Annual Report for Period: 10/2009 - 09/2010
Submitted on: 08/02/2010
Principal Investigator: Lufkin, Mimi E.
Award ID: 0734056
Organization: NAPE Ed. Foundation
Submitted By:
Lufkin, Mimi - Principal Investigator
Title:
GSE/EXT - STEM Equity Pipeline

Project Participants

Senior Personnel

Name: Lufkin, Mimi
Worked for more than 160 Hours: Yes
Contribution to Project:

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Name: Eccarius, Keith
Worked for more than 160 Hours: No
Contribution to Project:
Provides email and website technical assistance to project staff and consultants.

Other Participant

Name: Walker, Freda
Worked for more than 160 Hours: Yes
Contribution to Project:
Freda Walker, as a contracted consultant, provides services to the project in three ways. As assistant to the project director she helped train the state facilitators, organize the online professional development webinars and developed the expert portfolios. She also served as the State Facilitator for Illinois providing the State Team with technical assistance and professional development on the Five Step Program Improvement Process. In addition to these activities Freda served as the Co-Facilitator of Missouri during the second year of the project.

Name: Glasser, Howard
Worked for more than 160 Hours: Yes
Contribution to Project:
Howard Glasser served as the State Facilitator for Wisconsin providing the State Team with technical assistance and professional development on the Five Step Program Improvement Process. In the second year of the project Howard also servied as the State Facilitator for Minnesota.

Name: Chiatovich, Louise
Worked for more than 160 Hours: Yes
Contribution to Project:
Louise Chiatovich served as the State Facilitator for Missouri providing the State Team with technical assistance and professional development on the Five Step Program Improvement Process. Louise served in this capacity for the first year of the project.

Name: Bostrom, Bonnie

Worked for more than 160 Hours: Yes

Contribution to Project:

Bonnie Bostrom served as the State Facilitator for Oklahoma providing the State Team with technical assistance and professional development on the Five Step Program Improvement Process. Bonnie served in this capacity only during the first year of the project.

Name: Metz, Susan

Worked for more than 160 Hours: No

Contribution to Project:

Susan Metz conducted the first STEM Equity Pipeline webinar on March 19, 2008. Her presentation on the status of women in STEM education and careers set the stage for the purpose of the project.

Name: Berry, Tricia

Worked for more than 160 Hours: No

Contribution to Project:

Tricia Berry conducte two webinars on how to assess the effectiveness of you program and how to use the tools on the Assessing Men and Women in Engineering (AWE) website. These webinars were conducted on May 21, 2008 and June 16, 2008.

Name: Grayson, Dolores

Worked for more than 160 Hours: No

Contribution to Project:

Dolores Grayson conducted a on-site professional development workshop with members of the state teams and others attending the National Alliance for Partnerships in Equity annual Professional Development Institute in Washington, DC on April 6-10, 2008 in Arlington, VA. Her workshop was on effective instructional practices to ensure the engagement of women and girls in STEM classes.
Dr. Grayson also conducted an on-site professional development workshop at the Career and Technical Education Equity Council Conference in Oklahoma City, OK September 12, 2008. The workshop was on effective instructional techniques to engage girls in STEM. She also conducted a series of four webinars with a cohort of extension agents from Missouri, Minnesota, Illinois, Wisconsin, California and Iowa. The series was on the Generating Expections for Student Achievment (GESA) program - An Equitable Approach to Educational Excellence. The purpose of GESA is to help teachers examine the impact of biases on student achievement and retention and to discover what happens when they reduce bias in their classrooms.

Name: Klein, Steve

Worked for more than 160 Hours: Yes

Contribution to Project:

Steve Klein, (title), from MPR Associates collected Perkins data from each of the participating states to be used as baseline data for the program impact evaluation. He also assisted the State Facilitators in analysing the Perkins data submitted to the project. This data analysis was used as part of the Five Step Program Improvement Process training conducted with each of the State Teams. Dr. Klein's role in the evaluation process is to work with each state lead agency to collect data on the participation and completion of female students in STEM related Career Cluster Programs of Study at the districts and community colleges where faculty are involved in the professional development efforts conducted by the State Team.

Name: Farr, Beverly

Worked for more than 160 Hours: Yes

Contribution to Project:

Beverly Farr, (title), MPR Associates prepared process data collection instruments for State Facilitators and evaluation instruments for all project activities. She will collect and analyze the results of these instruments as part of the project process evaluation. Dr. Farr is the head project evalautor and develops quarterly progress reports and updates for project staff.

Name: Nagy, Greg

Worked for more than 160 Hours: Yes

Contribution to Project:

Greg Nagy, (title), The Ohio State University is responsible for managing the STEM Equity Pipeline website and all online professional development efforts. Greg developed the website, manages its content, regularly updates the website with information provided by project staff and tracks website metrics for the project evaluation. Greg has set up Share Point sites for the staff and for each of the State Teams to manage the sharing of documents, contact information, calendars and easy one click email access to all

members of the State Team. Greg assists in the conduct of each of the webinars by setting them up with WebEx, tracking registration, answering participant technical questions, providing technical assistance during the webinar, tracking evaluation completion at the end of the webinar and summarizing the results of each webinar and submitting these to the project evaluator.

Name: Blue, Holly

Worked for more than 160 Hours: Yes

Contribution to Project:

Holly Blue has developed all graphic design elements for the STEM Equity Pipeline website and print materials. Holly works closely with project staff to provide them with online and print materials for all professional development events. She also assists in the collection and submission of website content to Greg Nagy, Technology Coordinator for the project. In the second year of the project Holly has taken on the development of marketing and information efforts through the listserv and the development of online tools for inclusion on the virtual learning community (www.stemequitypipeline.org)

Name: Ayers, Joyce

Worked for more than 160 Hours: Yes

Contribution to Project:

Joyce provides financial management and organizational management for project staff and professional development activities occurring in each of the participating states. Joyce manages the project records, participant data base and staff reporting records. Joyce provides general support to the PI and project staff to ensure the success of all implemented activities.

Name: Paine, Penny

Worked for more than 160 Hours: No

Contribution to Project:

Penny Paine worked with the Assistant Director of the project to collect, develop and format the expert portfolios for the experts participating in the project. These can all be found on the STEM Equity Pipeline website.
During the second year of the project Penny provided technical assistance and conducted an on-site training on January 15, 2009 at Mt. San Antonio Community College in California.

Name: Alfeld, Corrine

Worked for more than 160 Hours: No

Contribution to Project:

Developed portfolio for the STEM Equity Pipeline Virtual Learning Community

Name: Tuvesson, Nancy

Worked for more than 160 Hours: No

Contribution to Project:

Nancy reviews all website and media resources and develops the Pipeline Press monthly for members of the STEM Equity Pipeline Virtual Learning Community listserv.

Name: Jenkins, Courtney

Worked for more than 160 Hours: Yes

Contribution to Project:

Courtney Reed Jenkins served as the State Facilitator for Iowa providing the State Team with technical assistance and professional development on the Five Step Program Improvement Process during the second year of the project.

Name: Larkey, Rick

Worked for more than 160 Hours: Yes

Contribution to Project:

Rick Larkey served as the State Facilitator for Missouri providing the State Team with technical assistance and professional development on the Five Step Program Improvement Process.

Name: Baine, Celeste

Worked for more than 160 Hours: No

Contribution to Project:

Celeste Baine conducted a training with school counselors in Oklahoma at the Project Lead the Way Counsleor Conference on December 10, 2008.

Name: Sadker, David

Worked for more than 160 Hours: No

Contribution to Project:

Conducted a workshop and post-conference training at the California Joint Special Populations Advisory Committee Annual Conference on December 4, 2008 in Sacramento, California with teachers, counselors and administrators from secondary and community colleges in California.

Name: Casad, Bettina

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Bettina Casad, Assistant Professor of Psychology and California Polytechnic State University, Pomona, CA conducted a webinar on December 17, 2008 on 'The Interactive Effects in the Theory of Planned Behavior: Examining Attitudes, Norms, control, and Stereotype Threat to Predict Girls Math Performance and Intentions.

Name: Bullock, Jessica

Worked for more than 160 Hours: No

Contribution to Project:

Jessica Bullock, Girl Tech Coordinator, Francis Tuttle Career Technical Center, Oklahoma City, OK conducted a webinar on June 18, 2009 about their award winning mentoring program for girls in STEM career and technical education programs.

Name: Matjeka, Lisa

Worked for more than 160 Hours: No

Contribution to Project:

Lisa Matjeka, Research Coordinator, Illinois Center for Specialized Professional Support conducted a workshop on how to conduct a root cause analysis using the New Look online assessment tool at the California Joint Special Populations Advisory Committee Conference December 4, 2008 in Sacramento, CA.

Name: Curry, Jane

Worked for more than 160 Hours: No

Contribution to Project:

Jane Curry provided an evening program on the history of women in science with the members of the State Teams attending the STEM Equity Pipeline Leadership Institute in Washington, DC on April 1, 2009.

Name: Winterton, Joyce

Worked for more than 160 Hours: No

Contribution to Project:

Joyce Winterton, Assistant Director of Education at NASA was the keynote luncheon speaker for the opening session of the STEM Equity Pipeline Leadership Institute. Her presentation informed the participants of the myriad ways that NASA supports STEM educators and conducts outreach and recruitment to increase the diversity of the STEM workforce.

Name: Eliot, Lise

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Eliot conducted a webinar on June 2, 2010

Name: Chan, Jill

Worked for more than 160 Hours: No

Contribution to Project:

Jill Chan conducted a webinar on March 16, 2010

Name: Chapman, Robbin

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Chapman conducted two webinars on November 16, 2009 and December 14, 2009

Name: Good, Katherine

Worked for more than 160 Hours: No

Contribution to Project:

Dr. Good conducted a webinar on October 26, 2009

Name: Dempsey, Pamela

Worked for more than 160 Hours: Yes

Contribution to Project:

PJ Dempsey was employed at the NAPE Education Foundation from January 18, 2010 to May 14, 2010 as the Assistant Director. Part of her responsibilities included representing the Foundation at various national meetings to inform others about the STEM Equity Pipeline project.

Name: Reha, Lynn

Worked for more than 160 Hours: No

Contribution to Project:

Lynn Reha, Director of the Illinois Center for Specialized Professional Support, along with staff of the NAPE Education Foundation created the document Nontraditional Career Preparation: Root Causes and Strategies for use with the Five Step Program Improvement Process training.

Name: Weber, Katherine

Worked for more than 160 Hours: Yes

Contribution to Project:

Katherine Weber served as the State Facilitator for the Ohio State Team and conducted technical assistance and professional development with the team to assist them in creating their state plan for implementing gender equity in STEM training in the state.

Name: Perna, Mark

Worked for more than 160 Hours: No

Contribution to Project:

Mark Perna worked with the Missouri Career Education Coordinators by providing them with expertise in student outreach strategies which they could then use with thier pilot sites participating in the STEM Equity Pipeline.

Research Experience for Undergraduates

Organizational Partners

Women in Engineering Program Advocates Network(WEPAN)

The PI presented at the annual WEPAN conference in St. Louis, MO on June 8-10, 2008. The PI presented at the annual WEPAN conference in Austin, TX on June 17-20, 2009. Mimi Lufkin, PI and Diane Matt, ED of WEPAN have been working together to develop a process for the STEM Equity Pipeline resources to be submitted to the WEPAN Knowledge Center.

National Girls Collaborative Project

The PI serves on the NGCP Champions Board. Efforts are made to coordinate project activities in states where both projects are working. State Facilitators have encourage local programs to register on the NGCP program registration director on their website. In Illinois the NGCP Kick Off and the STEM Equity Pipeline State Team meeting were held jointly. This is a great example of these two NSF funded programs working collaboratively - NGCP in informal STEM education and the STEM Equity Pipeline in formal STEM education. Mimi Lufkin, PI; Karen Petersen, PI from the NGCP and Lynn Reha from the ICSPS presented this collaborative model at the WEPAN Conference in Austin, TX June 17-20, 2009. Karen Petersen, NGCP Director, joined the STEM Equity Pipeline National Advisory Board in 2009.

Nat. Research Center for CTE

The NRCCTE conducted a Technical Assistance Academy for five states to assist them in improving their performance on the nontraditional measure in the Perkins Accountability System. Project staff were contracted to provide technical assistance and lead state workgroups at the Academy on June 26-28, 2008 in Washington, DC. All expenses including staff consulting time was paid for by the NRCCTE contract with the Academy for Educational Development who organized the Academy. Jim Stone, Director of the NRCCTE serves on the STEM Equity Pipeline National Advisory Board.

NASDCTEC

The National Association of State Directors of Career and Technical Education's Executive Director serves on the STEM Equity Pipeline

National Advisory Board. NAPE also co-sponsors a project with the National Women's Law Center, the Association for Career and Technical Education and the National Association of State Directors of Career and Technical Education. The Programs and Practices That Work project recognizes programs across the country that have been successful in increasing the participation of underrepresented gender students in nontraditional career and technical education programs. Many of the past recipients of this recognition have been STEM related CTE programs. We will be continuing to sponsor this project during the life of the grant and hope that many of the future programs recognized will come as a result of our work.

Skills USA

Mimi Lufkin, PI, serves on the Skills USA Technical Committee. Staff from Skills USA and NAPE share resources and strategies for working with local education communities in high risk schools. Tim Lawrence, Executive Director of Skills USA joined the STEM Equity Pipeline National Advisory Board in 2009. Mimi Lufkin, PI, attended the Skills USA National Championships in Kansas City, MO June 24, 2009.

Association for Career & Technical Educa

The Association for Career and Technical Education's Executive Director serves on the STEM Equity Pipeline National Advisory Board.NAPE also co-sponsors a project with the National Women's Law Center, the Association for Career and Technical Education and the National Association of State Directors of Career and Technical Education. The Programs and Practices That Work project recognizes programs across the country that have been successful in increasing the participation of underrepresented gender students in nontraditional career and technical education programs. Many of the past recipients of this recognition have been STEM related CTE programs. We will be continuing to sponsor this project during the life of the grant and hope that many of the future programs recognized will come as a result of our work. Lynn Reha, Director of the Illinois Center for Specialized Professional Support and the State Contact for the STEM Equity Pipeline project in Illinois, presented about the project at the ACTE Conference in Charolotte, NC, December 4-6, 2008.

Nat'l Assocation of Workforce Developmen

The National Association of Workforce Development Professionals' Executive Director serves on the STEM Equity Pipeline National Advisory Board.

American Association of Community Colleges

The American Association of Community Colleges' Senior Program Associate serves on the STEM Equity Pipeline National Advisory Board.

American School Counselor Association

The American School Counselor Association's Assistant Director serves on the STEM Equity Pipeline National Advisory Board. The ASCA has invited the project director to write an article for the ASCA magazine on recruiting and retaining diverse students in STEM programs. The article was published in the January/February 2009 issue.

American Federation of Teachers

The American Federation of Teachers' Associate Director serves on the STEM Equity Pipeline National Advisory Board.

Center for Advancement of Scholarship on

The Center for the Advancement of Scholarship on Engineering Education's Director serves on the STEM Equity Pipeline National Advisory Board. The project director and staff from NAPE also work collaboratively with CASEE on another extension services grant - the Engineering Equity Extension Service. In this project NAPE staff have provided expert assistance to Project Lead the Way to develop professional development programming on gender equity for their master teachers and teachers.

National Association for Multicultural E

The National Association for Multicultural Education's Executive Director serves on the STEM Equity Pipeline National Advisory Board.

Wider Opportunities for Women

The Wider Opportunities for Women's Executive Director serves on the STEM Equity Pipeline National Advisory Board.

Cisco Networking Academy Program

The Cisco Networking Academy Program's National Initiatives Manager serves on the STEM Equity Pipeline National Advisory Board. Staff from the project were invited to present at the three national Cisco Networking Academy conferences in Portland,OR, Saratoga Springs, NY and Little Rock, AR.

Women Work!

The Women Work!'s President and CEO serves on the STEM Equity Pipeline National Advisory Board. In 2008, NAPE and Women Work! held their annual conferences jointly. The allowed both organziations to leverage the capacity of each to offer a larger and more diverse conference program to participants. It was an extremely successful event. We did this again March 29 - April 1, 2009 and repeated the successful event!

Center for Women in Information Technol

The Center for Women in Information Technology's Executive Director serves on the STEM Equity Pipeline National Advisory Board.

American Association for University Wome

The American Association for University Women's President serves on the STEM Equity Pipeline National Advisory Board.

National Education Association

The National Education Association's Senior Policy Analyst serves on the STEM Equity Pipeline National Advisory Board. Mimi Lufkin, PI, participated in the NEA Women's Summit April 3, 2009 in Washington, DC.

Disabilities Unlimited

The Disabilities Unlimited's Executive Director serves on the STEM Equity Pipeline National Advisory Board.

National Women's Law Center

The National Women's Law Center's Vice President for Education and Employment serves on the STEM Equity Pipeline National Advisory Board. NAPE also co-sponsors a project with the National Women's Law Center, the Association for Career and Technical Education and the National Association of State Directors of Career and Technical Education. The Programs and Practices That Work project recognizes programs across the country that have been successful in increasing the participation of underrepresented gender students in nontraditional career and technical education programs. Many of the past recipients of this recognition have been STEM related CTE programs. We will be continuing to sponsor this project during the life of the grant and hope that many of the future programs recognized will come as a result of our work.

Society of Women Engineers

The Society of Women Engineer's Executive Director serves on the STEM Equity Pipeline National Advisory Board.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The American Association for the Advancement of Science's Director, Project on Science, Technology and Disability and ENTRY POINT! serves on the STEM Equity Pipeline National Advisory Board.

Project Lead The Way

The Project Lead The Way's Vice President serves on the STEM Equity Pipeline National Advisory Board. The project director and staff from NAPE also work collaboratively with Project Lead the Way on another extension services grant - the Engineering Equity Extension Service - that has been awarded to the National Academy for Engineering. In this project NAPE staff have provided expert assistance to Project Lead the Way to develop professional development programming on gender equity for their master teachers and teachers.

Intel Corporation

The Intel Corporation's Education Manager, California Corporate Affairs serves on the STEM Equity Pipeline National Advisory Board. Intel has offered the project the use of the Live Meeting software for staff meetings/trainings and project online professional development events - all for free!

Rolls-Royce Corporation

The Rolls-Royce Corporation's Manager of Employee Development serves on the STEM Equity Pipeline National Advisory Board.

CA Commission on the Status of Women

The California Commission on the Status of Women's Executive Director serves on the STEM Equity Pipeline National Advisory Board.

Southern Regional Education Board

Gene Bottoms, Director of the Southern Regional Education Board, joined the STEM Equity Pipeline National Advisory Board in 2009. He attended the STEM Equity Pipeline Leadership Institute on Wednesday, April 1 in Washington, DC. Mimi Lufkin, PI, presented at the SREB National Conference in Atlanta, GA on July 9, 2009.

California Joint Special Populations Adv

The California Joint Special Populations Advisory Committee is the sponsoring organization for the California STEM Equity Pipeline State Team. They have provided both financial and staff support to ensure the sucess of the the professional development the project has offered in California. The JSPAC is a collaborative group sponsored by the California Department of Education and the California Community College Chancellors Office.

Illinos Center for Specialized Professio

The Illinois Center for Specialized Professional Support (ICSPS) is the sponsoring organization for the STEM Equity Pipeline in Illinois. ICSPS is funded by the Illinois State Board of Education and the Illinois Community College System. ICSPS has provided financial support to the NEW Look projects to implement a modified version of the Five Step Program Improvement Process. The Center staff has been instrumental in organizing state team activities and have participated in training as extension agents. Staff from the Center have also been involved in conducting outreach workshops at national meetings with the PI.

Missouri Center for Career Education

The Missouri Center for Career Education has served as the sponsoring organization for the STEM Equity Pipeline project in Missouri. The MCCE is funded by the Missouri Department of Elementary and Secondary Education. The eight regional coordinators from the MCCE participated in extension agent training and have been implementing the Five Step Program Improvement Process with pilot sites across Missouri.

Oklahoma Department of Career Technical

The Oklahoma Department of Career Technical Education is the sponsor of the STEM Equity Pipeline project in Oklahoma. Staff from ODCTE have been participating on the states leadership team and have been instrumental in the implementation of the professional development efforts in OK. Contributions have included staff time, facilities for training, financial support for participants, access to equipment and technology to implement training.

Wisconsin Department of Public Instruction

The Wisconsin Department of Public Instruction in collaboration with the Wisconsin Technical College System have been the sponsoring organizations for the STEM Equity Pipeline Project in Wisconsin. Staff from WDPI and WTCS have provided leadership for the project. Both organizations have provided financial support, facilities and equipment to support the professional development efforts of the project.

Wisconsin Technical College System

The Wisconsin Department of Public Instruction in collaboration with the Wisconsin Technical College System have been the sponsoring organizations for the STEM Equity Pipeline Project in Wisconsin. Staff from WDPI and WTCS have provided leadership for the project. Both organizations have provided financial support, facilities and equipment to support the professional development efforts of the project.

Minnesota State Colleges and Universitie

The Minnesota State Colleges and Universities in collaboration with the Minnesota Department of Education have been the sponsoring organizations for the STEM Equity Pipeline Project in Minnesota. Staff from MNSCU and MNDE have provided leadership for the project. Both organizations have provided staff time, financial support, facilities and equipment to support the professional development efforts of the project. MNSCU has a STEM staff person who has taken on leadership for this project as part of her job responsibilities at no expense to the project.

