

# SCIENCE EDUCATION FOR NEW CIVIC ENGAGEMENTS AND RESPONSIBILITIES

## SENCER

- Connects science and civic engagement by teaching through complex problems.
- Invites students to put scientific knowledge and the scientific method to use on matters of immediate interest to students.
- Locates the responsibilities, challenges, and pleasures of discovery as the work of the student.
- Fosters both STEM learning and 21<sup>st</sup> century civic skills:
  - Ethical reasoning,
  - Critical thinking,
  - Evidence-based, unscripted, problem-solving,
  - Technological and quantitative literacy, and
  - Teamwork and effective communication.
- Approaches regard the learning environment as both conceptual and physical “civic space” that conveys and establishes the “pathways” for learning and for producing knowledge.
- Approaches reflect an understanding of how the physical environment shapes the relationships, hierarchies, roles, and responsibilities of the learner.
- Fosters embodied learning for all.



## WHO THEY ARE

SENCER is the signature initiative of the National Center for Science & Civic Engagement at Stony Brook University. Established in 2001, SENCER is a national STEM reform initiative funded by NSF to promote teaching science through pressing civic challenges of immediate interest to students.

Over 4000 participants from 500 institutions are part of the SENCER community. These individuals and campuses are working to make STEM learning real, relevant, rigorous, and responsible; their mission is to empower citizens as responsible lifelong learners who can apply the knowledge, values, and methods of science to the complex civic challenges facing our democracy.

## WHAT THEY DO

SENCER offers workshops on faculty development and course design. SENCER prepares and disseminates curricular models, assessment tools, teaching guides, and research reports. SENCER models provide examples of field-tested courses that teach science content in the real-world contexts of policy, ethics, history, economics, psychology, culture, and law.

## QUESTIONS THEY ASK

- How can learning spaces facilitate connections between academic and civic life?
- How can the built environment empower, rather than inhibit, all USERS (students, faculty, community members) as they learn and co-create new knowledge and solutions for our complex civic challenges?
- How does SENCER disrupt or transform the “normalized” approach to STEM teaching?

### RESEARCH & RESOURCES

- <https://sencer.net>
- <http://serc.carleton.edu/>
- <http://www.pkallsc.org/partners/sencer>

