The Center for Science and the Schools (CSATS), at Penn State University, facilitates mutually beneficial and sustainable relationships between Penn State STEM researchers and outreach providers, and K-12 schools that enhance K-12 science and engineering education across Pennsylvania.

Spectrum of CSATS Project Activities

• Teacher PD workshops (1 Day; Series; Week-long)
• Research Experiences for Teachers/Young Scholars
• Classroom follow-up after workshops or RETs
• Undergraduate and graduate student involvement
• Curriculum design

CSATS Research

CSATS engages in research examining aspects of teacher-researcher partnerships that will inform future work and collaboration for both partners. These research efforts are meant to design and execute cohesive and comprehensive pre-college STEM areas of impact that integrate higher education and diversity.

CSATS developed the STEM Education Outreach Model to provide leadership for Penn State STEM researchers to develop and execute cohesive and comprehensive pre-college STEM broader impacts proposals and projects that align with degree generation and diversity.

Contact Information

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Supporting STEM Researchers

CSATS can assist scientists and engineers in the development and implementation of the education outreach plan of their research grant proposals. CSATS expertise includes:

• Understanding of funding agency expectations for quality education plans
• Expertise in understanding outreach and education components
• K-16 education teaching and learning strategies
• Understanding needs of diverse audiences
• Experience coordinating wide variety of research topics with outreach programs
• Established relationships with school districts and IUs across PA
• Knowledge about other Penn State outreach entities and opportunities for leveraging existing programs

CSATS can support researchers through multiple levels of involvement in proposal development

• Consultation
• Design of cohesive education outreach programs integrating higher ed, K-12 and diversity
• Grant writing of education outreach components
• Implementation of education outreach components

Supporting K-12 Teachers

CSATS helps bring modern learning theory into teacher professional development, classroom programs, and new educational resources in STEM education. CSATS support for teachers includes:

• CSATS Saturday Science Workshops for K-8 Teachers
  — Free workshops on a variety of topics geared to provide teachers with increased content knowledge and activities which they can use in their classrooms. Continental breakfast and lunch is provided and ACT 48 is offered for a small fee.

• Easy access to:
  — Penn State professional development programs for teachers
  — Penn State curriculum resources
  — Penn State outreach resources and programs
  — PA and national STEM education standards

• Monthly electronic newsletters of current teacher and student opportunities
• Professional development for enhancing STEM teaching practice through teacher-researcher partnerships with Penn State researchers

Supporting and Enhancing Penn State STEM Education Outreach Efforts

Penn State has a rich tradition of STEM education outreach, reflected in the large number of outreach entities across the STEM colleges and the variety of programs they provide. CSATS strives to support the efforts of these entities, while promoting collaboration and leveraging of existing programs. We support these goals by providing services and resources as described to the right.

Services

• Collaboration on K-12 STEM education outreach, reflection, and improvement projects
  — K-12 STEM education outreach
  — STEM education research

Resources

• Curriculum Center (K-12 Curriculum and Science Education Resources)
• PSU STEM Outreach Database
• On-line Digital STEM Education Research Library

CSATS Projects

CSATS collaborates with many partner organizations to design and implement projects that aim to enhance K-12 STEM education outreach, focusing on project sustainability, and impacting audiences. Our approach to projects reflects the depth of background of CSATS faculty and staff in science, K-12 science teaching, education research on teaching and learning, and science teacher preparation. These projects are designed to enhance and strengthen science programs.