Minnesota Department of Education

The Minnesota State Colleges and Universities in collaboration with the Minnesota Department of Education have been the sponsoring organizations for the STEM Equity Pipeline Project in Minnesota. Staff from MNSCU and MNDE have provided leadership for the project. Both organizations have provided staff time, financial support, facilities and equipment to support the professional development efforts of the project.

Iowa Department of Education

The Iowa Department of Education has been the sponsoring organization for the STEM Equity Pipeline Project in Iowa. Staff from IA DOE have provided leadership for the project, financial support, facilities and equipment to support the professional development efforts of the project.

New Hampshire Department of Education

The New Hampshire Department of Education has been the sponsoring organizations for the STEM Equity Pipeline Project in New Hampshire. Staff from NHDOE have provided leadership for the project, facilities and equipment to support the professional development efforts of the project.

Ohio Association of Community Colleges

The Ohio Association of Community Colleges has been the sponsoring organizations for the STEM Equity Pipeline Project in Ohio. A staff person, Ben Williams, from Columbus State Community College has provided leadership for the project. Members of the Ohio State Team have provided staff time, facilities and equipment to support the professional development efforts of the project.

Other Collaborators or Contacts

National Defense Industry Association, Aerospace Industry Association, U.S. Chamber of Commerce, Institute for a Competitive Workforce, Kennan Institute for Eng, Tech & Sci, Quality Float Works, Career Communications Inc., U.S. Department of Education - Office of Vocational and Adult Education, Academy for Educational Development

California:

Aerojet , American Public Works Association, American River College
Bakersfield Adult School, Bakersfield College, Butte Glenn Community College, CA Commission on the Status of Women, CA Community Colleges, CA Department of Education, CA Space Education & Workforce Institute, CA Workforce Investment Board, California Association of School Counselors, California Comm. College Chancellors Office, California Conversation Corps, Career Tech Ed, Center of Excellence, Chabot Space & Science Center, Citrus College, City College of San Francisco, College of the Canyons, College of the Redwoods, Columbia College, Cordova High School, Diablo Valley College, East Side Union High School District, El Camino College, Encourage Tomorrow, Foothill Associates, GenCorp Foundation, Glendale Community College, GrayMill Consulting, Grossmont College, Grossmont Cuyamaca CCD, Intel Corporation, California Public Affairs, Kitty Hawk School ? FCUSD, LACOE-ROP, Laney College, Lassen Community College, Learning in Communities, Lompoc High School, Long Beach City College, Los Angeles County ROP, Los Medanos College, Mattole Valley Charter School, Merced College, MESA, Mira Costa Community College, Modesto Junior College, Montebello Adult School, Moorpark College, MPR Associates, Mt. San Antonio College, National Academy Foundation, Ohlone College,
Oxnard College, Paradise High School, Pathfinder Consulting Solutions, Perkins Akinada Consulting and Mission College, Poway Adult School & ROP-PUSD, Project Lead The Way, Rio Hondo College, Riverside Community College, ROP, Riverside County Office of Education, Sacramento City College, Sacramento City Unified School District, Sacramento Employment & Training Agency, San Diego County Office of Education, San Joaquin Delta College, Santa Ana College, School of Continuing Ed, Santa Barbara City College, Santa Rosa Junior College, Scott Valley Unified School District, SCUSD Engineering and Sciences, Sierra College, Silicon Valley Education Foundation, Siskiyou County Office of Education, Solano Community College, South Central Regional Consortium/Ventura College, Southwestern College,
Sustainable Programs for Independent Neighborhoods, University of California, Davis, Victor Valley Union High School Dist., Wallner Consulting, Wm. S. Hart UHSD, Yuba County Office of Education,Yucaipa-Calimesa Joint Unified School District

Illinois:

Chicago Pubic Schools, College of DuPage-Cisco Networking Academy, Heartland Community College, ICCB, Illinois State Board of Education, Illinois Center for Specialized Professional Support ,Illinois Community College Board, Illinois Math and Science Academy, Illinois Office of Educational Services, University of Illinois, Verizon, Chicago Workforce Board, Illinois Math and Science Partnership, Joliet Junior College, Bement High School, College of DuPage, Danville Area Community College, Lincoln Land Community College, Sauk Valley Community College, Wilbur Wright Community College, Elgin Community College, Olney Central College Learning Center, John Wood Community College, Kaskaskia College, Kishwaukee College and Southwestern Illinois College

Iowa:

Albia Community High School, Clarksville Community Schools, Des Moines Area Community College, Girls Scouts of Greater Iowa, Hawkeye Community College, Indian Hills Community College, Iowa Commission on the Status of Women, Iowa Department of Education, Iowa Dept. of Economic Development, Iowa State University, Iowa Western Community College, Iowa Workforce Development, Prairie Lakes Area Education Agency, Rockwell Collins, Shenandoah High School, Technology Association of Iowa, Tri-Center High School, UNI/IMSEP, Western Iowa Tech Community College, Grant Wood AEA, Kirkwood Community College, Women in Science and Engineering, Iowa Mathematics and Science Education Partnership, Denver School District, Williamsburg High School, Iowa City West High School, Cedar Rapids School District and Mount Vernon High School.

Minnesota:

Minnesota Department of Education, Minnesota State College and Universities, Anoka-Ramsey Community College, Lakes Country Service Cooperative, Minneapolis Public Schools, Minnesota State University, Minnesota High Tech Association, Pathways to Employment/DEED VR, Science Museum of Minnesota, SE Service Cooperative, Society for Women Engineers, South Central College, STEP Academy, Winona State University, Metropolitan State University, St. Paul Public Schools, St. Paul College, Ridgewater College, Gibbon-Fairfax-Winthrop Schools, Wayzata High School, Hopkins High School, North Hennepin Community College, Eden Prairie High School, Normandale Community College, Bloomington Schools, Kennedy High School, Jefferson High School and Shakopee High School.

Missouri:

Carrollton Area Career Center School, Cass Career Center, Cisco Systems, Columbia Career Center, Current River Career Center, Dept. of Elementary & Secondary Education, Fort Osage School District, Fort Zumwalt, Hickman Hills, Hillyard Technical Center, Kennett Career Center, Kirksville Area Technical Center, Linn State Technical College, MAHEC, Mineral Area College, Missouri Center for Career Education, Missouri Dept. of Elementary and Secondary Education, Missouri University of Science and Technology, Moberly Area Community College, Nichols, Northland Career Center, Ozarks Technical Community College, Ray-Pec High School, Ritenour High School, Rolla Technical Institute, Sikeston R-6 Schools, Smith Hale Middle School, Southeast Missouri State University, Southwest Area Career Center, St. Louis Community College, University of Central Missouri, Washington University, William Chrisma Senior High School, Winfield High School, Woodland R-IV Middle School, Excelsior Springs Career Center, Brookfield Career Center, Columbia Career Center, Crowder College, Alliance for the Status of Missouri Women, Department of Economic Development, KCMO School District, Poplar Bluff R-I, and South Central Career Center.

New Hampshire:
Community College System of NH, GLOBE, Great Bay Community College, Information Technology & Manufacturing Partnership, Keene State College, Manchester School of Technology, Milford High School & Applied Technology Center, New Hampshire Department of Education, New Hampshire Project Learning Tree, New Hampshire Technical College, Pinkerton Academy, Profile School, Project HOME, Project WET, Project WILD, Sugar River Valley Regional Technical Center, The SABEN's Group, U S Forest Service, University of New Hampshire, and White Mountains Community College

Ohio:

Battelle/Ohio STEM Steward, Butler Technology and Career Development Schools, Cincinnati State Technical and Community College, Columbus State Community College, Eastern Gateway Community College, Ohio Association of Community Colleges, Ohio Board of Regents, Ohio Department of Education, Ohio Mathematics & Science Coalition, Ohio Resource Center (Mathematics, Science and Reading), Owens Community College, Sinclair Community College, Stark State College of Technology, University Hospitals, and Washington State Community College

Oklahoma:

Caddo Kiowa Technology Center, Canadian Valley Technology Center, Carl Albert State College, Catoosa Public Schools, Central Technology Center, CKTC, Francis Tuttle, Gordon Cooper Technology Center, Great Plains Technology Center, Indian Capital Technology Center, Kiamichi Technology Center, Konawa High School, Meridian Tech, Metro Technology Centers,,
Mid-America Technology Center, Moore Norman Technical College, Moore Norman Technology Center, Northeast Technology Center, OKCPS, Oklahoma Department of Career & Technology Education, Southern TC, Stillwater Public Schools, Tahlequah High School, TriCounty, Tulsa Public Schools, Tulsa Technology Center, Western Technology Center, Yukon Public Schools, Choctaw High School, Claremore High School, East Central University, Keys High School, Langston University, Pioneer Tech Center, Red River Tech Center, and Rose State College

Wisconsin:

Alverno College, Badger Science and Engineering Fair, Blackhawk Technical College, Bowman Performance Consulting, Center of Education and Work/Univ. of Wisconsin, CESA #3, CESA 1, CESA 11, CESA 5, CESA 9, Chippewa Valley Technical College, Department of Workforce Development, Educational Communications Board, Elkhorn Area High School, Elmbrook School District, Engineer & Scientists of Milwaukee, Farnsworth Middle School, Fox Valley Technical College, Gateway Technical College, Horace Mann Middle School, Inacom Information Systems, Kettle Moraine School District, Lakeshore Technical College, Lincoln High School, Madison Area Technical College, Manitowoc Public Schools, Medical Physics Department, Mid-State Technical College, Milwaukee Public Schools, Milwaukee School of Engineering, Monona Grove School District, Moraine Park Technical College, MPTC, North Crawford Schools, Northcentral Technical College, Northeast Wisconsin Technical College, Oconto Falls Public School, P&H Mining Equipment, Plymouth High School, Riverview Middle School, Sheboygan Area School District, Sheboygan North High School, Sheboygan South High School, Technical College System: Engineering & Manufactur, University of Wisconsin ? Madison, University of Wisconsin Eau Claire, Waukesha County Technical College, Waunakee Community Schools, Wilmot Union High School, Winter School District, Wisconsin Department of Public Instruction, Wisconsin Technical College System, Wisconsin Technical College System Board, Wisconsin Technical System Office, Badger High School, CESA 10, CESA 12, CESA 4, CESA 6, CESA 7, CESA 8, Clarke Street School, and Menomonie Area Public Schools.

Activities and Findings

Research and Education Activities: (See PDF version submitted by PI at the end of the report)

STEM Equity Pipeline
Year Three Annual Report? July 1, 2009 ? June 30, 2010
Activities

The STEM Equity Pipeline is now in its third year of implementation. The project continues to focus on its stated goals in the original proposal:
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 science, technology, engineering and math (STEM) education.
2. Institutionalize the implemented strategies by connecting the outcomes to existing accountability systems
3. Broaden the commitment to gender equity in STEM education
In addition, the project has not wavered from its original implementation design and continues to work with teams of staff development professionals in states to act as extension agents within their particular professional development delivery systems. In many of the states due to the local control of professional development this work has been with teams located at community colleges, high schools and middle schools. Cross institutional teams have been trained in the Five Step Program Improvement Process, a data driven decision making process that assists teams in identifying effective implementation strategies to increase the participation and completion of females in STEM related programs of study.

NATIONAL ADVISORY BOARD

A National Advisory Board (NAB) consisting of twenty-seven members continued to meet during the third year of the project's implementation. The NAB includes representatives from the following organizations: American Association of University Women, Association for Career Technical Education, American School Counselors Association, American Association for the Advancement of Science, American Association of Community Colleges, American Federation of Teachers, California Commission on the Status of Women, Cisco Networking Academy Program, National Association of Multicultural Education, Center for the Advancement of Scholarship on Engineering, Disabilities Unlimited Consulting Services, EdLab Group, Intel Corporation, Multinational Development of Women in Technology, National Association of State Directors of Career and Technical Education, National Association of Workforce Development Professionals, National Education Association, National Research Center for Career and Technical Education, National Women's Law Center, Project Lead the Way, Rolls-Royce Corporation, SkillsUSA, Society of Women Engineers, Southern Regional Education Board, Women in Engineering ProActive Network, Wider Opportunities for Women, Association for Gender Equity Leadership in Education. Contact information for the NAB can be found at www.stemequitypipeline.org.

The National Advisory Board met on October 27, 2009 (19 attended) and April 15, 2010 (16 attended). The agendas and minutes for these two

meetings can be found in the attachments. The National Advisory Board continues to be an important group in providing valuable feedback regarding the projects implementation. At both these meetings the Board had significant discussions regarding sustainability, impacts, implementation decisions and the significant implications this project can have for future research and implementation strategies.

EXTENSION SERVICES GROUP

In 2009-10 thirteen experts (Lise Eliot, Ph.D, Jill Chan, Dr. Robbin Chapman, Katherine Good, Mimi Lufkin, PJ Dempsey, Courtney Reed-Jenkins, Dee Grayson, Lynn Reha, Howard Glasser, Katherine Weber, Winifred Walker, Mark Perna) were used to conduct a webinar, present a workshop at the professional development institute, or present at a participating state professional development event. These individuals are named in the Participants: 'Who has worked on this project?' section of this annual report. States have relied on their State Facilitator or the PI to conduct professional development and using experts to supplement when content specific training is requested.

The project staff met in Dallas, Texas, July 26-28, 2009. The staff meeting agenda is included in the attachments to this report. State Facilitators and their assigned states are: Mimi Lufkin, California and New Hampshire; Freda Walker, Illinois and Missouri; Howard Glasser, Wisconsin and Minnesota; Courtney Reed Jenkins, Iowa; and Katherine Weber, Ohio. In addition to the state facilitators the project evaluator Sandra Staklis from MPR, Inc. attended. The three days were spent reviewing the two new states' applications (New Hampshire and Ohio), reviewing the first and second year states progress, increasing skills in presenting the Five Step Program Improvement Process, evaluating the second year's activities and reviewing the evaluation plan.

All members of the project staff meet at the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC April 12-15, 2010. Each State Facilitator met with their state teams and participated in professional development training.

The management team consisting of the PI, the five state facilitators, two support staff located in the national office, the VLC manager and the two project evaluators met approximately once a month via conference call. These virtual meetings were very valuable in identifying areas of needed support, troubleshooting, and communication. The management team meetings were held on July 10, 2009, September 2, 2009, October 21, 2009, November 24, 2009, January 6, 2010, January 26, 2010, February 23, 2010, March 31, 2010, May 18, 2010, and June 17, 2010. The PI also conducted individual assistance calls with each of the state facilitators on an as needed basis.

STATE TEAM DEVELOPMENT

The national office continues to create resources used by State Facilitators when training State Teams and by Extension Agents when conducting professional development with their constituents. Some examples included in the attachments are:

State Implementation and Evaluation Form- This was developed as a fill in the blank form for the Iowa Department of Education to use with the community colleges, all of whom are required to complete the STEM Equity Pipeline's Five Step Program Improvement process training as before receiving their Perkins nontraditional career grants. It will also be available for other states to use.

3D Spatial Visualization Exercise Instructions ? This exercise is used as part of the Five Step Program Improvement Process training to illustrate the visual and spatial relations skills root cause.

Webinar Participation Certificate- Everyone who attends a STEM webinar training receives one of these certificates as verification for continuing education credits at the local level.

In addition to state based resources the national office continues to maintain the Virtual Learning Community (www.stemequitypipeline) where online resources and training tools are constantly updated. Resources used by the staff to conduct outreach through the NSF Joint Annual Meeting (NSF JAM Poster) and for the Reverse Site visit (Reverse Site Visit Data Sheets) are also included in the attachments. Each state has access to Microsoft Share Point to create a virtual online workspace for their team and can also access Microsoft Live Meeting to conduct online meetings.

STATE TEAM ACTIVITES

The focus of the STEM Equity Pipeline is to build the gender equity in STEM knowledge of individuals who conduct professional development with STEM educators. During year three, nine states participated in the project: California, Illinois, Iowa, Minnesota, Missouri, New Hampshire, Ohio, Oklahoma, and Wisconsin.

TWO NEW STATES SELECTED FOR 2009-2010
A Request for Applications for two new states was released on April 24, 2009 with a due date of July 15, 2009. 2 states submitted applications

for consideration (New Hampshire and Ohio). Although there was significant interest from other states we speculate that many of them did not apply because of the severe economic crisis that has caused many state agencies to cut staff and eliminate programs. Taking on additional responsibility, like the STEM Equity Pipeline, was not feasible for many in this climate. The applications were reviewed by a committee of state facilitators, members of the national advisory board and project evaluator. The committee reviewed the applications using a common scoring rubric and submitted individual comments, scores and rankings. The staff completed the final review of the applications at the summer staff retreat and selected New Hampshire and Ohio to participate in 2009-10.

STATES IN YEAR ONE OF IMPLEMENTATION

States in year one of implementation typically form their State Team, identify the potential STEM professional development mechanisms in the state, conduct a performance gap of girls in STEM related programs of study in the state and settle on an implementation strategy.

NEW HAMPSHIRE

New Hampshire's implementation strategy is being led by the New Hampshire Department of Education. The State Contact, Susan McKevitt, retired in June passing the responsibility for this project to her colleague Bob McLaughlin. A state team has been formed and met where they developed an implementation strategy that they will be implementing over the next two years. Three pilot sites consisting of secondary/postsecondary teams will learn the Five Step Program Improvement Process and then work with administrators/faculty in their respective sites to pass on the knowledge and infuse equity into their STEM related programs. In addition, those who have been so trained will make themselves available to help in other schools or at conferences to 'extend' the work. The pilot sites include: Milford High School & Applied Technology Center, Community College System of NH, White Mountains Community College, and Sugar River Valley Regional Technical Center. A cadre of independent professional development providers has been identified and will be trained on infusing equity into STEM related programs so they would include it in the professional development they provide and/or train their organization's professional development providers to do so, once again 'extending' the work. The STEM Equity Pipeline will collaborate with the Online Professional Education Network of New Hampshire (OPEN NH) to provide online professional development on gender equity in STEM and as a portal to access resources on the virtual learning community. Two online courses are now being developed.

9/9/10 State Team conference call (5 attended) Mimi Lufkin provided an orientation to the STEM Equity Pipeline Project with individuals who will potentially become the State Leadership team. The goals of the call were:(1) for everyone to introduce themselves; (2) to give the group an overview of the STEM Equity Pipeline Project; (3) explain the roles and responsibilities of the State Facilitator, State Contact, State Leadership Team and State Team; (4) give and overview of the implementation plan process; and (5) schedule the first onsite visit.

12/17/09 The State Team met in Concord, NH. Mimi Lufkin, PI and State Facilitator for NH presented an overview of the status of girls in STEM in New Hampshire and worked with the team to identify its implementation strategy. 18 people attended the meeting representing secondary and postsecondary institutions in NH as well as professional development providers. The agenda for this meeting is included in the attachments.

4/11-15/10 7 members of the New Hampshire State Team attending the STEM Equity Pipeline Leadership Institute and NAPE Professional Development Institute in Arlington, VA.

5/3/10 The State Leadership Team met at the New Hampshire Department of Education to conduct planning with the leaders of the four pilot sites. Each of the sites will build their teams over the summer and conduct initial data gathering. The sites will be meeting on September 21, 2010 for their Five Step Program Improvement Process training.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. New Hampshire had 13 people participate in these webinars.

OHIO

The Ohio STEM Equity Pipeline project is being led by the Ohio Association of Community Colleges. The individual who started as the state contact passed the responsibility on to a community college colleague at the second State Team meeting. As a result of the outcomes of the first State Team meeting the staff conducted a performance gap analysis and benchmarking of nontraditional STEM related career and technical education programs of every community college and secondary planning district in the state. The team has tentatively developed a plan that includes the following:
- State Team members will participate in the Five Step Program Improvement Process training to build their capacity to conduct outreach and training at state level professional development activities with their communities of practice.
- Conduct outreach and identify pilot sites in three communities of practice in Ohio: the Ohio STEM Learning Network sites; Tech Prep consortia through the career technical centers; and community colleges. The first phase of pilot sites includes: Cincinnati State, Sinclair

Community College and Washington State. Additional pilot sites will be added in January 2011.
- Partner with the Ohio STEM Learning Network to conduct outreach to STEM educators to access online professional development through the virtual learning community.
- Develop Ohio specific marketing materials, such as a STEM data fact sheet, for State Team members to use when conducting outreach activities.

10/16/09 ? State Team conference call (11 attended) The State Facilitator and Mimi Lufkin provided an orientation to the STEM Equity Pipeline Project with individuals who will potentially become the State Leadership team. The goals of the call were :(1) for everyone to introduce themselves; (2) to give the group an overview of the STEM Equity Pipeline Project; (3) explain the roles and responsibilities of the State Facilitator, State Contact, State Leadership Team and State Team; (4) give and overview of the implementation plan process; and (5) schedule the first onsite visit.

12/14/09 ? State Team meeting (15 attended) ? The State Facilitator gave an overview presentation about the status of women in STEM as well as the status of women in Ohio. Mimi provided a snap shot of the Ohio participation of secondary students and adults in nontraditional CTE courses. They were also given an overview about the STEM Equity Pipeline project. The agenda for this meeting is included in the agenda.

