

SCIENCE AND TECHNOLOGY CENTERS

The Science and Technology Centers (STC): Integrative Partnerships program supports innovative, potentially transformative, complex research and education projects that require large-scale, long-term awards. STCs conduct world-class research through partnerships among academic institutions, national laboratories, industrial organizations, and/or other public/private entities, and via international collaborations, as appropriate. They provide a means to undertake important complex investigations at the interface of disciplines and/or novel approaches within disciplines. STC investments support the NSF vision of advancing discovery, innovation and education beyond the frontiers of current knowledge, and of empowering future generations in science and engineering.

The National Science Foundation established the Science and Technology Centers Program in 1987. The objective was to mount an innovative, interdisciplinary campaign in important areas of basic research. STCs have grown from a new idea into a vital network of programs. They have catalyzed breakthroughs, built bridges of exchange with industry, spun off new technologies and businesses, and trained young scientists and engineers.

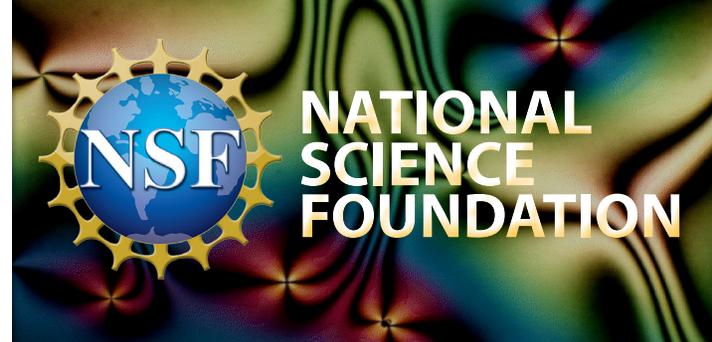
OFFICE OF INTEGRATIVE ACTIVITIES

The Office of Integrative Activities (OIA) catalyzes excellence in research and education across the National Science Foundation. It funds emerging, cross-disciplinary research programs, education activities, and initiatives that enhance scientific discovery, invest in research infrastructure, and strengthen the nation's technically trained workforce. For example, OIA manages the Experimental Program to Stimulate Competitive Research, the Major Research Instrumentation program, the Cyber-Enabled Discovery and Innovation program, and agency-wide Science and Technology Center activities. Additionally, OIA administers prestigious honorary award programs—such as the National Medal of Science and the Alan T. Waterman award—and professional internships for aspiring scientists and engineers. OIA provides policy support to the Director and Deputy Director of the National Science Foundation and plays a leadership role—working in partnership with NSF directorates and offices—to promote agency-wide policy, support for new strategic directions, and programmatic and operational unity and alignment.

