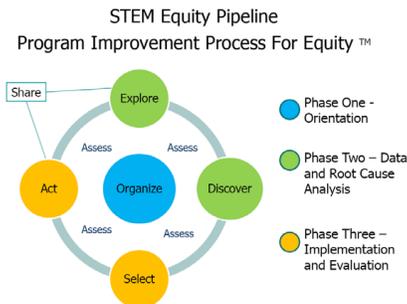


What is PIPESTEM™?

Program Improvement Process for Equity in STEM™ (PIPESTEM™) is a research-based, effective professional development program to increase the participation and success of female students – particularly girls and women of color – in Science, Technology, Engineering and Mathematics (STEM). **PIPESTEM™** training is designed for school teams and the improvement process includes 5 modules:



Module 1: ORGANIZE. How to organize a pipeline team. NAPEEF will provide all the tools necessary to coordinate project orientation, collect pilot site baseline data, and prepare the school teams for training.

Module 2: EXPLORE. How to analyze national, state and school gendered performance and participation in STEM by comparing performance levels between schools, student populations, and programs over time. School teams will use summary statistics and basic graphs and charts to document performance gaps, based on gender, race/ethnicity, and other available disaggregated data, and identify improvement priorities.

Module 3: DISCOVER. How to determine the most important and most direct causes of gendered performance gaps that can be addressed by improvement strategies and specific solutions. School teams are encouraged to use multiple methods to identify and evaluate potential causes and select a few critical root causes as the focus of improvement efforts. The cornerstone resource for this and the next step is a distillation of the last twenty years of research literature on nontraditional career preparation, especially women’s access to STEM careers.

Module 4: SELECT. Using the results from the DISCOVER process, school teams align their identified root causes with potential solutions to gendered performance gaps, including both improvement strategies and program models. They review and evaluate the underlying logic of these solutions and the empirical evidence of their effectiveness in achieving performance results.

Module 5: ACT. School teams explore practical and rigorous methods and tools for evaluating solutions before full implementation and then develop plans to implement research-based interventions for program improvement.

National Alliance for Partnerships in Equity, P.O. Box 369, Cochranville, PA 19330 www.napequity.org



**MOTOROLA SOLUTIONS
FOUNDATION**



HRD-0734056

As a member of a school team, what can I expect during the 2012-13 school year?

You can expect to work with your school team to analyze your school's data, review the research, develop hypotheses regarding gendered participation or performance, and implement and test research-based interventions. The members of the pilot site teams will be expected to share lessons learned (i.e., conducting workshops at state or regional sponsored professional development, writing articles for state newsletters and publications, conducting online training with others, and working one-on-one with other college and high school teams interested in implementing the process to improve their performance).

You will be expected to actively participate in three full days of professional development and necessary intersession teamwork:

- August-September: participate in virtual project orientation. (1 hour/member)
- September: participate in first face-to-face training (Modules 1-3). (1 day/member)
- October-November: participate in monthly technical assistance calls with NAPE trainer; collect quantitative and qualitative data aligned with root causes hypotheses; prepare for presentation at the second face-to-face training. (8 hours/member)
- December: participate in second face-to-face training (Modules 4-5). (1 day/member)
- January-April: participate in monthly technical assistance calls with NAPE trainer; implement and evaluate research-based solutions to increase female participation in STEM; prepare for presentation at the third face-to-face training. (16 hours/member)
- May: participate in third face-to-face training (School teams share results). (1 day/member)

NAPE Education Foundation

NAPE is a consortium of state and local agencies, corporations, and national organizations committed to access, equity and diversity in education and careers. The NAPE Education Foundation was established in 2002 in response to requests for expanded assistance with program improvement efforts by education and workforce agencies across the nation.

The NAPE Education Foundation developed **PIPESTEM™** training through a grant funded by the National Science Foundations (HRD-0734056-0734056, project website at www.stemequitypipeline.org). During three years, the project reached over 20,000 educators who serve more than 3 million high school and community college students.

More than 70 secondary schools and community colleges have participated in school team activities through **PIPESTEM™** and, in interviews conducted by the project's independent evaluators, team members identified five significant benefits:

- understanding and using data;
- increased awareness of and commitment to STEM equity issues;
- new partnerships created;
- increase in female participation and retention in STEM related programs of study; and
- project sustainability and expansion.

Pilot site participants have reported an increase in female participation rates as a result of implementing their selected strategy as part of the Five Step Program Improvement Process. Examples include: an increase from 8 to 30 girls in Project Lead the Way, increase from 0 to 3 women of 7 students in a design technology class, increase in girls participating in a STEM summer camp from 3 to over 20; increase in females participating in auto technology from 7(12%) to 21(36%); increase in women in electronics and telecommunications from 12 (7%) to 21 (12%); increase of senior girls in advanced level math from 15% to 55% in two years.