2/22/10 ? State Team meeting (15 attended) - Mimi Lufkin discussed the data trend for STEM nontraditional post-secondary courses. The group was introduced to the 3 goals of the STEM Equity Project. A discussion took place as to how each of the goals could be completed in the state of Ohio. A discussion also took place as to who would be sent to the Leadership Institute

4/11 ? 4/15/10 ? Ohio sent 5 people from their state team to attend the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

6/24/10 ? State Team meeting (13 attended) ? The State Facilitator gave the group a brief overview of the STEM Equity Pipeline Project. They then had a discussion about the Ohio STEM Equity Pipeline teams' vision, mission, and goals. The group was then given an overview of the expectations of pilots and we discussed the timeline for the pilot site training.

State Team conference call meetings were held on 11/18/09, 12/16/09, 4/7/10 and 5/13/10 to discuss data collection, implementing strategies on their OH State Plan and pilot sites.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Ohio had 16 people participate in these webinars.

STATES IN YEAR TWO OF IMPLEMENTATION

States in year two of the project worked on implementation of their developed plans and included significant training with pilot sites and investment of state level resources to fund these activities.

IOWA

The Iowa Department of Education has taken on the leadership for the STEM Equity Pipeline project. A very broad group of organizations was convened as a State Team to develop the implementation plan for the state. Iowa does not have a central professional development mechanism or professional development staff that conducts professional development in the state so the team focused on identifying potential organizations and strategies where the resources being made available could be instituted. The implementation strategy has included:
- Conducted Five Step Program Improvement Process training with four community college pilot sites. The pilot sites are: Hawkeye Community College, Clarksville Community Schools and Denver School District; Iowa Western Community College, Tri-Center High School and Shenandoah High School; Indian Hills Community College and Albia Community High School; and Kirkwood Community College, Williamsburg High School, Iowa City West High School, Cedar Rapids School District, Mount Vernon High School. The pilots have resulted in the deans from all the community colleges in Iowa requesting training in the institutional change model. This training will be conducted in summer 2010.
- Conducted Five Step Program Improvement Process training with eastern central region Project Lead the Way faculty.
- Collaborated with the Iowa Math and Science Education Partnership (IMSEP) on the 2009 Summer Institute for members of the Iowa Association of Teacher Educators (33 teacher preparation institutions of higher education). The project sponsored the keynote speaker and was involved in the planning of the institute. As a result of participating in the STEM Equity Pipeline Project, IMSEP has committed to ongoing professional development for the pre-service faculty, including a 2010 Summer Institute.
- Members of the leadership team have presented at statewide, regional, and national professional development conferences and workshops.
- The Iowa Department of Education aligned discretionary Perkins funds with the STEM Equity Pipeline's 5-Step Training. ($200,000). The Iowa Request for Applications and Implementation and Evaluation Plan form is included in the attachments.

- The IA Department of Education and the IA Department of Human Rights submitted a FFY 2011 Project Request to expand the STEM Equity Pipeline Project in Iowa ($210,000).Iowa submitted an application for Race To The Top (http://www.iowa.gov/educate/index.php?option=com_content&view=article&id=1910:race-to-the-top&catid=1051:race-to-the-top&Itemid=2616) and included work with the STEM Equity Pipeline as activities that are positioned well for expansion

August 21, 2009 The State Facilitator conducted Steps Three and Four of the Five Step Program Improvement process with the Computer Science Program at Iowa Western Community College (an Iowa intensive site), Council Bluffs, IA. Eight (8) individuals attended.

December, 18, 2009 The State Facilitator conducted an annual planning and networking meeting for State Leadership Team. Team members updated the rest of the team regarding activities and events; team members prioritized activities for SY 09-10 aligned with the three goals of the STEM Equity Pipeline Project.

December 18, 2009 The State Facilitator conducted the Five Step Program Improvement Training process with Project Lead the Way faculty in the eastern central region of Iowa at Kirkwood Community College, Cedar Rapids, IA. Nine (9) individuals attended.

April 11-April 15, 2010 Iowa sent 7 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

Iowa conducted nine virtual meetings with the State Facilitator. Those meetings were held 7/23/09, 9/22/09, 11/11/09, 1/13/10, 1/21/10, 2/11/10, 3/1/10, 3/9/10 and 5/27/10.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Iowa had 12 people participate in these webinars.

MINNESOTTA

The STEM Equity Pipeline project in Minnesota is being managed by the STEM Coordinator for MNSCU. She has been able to integrate the state's participation in the STEM Equity Pipeline into her job description. The Minnesota State Leadership Team consists of twelve staff from both the Minnesota Department of Education and Minnesota State Colleges and Universities (MNSCU). A larger State Team, consisting of STEM faculty, curriculum coordinators, professional development experts, administrators, and representatives from STEM outreach organizations. Minnesota has an established network of Perkins consortia linking secondary and post-secondary Career and Technical Education program. The team has chosen to focus on the implementation of the Five Step Program Improvement Process with pilot sites in each of the four regional consortia. Members of the State Leadership Team conducted regional orientation workshops with faculty and staff from high schools and community colleges in the four areas of the state. Perkins Consortia were invited to apply for participation based on their commitment to increase the participation rate of females in nontraditional STEM programs. Four sites were accepted for participation: Hennepin West with a focus on engineering; Mid-Minnesota, with a focus on engineering and drafting; Southwest Metro, with a focus on engineering and manufacturing; and St. Paul, with a focus on computer programming, construction, and engineering. Members of the State Team and teams from each of the pilot consortia were trained in the Five Step Program Improvement Process. The State Team has created technical assistance teams that are working with each of the pilot site consortia. Once the pilot sites completed their performance gap analysis (step one) and root cause research (step two) they were eligible to apply for funding ($2000 per consortia) for their strategy implementation (steps three, four and five). The sites participate in monthly technical assistance calls with members of the State Team and the STEM Equity Pipeline State Facilitator. Members of the State Team have also presented at professional development events in the state.

July 7, 2009 Minnesota conducted its first State Team Kick-off meeting at Saint Paul College, St. Paul, MN. This was the first meeting with entire state team after the leadership team completed their orientation meetings with the pilot sites. This meeting focused on STEM activities and resources that could be leveraged for this project, enhanced team members' understanding of the STEM Equity Pipeline Project including the 5-Step Process, developed a list of areas of expertise for team members, generated ideas for how to share their expertise, and find ways to integrate the resource list, areas of expertise, and more into a plan for supporting local teams (and beyond). 26 people attended representing Lakes Country Service Cooperative, Metropolitan State University, Minnesota Department of Education, Minneapolis Public Schools, Minnesota State Colleges and Universities, Minnesota State University, Mankato, Pathways to Employment/DEED VR, Society for Women Engineers, South Central College, St. Paul Public Schools, and University of Minnesota.. The State Facilitator and Project Director attended via conference call and through an online connection. It was a very effective way to conduct this meeting when the project staff was not central to the meetings agenda.

October 12, 2009 The State Facilitator and Mimi Lufkin introduced the Five-Step Program Improvement Process to members of four consortia (and other people from MN New Look Process), focusing on documenting performance results, identifying root causes, selecting best strategies, and next steps at Eisenhower Community Center in Hopkins, MN. Approximately 60 people attended. The STEM Equity Pipeline and the Minnesota NEW Look projects are collaborating on their work with pilot sites interested in implementing research-based strategies to

increase the participation of students in nontraditional career preparation programs, including women in STEM related programs of study. The projects conducted joint training and technical assistance. An example of the Minnesota STEM Equity Pipeline and NEW Look Newsletter is included in the attachments.

April 11-April 15, 2010 Minnesota sent 5 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

May 27, 2010 The State Facilitator and Mimi Lufkin attended the Minnesota Equity Showcase. This event was the Equity Showcase relating to our join work with the New Look Project in Minnesota. Brenda and Eva provided a presentation and training on SAGE. Target sites displayed work from activities they implemented and they observed other projects' work/progress too. They discussed evaluation, next steps, and evaluated their work thus far and plans and interests looking forward (as members of the state team listened and asked for more information). The state team then discussed their observations and ideas for moving forward. Sixteen people were in attendance.

The Minnesota State Team had several conference call meetings throughout the year. The dates of those meetings are 7/7/09, 11/25/09, 12/8/09, 1/18/10, 1/28/10, 2/10/10, 3/2/10, 4/1/10, 4/6/10, 5/4/10, 5/18/10 and 6/22/10.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Minnesota had 17 people participate in these webinars.

STATES IN YEAR THREE OF IMPLEMENTATION

States in year three continue to implement their action plans and develop sustainability and investment options. In many states the work of the STEM Equity Pipeline is being absorbed into the agendas of statewide professional development organizations.

CALIFORNIA

The California Joint Special Populations Advisory Committee (JSPAC) is a joint initiative of the California Department of Education and the California Community College Chancellors Office. The JSPAC is a committee comprised of educators from the K-12, adult education, and community colleges as well as business, industry, and the trades who are committed to enhancing the Career and Technical Education field as well as encourage girls and women to explore and enter into training programs and careers that are non-traditional by gender as well as high-wage and high-demand. From the beginning, the JSPAC provided the leadership and direction for the implementation and integration of the work of the STEM Equity Pipeline project and integrated it into its work plan. The JSPAC conducts regional training meetings, puts on an annual professional development conference, and conducts research on the participation of special populations in career and technical education in the state. Their work is particularly focused on increasing the participation and completion of underrepresented gender students in nontraditional career and technical education. Determining the best project implementation strategy for a state of this size and the potential magnitude of the effort was difficult at best. Ultimately the leadership team, with advice from the full JSPAC and a diverse group of State Team members, has taken four approaches to meet the three goals of the project:
- Brought together, at least annually, a diverse group of STEM stakeholders as their State Team to provide advice to the JSPAC's efforts and provide a state network to share STEM education resources from all stakeholders on increasing the participation and completion of women and girls in STEM related programs of study in secondary and community college programs
- Conducted Five Step Program Improvement Process training with professional development staff of the JSPAC and leaders from interested K-Adult and community colleges across the state, to create a cadre of extension agents are sharing the information with their communities of practice.
- Integrated resources and expertise available through the STEM Equity Pipeline project into the JSPAC's regional workshops and annual conference.
- Included information about the resources available at the STEM Equity Pipeline virtual learning community through the JSPAC website and listserv

December 1, 2010 The JSPAC conducted a STEM Equity Pipeline State Team meeting as a pre-conference session to their annual conference. 45 people participated in the meeting. The meeting was conducted in collaboration with the California Space Education and Workforce Institute (CSEWI). The team reviewed and developed specific actions in response to the Recommendations to Improve Science, Technology, Engineering and Mathematics (STEM) Education in California produced by the CSEWI.

December 2, 2010 Mimi Lufkin conducted a four hour training with the 250 participants at the JSPAC annual conference. The training was on the use of the NAPE developed Taking the Road Less Traveled: Educators Toolkit to Prepare Students for Nontraditional Careers. The presentation included resources and information about the STEM Equity Pipeline project.

March 1, 2010 The STEM Equity Pipeline Leadership team met at the California Educating for Careers Conference in Anaheim, CA. The team discussed the options for follow-up from the December State Team meeting and the potential of continuing this activity annually.

March 2, 2010 Mimi Lufkin conducted a workshop session at the California Educating for Careers Conference in Anaheim, CA. 50 people attended the session. The session introduced the STEM Equity Pipeline project and included information on the status of women and girls in STEM and the root causes and strategies to increase their participation.

April 11-April 15, 2010 California sent 5 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The California Leadership Team help a series of conference calls to plan the events of the year and to work on strategies for sustainability as they move out of the projects assistance. These meetings were held on November 2, 2009; November 18, 2009; January 14, 2010; January 19, 2010; January 25, 2010, April 27, 2010, May 5, 2010, May 25, 2010, June 28, 2010

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. California had 43 people participate in these webinars.

The California JSPAC conducted a series of regional meetings across the state and incorporated the training received from the STEM Equity Pipeline Project into these trainings. The State Facilitator provided technical assistance to the two extension agents conducting the training. These trainings were highlighted in the JSAPC newsletter, News You Can Use, which is included in the attachments.

Sustainability and Investments in California
The California Joint Special Populations Advisory Committee has committed to continuing to support the gathering of the STEM Equity Pipeline State Team semi-annually for at least the next two years. They will also continue to integrate the training and resources provided through the project at their regional and statewide professional development activities. The JSPAC will be funding staff to provide technical assistance to two secondary/community college pilot sites to implement the Five Step Program Improvement Process in 2010-11.

ILLINOIS

The Illinois Center for Specialized Professional Support (ICSPS) at Illinois State University is funded by the Illinois Board of Education and the Illinois Community College System. ICSPS facilitates the improved performance of special populations' learners in career and technical education by assisting professionals in gaining the knowledge and skills needed for helping every learner to succeed. ICSPS provided the initial leadership to bring together a leadership team to plan and implement the following strategies:
- Conducted the Five Step Program Improvement Process training with the leadership team so each of them, as extension agents, have trained others and shared resources with their communities of practice.
- Integrated STEM Equity Pipeline training and resources into the ICSCP's NEW Look Projects who receive monetary awards, technical assistance and professional development to increase the participation and completion of underrepresented gender students in nontraditional career and technical education. New Look Projects use the improvement process. The following pilot sites received training, technical assistance nad mini-grant support from ICSPS's NEW Look project: Bement High School, College of DuPage, Danville Area Community College, Lincoln Land Community College, Sauk Valley Community College, Wilbur Wright Community College, Elgin Community College, Olney Central College Learning Center, John Wood Community College, Kaskaskia College, Kishwaukee College, Southwestern Illinois College. The Illinois NEW Look Newsletter that includes STEM Equity Pipeline resources is in the attachments.
- Conducted training with the Illinois Project Lead the Way teachers at their fall and summer training institute.
- Extension agents shared STEM Equity Pipeline resources through workshop presentations at Illinois professional development events.
- Disseminated STEM Equity Pipeline virtual learning community resources through the ICSPS and Illinois Office of Educational Services, Illinois Community College and University of IL Chicago listservs for CTE educators.

During the 2009-2010 year, Illinois had three conference call meetings of the Leadership Team: 7/23/09 and 9/3/09 and 2/16/10. These calls were primarily focused on the updating of their implementation plan and updating of activities being conducted in the state.

April 11-April 15, 2010 Illinois sent two members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Illinois had 28 people participate in these webinars.

Sustainability and Investments in Illinois
The Illinois Center for Specialized Professional Support has fully integrated the Five Step Program Improvement Process into their New Look Project and will continue, with support from the State Board of Education and the Community College Board, to provide mini-grant funding,

professional development and technical assistance to local education agencies implementing the process in STEM related programs of study. The Board of Education is also exploring ways to extend the training to all secondary school districts as part of their Perkins nontraditional career preparation program improvement efforts. The board funds a Nontraditional and Gender Equity Specialist who disseminates STEM Equity resources.

MISSOURI

Missouri's State Team has developed somewhat differently that the other four states due to a unique professional development model they made available to the project as an implementation vehicle. The Missouri Department of Elementary and Secondary Education, who administers career and technical education at the secondary and postsecondary level in Missouri, funds the Missouri Center for Career Education (MCCE). In turn, the MCCE has eight Career Education Coordinators (CECs) located throughout the state whose responsibility includes providing professional development and technical assistance to secondary and community college career and technical education programs. Central to their responsibility is to assist these local education agencies in improving their performance on the Perkins accountability measure requiring the increase in participation and completion of underrepresented gender students in nontraditional career and technical education programs (i.e. women and girls in STEM related CTE programs). Due to this connection, the State Director for CTE in Missouri chose to have the coordinator of the eight CECs be the State Contact and have the CECs become extension agents for the project. This is a very focused implementation model that is integrated into an existing system with a shared mission central to our implementation strategy. As a result their State Team consists of the eight CECs and an advisory group that provides advice and resources to the extension agent team (the eight CECs). The eight CEC's have been trained in the Five Step Program Improvement Process. They have each selected a pilot site in their region to work with and have implemented the process with local planning teams. Three of the CEC's have started with a second pilot site implementation. The eight CEC's have also integrated what they have learned from the training, participation in webinars and resources available from the virtual learning community into the professional development they do with teachers and programs with students in their regions. The CEC's have developed their own Five Step Program Improvement Process Toolkit to help them implement the process with additional sites in the future. They have also accessed experts through the project to supplement their knowledge and provide specific technical assistance with the pilot sites.

The Missouri Leadership Team has met via conference calls during the year on the following dates: 7/10/09, 7/21/09, 8/17/09, 9/18/09, 12/2/09, 1/13/10, 1/19/10 and 5/21/10. These were technical assistance calls with the CEC's who were working with their pilot sites on implementing the Five Step Program Improvement Process. The pilot sites are: Excelsior Springs Career Center, Brookfield Career Center, Columbia Career Center, Linn State Technical College, Current River Career Center, Ozarks Community College and Crowder College.

April 11-April 15, 2010 Missouri sent 4 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

Generating Expectations for Student Achievement (GESA) - Four of the 2008-09 webinars were focused on training extension agents to facilitate the GESA process with teams at their school sites. Six of the CECs participated in the complete series with their receiving certification as onsite GESA Facilitators. As a result of their participating in the series, Dee Grayson, developer of GESA, conducted a follow-up training with the CECs on September 21-22, 2009 to build on some of the findings from the GESA Training and go more in-depth with content and presentation tips that will lead to developing meaningful action plans for each of the findings and the team as a whole. Nine individuals participated in this training.

Mark Perna, a STEM Equity Pipeline Expert, was the Keynote Speaker at the Missouri Council of Career and Technical Administrators in Lake Ozark, MO held on March 7-9, 2010. Marks presentation addressed strategies for increasing the number of females in STEM areas at the Missouri Career Centers as part of an overall marketing strategy. He also met with the CEC's to provide them with targeted marketing strategies that they can share with their pilot sites.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Missouri had 5 people participate in these webinars.

Sustainability and Investments in Missouri
The STEM Equity Pipeline effort has been totally integrated into the work of the eight career education coordinators work responsibilities through the Missouri Center for Career Education. They have done an exceptional job mentoring each other, training new coordinators that have joined the team and developed Missouri specific materials to support their implementation. The Missouri Department of Elementary and Secondary Education, who funds the Missouri Center for Career Education is committed to seeing this work continue through their own efforts in the state.

OKLAHOMA

Oklahoma has a single state agency that administers career and technical education in the state, the Oklahoma Department of Career Technology Education. The responsibility as State Contact in Oklahoma was given to the Equity Coordinator for CTE. Oklahoma's career and technical education system includes a well developed network of career technology centers around the state where students attend to participate in CTE programs. The leadership group in Oklahoma decided they wanted to focus their efforts with the STEM Equity Pipeline project with professional development staff at the career technical centers with STEM related CTE programs. The following Career Technical Centers received training in the Five Step Program Improvement Process Training in year two of their implementation:

Caddo Kiowa Technology Center, Canadian Valley Technology Center, Central Technology Center, Consultants, Gordon Cooper Technology Center, Great Plains Technology Center, Oklahoma Department of Career & Technology Education, and Tulsa Technology Center, Autry Technology Center, Carl Albert State College, Francis Tuttle Tech Center, Grove High School, Indian Capital Technology Center, Metro Technology Centers, Miami Public Schools, Muskogee ICTC, Ohio State University, Pontotoc Technology Center, , , , Catoosa Public Schools, Indian Capital Technology Center, Konawa High School, Mid-America Technology Center, Moore Norman Technology Center, Northeast Technology Center, NW Tech Center-Alva, Oklahoma CPS, , Stillwater Public Schools, Tahlequah High School, Tulsa Public Schools, , Western Technology Center, and Yukon Public Schools.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010 Oklahoma had 11 people participate in these webinars.

Sustainability and Investments in Oklahoma
At the end of the second year the Oklahoma Department of Career and Technology Education chose not to continue their involvement with the STEM Equity Pipeline Project. Changes in staffing, budget cuts, lack of staff time available to sustain the effort at the state level and restructuring of career and technology education data collection in the state have caused the state level efforts to stall. The investment in building the capacity of the CTC staff to implement the Five Step Program Improvement Process has created a grassroots effort that has potential to be sustained. A recent follow-up survey conducted by the STEM Equity Pipeline staff received responses from eight of the forty-four individuals who had received training. They indicated that they had shared the information with 8,281 students, 558 teachers, 49 administrators, 2042 parents, and 80 business/employers, without support from the state STEM Equity Leadership team.

WISCONSIN

Wisconsin's leadership has been provided by the Perkins 'equity coordinators' of the Wisconsin Department of Public Instruction and the Wisconsin Technical College System. These two individuals have many years of experience providing professional development and technical assistance to local education agencies on gender equity issues. Initially, there appeared to be no professional development mechanism in the state, beyond the work of these two state staff members, where the STEM Equity Pipeline resources and training could be integrated. They adopted a strategy to develop a State Team of diverse STEM education stakeholders to serve as extension agents to conduct professional development with their communities of practice. The Five Step Program Improvement Process training and other gender equity in STEM training was conducted with the team. However, the work was not being disseminated by the State Team members as widely as was expected due to a lack of comfort and experience with the content. The leaders then decided a pilot site approach would help them create some local traction that could be replicated statewide. An application for participation was released and a pilot site consisting of a community college and three feeder high schools was selected. Teams from each of the schools gathered twice to participate in the training, conducting a performance gap analysis using local data and completing action research to identify root causes between the two trainings, ultimately resulting in strategy implementation plans. In addition, Wisconsin developed a STEM Equity Pipeline newsletter to keep members of the State Team informed of project activities and developed, in collaboration with the Wisconsin Department of Workforce Development, a STEM Fact Sheet for use when conducting outreach.

