



National Science Foundation  
Award CNS0739233

# BPC-DP: Broadening Female Participation in Middle School through Undergraduate Study

## National Science Foundation CNS-0739233

### Philosophy

The Colorado School of Mines (CSM) approach to outreach in Colorado's Adams County District 50 (AC50) and Aurora Public Schools (APS) is to provide the opportunity for teachers and students to be immersed in mathematics, science and technology at the elementary, middle school and high school levels. Through a \$2.5 million grant from the Bechtel Foundation, CSM faculty and graduate students will be directly assisting K-5 teachers in AC50 and APS as they implement scientifically and mathematically rich, hands-on instruction at the elementary level. The National Science Foundation is supporting our efforts at the middle school level in these school districts as part of the GK-12 Learning Partnerships grant (DGE-0638719; \$1.7 million). The current grant, Broadening Participation in Middle School through Undergraduate Study, completes the pipeline by providing support for interventions at the high school and college levels.

### Participants

Both districts are culturally diverse, with AC50 containing 58% Hispanic and 2% African American students, and APS containing 48% Hispanic and 21% African American. Both are economically disadvantaged with a large proportion of students receiving free or reduced cost lunches. CSM is a university of applied science and engineering and has the highest admission standards in the State of Colorado.

### Activities

This project comprises the following activities that are designed to attract and retain female participation in computer science from middle school through undergraduate studies:

- a summer technology camp for middle school students
- an after school technology club for high school girls
- interventions with middle school and high school teachers through summer workshops, which will provide instruction on research based methods to encourage female participation in computer science, mathematics and science
- interventions to improve academic advising at the middle school, high school and undergraduate levels with respect to technical fields
- revisions to the computer science curriculum at the Colorado School of Mines (CSM) to increase female interest and participation

### Accomplishments 2007-2008

The academic year 2007-2008 has resulted in the following accomplishments:

- Two all girl, summer, technology camps attended by 22 girls
- Complete curriculum for three year sequence of technology camp
- Complete curriculum for three year sequence of technology club for high school girls
- Supplementary funds acquired to support technology camp and technology club from the Tensor foundation (\$6000)
- Supplementary funds acquired for technology camp from LexisNexis, Sigma Xi and the Women in Science, Engineering and Mathematics at CSM (total: \$5000)
- Special session in summer workshop offered to middle school and high school teachers on gender issues in computer science
- Three years of college level curriculum designed to appeal to female students

For more information visit: <http://inside.mines.edu/research/BPC/>



Mathematical and  
Computer Sciences

