Science Mathematics and Technology Education
Western Washington University

SMATE Mission

- To be a national model of the highest quality preparation of future elementary teachers of STEM and secondary STEM teachers
- To participate in research and dissemination of new knowledge in STEM education and education reform to the university and K-12 communities
- To serve as a valuable STEM education resource to the university and broader community.

SMATE Strengths

Center Model

- Faculty with half time appointments in SMATE and their disciplinary departments
    - Biology, Chemistry, Geology, Physics, Computer Science, Education (Elementary and Secondary)
    - Regularly collaborating with faculty fr**om** Math

Strategic Areas of Focus

- **Teacher Preparation**
    - Use of a locally developed, innovative Elementary Science Course sequence and curricula for introductory physics, geology, biology, and chemistry,
    - Modeling of effective science teaching, learning, and assessment practices emphasizing Next Generation Science Standards (NGSS) and connections to Common Core State Standards in Math
    - Collaborating with other Washington state institutions to create new models of teacher preparation in order to produce NextGen STEM teachers
- **Undergraduate STEM Education**
    - Multi-disciplinary, and multi-institutional collaborations between faculty in Biology, Chemistry, Engineering, Environmental Science, Geology, Physics, Math, Computer Science, and Education in order to improve undergraduate teaching and learning for all students and increase the diversity of the STEM workforce
- **K-12 Teacher and Administrator Professional Development and K-12 School Reform**
    - Collaborations between teachers, administrators, and higher education faculty to improve K-12 teaching and learning as envisioned in the Next Generation Science Standards, the Common Core State Standards in Mathematics, and the Teacher Principal Evaluation Program

SMATE faculty and staff regularly secure grant funding from state and national sources to support improvements in K-16 teaching and learning with an emphasis on generating new knowledge about student-centered inclusive instructional practices, and whole school and institutional reform.

Current research interests include integrating Computer Science, Engineering, and Sustainability principles and practices into STEM teacher preparation and K-12 professional development activities.