October 13, 2009 The State Facilitator and Mimi Lufkin attended the second meeting with the Wisconsin pilot sites (Lakeshore Technical College, Manitowoc School District, Plymouth School District and Sheboygan School District.) where the teams reported what they had done since the April meeting, conducted training on steps 3, 4, & 5 of the Five Step Program Improvement Process, and concentrated on passing the baton to a target site and state contacts. There were 34 in attendance. The agenda for this meeting is included in the attachments.

April 11-April 15, 2010 Wisconsin sent 6 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

June 3, 2010 The Wisconsin State Team met and the State Contacts (Barbara Bitters and Karen Showers) ran the meeting. Barbara provided an overview of project accomplishments and asked for input of other accomplishments throughout the state. The group then discussed plans for the 2010-2011 school year and decided to hold one fall and one spring conference call. The group shared other upcoming events and activities and Karen reminded everyone to complete extension agent reports for the project.

The Wisconsin State Team has had several conference call meetings on the following dates: 7/10/09, 9/23/09, 5/12/10 and 5/24/10. These calls

were primarily focused on providing technical assistance to the two State Contacts who are working with the pilot sites.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010 Wisconsin had 39 people participate in these webinars.

Sustainability and Investments in Wisconsin
Technical assistance with the four pilot sites is continuing through the efforts of the two state equity coordinators. The secondary sites are receiving $5000 incentive grants from the Department of Public Instruction each year for three years to implement their selected strategy. The members of the teams at the four sites are expected to conduct professional development with other interested sites once they have completed their initial strategy implementation and evaluation. Also, the networking conducted by the State Team helped create the WI STEM Portal, Wisconsin's source for all things STEM (www.wistem.org), with the STEM Equity Pipeline as one of its partners. The project will continue to collaborate with the WI STEM portal to provide online professional development through the virtual learning community.

VIRTUAL LEARNING COMMUNITY

The Virtual Learning Community (VLC) was designed by the PI and Holly Blue of the NAPE Education Foundation staff. The site was programmed and is updated and managed by Greg Nagy, Web Communications Systems Engineer, Center for Special Needs Populations, The Ohio State University. The website address is www.stemequitypipeline.org.

The VLC home page has special links to pages of importance, a listing of all upcoming project activities, a list of the last month's activities and links to these posted presentations, and articles and current events of interest. The about us and contacts menus include information about the project, the national staff and state facilitators. The experts menu includes information about how to access the experts, an online request process and individual portfolios for each expert describing their area of specialty and assistance they can proved. The state teams menu includes information about how to form state team and what the state team's roles and responsibilities are. There are pages for each of the state teams identifying the state contacts, announcing any upcoming activities for the state team and links to posted resource materials from state team trainings. The resources menu has archived copies of the monthly Pipeline Press, archived news from the home page, a data base of online resources with over 500 entries and the Five Step Program Improvement Process resource pages. The professional development menu has the STEM Equity Pipeline calendar of events, a page where all past webinars are archived, links to online professional development, a general resources link, a page of promising practices links, information on the Five Step Program Improvement Process, the online professional development needs assessment, a page of research links, a page of project developed professional development tools and the materials use policy.

Website metrics for July 1, 2009 ? June 30, 2010 include
16,818 unique visitors total
12,452 one-time visitors
4,366 repeat visitors
118,609 visitor sessions (the number of times that visitors came to the site)
840,005 total hits

Website metrics for October 1, 2007 ? June 30, 2010
31,532 unique visitors
23,059 one-time visitors
8473 repeat visitors
205,847 visitor sessions
1,602,099 total hits

The VLC also manages ten listservs: 1) a national listserv of all individuals who have either registered through the website, attending a workshop or training, or has contacted the national office with interest in the project of 2418members; 2) a listserv for California of 418 members; 3) a listserv for Illinois of 47 members; 4) a listserv for Missouri of 72 members; 5) a listserv for Oklahoma of 235 members; 6) a listserv for Wisconsin of 189 members; 7) a listserv for Minnesota of 113 members; and 8) a listserv for Iowa of 115 members, 9) a listserv for New Hampshire of 35 members; 10) a listserv for Ohio of 33 members. The listservs provide a communication vehicle for project activities at the national and/or state levels.

The VLC includes eleven share point sites, one for the management team and one for each of the state leadership teams. The share point sites allow members of the state leadership teams to: manage a common calendar; post announcements; maintain contacts; post links; send a one click email to all members; post and share documents and more. The state leadership teams have found the sites to be very useful in managing their work.

The VLC prepares and distributes on the national listserv the Pipeline Press at the end of each month. The Pipeline Press contains current events, articles, resources, funding announcements, and links that are of interest to participants working on gender equity in STEM. All issues of the Pipeline Press are archived on the VLC at www.stemequitypipeline.org

PROFESSIONAL DEVELOPMENT

The project has developed an online professional development needs assessment that can be found on the VLC. This needs assessment has been conducted with the State Teams as part of their initial kick-off meeting. Outreach to other individuals in each of the states has been done through the listservs and website to get interested individuals to complete the needs assessment. The results of the needs assessment have been used to identify webinar topics and workshop topics specific to State Team needs.

WEBINARS
The project hosted five national webinars: 1) October 26, 2009 Improving Academic Achievement: Effects of Stereotypes, Beliefs about Intelligence, and Belonging conducted by Catherine Good had 57 attendees; 2-3) A two-part series, November 16, 2009 and December 14, 2009, Subtle Micro-Messages Impact the Success of Women and Girls in STEM conducted by Robbin Chapman had 54 and 55 attendees; 4) March 16, 2010, How to Market Your CTE STEM Program: Tell Your Story to the Right People the Right Way and Get the Right Results conducted by Jill Chan also had 54 attendees; and 5) June 2, 2010, Pink Brain, Blue Brain? Females and Males in Math and Science conducted by Dr. Lise Eliot had 130 attendees.
All five of these webinars are archived on the VLC. Webinar evaluation results can be found in the findings section of the annual report.

STEM EQUITY PIPELINE LEADERSHIP INSTITUTE

On Monday, April 12, 2010 the STEM Equity Pipeline held its annual Leadership Institute for members of the State Teams participating in the project. State Team members participated in a day of activities that included an overview of results of the project to date. The State Team members participated in a series of half hour round table sessions with each of the other states where they had the opportunity to share successes, impacts, challenges, sustainability and recommendations. Each State Team had prepared a report addressing these five items which they shared one week prior to the conference. This allowed these sessions to be interactive and gave the group a chance to really learn from each other.

On Thursday, April 15, 2010 the STEM Equity Pipeline State Team members who had stayed for the entire Professional Development Institute had the opportunity to have lunch with a member of the National Advisory Board. The luncheon keynote speaker was Jessie DeAro from the White House Office of Science and Technology Policy. Following lunch National Advisory Board members were given time to dialogue with members of the State Teams to learn about their implementation strategies before adjourning to their meeting with the project staff.

PROFESSIONAL DEVELOPMENT INSTITUTE

April 12-15, 2010 - The National Alliance for Partnerships in Equity held their annual conference in Arlington, VA and included four days of professional development. The conference program is included in the attachments.

On Tuesday, April 13 and Thursday, April 15, 2010 the STEM Equity Pipeline sponsored a series of workshops:

'Women in Green: Opportunities in Environmentally Responsible Occupations' Lynn Reha, Director; Aimee LaFollette Julian, Assoc. Director of Professional Development, Illinois Center for Specialized Professional Support, Normal, IL; PJ Dempsey, Assistant Director, National Alliance for Partnerships in Equity, Cochranville, PA This presentation will explore programs and initiatives that are in place to support the development and advancement of 'Green-Collar Jobs'. Also outlined in this presentation are the skills that will be required for students to take the lead in 'clean power' and technological industries. Session leaders will discuss the possibilities for women in green-collar career opportunities and explore the unique role of women in contributing to the 'greening' of many existing careers. Many of the jobs in the future will use technologies that have not even been created yet, requiring workers to develop skills through on-the-job training. By including businesses in the educational process, students learn real skills that make them more competitive and successful in the workforce of tomorrow.

'Crafting a Comprehensive Pre-Engineering Strategy, with Special Focus on Pre-Engineering Programs' Jennifer Schelly, Principal Electro-Optics System Engineer, BAE Systems, Nashua, NH Are you looking to start a fun, creative pre-engineering program to engage female students and get them jump started in engineering? If you are, then this workshop is for you! We will review the case for pre-engineering education and then dive into strategies to put into operation, including programs already implemented. A well-liked student activity will be carried out in the workshop. This workshop will be an enjoyable review of programs that will engage your students!

'Overview of 5-Step Improvement Process Utilized with Missouri Career Centers' Lori Mann, Career Education Coordinator, Platte City; Janet Reppert, Career Education Coordinator, Monett; Camille MacDonald, Career Education Coordinator, Popular Bluff, All of Missouri Center for Career Education, MO Coordinators, who facilitate the 5-Step Program Improvement Process from the various regions in Missouri, will share how the 5-Step Process has been implemented in Missouri with their career centers and sending high schools. In particular, Career Education Coordinators will share Perkin's nontraditional participants and completer data, how they look at trend data, what tools were utilized to collect additional data and the analysis and 'next steps' that have been taken toward implementing promising practices. A summarization of the challenges and success of the process will be shared. A website for a 5-Step Process Facilitator's Guide will be shared.

'Training Teachers to Attract Girls to High School Computer Science Classes: An NCWIT Extension Services Train-the-Trainer Workshop' Joanne McGrath Cohoon, Senior Research Scientist, Charlottesville, VA; Lecia Barker, Senior Research Scientist, Austin, TX, Both of National Center for Women and Information Technology Workshop participants will learn why there is a need to actively recruit girls into high school computer science classes. They will learn how they can train others to: create messages that influence girls, deliver those messages effectively, and track their results. Participants will practice applying these evidence-based practices, preparing them to help others learn to use the practices in their own environments. Attendees will receive professional quality materials to guide their efforts.

'Gender Equity and Technical Education in Vermont: One State's Collaborative Effort to Address the Ever ?? Changing Needs of both Girls and Boys in Nontraditional Career Studies' Kelly Walsh, Program Coordinator, Vermont Works for Women, Winooski, VT; Ruth Durkee, Adult Education Coordinator, Randolph Technical Career Center, Randolph, VT; Lynn Vera, Guidance Counselor, Center for Technology, Essex, Essex Junction, VT This workshop highlights innovative strategies for engaging and supporting nontraditional students. The collaborative efforts of Vermont Works for Women (VWW), the Center for Technology, Essex (CTE), Randolph Technical Career Center (RTCC) - and others in Vermont - have brought about successful programs such as the statewide 'Women Can Do!' conference, RTCC's 'Career Challenge Day', and CTE's 'Introduce a Girl to Engineering Day' activities. This workshop will focus on the strength of Vermont's collaborative efforts to benefit students, technical centers, and the state.

'Challenging The Gender Gap in Emerging Technologies: Strategies for Recruiting Girls and Women in the New Blue and Green Collar Fields' Brigitte Watson, Equality Works Program Coordinator, Equality Works Program, Legal Momentum, New York, NY; Sandra McGarraugh, Director, Center for Technology, The Net Project, Center for Women in Government & Civil Society, Univ. at Albany, Albany, NY; Ivana Nunez, SVA Apprentice: Electrical Installation, Female CTE Graduate, Thomas A. Edison Career and Technical High School, Queens, NY Although careers in green and blue collar jobs provide new and rewarding opportunities, gender stereotypes are a significant factor in educational choices. Thirty-five years after Title IX, girls are still underrepresented in technology classrooms and are graduating with significantly less earning potential than their male counterparts. This workshop will review the factors that contribute to the gender imbalance and discuss targeted interventions within the Career and Technical Education system that are challenging the status quo.
'Women on the Wires: Bringing Women into Nontraditional Careers in Electric Utilities' Linda Mihalik, Education Consultant, American Electric Power Transmission, Gahanna, OH; Carol Wintz, Workforce Planning and Development Consultant, Hard Hatted Women, Cleveland, OH; Terri Burgess Sandu, Executive Director, Hard Hatted Women American Electric Power, the nation's third-largest electric utility, reached out to Hard Hatted Women, a community-based organization, to join in employing more women in nontraditional jobs. You will learn from both organizations how they crafted their partnership and a program that meets their joint and individual goals, while benefiting women with high-wage, high-demand, sustainable employment.

'Why So Few? What Research Tells Us About Girls and Women in Science, Technology, Engineering and Math' Catherine Hill, Director of Research, American Association of University Women (AAUW), Washington, DC The AAUW will present recent research findings that help explain the small numbers of women in certain science, technology, engineering, and math (STEM) fields profiled in a Spring 2010 AAUW report. The presentation will be organized around seven research findings and recommendations for change. Topics include: malleability of intelligence, spatial skills learning, stereotype threat, self-assessment, college/university departmental culture, implicit bias, and bias against women in maledominated environments.

'A Continuum of Alternative Education Opportunities for All Ages' Dr. Kara Gae Neal, Superintendent Dr. Richard Palazzo, Director of Alternative Ed., Both of Tulsa Technology Center, Tulsa, OK Tulsa Tech is a comprehensive Career Tech facility providing Alternative Education for a wide range of vulnerable populations ages 12-adult. Largest of the alternative programs are the SUCCESS CENTERS located at four campuses providing credit recovery, GED/ACT/SAT preparation, Math & Reading Enhancement, and EOI tutoring. The Youth Build program engages unemployed adults (18-22) dropouts. YouthBuild provides GED preparation, Construction Skill training, Work-Based experience, and Life Skill instruction. Project H.I.R.E., M.E.N.D.S., and Project M.O.V.E.S. are all unique programs preparing different high-risk adult populations for productive career pathways and employment.

'Single Sex Education in a CTE Context: Forward or Back to the Future?' Barbara Bitters, Assistant Director, Wisconsin Department of Public Instruction, Madison, WI This session will explore the reasons why CTE educators want to offer single sex classes; the legal landscape under Title IX; the steps required of districts if the Board of Education elects to take affirmative action through single sex course offerings; and

alternative strategies for promoting nontraditional enrollment in CTE courses. Discussion of a Wisconsin survey of technology education and pre-engineering teachers on single sex education will be shared, along with results.

'Women in the Trades Go Green' Berta Lloyd, Director of Grant and Special Projects; Mavis McAllister, STRIPE Pre-Apprenticeship Coordinator, Both of American River College, Sacramento, CA American River College's Sacramento Transportation Regional Infrastructure Partnership in Education (STRIPE) Preapprenticeship training program is providing opportunities for women to learn about renewable energy and energy efficiency applications for entry into apprenticeship training. In a 16-week course, students learn about the tools, equipment, materials, construction, and safety techniques used for building roads, bridges, levees, and rail and learn how 'green' is applied. Career choices include Bricklayers/Stone Masons, Carpenters, Cement Masons, Drywall/Lathers, Electricians, Iron Worker, Laborers, Operating Engineers, Pile Drivers, Plumbers, Sheet Metal, Surveyors, and Teamsters. This training provides disadvantaged populations with opportunities that result in high-skill, high-wage employment.

'Preparing Women to Succeed in the Green Economy: The Women's Bureau Approach' Jenny Erwin, Regional Administrator, Region IX, San Francisco, CA; Karen Hornstein Shapiro, Program Analyst, U.S. Dept of Labor, Women's Bureau, Washington, DC Do you have the tools and resources to help women learn about career opportunities in the emerging green economy? Are you aware of best practices or pilot training projects that help women gain skills and employment in green jobs? In this interactive session, you will learn about new Women's Bureau resources including 'A Woman's Guide to Green Jobs', Fact Sheets, and Webinar series. You will also learn how to become more involved with the Bureau to help increase women's participation in nontraditional jobs.

'Leveraging Grant-Funded Science, Technology, Engineering and Mathematics (STEM) Undergraduate Programs to Optimize Student Success' Dr. Candice Foley, College Associate Dean for Curriculum Development; Nina Leonhardt, College Associate Dean for Continuing Education, Both of Suffolk County Community College, Selden, NY With RFP's being issued to support STEM undergraduates, it is now possible to leverage these resources so that students are fully funded, have access to support services, such as participation in a community of STEM scholars and individualized tutoring sessions, and may experience STEM research through paid internships. In addition, the ability of applicants to demonstrate the leveraging of resources is now an important criterion for those making funding decisions. Learn how Suffolk County Community College is leveraging local, state, NSF, business, and industry resources to deliver full-service STEM education.

Findings: (See PDF version submitted by PI at the end of the report)

NSF REPORT ON STEM EQUITY EVALUATION WORK

The purpose of this section of the report is to describe the results of data collection from major activities during the project's third year for purposes of program evaluation by MPR Associates (MPR). The evaluation was designed to accomplish three major goals: (1) to provide useful and actionable feedback for the STEM Equity Pipeline project team regarding the quality and effectiveness of training and services; (2) to synthesize feedback on the tools and processes developed as part of this project; and (3) to provide evidence of implementation success and impact on student and teacher outcomes.

Event Evaluations

During the third year, the project collected feedback data on all major events (including webinars) and reviewed and synthesized reports that documented activities in each of the states that received services. First, the evaluation team from MPR developed, administered, and analyzed event evaluations from 18 on-site and virtual events (including webinars) offered directly by the project staff. Event evaluation data were also collected from a meeting convened by the Wisconsin state leadership team with pilot site participants in Wisconsin convened by the state leadership team to gauge the pilot sites' progress on implementing the 5-step program improvement process. All of the events were received favorably by participants, with uniformly high average ratings.

To understand how the information and training imparted through the services offered by the project's staff is shared, the project continued to administer the web-based Extension Agent Survey. Periodic reminders to the project's listserv ask recipients to report on their extension of services beyond the core facilitators. Nearly 150 surveys were completed by individuals who had participated in project services and who went on to share what they learned in their own settings. These activities included in-service training, conference and workshop presentations, and other events that reached an estimated total of 6,500 individuals. Another 3,000 individuals were reached through the inclusion of project information and materials in newsletters and other publications. A summary of our analysis of these reports is included in this report.

State Interviews

The evaluation team also completed a total of 15 telephone interviews with from two to six key state contacts from each of the five states that had completed two years in the project. The interviews addressed topics including the state teams' accomplishments and challenges, the quality and value of the project's services and materials, and project sustainability. The analysis resulted in 15 summary statements about the project's work in these states. These statements have informed the project's work with other states, plans for including new states during year four, and

plans to intensify the work with pilot sites.

Collection of Participation Data
As in previous years, quantitative data were collected from the two states (New Hampshire and Ohio) that were new to the project in year three. Although privacy restrictions limit the collection and use of state-level data in Ohio, where local alternatives will be used, the project was able to gather statewide secondary and postsecondary data in New Hampshire. These data were analyzed and will be used for benchmarking in training and as a baseline for future analyses of female participation and completion rates in STEM CTE programs to gauge program impact.

Reverse Site Visit

In collaboration with the Project Director, the MPR evaluation director developed a presentation reviewing the evaluation methods and results to-date and participated in a Reverse Site Visit convened by NSF staff in Washington, D.C. The panel included NSF staff and representatives with relevant knowledge from several colleges or organizations. The summary report provided by the panel has been used to develop a revised set of strategies for the evaluation as the project moves forward. In particular, and in keeping with our own sense of what was needed to extend the evaluation, the MPR evaluation team has identified new strategies for collecting data that more clearly demonstrates the implementation of the project at the local level, reflecting performance and impact. As suggested by the panel, we also want to know more about how practices are being implemented by groups at the local level, including teachers in classrooms. Our revised objective is to develop case studies that describe how state activity translates to local pilot (or intensive site) implementation. Our intent is to characterize differences between local implementation among states and the barriers, constraints, and opportunities posed in different states as well as the cost and time requirements for accomplishing end goals. We have also planned a revision of our Extension Agent Reports to allow us to collect more detailed information about local implementation.

To develop the case studies mentioned above, the evaluation team has begun development of an evaluation plan for the pilot sites. The plan includes strategies for initial data gathering as the pilot sites are chosen and participate in the first parts of the 5-step program improvement plan training. The plan also includes approaches to monitoring pilot site activities over time and gauging the impact of pilot site work on administrators, faculty members, and students. This plan will be fine-tuned in the coming months with input from project staff and pilot site participants. The data will be analyzed by creating case studies of selected sites. In the coming year, pilot site evaluation will be introduced to complement the project-wide evaluation strategies for which data are reported here.

The following sections provide detailed findings from each of the data gathering activities conducted during the previous year, and are organized as follows:

Event and Activity Evaluations 3
Overview 3
Individual state results 4
Webinars 9
Extension Agent Surveys 11
Interviews with STEM Equity Pipeline Project Participants 16
Quantitative Data Gathering 18

Event and Activity Evaluations
Overview
Exhibit 1 presents a summary of the event evaluation work during the third year. It should be noted that an evaluation form was not used for every event provided by facilitators, so the following reports represent a sample. The next section provides summary information on the events and evaluation results by state, as well as the webinars. Detailed summaries of each separate national and state event (including statistics on each aspect of the events collected through feedback surveys) are included in the Appendix.

Exhibit 1: Summary of Year 3 Evaluation Activities of State Team Meetings and Other Events

As with the first two years of the NAPE Stem Equity Project, surveys were distributed at the end of meetings to ascertain attendees' reactions to the meeting, their progress towards the project goals, and topics they would like to learn more about. Survey questions addressed gender equity awareness, general project information, confidence in carrying the project forward, working with data within the Five-Step Process, and knowledge about project resources available. A total of 19 meetings and webinars were surveyed in Year Three.

