

POPS! – The Power of Physical Science



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Women are underrepresented in Physics and Geology.

- In 2004-05, 43% of Geology graduates and 21% of Physics graduates were women. (Compared to 62% and 51 % for Biology and Chemistry, respectively.)¹

We need to encourage girls *before* they enter college.

- In a survey of women physicists, 60% of the respondents indicated that they first thought of studying physics while in high school; only 17% indicated that they were influenced to study physics while undergraduates.²

When considering careers, girls want to “help others”.

- Among 6th graders, more females than males list “Help other people” as an important characteristic of a future job.³



Can an intervention that emphasizes the societal benefits of physics and geology change girls’ perceptions?

The POPS Plan

- Explore the science education literature to provide a strong, research-driven basis for the design of the enrichment curriculum
- Develop an enrichment curriculum that will supplement and enhance the New York State-defined curriculum in physics and earth science
- Create intriguing, hands-on activities
- Gather baseline data on students from the Core Partner and Support Partner secondary schools
- Host a series of workshops for science educators and administrators from Core Partner Support Partner institutions to elicit feedback and guidance on the proposed study
- Complete a pilot study of the impact of engaging educational curriculum modules that focus on areas of physics and geology with broader social impact
- Host Family Science Nights so that participating students can share their work with their families



The POPS Team

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References

- ¹ http://nces.ed.gov/programs/digest/d06/tables/dt06_258.asp, U.S. Department of Education, Institute of Education Statistics (accessed January 7, 2009).
- ² Rachel Ivie and Stacy Guo, “Women Physicists Speak Again,” American Institute of Physics Publication number R-4411, April 2001.
- ³ M. Gail Jones, Ann Howe, and Melissa Rua, “Gender Differences in Students’ Experiences, Interests, and Attitudes toward Science and Scientists,” Science Education 84 (2000) 180-192.

“Can a rigorous and engaging enrichment curriculum that emphasizes the societal benefits of the physical sciences encourage more girls to study physics and geology?”