

Maine Space Grant Consortium (MSGC)

MERITS Program – Teacher Component

Guidelines for Mentors and Host Institutions

In keeping with its mission to build the STEM (science, technology, engineering and mathematics) workforce in Maine, the Maine Space Grant Consortium (MSGC) is pleased to reinstate the Teacher Component in MERITS and will support a limited number of internships for highly motivated secondary teachers. In contrast to the goals of the MERITS Program for student interns, the program's goal for teacher interns is to broaden their knowledge in STEM as a way to better understand STEM career pathways, help bring new ideas to the classroom through lesson plans and to increase students understanding of and interest in STEM. The objective is to show MERITS Teachers how the fundamentals of STEM are integrated into research and development projects and not to train and educate them in the nuances of any specific STEM discipline.

The MERITS Teacher Component is a six-week educational program that provides STEM internships for teachers who are interested in broadening their knowledge in STEM. Teachers will be matched with mentors at MSGC Affiliates who are committed to the principles of integrating STEM units in Middle and High School math, science, Language Arts, Social Studies and the Humanities classes. This requires mentors to make considerable effort to identify projects based on their current work that would provide MERITS Teachers a broad understanding of how STEM is integrated in the projects.

Requirements of MERITS Teachers

Every MERITS Teacher must complete the required time commitment for the six-week program at a MSGC Affiliate and attend all scheduled events including lectures and group activities while at the Affiliate's facility. At the end of the summer participants are required to:

- write a 5-page summary of their summer experience,
- produce a lesson plan or hands-on lab exercise for their classroom based on their summer internship,
- give an oral report on their experience to other participants and mentors during a day-long celebration at the conclusion of the program,
- present their experience (poster or oral presentation) at one of several statewide educators meetings such as the Maine Science Teachers Association, etc., and
- communicate each week by phone, email or blog with MSGC staff and/or other program participants.

Effective Practices for Mentors:

The goal of the MERITS Teacher Component is to broaden the teachers knowledge in STEM as a way to help bring new ideas to the classroom through lesson plans and to spark students' interest in STEM. In this context, effective practice at the local MERITS Teacher internship sites is expected to include: sufficient preparation and orientation for interns, active involvement

of interns in a “research team” with specific job tasks, in a context where they are able to increase their STEM knowledge. “Research” is understood to include monitoring, production and educational projects for MERITS interns.

1. Goals and responsibilities:
 - a. Be aware of and clearly articulate the MERITS goals. With familiarity and commitment to their roles and responsibilities, mentors are better able to provide and supervise a successful research experience.
2. Orientation and preparation:
 - a. Adequately prepare space, resources, and other supports for interns in anticipation of their arrival
 - b. Quickly integrate arriving interns into the workings of the site, introduce them to work colleagues and bring them up to speed on their projects
 - c. Provide access to all the information, research papers, data, and tools needed to get oriented and “onboard” with the research/work ahead of time.
3. Meeting the needs of interns while meeting the needs of mentors and the research project:
 - a. Mentors share research project outcomes/facility objectives with the interns
 - b. Interns meet with their mentors to determine the scope of their work and to choose which component of research they will work on
 - c. Interns and mentors meet regularly (weekly or more) to discuss progress on the research.
 - d. Mentors provide other researchers, graduate students, or personnel to whom interns can go for guidance if the mentor is not available.
4. Interns as Researchers:
 - a. Mentors make sure that the interns are authentically involved in the project, even if the skills are not as advanced as expected.
 - b. Sometimes interns have other skills necessary to the success of the project. Encourage their participation in these areas of strength, i.e., computing, outreach, etc.

In summary, the most successful interns feel like an integral member of the research team, understand how their work fits into the whole, and have the supports and resources to carry out their work.