Exhibit 2 displays common questions asked within the state team meeting surveys. Response to these questions and most others were by and large very positive. Detailed summaries of each meeting are included in the Appendix.

Exhibit 2: State team members' average responses to state team meeting survey questions (1 = Strongly Disagree; 4 = Strongly Agree)

In addition to regular meetings, several webinars were conducted by a number of noted experts on STEM equity, gender issues, and strategies related to the project's work. These sessions allowed for people from states not officially part of the project to learn about the Five Step Process and other issues related to gender equity in STEM fields. Data were obtained for questions asked during the webinar to participants, as well as surveys administered at the end asking about their webinar experience. All of the surveys had three questions in common, two of them similar to the ones asked in the in-person meeting surveys. Exhibit 3 lists the average rating for these questions.

Exhibit 3: Webinar participants' average response to survey questions (1 = Strongly Disagree; 4 = Strongly Agree)

The following section consists of summaries for each state team meeting and each webinar conducted in Year Three of the project.

Individual state results
Iowa

August 21, 2009
The Iowa state team meeting was convened by state facilitator Courtney Reed Jenkins at Iowa Western Community College in Council Bluffs, Iowa. The training session was for the Computer Science Program at the college. Steps 3 and 4 of the 5 Step Improvement Process were reviewed, and a total of eight college faculty members and state team members attended the session.

Responses to the scale questions were positive; participants agreed most strongly that they believed they would be able to use the resources and tools identified in the session to design an evaluation, select a pilot site, choose outcome measures, and identify data sources. They felt that the session gave them a better understanding of what to consider for evaluation plans, and increased their understanding of how to pilot test and evaluate possible strategies for addressing the critical root causes identified.

December 18, 2009
Two meetings were held for state team members and pilot site participants on December 18, 2009. The first meeting was a planning and networking meeting for the State Leadership Team. Team members updated their colleagues regarding activities and events and prioritized activities for the current school year. This meeting had 11 attendees. The second meeting was for initial 5-step program improvement training with Project Lead the Way faculty at Kirkwood Community College in Cedar Rapids and had 9 attendees.

Survey responses from the first meeting were very positive. Respondents strongly agreed that the session increased their awareness of other STEM gender equity initiatives in Iowa and of the data and information sources available. They also strongly agreed that they understand the roles and responsibilities of the Iowa state team, and that the session gave them ideas of what they can do to support the STEM Equity Network. At the end of the survey, participants were asked to provide a brief description of something they will do as a follow-up to the meeting. Responses included:
? Move forward with the collaboration tasks that emerged as a result of the meeting.
? Communicate with two small groups to encourage closer work on these efforts with younger students (girls) and their parents.

The second meeting on December 18, 2009, was also viewed favorably. Respondents strongly agreed that they now know about some of the resources available to them as they work to recruit and retain women in their STEM classes. As a result of this session, respondents all agreed that they now have an increased understanding of the root causes identified in research on participation and completion of females in STEM. However, when asked if this session led to an understanding of the concept of benchmarking and to an awareness of the sources of benchmarking data, responses were moderate. When asked how they intend to follow-up, responses included:

? The resources and information provided were incredible. I will be using them soon.
? Work with school for public exposures using school events.
? Share the information with my PLTW advisory board!

Minnesota

July 7, 2009
Howard Glasser, the Minnesota state facilitator, and Mimi Lufkin brought together the entire state team for the first meeting of the entire state team after the leadership team completed their orientation meetings with the pilot sites. Twenty-six people attended. The goals of this meeting included identifying available resources and expertise within the group, enhancing the team's understanding of the project, and developing ways to share information within the group. The virtual meeting was facilitated from Saint Paul College in St. Paul, Minnesota.

Based on the survey data, participants believed that the pilot projects have the potential to move their efforts around STEM equity forward. They also agreed strongly that they now have a good understanding of the purpose and goals of the project and of the five-step program improvement process. Most agreed that they felt more aware of the activities and resources that can be leveraged to accomplish their project goals. They also mostly agreed that the session increased their knowledge of their team members' talents and areas of expertise, and that they incorporated what they discussed at the meeting into a plan for sharing expertise and supporting local teams.

October 12, 2009
The state facilitator for Minnesota, Howard Glasser, and Mimi Lufkin, held a meeting for members of four consortia and others at the Eisenhower Community Center in Hopkins, Minnesota. The session was an introduction to the five-step program improvement process to consortia interested in doing pilot site work. Sixty consortia of faculty members, administrators, and staff attended the session. The meeting gave participants an introduction to the STEM Equity Pipeline Project and provided an opportunity to learn about the resources available to them. It also provided ideas to the members about how they can further their work around gender equity.

Based on the responses from the state team members, the session was viewed favorably by the participants. However, in future sessions, more attention may need to be given to providing resources that orient participants to the meeting's materials. Respondents were asked for additional comments at the end of the survey. Almost all participants provided a response, some of which are listed as follows:
? Excellent workshop! The information was very useful.
? A well thought out process. Concise posting the goals and dilemmas of the day on the wall for people to refer to.
? Session was too long. Goal setting presentation was a waste of time for many of us.

New Hampshire

December 17, 2009
The state facilitator convened the first state team meeting at the Higher Education Assistance Foundation in Concord that provided an introduction to the project and issues around gender equity in STEM; the meeting had 18 participants.

Most respondents strongly agreed that they now have a better understanding of the status of women and girls in STEM nationally and in New Hampshire. When asked if they now know more about how the project will use Perkins and other data to inform program improvement efforts, responses were more mixed. While the majority agreed with this statement, two respondents disagreed, and one strongly disagreed. All but one of the respondents agreed or strongly agreed that they learned about opportunities in New Hampshire to use resources of the STEM Equity Pipeline Project.

The survey also asked questions reflecting the members' clarity about the STEM Equity project itself. All members agreed or strongly agreed that they understood the purpose and goals of the STEM Equity Pipeline project. Most respondents agreed that the session increased their awareness of the resources available through the Virtual Learning Community. Respondents felt that they understand how people can act as extension agents for the project, and they were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in New Hampshire.

Ohio

December 14, 2009
Katherine Weber, the state facilitator, and Mimi Lufkin held a meeting for the state team members in Columbus. The attendees were then given an overview presentation about the status of women in STEM and the status of women in Ohio. Some 15 state members attended the session.

All of the surveyed participants agreed or strongly agreed that they now have a better understanding of the status of women and girls in STEM nationally and in Ohio. Responses were mixed when participants were asked if they learned more about the professional development opportunities and the mechanisms in Ohio where the resources of the STEM Equity Pipeline might be used. Participants were also asked about their understanding of the STEM Equity Pipeline Project. Most felt that the session increased their awareness of the resources available through the Virtual Learning Community. When asked if they were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in Ohio, responses varied. Although the majority of respondents agreed or strongly agreed with this statement, several disagreed, and 1 respondent strongly disagreed.

February 22, 2010
The second on-site meeting in Ohio focused on the Ohio STEM Equity Pipeline team's vision, mission, and goals. The group was then given an overview of pilot site expectations and discussed the timeline for the pilot site training. Thirteen state team members attended the meeting.

As a result of this meeting, participants strongly agreed that they have a better understanding of the purpose and goals of the STEM Equity Project, including the importance and relevance of gender equity work and the 5-Step Program Improvement Process. They also strongly agreed that they now have a deeper understanding of the status of women at the post-secondary level from looking at the data presented in Step 1. At the end of the session, participants left with a familiarity of the communication tools available to them. They also have specific ideas of how they will use what they learned and how they will share it with others.

Wisconsin

October 13, 2009
State team members convened a meeting with various representatives of target sites in Wisconsin for the second time. The aim of this session was to review Steps 3, 4 and 5 of the Five Step Improvement Process. The session was held at the Lakeshore Technical College in Wisconsin and had 35 attendees.
All respondents agreed that they now have a good understanding of the Five-Step Process. On average, respondents rated their understanding of Step 3 at 3.3, and Steps 4 and 5 at 3.2. Respondents also generally agreed that they now have a better understanding of the purpose and goals of the STEM Equity Pipeline Project and that they understand the importance of completing an implementation plan before attempting to implement a solution. Respondents also agreed that they are now familiar with the project management tools and that they will be useful to their future work. Overall, it was agreed that the session provided ideas of ways to enhance the participants' work around gender equity.

May 19, 2010
During a meeting the state team held with the pilot site participants, the pilot site participants were asked to complete an assessment of their work with the project so far. Fifteen people were in attendance.

Almost all respondents stated that they have participated in at least one Five Step Program Improvement Process training session. Participants were asked about the resources from the STEM Equity Pipeline Project they have used and what activities they have pursued based on what they have learned. Most have accessed the website, used the 5 Step Process training materials, and presented information about the project at a meeting or conference.

Almost all respondents identified a challenge and a success as a result of participating in this project to date. Time was by far the most mentioned challenge, mentioned by more than half of the 14 participants who commented. Other challenges mentioned included access to the appropriate students and to needed resources. The 11 successes mentioned were much more varied but included implementation, collaboration, and planning for the future.

Most respondents stated that they have identified at least one venue where they can continue to share what they have learned as a result of their participation in the program. When asked what role they feel data plays in affecting strategies to address gender equity, participants mentioned that they provide credibility and support the assessment of progress and the identification of areas to change. When asked how their participation in the project changed the way they work, several participants mentioned increased awareness of gender equity issues and that they have increased collaboration with their colleagues.

Leadership Institute

April 12, 2010
As part of the STEM Equity Pipeline Project, team members from states involved in the project came together for the annual State Leadership Institute. The event was held on April 12, 2010 in Crystal City, Virginia, in conjunction with the NAPE Professional Development Institute. The meeting was an opportunity for participating states to share their previous year's achievements, challenges, and plans for the coming year. There were also presentations on the project's evaluation plan and the results of NSF Reverse Site Visit. Seventy-seven state members attended

the session.

Participants felt that the institute allowed them to learn about the implementation strategies other states are using. When asked if they felt they benefited from the networking with other states, almost all agreed or strongly agreed. They also agreed that they gained ideas for things they can do to support the work of the project when they return to their states. Responses were slightly lower when asked about state planning. Most respondents agreed that their team was able to clarify their implementation plan for the upcoming year. They also generally agreed that their team was able to identify specific strategies for sustaining the work of the project in the coming years.

Activities in States Not Participating in the STEM Equity Pipeline Project

Georgia

October 2, 2009
The session was convened by the Georgia's state education staff as part of the NCPN Conference in Atlanta, Georgia. The session included an overview of the 5-Step Program Improvement Process and its underlying theories. Based on the survey responses from the attendees, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants an opportunity to learn about the resources available to them, better understand the STEM Equity Pipeline project and the 5-Step Process, and provided ideas about how they can further their work around gender equity. Thirteen people were in attendance.

Several of the members took the time to provide additional comments, which included:
 Very informative session. We are a part of the project, and I have received many emails but never had this practical explanation of the program's process and resources. Thank you!
 More than interested. Will offer to assist in Ohio implementation. Will put/embed PDFs on Perkins IV non-trad. research on my online course. Great resources - quality presentation!

Tennessee

November 19, 2009
Mimi Lufkin presented a session on gender equity and the 5-Step Program Improvement Process at the ACTE Convention in Nashville, Tennessee. Sixteen people were in attendance at this workshop. Based on the survey responses, the session was viewed very favorably by the participants and was useful in several respects. The average ratings for all items were 3.6 or higher, and not one respondent disagreed with any of the statements listed on the survey. Overall, most respondents strongly agreed that the session gave them ideas of what they can do to enhance their work related to gender equity in STEM. The meeting gave participants an opportunity to learn about the resources available to them, better understand the STEM Equity Pipeline project and the 5-Step Process, and provided ideas about how they can further their work around gender equity.

Webinars
A total of six webinars were conducted and participants surveyed in year three. The following are summaries of each event.

October 26, 2009
The first webinar was entitled Improving Academic Achievement: Effects of Stereotypes, Beliefs about Intelligence, and Belonging and was offered by Catherine Good, Assistant Professor of Psychology at Baruch College, City University of New York. This session focused on helping participants understand how stereotype threat influences academic performance and discussed methods to help mediate these threats. Respondents all agreed that the webinar helped them understand the concept of stereotype threat and how it contributes to students' underperformance. They also learned how a sense of belonging relates to and can mediate the effects of negative stereotypes. All agreed that they now understand the difference between incremental and entity theories of intelligence. Participants agreed that the webinar gave them specific ideas of how they can use this information in the work they do with students, with teachers, or with other staff developers. The webinar had 57 attendees.

November 16, 2009
This webinar was the first in the two-part series on micro-inequalities entitled Subtle Micro-Messages Impact the Success of Women and Girls in STEM led by Dr. Robbin Chapman, Manager of Diversity Recruiting for the School of Architecture and Planning, Massachusetts Institute of Technology. This session focused on providing an introduction to the concept of micro-messaging and its influence on performance and communication. The webinar had 54 attendees.

Respondents agreed that the webinar taught them the concepts of micro-messaging, micro-affirmation, and micro-inequity and how micro-messaging can directly influence the performance of students and colleagues. They also learned strategies for sending micro-messages

that fuel positive behaviors and outcomes for women and girls in STEM fields and now have specific ideas of how they will use this information in the work they do with students, with teachers, or with other staff developers. At the end of the survey, one respondent stated:

'This presentation was of high quality and offered a nice balance of scholarship with practical application. I wanted to know more about research linking the concepts presented to academic self-efficacy, and the speaker already directed me to those resources.'

December 14, 2009
The webinar was the second in the two-part series on micro-inequalities titled Subtle Micro-Messages Impact the Success of Women and Girls in STEM, and 54 people attended. Most respondents agreed that the webinar taught them the concepts of micro-messaging, micro-affirmation, and micro-inequity. They also felt they learned how micro-messaging can directly influence the performance of students and colleagues. Respondents generally agreed that they learned more advanced strategies for recognizing and addressing micro-inequities. Additionally, respondents agreed that they know how they will use this information for personal development, to communicate more intentionally and clearly with others, and to build an inclusive community in the work they do.

January 14, 2009
Mimi Lufkin presented a webinar for people involved in work with STEM Equity Pipeline New Look in Minnesota. The webinar focused on Step 4 of the 5-Step Program Improvement Process and focused on pilot testing and evaluation solutions. Out of 16 people who registered, nine people participated in the webinar, and six were from Minnesota. However, only three people responded to the survey, so results must be interpreted with caution.
Respondents said they now understand the difference between formative and summative evaluation, an objective and a goal, and short and long-term goals. They now feel that they can write short and long-term objectives and goals and will work with their implementation teams to develop an evaluation plan that is aligned with them. Respondents also agreed that they now understand the importance of developing an implementation plan and are now more familiar with the available tools.

March 16, 2010
The webinar, How to Market Your CTE STEM Program: - Tell your story to the Right People, the Right Way and Get the Right Results was led by Jill Chan, MBA, an account executive at Phillips Design in Sacramento, California. The session focused on helping participants understand the do's and don'ts of successful marketing and to learn a focused strategy for communication. The webinar had 54 attendees. Respondents on average agreed that they learned about do's and don'ts of successful marketing and how to create communication pieces that work. Participants also agreed that they now know how to establish a marketing objective and identify a target audience and how to develop appropriate messages to communicate. Participants left the session with an understanding of how they will use this information to develop a marketing strategy for CTE STEM Programs and how to select the best methods of communication.

June 2, 2010
The webinar, Pink Brain, Blue Brain? Females and Males in Math and Science, featured Dr. Lise Eliot, Associate Professor in the Department of Neuroscience at the Chicago Medical School. The session presented the latest science related to female brain development, including the role of genes, hormones, and environmental influences, and how social factors are proving to be far more powerful than popularly conceived. The webinar taught participants how to concrete ways educators can help females and reign in harmful stereotypes. The webinar had 130 attendees.

Almost all survey responses were positive. Most participants agreed or strongly agreed that the webinar reflected careful planning and organization and that the webinar's content would be useful to their work related to gender equity. In terms of specific concepts, respondents on average agreed that they now know more about female brain development and about the roles of hormones and learning in shaping cognitive development underlying STEM performance. They also felt they learned the power of social factors on the learning of males and females and about the latest science on sex differences in the brain as they relate to STEM performance. As a result of this session, participants generally agreed that they now know some ways they can help females control harmful stereotypes and have specific ideas of how they can engage both males and females in STEM.
Extension Agent Surveys

The Extension Agent Survey is a web-based reporting tool to the STEM Equity Pipeline Project Website created in January 2009.

http://www.stemequitypipeline.org/StateTeams/ExtensionAgentReporting.aspx

The survey explores how the project's extension agents have used the information they learned through professional development provided by the project to train their colleagues at the state, district, and school levels about nontraditional participation in STEM-related CTE programs and in using the 5-Step Program Improvement Process.

Periodic e-mail reminders prompt extension agents who have attended 5-Step Program Improvement Process training or other professional development provided by the STEM Equity Pipeline project to complete the short survey. The survey requests some basic demographic information and asks respondents to describe how they shared the information, whether through one-on-one sharing with colleagues, more formal presentations at conferences and workshops, or by offering training themselves. Respondents are also asked to describe the content of what they shared, the size and type of audience, any feedback they received, and suggestions they might have for improving the training and information offered by the STEM Equity Pipeline Project.

For the year 2 report, we provided data on the Extension Agent Reports from January to June 2009. In the year since the first set of surveys was analyzed (June 22, 2009 to June 28, 2010), 63 extension agents from 14 states completed 145 surveys. Many of the respondents submitted multiple surveys because they shared information related to multiple events. Seven of the states (California, Iowa, Minnesota, Missouri, Oklahoma, New Hampshire, and Wisconsin) are current or past participants in the STEM Equity Pipeline Project. Individuals from the other states (Colorado, Georgia, Illinois, Indiana, Pennsylvania, Texas, and West Virginia) participate in the NAPE STEM Equity Pipeline project listserv and have attended Webinars or other events offered by the project.

Survey Results
Survey respondents were asked to choose an occupational category that best describes their position. Of the 49 extension agents who entered their role on the survey, the most popular categories were state agency staff member, administrator, and teacher.

Exhibit 4: Extension Agent Survey Respondent's Position or Role/Responsibility

Survey respondents were asked to describe the participants and the number of attendees. The respondents estimated a total of 6,500 participants in the activities. The primary audience for the activities was teachers, administrators, counselors, students, scientists, and business/industry representatives, and most events included participants from several of these groups. However, there were a number of events aimed specifically at teachers, administrators, or counselors. The audiences for the largest events are listed in Exhibit 5.

Exhibit 5: Number of participants and type of audience attending the six largest conferences and workshops

The most common activities were conference/workshops, followed by in-service training events and one-on-one sharing with colleagues. In addition, extension agents reported writing articles for newsletters distributed to female scientists and researchers, business and industry representatives, and educators with a total subscription base of about 3000 readers.

Exhibit 6: Types of Activities Described in Extension Agent Surveys

Conference and workshops

Representative event topics
? Overview of the project and activities in WI
? Update on national STEM Equity Pipeline Project activities
? Current STEM systems of support and programs in action for K-12 teachers to access
? Review of Perkins IV accountability
? Orientation to 5-Step Process

In-service training

Selected events:
? State Leadership Team Meeting in Madison, WI
? Awareness training for faculty
? STEM Equity Pipeline NH Leadership Team Meeting
? School to Work Designee Workshop
? Annual Summer In-Service training for CTE teachers and counselors for local school district: Overview and short activity on Gender Equity for Student Achievement (GESA) and on the 5 Step Program Improvement Process

? Iowa Summit of Math and Science Teacher Educators
Activity Feedback and Suggestions for the STEM Equity Pipeline Project

For each reported activity, survey respondents were asked to briefly describe the feedback they received from participants, and 114 surveys included participant feedback for the reported activity. Overall, activities were well received by the attendees who found the sessions informational and appreciated the opportunity to learn more about issues surrounding gender equity. Several respondents reported requests for more activities and additional information and data on STEM Equity issues following the activity. A few also noted that some attendees were hesitant about the project.

Examples of activity feedback include:

? 'Extremely positive feedback with two participants asking about the possibility of on-site workshops next year.'

? 'The discussion was beneficial and follow up plans have been made. I always look forward to additional opportunities to discuss progress and collaboration opportunities.'

? 'We will be running some data using the new, agreed-to definition of STEM to get a good idea about occupational opportunities in our state. We will also investigate how it might be possible to break the labor market projections down by gender?By using a common definition in our state, we will be able to talk education system to education system and education to labor.'

? 'Feedback was positive. Negative comments included time needed to plan and staff time needed to complete projects.'

? 'We felt it was a great day, well worth our time. We had to decide how to learn more, and when to bring this team in to meet our advisory group.'

? 'Students appeared to enjoy meeting as a group, although it was difficult to coordinate a common meeting time due to students' class schedules.'

At the end of the survey, respondents were asked to provide suggestions for future professional development or curriculum development that would help them more effectively conduct their training. Ninety-two of the surveys had responses to this question. The majority of the responses concerned suggestions for additional resources on specific topics. Several respondents also commented on what they felt worked well. Selected examples are reproduced below:

? 'Aligning information to career development. How best to get information to students.'

