborations with HE as identified by SS respondents are: (1) *interactive* field trips to HE research sites, (2) professional development opportunities, and (3) one-week STEM learning modules for the classroom.
- Major challenges facing HE STEM programing are: lack of preparation for college level STEM courses (67%), insufficient funding for STEM K-12 education (62%), and inadequate links between the K-20 pipeline (58%).
- Most effective HE STEM initiatives identified by HE respondents to strengthen SS STEM education are: college student-led STEM activities, professional development for SS teachers by faculty, and access to HE research sites for SS students.
- Faculty incentives to implement collaborations with secondary schools as identified by HE respondents are: (1) stipends, (2) help with identifying collaborative opportunities, and (3) assistance with SS outreach.
- Only 59% of HE respondents report that their HE institution currently integrates community engagement into STEM curricula, despite 93% of SS respondents stating that it would help to strengthen STEM.

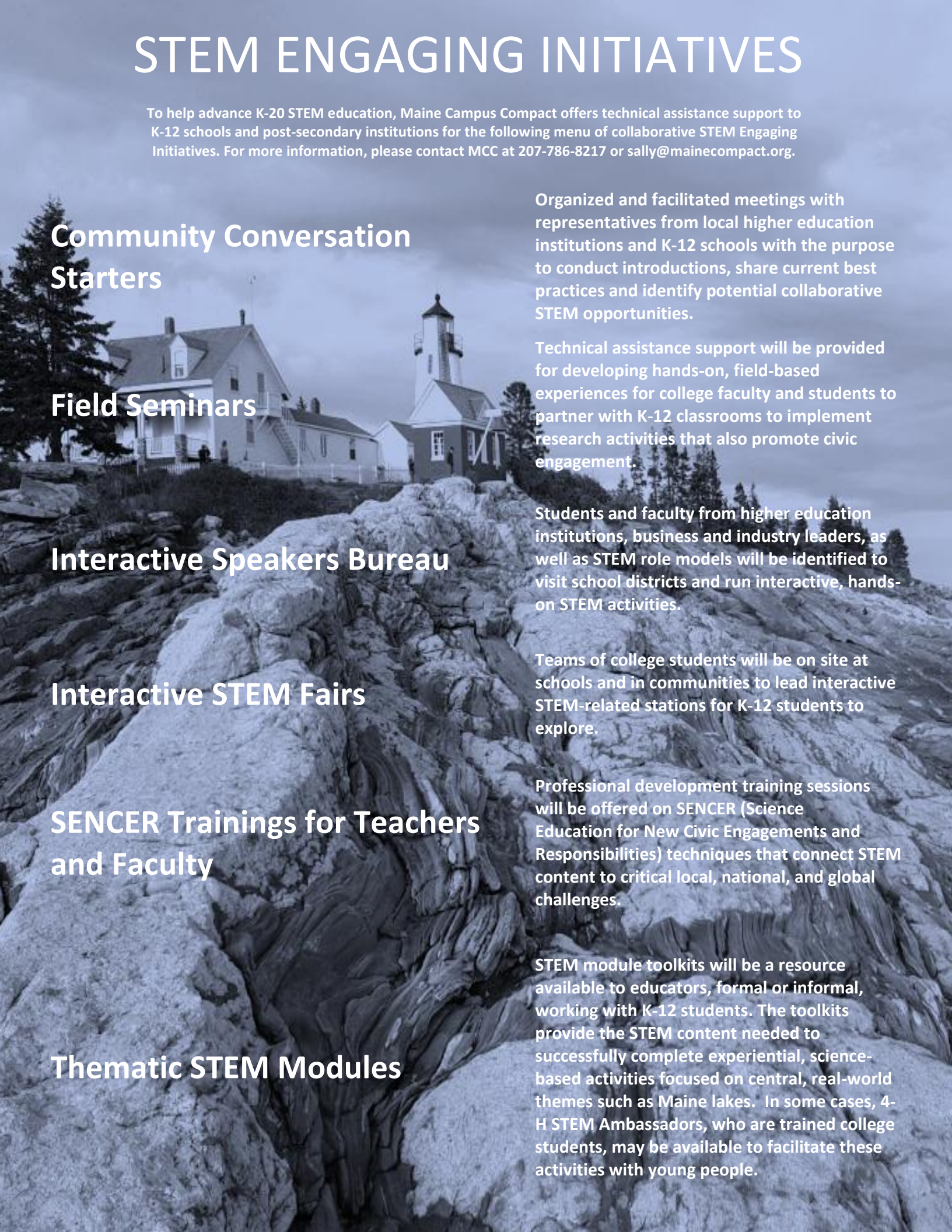
For more information, please contact Maine Campus Compact at 207-786-8217 or sally@mainecompact.org

MAINE EPSCoR

Campus Compact Maine

STEM ENGAGING INITIATIVES

To help advance K-20 STEM education, Maine Campus Compact offers technical assistance support to K-12 schools and post-secondary institutions for the following menu of collaborative STEM Engaging Initiatives. For more information, please contact MCC at 207-786-8217 or sally@mainecompact.org.



Community Conversation Starters

Organized and facilitated meetings with representatives from local higher education institutions and K-12 schools with the purpose to conduct introductions, share current best practices and identify potential collaborative STEM opportunities.

Field Seminars

Technical assistance support will be provided for developing hands-on, field-based experiences for college faculty and students to partner with K-12 classrooms to implement research activities that also promote civic engagement.

Interactive Speakers Bureau

Students and faculty from higher education institutions, business and industry leaders, as well as STEM role models will be identified to visit school districts and run interactive, hands-on STEM activities.

Interactive STEM Fairs

Teams of college students will be on site at schools and in communities to lead interactive STEM-related stations for K-12 students to explore.

SENCER Trainings for Teachers and Faculty

Professional development training sessions will be offered on SENCER (Science Education for New Civic Engagements and Responsibilities) techniques that connect STEM content to critical local, national, and global challenges.

Thematic STEM Modules

STEM module toolkits will be a resource available to educators, formal or informal, working with K-12 students. The toolkits provide the STEM content needed to successfully complete experiential, science-based activities focused on central, real-world themes such as Maine lakes. In some cases, 4-H STEM Ambassadors, who are trained college students, may be available to facilitate these activities with young people.