

Mobilizing STEM Education

for a Sustainable Future



For more than two decades, national groups have called for radical improvement in science education at all levels. Over that time, initiatives funded by foundations and administered by colleges and universities have sought to identify, implement, and study resources and practices that more effectively foster student learning in undergraduate STEM courses. Yet the resources and practices developed by these initiatives have not spread through U.S. postsecondary education, despite mounting evidence that they are more effective than traditional approaches.

Mobilizing STEM Education for a Sustainable Future seeks to identify new strategies to transform the organization and practice of STEM education.

Our Aims: To critically examine the tacit ‘theories of change’ embedded in funded STEM reform initiatives; and to articulate new theories of change that can help spread teaching practices that will better enable undergraduates to address the urgent problems that we now face on our planet.

Our Plan: We will bring together two groups of **critical advisors**—national experts and leaders carefully selected for their diverse knowledge and experience—to examine and help articulate new theories of change.

The first group of critical advisors will meet in January 2009 to re-envision the theories of change that shape education policy and action in institutions of higher education. These individuals were selected for their expertise and achievements in the following domains:

- Higher education science and engineering curricula pertaining to global issues
- Higher education policy and practice, including accountability, economics, and resource & reward distribution
- Professional development in teaching for current and future faculty
- External funding sources for higher education
- Higher education associations
- Improving university teaching and learning
- Media and communications

The second group of critical advisors will meet in in June 2009 to review and refine the theories of change formulated by the first group and then use these theories to develop strategies that will enable institutions of higher education to meet their responsibilities to contribute solutions to current global crises through more effective STEM education.

Outcome: A document that promotes these strategies to national leaders who are positioned to implement them will be developed and disseminated in 2010.

Principal Investigators

Susan Millar
Senior Scientist, Wisconsin Center for
Education Research
University of Wisconsin-Madison
sbmillar@wisc.edu

Jean MacGregor
Senior Scholar, Washington Center for
Undergraduate Education
The Evergreen State College
MacJean@evergreen.edu

Cathy Middlecamp
Distinguished Faculty Associate
Department of Chemistry
University of Wisconsin-Madison
cmiddle@wisc.edu

Elaine Seymour
Director Emerita, Ethnography and Evaluation
Research
University of Colorado, Boulder
elaine.seymour@colorado.edu

Research Staff

Mark Connolly
Assistant Scientist, Wisconsin Center for
Education Research
University of Wisconsin-Madison
mconnolly@wisc.edu

Facilitator for the Critical Advisors Meeting

Melvin George
President Emeritus of St. Olaf College and the
University of Missouri
mgeorge@math.missouri.edu



<http://mobilizingstem.wceruw.org/>

This project is funded by the National Science Foundation (Award no. 0744106).
Mobilizing STEM is housed within the Wisconsin Center for Education Research in the School of Education at the University of Wisconsin-Madison
Copyright ©2008 The Board of Regents of the University of Wisconsin System