? 'At this point, we struggle to get our supervisors to understand the preliminary work they must do to get to the root causes THEN determine strategies. Honestly, I think some of them decided to do this because they would not have to worry about strategies until FY 11. We will continue to monitor those systems that indicated on the local plan they would follow the 5-Step process during the FY 10 school year?'

? 'Introducing underserved populations to STEM activities requires the academic and the career and technical administrators to agree that there is a problem with recruiting females and that career and technical education provides a conduit to successful employment/future education in technology. Providing programming like this does not seem to be important to superintendents concerned with budgets and meeting state standards, although it provides a cost-effective solution. Follow-up structure and mentoring opportunities for rural schools is needed.'

? 'Participants remain uncomfortable with their own ability to handle the myriad of questions that might come up around these topics.'

? 'People coming to the workshop were just beginning to understand STEM and had yet to really think through the stem equity pipeline issues. Counselors in attendance were interested, but it seemed unlikely that they were prepared to take any post-workshop actions.'

? 'The Root Causes and Strategies document is excellent. It would be nice to have a webinar, led perhaps by Mimi, that would take people through the document, similar to what she did with the Improving Perkins III Performance, Chapter 6 presentation. We would prefer advanced announcement of more than a month if possible, as this would be a good event to promote widely and attract various groups to have wrap-around discussions.'

? 'This audience may result in a community project on advancing STEM. There was a variety of stakeholders, many people knew each other, and folks started making mental connections and cross audience connections as well. It was a six-hour drive one way to reach them for which they were very appreciative.'

? 'We may be able to create a new set of slides for our state that uses labor market statistics that use a common definition of STEM. We could look at STEM Cluster occupations and also look at STEM Cluster and STEM related Pathways labor market data. We will want to create a Presentation Guide to use with the data.'

? 'We will need to go back and review Steps 3-5 as participants said that they felt these steps were rushed and lacked sufficient detail. A decision was made to host electronic meetings in the future unless there is a need or opportunity to have an all-day drive-in meeting again.'

? 'We're looking forward to the upcoming modules that are under development - to share with our project partners/faculty.'

? 'This training of the project and the five steps was more clearly understood by participants and a precursor to their own work in their own districts. This focus was really helpful and led to specific actions during the spring and summer.'

? 'We really felt like the panel was the strength of our presentation as our Career Center Directors (2) were there to tell their perspective and how it benefited the schools. So the audience gets both a facilitator's view and director's view of how the process unfolded, what worked or didn't work and resources that we developed that were needed and we didn't have. The next time we may shorten the 'wrap-up,' but otherwise we were happy with how the presented was shared.'

? 'Native American evaluation topics: design, access, ownership, MOU's/legality when working with sovereign Indian governments ('multi-jurisdictionality' of it), and IRB/Human Subjects policies, protocols, and best practices for state/federal/school collaborations with Native populations and Tribal governments.'

? 'Perhaps a webinar that features a panel of female STEM students at the post-secondary level discussing what motivated them to pursue a STEM field, and who specifically at their high school and/or technical college who provided support. It would also be good to know what colleges could do to improve. Perhaps these could be students from the Wisconsin Technical College System.'

? 'I'm thinking about creating a startling statements sheet specific to nanotechnology in bioengineering. That might help steer girls to the emerging fields that utilize nanotech methods in bioengineering. Bioengineering appears to have a pull for girls/young women simply because bio is in the label and it attracts the large pool of females in biology majors. '

? 'Learning about effective strategies (and even ineffective ones) that others have implemented would give us some ideas of what has worked and what hasn't so we have some direction moving forward.'

Interviews with STEM Equity Pipeline Project Participants
California, Illinois, Missouri, Oklahoma, and Wisconsin

To learn about the implementation process, activities, and accomplishments of the 'graduated' states that had completed two years in the project, the MPR evaluation team conducted a series of interviews. The interviewees included state team leaders, participants, and extension agents from California, Illinois, Missouri, Oklahoma, and Wisconsin. Interviews were conducted by telephone from November 2009 to April 2010 using a semi-structured protocol, and they were recorded to help with clarification of notes.

Interviewees were asked to describe their teams' accomplishments and challenges, assess the project's services and materials, and describe their plan to continue project activities in the next few years. They were also asked to reflect on their team's success in meeting the project's goals, and whether the goals were realistic for a project of this scope and duration. Participants' answers were confidential, and only summary information was shared with the project team (information that might identify a state or individual was removed). The final analysis was based on a total of 15 interviews with 19 participants, and included from two to six interviews for each state.

The interview notes were coded for themes and patterns, and the general themes that emerged were synthesized into 15 statements, which have informed project planning and development. As a result of the interview findings and other participant feedback, new states are indentifying and targeting pilot sites early in their work with the project. The project has also introduced conference call meetings with participants from all the states, so that new states can learn from those that have participated for a year or more, and all states can learn from each other. The first of these calls is scheduled for July 2010. Finally, the project team is creating shorter modules for aspects of the 5-Step Program Improvement Process to ease understanding and break the training into smaller steps that participants will be able to share with colleagues

The 15 statements representing themes that emerged from the data include:

Understanding and Using Data
1. As a result of the training that they received through the NAPE STEM Equity Pipeline Project, participants reported working with their districts and institutions to develop a 'culture of data' and being more actively engaged in using data to understand and improve their programs. Factors reported that are related to this theme included:
? Improved data-keeping
? Skill level needed to accommodate process that 'can get very technical'
? Related to project sustainability

2. Project participants reported changes in the way data are reported and used at both the state and local levels. Participation in the NAPE STEM Equity Pipeline project also encouraged participants to be more critical about the quality of the data reports they receive and the quality of the data itself.

Commitment and Awareness to STEM Equity Issues
3. Participants reported increased awareness of and commitment to improving STEM Equity in their state for females and other special populations. State informants varied in saying how much the increased awareness and commitment was evident at the state level as opposed to the local level, with some saying the former and some the latter. This depended on the nature of the activities that were undertaken.

4. The project has accomplished a fair degree of reach with many of the informants indicating that they are sharing the NAPE 5-step training in a range of venues?from state conferences to internal meetings.

Project Services and Resources
5. The five-step training and Webinars provided through the project were rated very highly by participants. The products and services provided through the project were generally deemed to be of high quality. Only one state reported less than positive reactions to the services, and there seem to have been extenuating circumstances that contributed to that reaction.

6. The 5-Step Program Improvement Process training was generally seen as being very valuable, although many thought it was quite complicated and required substantial involvement and time to build capacity for implementing it. Several informants reported ways that they had found to modify or adapt it to their local needs and resources. A number of people noted that it was applicable to many efforts to improve education.

7. Although comfort with using data increased, some participants felt overwhelmed by the 5-Step Process, and particularly by the data work, at the beginning of the training.

Implementation and Partnerships
8. Participation in the NAPE STEM Equity Pipeline Project resulted in new partnerships between state agencies, non-governmental organizations, and individual participants.

9. Developing a state team with the right members and support from high-level administrators and leadership takes time. Most saw strong value in having a state team, but they also pointed out drawbacks in how they operated. Most wanted more guidance on how state team should function.

10. Clear specific guidelines for the state plan would have helped focus the work at an earlier stage of the project.

11. States contributed staff time, meeting space, and other logistical support to the project.

12. Those interviewed identified a number of challenges associated with carrying out the intention of the project within their local contexts. These included the challenge of conflicting demands, the process of getting started and maintaining momentum, getting the right people to the table and garnering support from the right sectors, facilitator knowledge of the state, the need for more specific guidance, and the policy context.

Successes and Sustainability
13. Although program participations generally felt that two years was too short to see a difference in the number of females participating in STEM programs as a result of strategies introduced through the NAPE Pipeline Project, several offered examples of the types of implementation strategies and CTE program changes that are developing.

14. Although just two of the five states implemented pilot sites, the use of pilot or intensive sites seems to hold some promise for developing a systemic process and effecting changes at the student level.

15. State informants have reported some notable successes of the STEM Equity Pipeline project in instituting data-driven decision making for addressing STEM gender equity and other education issues.

Quantitative Data Collection

In year three, the evaluation team continued to work with state education personnel who work with career and technical education data to gather quantitative data for training and evaluation purposes. The two new states, Ohio and New Hampshire, were required to submit baseline Perkins data on participation and completion in STEM -related CTE programs for the two academic years preceding their joining the program. The requested information included aggregate statewide performance data, averaged across all providers in the state, and individual provider data for each secondary and postsecondary institution receiving federal Perkins funding.

Data collection in year three began with two conference calls in the fall of 2009 that involved Mimi Lufkin, the state facilitator, staff from the relevant state agencies, and the MPR evaluation team. The purpose of the calls was to clarify the data expectations and answer any questions the state data analysts might have. The calls also provided an opportunity to explore states' interpretation of the FERPA act which protects the privacy of education records. Through these calls, the evaluation team learned that there were no restrictions on the data requested from New Hampshire and that statewide enrollment data at the CTE program level would be available for all local education agencies and institutions of higher education in the state. In Ohio, however, the project learned that statewide postsecondary data could only be shared in the aggregate because it is required that cells with enrollments of less than 6 be suppressed. Statewide secondary data for the project were not available, and the state facilitator is investigating regional and local data sources for use in pilot site training and evaluation.

Follow-up calls and communications were conducted on a regular basis to review how the data would be analyzed and used, so that data analysts would have a fuller understanding of the project. As of July 2010, MPR researchers have obtained postsecondary data from both New Hampshire and Ohio, and secondary data from New Hampshire. For the analysis, MPR researchers used a crosswalk developed by NAPE to identify STEM-related CTE programs that are considered nontraditional. The matched data were used to create tables and figures comparing female enrollments in STEM-related CTE programs across the state and within individual districts and institutions. The results will used in training with the states' pilot sites and compared to data collected in the future to monitor changes in female enrollments and contribute to the evaluation of the states' work and of the project overall.

Training and Development:

STEM Equity Pipeline
Year Three Annual Report? July 1, 2009 ? June 30, 2010
Training and Development

EXTENSION SERVICES GROUP

In 2009-10 thirteen experts (Lise Eliot, Ph.D, Jill Chan, Dr. Robbin Chapman, Katherine Good, Mimi Lufkin, PJ Dempsey, Courtney Reed-Jenkins, Dee Grayson, Lynn Reha, Howard Glasser, Katherine Weber, Winifred Walker, Mark Perna) were used to conduct a webinar, present a workshop at the professional development institute, or present at a participating state professional development event. These individuals are named in the Participants: 'Who has worked on this project?' section of this annual report. States have relied on their State Facilitator or the PI to conduct professional development and using experts to supplement when content specific training is requested.

The project staff met in Dallas, Texas, July 26-28, 2009. The staff meeting agenda is included in the attachments to this report. State Facilitators and their assigned states are: Mimi Lufkin, California and New Hampshire; Freda Walker, Illinois and Missouri; Howard Glasser, Wisconsin and Minnesota; Courtney Reed Jenkins, Iowa; and Katherine Weber, Ohio. In addition to the state facilitators the project evaluator Sandra Staklis from MPR, Inc. attended. A portion of the three days was used to build the skills of the state facilitators to conduct Five Step Program Improvement Process training and technical assistance.

Staff members also participate in all online training conducted by the project. The staff has also been trained to use WebEx and Live Meeting to conduct on line meetings and webinars. All staff has also received technical assistance from the national office technology staff regarding the use of the share point sites and remote access and management of email using napequity accounts. Because so much of our work is done

virtually, the staff has all increased their technical proficiency significantly.

NEW HAMPSHIRE

12/17/09 The State Team met in Concord, NH. Mimi Lufkin, PI and State Facilitator for NH conducted a workshop on the status of girls in STEM in New Hampshire. 18 people attended the meeting representing secondary and postsecondary institutions in NH as well as professional development providers.

4/11-15/10 7 members of the New Hampshire State Team attending the STEM Equity Pipeline Leadership Institute and NAPE Professional Development Institute in Arlington, VA.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. New Hampshire had 13 people participate in these webinars.

OHIO

12/14/09 ? State Team meeting (15 attended) ? The State Facilitator gave an overview presentation about the status of women in STEM as well as the status of women in Ohio. The team members were trained in how to conduct a performance gap analysis using the Ohio Perkins participation of secondary students and adults in nontraditional CTE programs.

2/22/10 ? State Team meeting (15 attended) ? The team received additional performance gap analysis training using the data trend for STEM nontraditional post-secondary courses.
4/11 ? 4/15/10 ? Ohio sent 5 people from their state team to attend the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Ohio had 16 people participate in these webinars.

IOWA

August 14, 2009 Iowa Mathemathics and Science Partnership Summer Institute, Des Moines, Iowa. Bettina Casad was the Keynote Speaker and presented a workshop with 9 people in attendance.

August 21, 2009 The State Facilitator conducted Steps Three and Four of the Five Step Program Improvement process with the Computer Science Program at Iowa Western Community College (an Iowa intensive site), Council Bluffs, IA. Eight (8) individuals attended.

December 18, 2009 The State Facilitator conducted the Five Step Program Improvement Training process with Project Lead the Way faculty in the eastern central region of Iowa at Kirkwood Community College, Cedar Rapids, IA. Nine (9) individuals attended.

April 11-April 15, 2010 Iowa sent 7 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Iowa had 12 people participate in these webinars.

MINNESOTTA

October 12, 2009 The State Facilitator and Mimi Lufkin introduced the Five-Step Program Improvement Process to members of four consortia (and other people from MN New Look Process), focusing on documenting performance results, identifying root causes, selecting best strategies, and next steps at Eisenhower Community Center in Hopkins, MN. Approximately 60 people attended. The STEM Equity Pipeline and the Minnesota NEW Look projects are collaborating on their work with pilot sites interested in implementing research-based strategies to increase the participation of students in nontraditional career preparation programs, including women in STEM related programs of study. The projects conducted joint training and technical assistance. An example of the Minnesota STEM Equity Pipeline and NEW Look Newsletter is included in the attachments.

April 11-April 15, 2010 Minnesota sent 5 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

May 27, 2010 The State Facilitator and Mimi Lufkin attended the Minnesota Equity Showcase. This event was the Equity Showcase relating to our join work with the New Look Project in Minnesota. Brenda and Eva provided a presentation and training on SAGE. Target sites displayed

work from activities they implemented and they observed other projects' work/progress too. They discussed evaluation, next steps, and evaluated their work thus far and plans and interests looking forward (as members of the state team listened and asked for more information). The state team then discussed their observations and ideas for moving forward. Sixteen people were in attendance.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Minnesota had 17 people participate in these webinars.

CALIFORNIA

December 1, 2010 The California Joint Special Populations Advisory Committee (JSPAC) conducted a STEM Equity Pipeline State Team meeting as a pre-conference session to their annual conference. 45 people participated in the meeting. The meeting was conducted in collaboration with the California Space Education and Workforce Institute (CSEWI). The team reviewed and developed specific actions in response to the Recommendations to Improve Science, Technology, Engineering and Mathematics (STEM) Education in California produced by the CSEWI.

December 2, 2010 Mimi Lufkin conducted a four-hour long training with the 250 participants at the JSPAC annual conference. The training was on the use of the NAPE developed Taking the Road Less Traveled: Educators Toolkit to Prepare Students for Nontraditional Careers. The presentation included resources and information about the STEM Equity Pipeline project.

December 4-6, 2009 California Math Council, Asilomar Conference, Pacific Grove, CA. Mimi Lufkin and Winifred Walker presented with 1 person in attendance.

March 2, 2010 Mimi Lufkin conducted a workshop session at the California Educating for Careers Conference in Anaheim, CA. 50 people attended the session. The session introduced the STEM Equity Pipeline project and included information on the status of women and girls in STEM and the root causes and strategies to increase their participation.

April 11-April 15, 2010 California sent 5 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. California had 43 people participate in these webinars.

ILLINOIS

April 11-April 15, 2010 Illinois sent two members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Illinois had 28 people participate in these webinars.

MISSOURI

April 11-April 15, 2010 Missouri sent 4 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

Generating Expectations for Student Achievement (GESA) - Four of the 2008-09 webinars were focused on training extension agents to facilitate the GESA process with teams at their school sites. Six of the CECs participated in the complete series with their receiving certification as onsite GESA Facilitators. As a result of their participating in the series, Dee Grayson, developer of GESA, conducted a follow-up training with the CECs on September 21-22, 2009 to build on some of the findings from the GESA Training and go more in-depth with content and presentation tips that will lead to developing meaningful action plans for each of the findings and the team as a whole. Nine individuals participated in this training.

Mark Perna, a STEM Equity Pipeline Expert, was the Keynote Speaker at the Missouri Council of Career and Technical Administrators in Lake Ozark, MO held on March 7-9, 2010. Marks presentation addressed strategies for increasing the number of females in STEM areas at the Missouri Career Centers as part of an overall marketing strategy. He also met with the CEC's to provide them with targeted marketing strategies that they can share with their pilot sites.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010. Missouri had 5 people participate in these webinars.

OKLAHOMA

The project conducted five national webinars from July 1, 2009 ? July 1, 2010 Oklahoma had 11 people participate in these webinars.

WISCONSIN

October 13, 2009 The State Facilitator and Mimi Lufkin attended the second meeting with the Wisconsin pilot sites (Lakeshore Technical College, Manitowoc School District, Plymouth School District and Sheboygan School District.) where the teams reported what they had done since the April meeting, conducted training on steps 3, 4, & 5 of the Five Step Program Improvement Process. There were 34 in attendance.

April 11-April 15, 2010 Wisconsin sent 6 members of its State Team to the NAPE Professional Development Institute and STEM Equity Pipeline Leadership Institute in Washington, DC.

The project conducted five national webinars from July 1, 2009 ? July 1, 2010 Wisconsin had 39 people participate in these webinars.

WEBINARS
The project hosted five national webinars: 1) October 26, 2009 Improving Academic Achievement: Effects of Stereotypes, Beliefs about Intelligence, and Belonging conducted by Catherine Good had 57 attendees; 2-3) A two-part series, November 16, 2009 and December 14, 2009, Subtle Micro-Messages Impact the Success of Women and Girls in STEM conducted by Robbin Chapman had 54 and 55 attendees; 4) March 16, 2010, How to Market Your CTE STEM Program: Tell Your Story to the Right People the Right Way and Get the Right Results conducted by Jill Chan also had 54 attendees; and 5) June 2, 2010, Pink Brain, Blue Brain? Females and Males in Math and Science conducted by Dr. Lise Eliot had 130 attendees.
All five of these webinars are archived on the VLC. Webinar evaluation results can be found in the findings section of the annual report.

STEM EQUITY PIPELINE LEADERSHIP INSTITUTE

On Monday, April 12, 2010 the STEM Equity Pipeline held its annual Leadership Institute for members of the State Teams participating in the project. State Team members participated in a day of activities that included an overview of results of the project to date. The State Team members participated in a series of half hour round table sessions with each of the other states where they had the opportunity to share successes, impacts, challenges, sustainability and recommendations. Each State Team had prepared a report addressing these five items which they shared one week prior to the conference. This allowed these sessions to be interactive and gave the group a chance to really learn from each other.

On Thursday, April 15, 2010 the STEM Equity Pipeline State Team members who had stayed for the entire Professional Development Institute had the opportunity to have lunch with a member of the National Advisory Board. The luncheon keynote speaker was Jessie DeAro from the White House Office of Science and Technology Policy. Following lunch National Advisory Board members were given time to dialogue with members of the State Teams to learn about their implementation strategies before adjourning to their meeting with the project staff.

PROFESSIONAL DEVELOPMENT INSTITUTE

April 12-15, 2010 - The National Alliance for Partnerships in Equity held their annual conference in Arlington, VA and included four days of professional development. The conference program is included in the attachments.

On Tuesday, April 13 and Thursday, April 15, 2010 the STEM Equity Pipeline sponsored a series of workshops:

'Women in Green: Opportunities in Environmentally Responsible Occupations' Lynn Reha, Director; Aimee LaFollette Julian, Assoc. Director of Professional Development, Illinois Center for Specialized Professional Support, Normal, IL; PJ Dempsey, Assistant Director, National Alliance for Partnerships in Equity, Cochranville, PA This presentation will explore programs and initiatives that are in place to support the development and advancement of 'Green-Collar Jobs'. Also outlined in this presentation are the skills that will be required for students to take the lead in 'clean power' and technological industries. Session leaders will discuss the possibilities for women in green-collar career opportunities and explore the unique role of women in contributing to the 'greening' of many existing careers. Many of the jobs in the future will use technologies that have not even been created yet, requiring workers to develop skills through on-the-job training. By including businesses in the educational process, students learn real skills that make them more competitive and successful in the workforce of tomorrow.

'Crafting a Comprehensive Pre-Engineering Strategy, with Special Focus on Pre-Engineering Programs' Jennifer Schelly, Principal Electro-Optics System Engineer, BAE Systems, Nashua, NH Are you looking to start a fun, creative pre-engineering program to engage female students and get them jump started in engineering? If you are, then this workshop is for you! We will review the case for pre-engineering education and then dive into strategies to put into operation, including programs already implemented. A well-liked student

activity will be carried out in the workshop. This workshop will be an enjoyable review of programs that will engage your students!