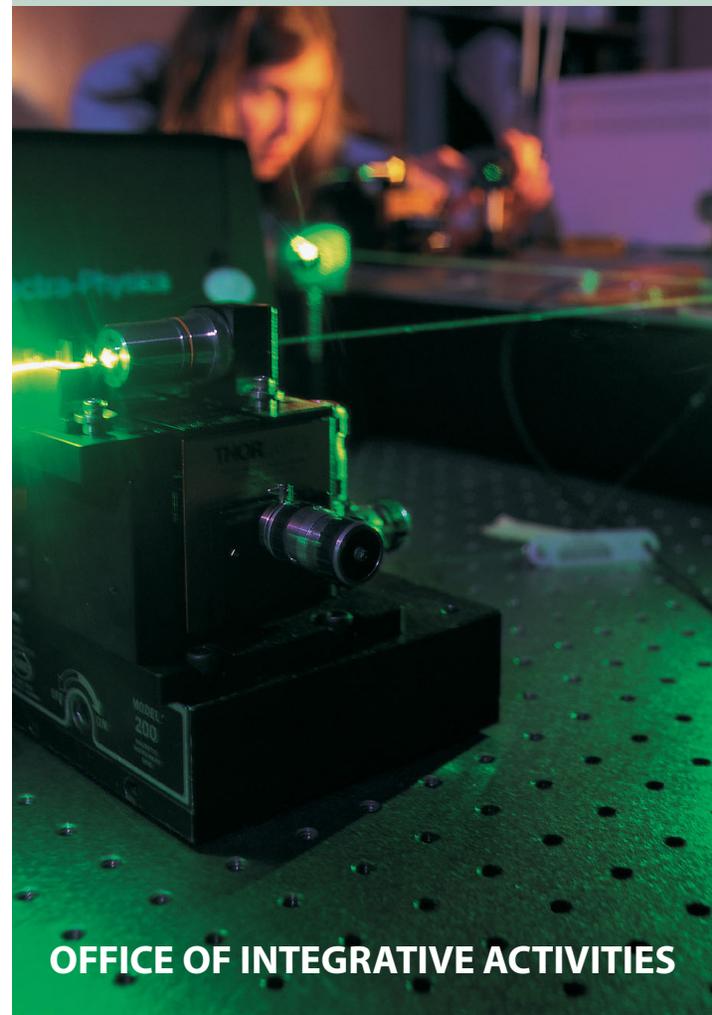


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Science and Technology Centers: Integrative Partnerships

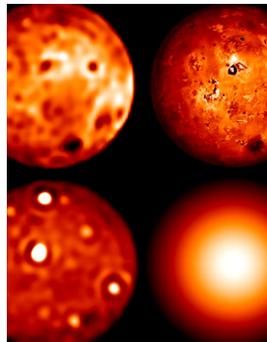
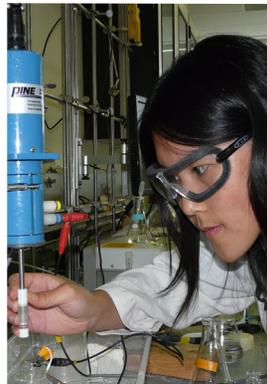


OFFICE OF INTEGRATIVE ACTIVITIES

EDUCATION AND WORKFORCE DEVELOPMENT

Science and Technology Centers (STCs) contribute to building science and engineering capacity and scientific literacy. They address the Nation's need for a world-class workforce by working with industry, academia, and government to provide learning and training opportunities for undergraduate and graduate students as well as for professional researchers. The centers strive to integrate research and education, providing student research experiences in the United States and abroad and encouraging scientists at the forefront of innovation to impart knowledge to the next generation of scientists and engineers.

STCs also provide a rich learning environment that encourages students and educators at all levels, and members of the public, to participate in the pursuit of discovery and knowledge. They foster excellence in education by creating links between inquiry and learning, so that curiosity and creativity support the learning process. Educational programs at STCs vary widely and may include lesson plans for K-12 classes, summer research opportunities for high-school and middle-school students, science fairs, and interactive exhibits.



RESEARCH

STCs conduct world-class research on problems of national importance that require a large-scale, long-term, interdisciplinary approach. They provide facilities and resources for theory, experimentation, visualization, simulation, and development and testing of cutting-edge technologies. The research is often transformative; the centers have advanced the frontiers of science and engineering and achieved breakthroughs in areas as diverse as astrophysics, biotechnology, cognitive science, climate modeling, and advanced materials. In an increasingly interconnected global environment, the centers also help the United States achieve and maintain leadership in emerging and established fields.

The centers enrich the research culture by forging partnerships among disciplines, institutions, and sectors, both nationally and internationally. Many of the STCs work with research groups at other universities, government laboratories, and industrial research facilities, providing wide access to the expertise and specialized equipment at the centers. Such collaborative research leads to the integration of diverse ideas and perspectives, facilitates the transfer of research to the marketplace, and provides a trained workforce for industry.

KNOWLEDGE TRANSFER

STCs provide knowledge and technologies that advance science and engineering, boost industries and the economy, and provide information that helps policymakers and legislators meet national and regional needs. They promote the exchange of information across disciplines and sectors, sharing data and resources that facilitate discovery and innovation. They foster connections between the theoretical foundation and practical application of ideas. Industry-academia partnerships focus on developing concepts, processes, products and technologies with commercial potential—often leading to patents, licenses, and start-up companies.

BROADENING PARTICIPATION

The centers exercise leadership in the Nation's effort to increase the participation of institutions, geographic regions, and populations traditionally underrepresented in science and engineering. They conduct both formal and informal activities to promote participation by a diversity of partners and to broaden career opportunities in their respective fields. To boost the participation of minorities, women, and people with disabilities, STCs provide meaningful research and education opportunities and role models in science, technology, engineering and math.

