



STEM Equity Pipeline

"Expanding Options for Women and Girls in Science, Technology, Engineering and Math"



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STEM Equity Pipeline

Goals

- ▲ Build the capacity of the formal education community to implement research-based approaches proven to increase the participation and completion of females, including those with disabilities, in Science, Technology, Engineering and Math education
- ▲ Institutionalize the implemented strategies by connecting the outcomes to existing accountability systems
- ▲ Broaden the commitment to gender equity in STEM education

Strategies

- ▲ Provide training and technical assistance that builds the capacity of staff developers in participating states to provide effective professional development to STEM related career cluster programs of study
- ▲ Conduct professional development on implementation of the 5-Step Improvement Process focused on school-identified needs
- ▲ Conduct teacher training on creating equitable classrooms using research-based models for eliminating bias and stereotyping in instructional practices focused on gender, disability and culture
- ▲ Sponsor consulting and technical assistance with recognized experts in gender equity research and practice.
- ▲ Maintain a virtual web-based professional learning community

"As a consequence of lack of diversity... we pay an opportunity cost, a cost in designs not thought of, in solutions not produced."
Dr. Bill Wulf, Past President, National Academy of Engineering

National Advisory Board

The **National Advisory Board** includes organizations and individuals who represent the education and business community with a common interest in increasing the diversity of the STEM workforce. The National Advisory Board will provide advice to the project management team on planning, implementation and dissemination of the STEM Equity Pipeline Projects results and products.

Extension Services Group

The **Extension Services Group** includes organizations and individuals with expertise in research and practice on increasing the participation of women and girls in STEM education. The Extension Services Group will provide focused technical assistance and professional development with State Teams through webcasts, webinars, online tutorials and onsite presentations.

State Teams

State Teams include organizations and individuals who provide professional development to middle school, high school and community college faculty of math, science and STEM related career and technical education programs. State Team members will

- Participate in State Team training and technical assistance with the Extension Services Group through onsite visits for the first two years of participation and through webcasts and webinars for the life of the project
- Conduct professional development with local educators particularly focusing on middle schools, high schools and community colleges who have low participation rates of women and girls in STEM Career Cluster programs
- Participate in the STEM Equity Pipeline Virtual Learning Community
- Integrate the training received into at least one existing professional development vehicle in the state as a way to share research-based best practices
- Provide summative and formative feedback regarding the effectiveness of the extension services provided

Local Educators

Local educators will implement best practices learned through participation in professional development activities conducted by their state team.

"If we do not engage women and minorities in the engineering enterprise, we are ignoring more than 50% of America's intellect."
Bostonworks.com

Virtual Learning Community

The **Virtual Learning Community** is a public web-based portal housing project information and relevant resources for the STEM equity community and will connect the National Advisory Board members, Extension Services Group experts, State Team members and local educators giving them a place to

- Form common-interest-based learning communities
- Network electronically via a listserv
- Locate relevant resources and links to other sites
- Find PowerPoint presentations, documents and publications
- Access webcasts, webinars, online courses and tutorials
- View archived webcasts and webinars
- Complete project evaluations



IA Implementation

Core values:

(1) Focused and realistic (2) Collaboration with other initiatives (3) Use technology for outreach/communication

Goal 1: Build the capacity of the formal education community to implement research-based approaches proven to increase the participation and completion of females, including those with disabilities, in STEM education.

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| Strategy |
| 1.1 Participate in two STEM EPP webinars that are developed and offered based on the needs assessment completed by IA Team members (November 2008). |
| 1.2 Explore infusing the STEM EPP information/intellectual specialization into professional development offered to Iowa's elementary, middle and secondary counselors and TAG educators. http://www.iowaschoolcounselors.org/ |
| 1.3 Collaborate with the IA Math and Science Education Partnership on the 2009 Summer Institute for members of the IA Association of Teacher Educators/33 teacher preparation institutions of higher education (IHE). http://www.iowamathscience.org/index.shtml |

Goal 2: Institutionalize the strategies implemented by connecting the outcomes to existing accountability systems.

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| Strategy |
| 2.1 Train staff from three community colleges (Hawkeye Community College, Indian Hills Community College, and Iowa Western Community College) to infuse the 5-step process into one or more existing initiatives. |
| 2.2 Collaborate with Project Lead the Way to institutionalize gender equity strategies into teacher training, counselor training, and school certification and ensure that the commissioned data projects can capture the successes of such strategies http://www.pltwiowa.org/ |

Goal 3: Broaden the commitment to gender equity in STEM education.

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| Strategy |
| 3.1 Present at six workshops, conferences, and other events where the audience is a stakeholder in gender equity and/or STEM classes and careers. |
| 3.2 Secure funding for pilot project to increase the number of women in high-wage, high-growth careers. |