'Overview of 5-Step Improvement Process Utilized with Missouri Career Centers' Lori Mann, Career Education Coordinator, Platte City; Janet Reppert, Career Education Coordinator, Monett; Camille MacDonald, Career Education Coordinator, Popular Bluff, All of Missouri Center for Career Education, MO Coordinators, who facilitate the 5-Step Program Improvement Process from the various regions in Missouri, will share how the 5-Step Process has been implemented in Missouri with their career centers and sending high schools. In particular, Career Education Coordinators will share Perkin's nontraditional participants and completer data, how they look at trend data, what tools were utilized to collect additional data and the analysis and 'next steps' that have been taken toward implementing promising practices. A summarization of the challenges and success of the process will be shared. A website for a 5-Step Process Facilitator's Guide will be shared.

'Training Teachers to Attract Girls to High School Computer Science Classes: An NCWIT Extension Services Train-the-Trainer Workshop' Joanne McGrath Cohoon, Senior Research Scientist, Charlottesville, VA; Lecia Barker, Senior Research Scientist, Austin, TX, Both of National Center for Women and Information Technology Workshop participants will learn why there is a need to actively recruit girls into high school computer science classes. They will learn how they can train others to: create messages that influence girls, deliver those messages effectively, and track their results. Participants will practice applying these evidence-based practices, preparing them to help others learn to use the practices in their own environments. Attendees will receive professional quality materials to guide their efforts.

'Gender Equity and Technical Education in Vermont: One State's Collaborative Effort to Address the Ever ?? Changing Needs of both Girls and Boys in Nontraditional Career Studies' Kelly Walsh, Program Coordinator, Vermont Works for Women, Winooski, VT; Ruth Durkee, Adult Education Coordinator, Randolph Technical Career Center, Randolph, VT; Lynn Vera, Guidance Counselor, Center for Technology, Essex, Essex Junction, VT This workshop highlights innovative strategies for engaging and supporting nontraditional students. The collaborative efforts of Vermont Works for Women (VWW), the Center for Technology, Essex (CTE), Randolph Technical Career Center (RTCC) - and others in Vermont - have brought about successful programs such as the statewide 'Women Can Do!' conference, RTCC's 'Career Challenge Day', and CTE's 'Introduce a Girl to Engineering Day' activities. This workshop will focus on the strength of Vermont's collaborative efforts to benefit students, technical centers, and the state.

'Challenging The Gender Gap in Emerging Technologies: Strategies for Recruiting Girls and Women in the New Blue and Green Collar Fields' Brigitte Watson, Equality Works Program Coordinator, Equality Works Program, Legal Momentum, New York, NY; Sandra McGarraugh, Director, Center for Technology, The Net Project, Center for Women in Government & Civil Society, Univ. at Albany, Albany, NY; Ivana Nunez, SVA Apprentice: Electrical Installation, Female CTE Graduate, Thomas A. Edison Career and Technical High School, Queens, NY Although careers in green and blue collar jobs provide new and rewarding opportunities, gender stereotypes are a significant factor in educational choices. Thirty-five years after Title IX, girls are still underrepresented in technology classrooms and are graduating with significantly less earning potential than their male counterparts. This workshop will review the factors that contribute to the gender imbalance and discuss targeted interventions within the Career and Technical Education system that are challenging the status quo.
'Women on the Wires: Bringing Women into Nontraditional Careers in Electric Utilities' Linda Mihalik, Education Consultant, American Electric Power Transmission, Gahanna, OH; Carol Wintz, Workforce Planning and Development Consultant, Hard Hatted Women, Cleveland, OH; Terri Burgess Sandu, Executive Director, Hard Hatted Women American Electric Power, the nation's third-largest electric utility, reached out to Hard Hatted Women, a community-based organization, to join in employing more women in nontraditional jobs. You will learn from both organizations how they crafted their partnership and a program that meets their joint and individual goals, while benefiting women with high-wage, high-demand, sustainable employment.

'Why So Few? What Research Tells Us About Girls and Women in Science, Technology, Engineering and Math' Catherine Hill, Director of Research, American Association of University Women (AAUW), Washington, DC The AAUW will present recent research findings that help explain the small numbers of women in certain science, technology, engineering, and math (STEM) fields profiled in a Spring 2010 AAUW report. The presentation will be organized around seven research findings and recommendations for change. Topics include: malleability of intelligence, spatial skills learning, stereotype threat, self-assessment, college/university departmental culture, implicit bias, and bias against women in maledominated environments.

'A Continuum of Alternative Education Opportunities for All Ages' Dr. Kara Gae Neal, Superintendent Dr. Richard Palazzo, Director of Alternative Ed., Both of Tulsa Technology Center, Tulsa, OK Tulsa Tech is a comprehensive Career Tech facility providing Alternative Education for a wide range of vulnerable populations ages 12-adult. Largest of the alternative programs are the SUCCESS CENTERS located at four campuses providing credit recovery, GED/ACT/SAT preparation, Math & Reading Enhancement, and EOI tutoring. The Youth Build program engages unemployed adults (18-22) dropouts. YouthBuild provides GED preparation, Construction Skill training, Work-Based experience, and Life Skill instruction. Project H.I.R.E., M.E.N.D.S., and Project M.O.V.E.S. are all unique programs preparing different high-risk adult populations for productive career pathways and employment.

'Single Sex Education in a CTE Context: Forward or Back to the Future?' Barbara Bitters, Assistant Director, Wisconsin Department of Public

Instruction, Madison, WI This session will explore the reasons why CTE educators want to offer single sex classes; the legal landscape under Title IX; the steps required of districts if the Board of Education elects to take affirmative action through single sex course offerings; and alternative strategies for promoting nontraditional enrollment in CTE courses. Discussion of a Wisconsin survey of technology education and pre-engineering teachers on single sex education will be shared, along with results.

'Women in the Trades Go Green' Berta Lloyd, Director of Grant and Special Projects; Mavis McAllister, STRIPE Pre-Apprenticeship Coordinator, Both of American River College, Sacramento, CA American River College's Sacramento Transportation Regional Infrastructure Partnership in Education (STRIPE) Preapprenticeship training program is providing opportunities for women to learn about renewable energy and energy efficiency applications for entry into apprenticeship training. In a 16-week course, students learn about the tools, equipment, materials, construction, and safety techniques used for building roads, bridges, levees, and rail and learn how 'green' is applied. Career choices include Bricklayers/Stone Masons, Carpenters, Cement Masons, Drywall/Lathers, Electricians, Iron Worker, Laborers, Operating Engineers, Pile Drivers, Plumbers, Sheet Metal, Surveyors, and Teamsters. This training provides disadvantaged populations with opportunities that result in high-skill, high-wage employment.

'Preparing Women to Succeed in the Green Economy: The Women's Bureau Approach' Jenny Erwin, Regional Administrator, Region IX, San Francisco, CA; Karen Hornstein Shapiro, Program Analyst, U.S. Dept of Labor, Women's Bureau, Washington, DC Do you have the tools and resources to help women learn about career opportunities in the emerging green economy? Are you aware of best practices or pilot training projects that help women gain skills and employment in green jobs? In this interactive session, you will learn about new Women's Bureau resources including 'A Woman's Guide to Green Jobs', Fact Sheets, and Webinar series. You will also learn how to become more involved with the Bureau to help increase women's participation in nontraditional jobs.

'Leveraging Grant-Funded Science, Technology, Engineering and Mathematics (STEM) Undergraduate Programs to Optimize Student Success' Dr. Candice Foley, College Associate Dean for Curriculum Development; Nina Leonhardt, College Associate Dean for Continuing Education, Both of Suffolk County Community College, Selden, NY With RFP's being issued to support STEM undergraduates, it is now possible to leverage these resources so that students are fully funded, have access to support services, such as participation in a community of STEM scholars and individualized tutoring sessions, and may experience STEM research through paid internships. In addition, the ability of applicants to demonstrate the leveraging of resources is now an important criterion for those making funding decisions. Learn how Suffolk County Community College is leveraging local, state, NSF, business, and industry resources to deliver full-service STEM education.

OUTREACH WORKSHOPS

July 8-9, 2009 Southern Regional Education Board High Schools That Work Conference, Atlanta, GA. Mimi Lufkin presented 4 workshops(58 in attendance - 4 workshops)

August 1-3, 2009 Association for Gender Equity Leadership in Education Conference, Manhattan Beach, CA. Courtney Reed Jenkins presented, 6 people in attendance.

Sept. 11, 200 Skills USA Staff Training, Leesburg, VA. Mimi Lufkin presented (29 in attendance).

September 17-18, 2009 Career and Technical Education Equity Council (CTEEC), Tulsa, OK. Mimi Lufkin presented with 14 in attendance.

October 1-3, 2009 National Careers Pathways Network Conference, Atlanta, GA. Mimi Lufkin presented with 13 in attendance.

October 28, 2009 National Girls Collaborative Project Champions Board Meeting, Washington, DC. Mimi Lufkin attended.

November 5-6, 2009 American School Counselor Association Conference, Sacramento, CA. Mary Wiberg presented (President of NAPE Education Foundation).

November 19-21, 2009 Association for Career and Technical Education Conference, Nashville, TN. Mimi Lufkin and Winifred Walker presented with 16 in attendance.

January 19-21, 2010 National Science Foundation GSE Extension Services Retreat, Irvine, CA. Mimi Lufkin, PJ Dempsey, Courtney Reed Jenkins and Beverly Farr attended.

April 30 ? May 4, 2010 AERA Conference, Denver, CO. Mimi Lufkin presented.

May 12, 2010 National Association for Career and Technical Education Information (NACTEI) Conference. PJ Dempsey presented with 6 in

attendance.

June 6-9, 2010 National Science Foundation Joint Annual Meeting, Washington, DC. Courtney Reed Jenkins attended. A poster display was also entered.

June 14 ? 16, 2010 Career Clusters Conference, Denver, CO. Mimi Lufkin presented.

Outreach Activities:

National Outreach Activities ? July 1, 2009 ? June 30, 2010

The staff of the STEM Equity Pipeline project conducted 16 Outreach activities which consisted primarily of conducting workshops at national or state conferences in an effort to inform professionals outside the participating State Teams about the projects professional development resources.

July 8-9, 2009 Southern Regional Education Board High Schools That Work Conference, Atlanta, GA. Mimi Lufkin presented 4 workshops(58 in attendance - 4 workshops)
August 1-3, 2009 Association for Gender Equity Leadership in Education Conference, Manhattan Beach, CA. Courtney Reed Jenkins presented, 6 people in attendance.
August 14, 2009 Iowa Mathemathics and Science Partnership Summer Institute, Des Moines, Iowa. Bettina Casad was the Keynote Speaker and presented a workshop with 9 people in attendance.
Sept. 11, 200 Skills USA Staff Training, Leesburg, VA. Mimi Lufkin presented (29 in attendance).
September 17-18, 2009 Career and Technical Education Equity Council (CTEEC), Tulsa, OK. Mimi Lufkin presented with 14 in attendance.
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June 14 ? 16, 2010 Career Clusters Conference, Denver, CO. Mimi Lufkin presented.

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):

www.stemequitypipeline.org

Description:

This is the Virtual Learning Community for the STEM Equity Pipeline Project. All project related activites, materials, announcements, calendar, links, archived webinars, expert portfolios, contact information and meeting registrations to name a few are on this site.

Other Specific Products

Product Type:

State Team Training Materials

Product Description:

We have developed a series of handouts used for State Team orientation and training. These materials can be found in the attachment to the activities section of the annual report. They include:
STEM Brochure ? an overview of the STEM Equity Pipeline project goals and activities and describes the model with each level of participation.
Description of STEM Project- A one page handout that provides a brief overview of the project and the model.
Stereotype Myths Brochure ? identifies myths about female participation in STEM and explains the facts.
Description of STEM Project- A one page handout that provides a brief overview of the project and the model.
5 Step Process ? a one page brief description of the Five Step Program Improvement Process.
STEM Career Clusters and Pathways ? identifies the eight career clusters and related pathways that define STEM career technical education programs of study for this project.
Forming a State Team ? identifies the ten steps in forming a State Team. This handout is used to assist the State Teams in the start-up phase.
State Team Roles and Responsibilities ? clearly identifies the roles and responsibilities of the project staff and the members of the State Team.

Sharing Information:

These materials are used with State Team members and are available on all State Team Share Point Sites for their use and access. We also use these materials when conducting outreach activities depending on the depth of the presentation and the interest of the audience. The content of all these materials is also available on the Virtual Learning Community at www.stemequitypipeline.org.

Product Type:

Training curriculum

Product Description:

Five Step Program Improvement Process training resources for training state and local teams in how to implement the process. The materials include power points, handouts, training exercises and worksheets. The Five Step Program Improvement Process train-the-trainer session prepares extension agents to work with local education agency (high schools and community colleges) to implement the process with the goal of increasing the participation and completion of women and girls in STEM related programs of study. The five steps are:
Step 1:Document Performance Results. The first step in the process is to describe state and school/college performance on the core indicators by comparing performance levels between schools/colleges, student populations, and programs over time. This step uses summary statistics and basic graphs and charts to document performance and identify improvement priorities.
Step 2:Identify Root Causes. The second step is to analyze performance data and use additional information and methods to determine the most important and most direct causes of performance gaps that can be addressed by improvement strategies and specific solutions. This step encourages states to use multiple methods to identify and evaluate potential causes and select a few critical root causes as the focus of improvement efforts.
Step 3:Select Best Solutions. The third step is to identify and evaluate potential solutions to performance problems, including both improvement strategies and program models, by reviewing and evaluating the underlying logic of these solutions and the empirical evidence of their effectiveness in achieving performance results.
Step 4:Pilot Test and Evaluate Solutions. The fourth step is to conduct pilot testing and evaluation of solutions. This step presents practical yet rigorous methods and tools for evaluating solutions before full implementation at the state or institutional levels.
Step 5: Implement Solutions. The fifth step is to implement fully tested solutions based on implementation plans that measure the implementation of the solution and evaluate the success of the solution in reaching the expected performance results. This step also addresses how to use evaluation results to plan the next steps in state and local improvement efforts.

Sharing Information:

All the materials are free and available to the public on our website. These resources are marketed through our online e-news and at all trainings. Participants in the STEM Equity Pipeline project are trained to use the materials and implement the process.

Contributions

Contributions within Discipline:

One of the goals of the STEM Equity Pipeline project is to increase the commitment to gender equity in STEM. We have already seen this through the diverse and large State Teams that have formed to receive training and implement STEM equity professional development. Most notable is the fact that without exception, the State Teams are composed of individuals from state agencies who have never worked together.

For example this is the first time the Math Consultant and the Career Technical Education Equity Coordinator have ever worked together. The commitment of the teams has been very impressive.

The project is also very committed to creating a culture of data and accountability among the State Teams. The first step in that process was to get each of the States to submit their Perkins data on nontraditional student participation and completion of STEM related career and technical education programs. The process of requesting and using this data has identified a variety of data quality and interpretation issues for the lead State Agency in all of the States. In one case we even discovered that the State Agency had been calculating their performance measure incorrectly for the last five years. This discovery has led to the error being corrected - a significant contribution.

As participating states are reaching the end of their direct receipt of consulting and technical assistance we are seeing this work getting integrated into existing professional development efforts, while maintaining its focus on women and girls in STEM. States are also integrating the core training of the project, the institutional change process, into their applications for federal career and technical education funds as well as investing other funds in pilot site work that is showing promise.

The Five Step Program Improvement process training which was developed by the U.S. Department of Education, Office of Vocational and Adult Education and adapted by the National Alliance for Partnerships in Equity to use with programs focusing on nontraditional career preparation programs, has become a sought after training commodity. Since the STEM Equity Pipeline project started in October 2007, three states and two local education agencies have contracted to receive the training. As the STEM Equity Pipeline staff continue to refine the training and develop additional resources this curriculum will be a significan contribution to the gender equity in STEM education community.

State's participation in this project has created significant collaborative relationships and cross agency partnerships that have resulted in joint communications, funding and a new emphasis on gender equity in STEM that did not exist before participation in this project. These states now have a significant number of extension agents who are prepared to assist with professional development in their state.

Contributions to Other Disciplines:

Contributions to Human Resource Development:

Contributions to Resources for Research and Education:

Contributions Beyond Science and Engineering:
The project director participates in a variety of coalitions in Washington, DC including the National Coalition of Women and Girls in Education, the National Coalition of Women in Jobs and Job Training and the STEM Education Coalition to name a few. As part of the NCWGE she participated in a listening session with President Obama's Transition Team where information regarding gender equity in STEM was part of the conversation. Although this work is not supported by this project but is funded by the National Alliance for Partnerships in Equity (NAPE), the lessons learned from the STEM Equity Pipeline project have influenced the recommendations made by NAPE to both the Administration and Congress in regards to public policy in career and technical education, STEM education and workforce development.

Conference Proceedings

Special Requirements

Special reporting requirements: None
Change in Objectives or Scope: None
Animal, Human Subjects, Biohazards: None

Categories for which nothing is reported:

Any Journal
Any Book
Contributions: To Any Other Disciplines
Contributions: To Any Human Resource Development
Contributions: To Any Resources for Research and Education

Any Conference

NSF REPORT ON STEM EQUITY EVALUATION WORK

The purpose of this section of the report is to describe the results of data collection from major activities during the project's third year for purposes of program evaluation by MPR Associates (MPR). The evaluation was designed to accomplish three major goals: (1) to provide useful and actionable feedback for the STEM Equity Pipeline project team regarding the quality and effectiveness of training and services; (2) to synthesize feedback on the tools and processes developed as part of this project; and (3) to provide evidence of implementation success and impact on student and teacher outcomes.

Event Evaluations

During the third year, the project collected feedback data on all major events (including webinars) and reviewed and synthesized reports that documented activities in each of the states that received services. First, the evaluation team from MPR developed, administered, and analyzed event evaluations from 18 on-site and virtual events (including webinars) offered directly by the project staff. Event evaluation data were also collected from one meeting convened by the Wisconsin state leadership team with pilot site participants in Wisconsin convened by the state leadership team to gauge the pilot sites' progress on implementing the 5-step program improvement process. All of the events were received favorably by participants, with uniformly high average ratings.

To understand how the information and training imparted through the services offered by the project's staff is shared, the project continued to administer the web-based Extension Agent Survey. Periodic reminders to the project's listserv ask recipients to report on their extension of services beyond the core facilitators. Nearly 150 surveys were completed by individuals who had participated in project services and who went on to share what they learned in their own settings. These activities included in-service training, conference and workshop presentations, and other events that reached an estimated total of 6,500 individuals. Another 3,000 individuals were reached through the inclusion of project information and materials in newsletters and other publications. A summary of our analysis of these reports is included in this report.

State Interviews

The evaluation team also completed a total of 15 telephone interviews with from two to six key state contacts from each of the five states that had completed two years in the project. The interviews addressed topics including the state teams' accomplishments and challenges, the quality and value of the project's services and materials, and project sustainability. The analysis resulted in 15 summary statements about the project's work in these states. These statements have informed the project's work with other states, plans for including new states during year four, and plans to intensify the work with pilot sites.

Collection of Program Participation and Completion Data

As in previous years, quantitative data were collected from the two states (New Hampshire and Ohio) that were new to the project in year three. Although privacy restrictions limit the collection and use of state-level data in Ohio, where local alternatives will be used, the project was able to gather statewide secondary and postsecondary data in New Hampshire. These data were analyzed and will be used for benchmarking in training and as a baseline for future analyses of female participation and completion rates in STEM CTE programs to gauge program impact.

Reverse Site Visit

In collaboration with the Project Director, the MPR evaluation director developed a presentation reviewing the evaluation methods and results to-date and participated in a Reverse Site Visit convened by NSF staff in Washington, D.C. The panel included NSF staff and representatives with relevant knowledge from several colleges or organizations. The summary report provided by the panel has been used to develop a revised set of strategies for the evaluation as the project moves forward. In particular, and in

keeping with our own sense of what was needed to extend the evaluation, the MPR evaluation team has identified new strategies for collecting data that more clearly demonstrates the implementation of the project at the local level, reflecting performance and impact. As suggested by the panel, we also want to know more about how practices are being implemented by groups at the local level, including teachers in classrooms. Our revised objective is to develop case studies that describe how state activity translates to local pilot (or intensive site) implementation. Our intent is to characterize differences between local implementation among states and the barriers, constraints, and opportunities posed in different states as well as the cost and time requirements for accomplishing end goals. We have also planned a revision of our Extension Agent Reports to allow us to collect more detailed information about local implementation.

To develop the case studies mentioned above, the evaluation team has begun development of an evaluation plan for the pilot sites. The plan includes strategies for initial data gathering as the pilot sites are chosen and participate in the first parts of the 5-step program improvement plan training. The plan also includes approaches to monitoring pilot site activities over time and gauging the impact of pilot site work on administrators, faculty members, and students. This plan will be fine-tuned in the coming months with input from project staff and pilot site participants. The data will be analyzed by creating case studies of selected sites. In the coming year, pilot site evaluation will be introduced to complement the project-wide evaluation strategies for which data are reported here.

The following sections provide detailed findings from each of the data gathering activities conducted during the previous year, and are organized as follows:

Event and Activity Evaluations 3
Overview 3
Individual state results 4
Webinars 9
Extension Agent Surveys 11
Interviews with STEM Equity Pipeline Project Participants 16
Quantitative Data Gathering 18

Event and Activity Evaluations

Overview

Exhibit 1 presents a summary of the event evaluation work during the third year. It should be noted that an evaluation form was not used for every event provided by facilitators, so the following reports represent a sample. The next section provides summary information on the events and evaluation results by state, as well as the webinars. Detailed summaries of each separate national and state event (including statistics on each aspect of the events collected through feedback surveys) are included in the Appendix.

