Cultivating Ensembles in STEM Education & Research (CESTEMER):

The CESTEMER conference builds community, facilitates collaboration, and celebrates the role of ensembles. CESTEMER is a product of an initial winter meeting on performance, science and science education, themed Cultivating Ensembles in STEM Education and Research held in 2012. The meeting was hosted by the NSF funded *Improvisational theater for computing scientists* research project. Performing is something that people do. This meeting brought together researchers and practitioners from a variety of scientific and educational backgrounds to explore the variety of performances that are being done in science and science education. CESTEMER is an innovative conference that is building community for faculty, graduate students, K-12 educators and professionals in STEM and art fields who are exploring, practicing, and researching performance in science. These innovators often experience being the "only one" in their institutions asking questions about the practical relationship between performance and how we do and learn science.

A growing population of STEM students and professionals in education and research are actively reinventing STEM culture in collaboration with, and learning from, professionals in theater, leadership and human development. Together they are developing a community of practice and research that explores the relevance of performance and performing arts to creating STEM fields as humanistic, collaborative, inclusive, highly innovative fields of practice. These artists, scientists and educators are intentionally cultivating diverse and often multi disciplinary groups as working ensembles. These ensembles are developing creativity, critical thinking, communication and innovative skills in STEM classrooms, conferences, outreach and research. Their work broadly spans areas of science communication, inclusion and arts in STEM (STEAM).

Disciplines and practices (including, but not limited to): computing, physics, engineering, biology, mathematics, performance based health practices, theater, dance, music, and education.

We address in multiple areas such practical questions as:
● Inclusion: How do we create an inclusive, diverse, open and collaborative community of STEM practitioners?
● Communication and Outreach: How do we talk to one another, people outside of our discipline, or those not in STEM careers?
● Education and Professional Development: How does performance and STEAM affect learning content and developing professional identity?
● Group Dynamics and Creativity: What interactions and social make up are needed for innovative research?
● Cross and Multidisciplinary: How does performance foster cross-disciplinary approaches and understanding?

Conference objectives
● Seed innovative collaborations across disciplines
● Learn successful approaches to developing a diverse (women, underrepresented minorities, 1st generation) STEM professionals
● Share and learn performance-based educational and science research practices.
● Develop skills mentoring, building inclusive environments, leading groups and communicating science.

The format is highly interactive: speakers, hands on sessions, open spaces, and a poster/share faire.