



Materials Camp for Teachers



"I learned many ways in which science, especially materials science, applies to the real world. I will have answers when students ask, "How will I ever use this?" " Teachers Camp Participant

Who are We?

The ASM Materials Education Foundation (ASM MEF) was founded in 1952 by ASM International, the world's largest and most established materials information society, to advance science and engineering through the support of education and research. Our vision is to be a leading provider of inspirational materials science educational resources to excite future generations about STEM learning and careers.

ASM MEF offers programming for both students and teachers, focusing on STEM competencies and inquiry-based teaching strategies to bring materials science – and all STEM subjects – to life. Since 2003, we have reached more than 16,000 students and 10,000 teachers. Through our Teacher Materials Camps and Student Materials Camps, we help teachers improve their STEM teaching skills and help students increase their interest in and knowledge of STEM subjects. We also supports students and teachers financially through our undergraduate scholarships and K-12 classroom grants. Finally, we encourage innovation in university students through an annual design competition.

"This camp left me with many ways to increase student engagement through hands-on activities that have real-world applications." Teachers Camp Participant

What is Materials Camp for Teachers?

Materials Camp for Teachers is an intensive, five-day professional development program for middle and high school teachers held in more than 30 cities in the US and Canada that provides STEM content, teaching techniques, and labs and demonstrations to teachers. The local camp will be held at the University of Houston-Downtown (UHD) in June 2019 and will serve 25-30 teachers. The impact of the Camps grows exponentially, as each teacher engages approximately 100 students in improved STEM learning each school year.

The Camp teaches the basics of materials science technology by having teachers work hands-on with common materials including metals, ceramics/glass, polymers, and composites. Through this experience, the teachers develop a greater appreciation for the importance of these materials to science and technology, and modern life in general. By building their STEM knowledge and learning new teaching techniques, they will lead students to become engaged, energized, and enthusiastic about STEM. This year's Camp will offer the following:

- Instructors who are ASM-certified Master Teachers with 20+ years of classroom teaching experience
- Live lab experiences
- Strategies teachers can use to incorporate materials science and other STEM subjects into their classroom curricula
- A selection of materials and resources teachers take with them so they can recreate demonstrations and experiments in their classrooms
- Follow-up instruction and support through webinars and local learning communities

We will follow the progress of teachers in using what they learn in their classrooms, and seek to achieve the following goals:

- 90% of teachers will indicate increased confidence in STEM concepts, teaching techniques, and the use of inquiry-based methods in their classrooms.
- 85% of teachers will implement at least four materials science modules in existing STEM curricula.
- 70% of students of participating teachers will express greater interest in technology and engineering topics and/or careers after the teacher presents materials from camp.

"It has changed the way I look at our world and its composition. And I hope to do the same with my students and encourage them to seek out career opportunities in areas involving materials."

Teachers Camp Participant

How Can You Help?

Each Camp costs approximately \$30,000 to put on, but ASMMEF provides the Camp at no cost so that it is accessible to teachers from both low- and high-income communities. Your support will help cover the costs of the Camp, including staffing, travel, materials and supplies, meals, and project evaluation costs.

Your support will also allow us to grow and enhance the Houston Camp experience. In 2019, we will work with local partners to recruit more new teachers into the program, especially those who teach in low-income communities. We will also expand the program so that teachers continue with their learning even after the camp experience is over. Plans include monthly webinars where attendees from across the US and Canada will have the opportunity to participate in additional instruction and peer sharing, as well as ask questions about classroom implementation. In addition, we will work with our local ASM chapter to develop a learning community that will bring together teachers with ASM chapter members to provide support and allow for greater awareness of careers and opportunities to share with students.