

Broader Impacts Showcase



**ACS Fall 2005 National Meeting & Exposition
Washington, D.C.**

<http://chemistry.clemson.edu/NSF-broaderimpactsposters/>

Welcome to the Broader Impacts Showcase

On behalf of the chemists serving on the NSF Mathematical and Physical Sciences Advisory Committee (MPSAC) and the Division of Chemistry, it is a pleasure to welcome you to the Broader Impacts Showcase. The Showcase is the result of a request from our community for additional education regarding the broader impacts criterion used to evaluate NSF proposals, particularly as it applies to Division-supported



Luis Echegoyen and Art Ellis

research. We are grateful to the dozens of principal investigators (PIs) participating in this Showcase for their willingness to share with the community the broader impacts associated with their projects. We hope that the message that emerges for PIs and reviewers from this Showcase is that the broader impacts criterion is a large umbrella, affording a wide range of opportunities to enhance the impact of Division-supported projects.

Thank you for attending. Please feel free to consult with NSF staff (www.nsf.gov/chem) and MPSAC chemists if you have questions regarding the broader impacts of your projects.

Sincerely,

Luis Echegoyen, Organizer, Broader Impacts Showcase, on behalf of the MPSAC chemists (Shenda Baker, Mostafa El-Sayed, Jean Futrell, Carl Lineberger, David Oxtoby)
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Broader Impacts Criterion: What are the broader impacts of the proposed activity?



Photo by Barry Myers

- How well does the activity advance discovery and understanding while promoting teaching, training and learning?
- How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
- To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?



Photo by Ralph Isovitch
Xavier University of Louisiana

Advance Discovery and Understanding While Promoting Teaching, Training and Learning

- training and mentoring students
- presenting seminars, organizing workshops and symposia
- updating the curriculum by writing texts and developing new classroom instructional materials and laboratory experiments
- sharing laboratory methods, instrumentation, software for data analysis, and samples of compounds
- devising and sharing safer laboratory procedures and more economical research practices

Example Posters **1 - 20**



Photo by Sue Cliftes

Broaden Participation of Underrepresented Groups

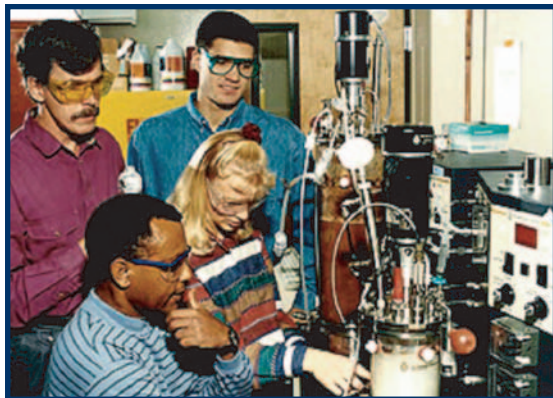


Photo Credit: Idaho EPSCoR Program

- including students from underrepresented groups as participants in the proposed research and education activities
- establishing research and education collaborations with faculty who are members of underrepresented groups or are from minority-serving institutions, community colleges, undergraduate institutions and colleges for women

Example Posters 21-33



Photo credit: Argonne National Laboratory

Enhance Infrastructure for Research and Education

- mentoring early-career scientists and engineers
- consulting with industrial and government colleagues
- establishing collaborations with scientists from around the world
- maintaining, operating and modernizing shared instrumentation and facilities
- developing the computing infrastructure that will allow cyber-enabled chemistry

Example Posters 34-38

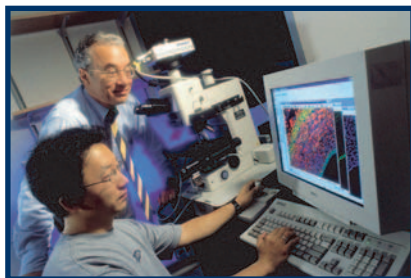


Photo by Gary Meek



Credit: @2001 Paul Taylor

Broad Dissemination to Enhance Scientific and Technological Understanding

- writing scholarly review articles and articles describing research to non-specialist audiences
- creating websites enhanced by engaging animations and movies
- working with science centers on new exhibits
- assisting journalists with their stories on technical topics
- developing new art forms for communicating science to wider audiences

Example Posters 39-43

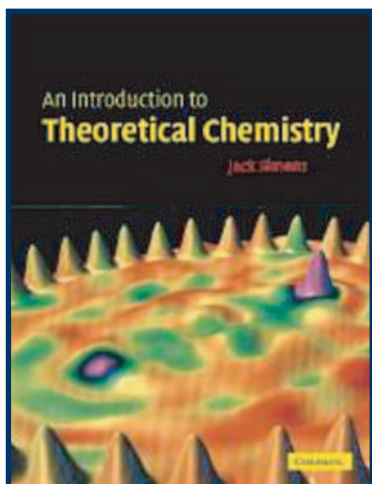


Photo Credit: Cover of Simons' text
An Introduction to Theoretical Chemistry
by Cambridge University Press



Photo by Sheryl A. Tucker
University of Missouri - Columbia

Benefits to Society



Photo credit: University of New Mexico Hydrogeoecology Group

- designing new routes to commodity and fine chemicals
- preparing new compounds of industrial, medical, and environmental significance
- identifying more effective ways to use energy resources
- developing new devices and methodologies for national security
- forming start-up companies for disseminating new technologies

Example Posters 44-50



Photo by Kamil K. Matyska



Photo by Madeleine M. Joullié
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**For more information concerning
Broader Impacts, please visit us:
www.nsf.gov/chem/broaderimpacts**



Photo by James Yardley, Columbia University

Posters can be found at:
**[http://chemistry.clemson.edu/
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***For information regarding
funding opportunities, please
visit us at:***
www.nsf.gov/chem



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