Exhibit 1: Summary of Year 3 Evaluation Activities of State Team Meetings and Other Events

	Jun 09	Jul 09	Aug 09	Sept 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10
IA			✓				✓ ✓						
MN		✓			✓								
MO													
OH							✓		✓				
NH							✓						
WI					✓							✓	
Other states					✓	✓							
Institute											✓		
Webinars					✓	✓	✓	✓		✓			✓

As with the first two years of the NAPE Stem Equity Project, surveys were distributed at the end of meetings to ascertain attendees' reactions to the meeting, their progress towards the project goals, and topics they would like to learn more about. Survey questions addressed gender equity awareness, general project information, confidence in carrying the project forward, working with data within the Five-Step Process, and knowledge about project resources available. A total of 19 meetings and webinars were surveyed in Year Three.

Exhibit 2 displays common questions asked within the state team meeting surveys. Response to these questions and most others were by and large very positive. Detailed summaries of each meeting are included in the Appendix.

Exhibit 2: State team members' average responses to state team meeting survey questions (1 = Strongly Disagree; 4 = Strongly Agree)

Question	Average Rating
Sessions were carefully planned/organized	3.6
Content was useful for work	3.5
Had good understanding of "Five-Step Process"	3.4
Understood project purpose and goals	3.4

In addition to regular meetings, several webinars were conducted by a number of noted experts on STEM equity, gender issues, and strategies related to the project's work. These sessions allowed for people from states not officially part of the project to learn about the Five Step Process and other issues related to gender equity in STEM fields. Data were obtained for questions asked during the webinar to participants, as well as surveys administered at the end asking about their webinar experience. All of the surveys had three questions in common, two of them similar to the ones asked in the in-person meeting surveys. Exhibit 3 lists the average rating for these questions.

Exhibit 3: Webinar participants' average response to survey questions (1 = Strongly Disagree; 4 = Strongly Agree)

Question	Average Rating
Webinars were carefully planned/organized	3.5
Content was useful for work	3.3
Had no logistical issues with connecting to webinar	3.2

The following section consists of summaries for each state team meeting and each webinar conducted in Year Three of the project.

Individual state results

Iowa

August 21, 2009
The Iowa state team meeting was convened by state facilitator Courtney Reed Jenkins at Iowa Western Community College in Council Bluffs, Iowa. The training session was for the Computer Science Program at the college. Steps 3 and 4 of the 5 Step Improvement Process were reviewed, and a total of eight college faculty members and state team members attended the session.

Responses to the scale questions were positive; participants agreed most strongly that they believed they would be able to use the resources and tools identified in the session to design an evaluation, select a pilot site, choose outcome measures, and identify data sources. They felt that the session gave them a better understanding of what to consider for evaluation plans, and increased their understanding of how to pilot test and evaluate possible strategies for addressing the critical root causes identified.

December 18, 2009
Two meetings were held for state team members and pilot site participants on December 18, 2009. The first meeting was a planning and networking meeting for the State Leadership Team. Team members updated their colleagues regarding activities and events and prioritized activities for the current school year. This meeting had 11 attendees. The second meeting was for initial 5-step program improvement training with Project Lead the Way faculty at Kirkwood Community College in Cedar Rapids and had 9 attendees.

Survey responses from the first meeting were very positive. Respondents strongly agreed that the session increased their awareness of other STEM gender equity initiatives in Iowa and of the data and information sources available. They also strongly agreed that they understand the roles and responsibilities of the Iowa state team, and that the session gave them ideas of what they can do to support the STEM Equity Network. At the end of the survey, participants were asked to provide a brief description of something they will do as a follow-up to the meeting. Responses included:

- Move forward with the collaboration tasks that emerged as a result of the meeting.
- Communicate with two small groups to encourage closer work on these efforts with younger students (girls) and their parents.

The second meeting on December 18, 2009, was also viewed favorably. Respondents strongly agreed that they now know about some of the resources available to them as they work to recruit and retain women in their STEM classes. As a result of this session, respondents all agreed that they now have an increased understanding of the root causes identified in research on participation and completion of females in STEM. However, when asked if this session led to an understanding of the concept of benchmarking and to an awareness of the sources of benchmarking data, responses were moderate. When asked how they intend to follow-up, responses included:

- The resources and information provided were incredible. I will be using them soon.
- Work with school for public exposures using school events.
- Share the information with my PLTW advisory board!

Minnesota

July 7, 2009
Howard Glasser, the Minnesota state facilitator, and Mimi Lufkin brought together the entire state team for the first meeting of the entire state team after the leadership team completed their orientation meetings with the pilot sites. Twenty-six people attended. The goals of this meeting included identifying available resources and expertise within the group, enhancing the team's understanding of the project, and developing ways to share information within the group. The virtual meeting was facilitated from Saint Paul College in St. Paul, Minnesota.

Based on the survey data, participants believed that the pilot projects have the potential to move their efforts around STEM equity forward. They also agreed strongly that they now have a good understanding of the purpose and goals of the project and of the five-step program improvement process. Most agreed that they felt more aware of the activities and resources that can be leveraged to accomplish their project goals. They also mostly agreed that the session increased their knowledge of their team members' talents and areas of expertise, and that they incorporated what they discussed at the meeting into a plan for sharing expertise and supporting local teams.

October 12, 2009
The state facilitator for Minnesota, Howard Glasser, and Mimi Lufkin, held a meeting for members of four consortia and others at the Eisenhower Community Center in Hopkins, Minnesota. The session was an introduction to the five-step program improvement process to consortia interested in doing pilot site work. Sixty consortia of faculty members, administrators, and staff attended the session. The meeting gave participants an introduction to the STEM Equity Pipeline Project and provided an opportunity to learn about the resources available to them. It also provided ideas to the members about how they can further their work around gender equity.

Based on the responses from the state team members, the session was viewed favorably by the participants. However, in future sessions, more attention may need to be given to providing resources that orient participants to the meeting's materials. Respondents were asked for additional comments at the end of the survey. Almost all participants provided a response, some of which are listed as follows:

- Excellent workshop! The information was very useful.
- A well thought out process. Concise posting the goals and dilemmas of the day on the wall for people to refer to.
- Session was too long. Goal setting presentation was a waste of time for many of us.

New Hampshire

December 17, 2009
The state facilitator convened the first state team meeting at the Higher Education Assistance Foundation in Concord that provided an introduction to the project and issues around gender equity in STEM; the meeting had 18 participants.

Most respondents strongly agreed that they now have a better understanding of the status of women and girls in STEM nationally and in New Hampshire. When asked if they now know more about how the project will use Perkins and other data to inform program improvement efforts, responses were more mixed. While the majority agreed with this statement, two respondents disagreed, and one strongly disagreed. All but one of the respondents agreed or strongly agreed that they learned about opportunities in New Hampshire to use resources of the STEM Equity Pipeline Project.

The survey also asked questions reflecting the members' clarity about the STEM Equity project itself. All members agreed or strongly agreed that they understood the purpose and goals of the STEM Equity Pipeline project. Most respondents agreed that the session increased their awareness of the resources available through the Virtual Learning Community. Respondents felt that they understand how people can act as extension agents for the project, and they were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in New Hampshire.

Ohio

December 14, 2009
Katherine Weber, the state facilitator, and Mimi Lufkin held a meeting for the state team members in Columbus. The attendees were then given an overview presentation about the status of women in STEM and the status of women in Ohio. Some 15 state members attended the session.

All of the surveyed participants agreed or strongly agreed that they now have a better understanding of the status of women and girls in STEM nationally and in Ohio. Responses were mixed when participants were asked if they learned more about the professional development opportunities and the mechanisms in Ohio where the resources of the STEM Equity Pipeline might be used. Participants were also asked about

their understanding of the STEM Equity Pipeline Project. Most felt that the session increased their awareness of the resources available through the Virtual Learning Community. When asked if they were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in Ohio, responses varied. Although the majority of respondents agreed or strongly agreed with this statement, several disagreed, and 1 respondent strongly disagreed.

February 22, 2010
The second on-site meeting in Ohio focused on the Ohio STEM Equity Pipeline team's vision, mission, and goals. The group was then given an overview of pilot site expectations and discussed the timeline for the pilot site training. Thirteen state team members attended the meeting.

As a result of this meeting, participants strongly agreed that they have a better understanding of the purpose and goals of the STEM Equity Project, including the importance and relevance of gender equity work and the 5-Step Program Improvement Process. They also strongly agreed that they now have a deeper understanding of the status of women at the post-secondary level from looking at the data presented in Step 1. At the end of the session, participants left with a familiarity of the communication tools available to them. They also have specific ideas of how they will use what they learned and how they will share it with others.

Wisconsin

October 13, 2009
State team members convened a meeting with various representatives of target sites in Wisconsin for the second time. The aim of this session was to review Steps 3, 4 and 5 of the Five Step Improvement Process. The session was held at the Lakeshore Technical College in Wisconsin and had 35 attendees. All respondents agreed that they now have a good understanding of the Five-Step Process. On average, respondents rated their understanding of Step 3 at 3.3, and Steps 4 and 5 at 3.2. Respondents also generally agreed that they now have a better understanding of the purpose and goals of the STEM Equity Pipeline Project and that they understand the importance of completing an implementation plan before attempting to implement a solution. Respondents also agreed that they are now familiar with the project management tools and that they will be useful to their future work. Overall, it was agreed that the session provided ideas of ways to enhance the participants' work around gender equity.

May 19, 2010
During a meeting the state team held with the pilot site participants, the pilot site participants were asked to complete an assessment of their work with the project so far. Fifteen people were in attendance.

Almost all respondents stated that they have participated in at least one Five Step Program Improvement Process training session. Participants were asked about the resources from the STEM Equity Pipeline Project they have used and what activities they have pursued based on what they have learned. Most have accessed the website, used the 5 Step Process training materials, and presented information about the project at a meeting or conference.

Almost all respondents identified a challenge and a success as a result of participating in this project to date. Time was by far the most mentioned challenge, mentioned by more than half of the 14 participants who commented. Other challenges mentioned included access to the appropriate students and to needed resources. The 11 successes mentioned were much more varied but included implementation, collaboration, and planning for the future.

Most respondents stated that they have identified at least one venue where they can continue to share what they have learned as a result of their participation in the program. When asked what role they feel

data plays in affecting strategies to address gender equity, participants mentioned that they provide credibility and support the assessment of progress and the identification of areas to change. When asked how their participation in the project changed the way they work, several participants mentioned increased awareness of gender equity issues and that they have increased collaboration with their colleagues.

Leadership Institute

April 12, 2010
As part of the STEM Equity Pipeline Project, team members from states involved in the project came together for the annual State Leadership Institute. The event was held on April 12, 2010 in Crystal City, Virginia, in conjunction with the NAPE Professional Development Institute. The meeting was an opportunity for participating states to share their previous year's achievements, challenges, and plans for the coming year. There were also presentations on the project's evaluation plan and the results of NSF Reverse Site Visit. Seventy-seven state members attended the session.

Participants felt that the institute allowed them to learn about the implementation strategies other states are using. When asked if they felt they benefited from the networking with other states, almost all agreed or strongly agreed. They also agreed that they gained ideas for things they can do to support the work of the project when they return to their states. Responses were slightly lower when asked about state planning. Most respondents agreed that their team was able to clarify their implementation plan for the upcoming year. They also generally agreed that their team was able to identify specific strategies for sustaining the work of the project in the coming years.

Activities in States Not Participating in the STEM Equity Pipeline Project

Georgia

October 2, 2009
The session was convened by the Georgia's state education staff as part of the NCPN Conference in Atlanta, Georgia. The session included an overview of the 5-Step Program Improvement Process and its underlying theories. Based on the survey responses from the attendees, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants an opportunity to learn about the resources available to them, better understand the STEM Equity Pipeline project and the 5-Step Process, and provided ideas about how they can further their work around gender equity. Thirteen people were in attendance.

Several of the members took the time to provide additional comments, which included:

- Very informative session. We are a part of the project, and I have received many emails but never had this practical explanation of the program's process and resources. Thank you!
- More than interested. Will offer to assist in Ohio implementation. Will put/embed PDFs on Perkins IV non-trad. research on my online course. Great resources - quality presentation!

Tennessee

November 19, 2009
Mimi Lufkin presented a session on gender equity and the 5-Step Program Improvement Process at the ACTE Convention in Nashville, Tennessee. Sixteen people were in attendance at this workshop. Based on the survey responses, the session was viewed very favorably by the participants and was useful in several respects. The average ratings for all items were 3.6 or higher, and not one respondent disagreed with any of the statements listed on the survey. Overall, most respondents strongly agreed that the session gave

them ideas of what they can do to enhance their work related to gender equity in STEM. The meeting gave participants an opportunity to learn about the resources available to them, better understand the STEM Equity Pipeline project and the 5-Step Process, and provided ideas about how they can further their work around gender equity.

Webinars

A total of six webinars were conducted and participants surveyed in year three. The following are summaries of each event.

October 26, 2009
The first webinar was entitled *Improving Academic Achievement: Effects of Stereotypes, Beliefs about Intelligence, and Belonging* and was offered by Catherine Good, Assistant Professor of Psychology at Baruch College, City University of New York. This session focused on helping participants understand how stereotype threat influences academic performance and discussed methods to help mediate these threats. Respondents all agreed that the webinar helped them understand the concept of stereotype threat and how it contributes to students' underperformance. They also learned how a sense of belonging relates to and can mediate the effects of negative stereotypes. All agreed that they now understand the difference between incremental and entity theories of intelligence. Participants agreed that the webinar gave them specific ideas of how they can use this information in the work they do with students, with teachers, or with other staff developers. The webinar had 57 attendees.

November 16, 2009
This webinar was the first in the two-part series on micro-inequalities entitled *Subtle Micro-Messages Impact the Success of Women and Girls in STEM* led by Dr. Robbin Chapman, Manager of Diversity Recruiting for the School of Architecture and Planning, Massachusetts Institute of Technology. This session focused on providing an introduction to the concept of micro-messaging and its influence on performance and communication. The webinar had 54 attendees.

Respondents agreed that the webinar taught them the concepts of micro-messaging, micro-affirmation, and micro-inequity and how micro-messaging can directly influence the performance of students and colleagues. They also learned strategies for sending micro-messages that fuel positive behaviors and outcomes for women and girls in STEM fields and now have specific ideas of how they will use this information in the work they do with students, with teachers, or with other staff developers. At the end of the survey, one respondent stated:

> "This presentation was of high quality and offered a nice balance of scholarship with practical application. I wanted to know more about research linking the concepts presented to academic self-efficacy, and the speaker already directed me to those resources."

December 14, 2009
The webinar was the second in the two-part series on micro-inequalities titled *Subtle Micro-Messages Impact the Success of Women and Girls in STEM*, and 54 people attended. Most respondents agreed that the webinar taught them the concepts of micro-messaging, micro-affirmation, and micro-inequity. They also felt they learned how micro-messaging can directly influence the performance of students and colleagues. Respondents generally agreed that they learned more advanced strategies for recognizing and addressing micro-inequities. Additionally, respondents agreed that they know how they will use this information for personal development, to communicate more intentionally and clearly with others, and to build an inclusive community in the work they do. The webinar had 54 attendees.

January 14, 2009
Mimi Lufkin presented a webinar for people involved in work with STEM Equity Pipeline New Look in Minnesota. The webinar focused on Step 4 of the 5-Step Program Improvement Process and focused on pilot testing and evaluation solutions. Out of 16 people who registered, nine people participated in the webinar, and six were from Minnesota. However, only three people responded to the survey, so results must be interpreted with caution.
Respondents said they now understand the difference between formative and summative evaluation, an objective and a goal, and short and long-term goals. They now feel that they can write short and long-term objectives and goals and will work with their implementation teams to develop an evaluation plan that is aligned with them. Respondents also agreed that they now understand the importance of developing an implementation plan and are now more familiar with the available tools.

March 16, 2010
The webinar, *How to Market Your CTE STEM Program: - Tell your story to the Right People, the Right Way and Get the Right Results* was led by Jill Chan, MBA, an account executive at Phillips Design in Sacramento, California. The session focused on helping participants understand the do's and don'ts of successful marketing and to learn a focused strategy for communication. The webinar had 54 attendees. Respondents on average agreed that they learned about do's and don'ts of successful marketing and how to create communication pieces that work. Participants also agreed that they now know how to establish a marketing objective and identify a target audience and how to develop appropriate messages to communicate. Participants left the session with an understanding of how they will use this information to develop a marketing strategy for CTE STEM Programs and how to select the best methods of communication.

June 2, 2010
The webinar, *Pink Brain, Blue Brain? Females and Males in Math and Science,* featured Dr. Lise Eliot, Associate Professor in the Department of Neuroscience at the Chicago Medical School. The session presented the latest science related to female brain development, including the role of genes, hormones, and environmental influences, and how social factors are proving to be far more powerful than popularly conceived. The webinar taught participants how to concrete ways educators can help females and reign in harmful stereotypes. This webinar had 130 attendees.

Almost all survey responses were positive. Most participants agreed or strongly agreed that the webinar reflected careful planning and organization and that the webinar's content would be useful to their work related to gender equity. In terms of specific concepts, respondents on average agreed that they now know more about female brain development and about the roles of hormones and learning in shaping cognitive development underlying STEM performance. They also felt they learned the power of social factors on the learning of males and females and about the latest science on sex differences in the brain as they relate to STEM performance. As a result of this session, participants generally agreed that they now know some ways they can help females control harmful stereotypes and have specific ideas of how they can engage both males and females in STEM.

Extension Agent Surveys

The Extension Agent Survey is a web-based reporting tool to the STEM Equity Pipeline Project Website created in January 2009.

http://www.stemequitypipeline.org/StateTeams/ExtensionAgentReporting.aspx

The survey explores how the project's extension agents have used the information they learned through professional development provided by the project to train their colleagues at the state, district, and school levels about nontraditional participation in STEM-related CTE programs and in using the 5-Step Program Improvement Process.

Periodic e-mail reminders prompt extension agents who have attended 5-Step Program Improvement Process training or other professional development provided by the STEM Equity Pipeline project to complete the short survey. The survey requests some basic demographic information and asks respondents to describe how they shared the information, whether through one-on-one sharing with colleagues, more formal presentations at conferences and workshops, or by offering training themselves. Respondents are also asked to describe the content of what they shared, the size and type of audience, any feedback they received, and suggestions they might have for improving the training and information offered by the STEM Equity Pipeline Project.

For the year 2 report, we provided data on the Extension Agent Reports from January to June 2009. In the year since the first set of surveys was analyzed (June 22, 2009 to June 28, 2010), 63 extension agents from 14 states completed 145 surveys. Many of the respondents submitted multiple surveys because they shared information related to multiple events. Seven of the states (California, Iowa, Minnesota, Missouri, Oklahoma, New Hampshire, and Wisconsin) are current or past participants in the STEM Equity Pipeline Project. Individuals from the other states (Colorado, Georgia, Illinois, Indiana, Pennsylvania, Texas, and West Virginia) participate in the NAPE STEM Equity Pipeline project listserv and have attended Webinars or other events offered by the project.

Survey Results

Survey respondents were asked to choose an occupational category that best describes their position. Of the 49 extension agents who entered their role on the survey, the most popular categories were state agency staff member, administrator, and teacher.

Exhibit 4: **Extension Agent Survey Respondent's Position or Role/Responsibility**

Position	Number of Respondents
Administrator	11
State Agency Staff Member	10
Teacher or Instructor	10
Counselor	3
Other (Business/Industry Representative, Career Education Coordinator, Consultant, Grant Writer)	5

Survey respondents were asked to describe the participants and the number of attendees. The respondents estimated a total of 6,500 participants in the activities.[1] The primary audience for the activities was teachers, administrators, counselors, students, scientists, and business/industry representatives, and most events included participants from several of these groups. However, there were a number of events aimed specifically at teachers, administrators, or counselors. The audiences for the largest events are listed in Exhibit 5.

Exhibit 5: **Number of participants and type of audience attending the six largest conferences and workshops**

Event	Audience	Number
sySTEM Now annual conference	Teachers, students, counselors, administrators, parents, industry reps.	300
"Why STEM" conference	Teachers, students, counselors, administrators, parents, industry reps., non-profit organizations	275
Iowa Summit of Math and Science Teacher Educators	College and university faculty	200
Local CTE Coordinator Fall Conference	CTE Coordinators from local districts or consortia	120
Project Lead the Way Summer Training Institute	Teachers	80
LTC Stem Equity Conference	Administrators, teachers, industry reps.	60

The most common activities were conference/workshops, followed by in-service training events and one-on-one sharing with colleagues. In addition, extension agents reported writing articles for newsletters distributed to female scientists and researchers, business and industry representatives, and educators with a total subscription base of about 3000 readers.

Exhibit 6: **Types of Activities Described in Extension Agent Surveys**

Type of Activity	Number
Conference/Workshop	61
In-Service Training	22
One-on-One Sharing with Colleagues	24
Newsletter/Website	6
Other (presentations, team meetings, planning meetings, etc.)	33

[1] This is the total number of attendance for all events and includes repeat counts of participants who attended multiple events.

Conference and workshops

Representative event topics

- Overview of the project and activities in WI
- Update on national STEM Equity Pipeline Project activities
- Current STEM systems of support and programs in action for K-12 teachers to access
- Review of Perkins IV accountability
- Orientation to 5-Step Process

In-service training

Selected events:

- State Leadership Team Meeting in Madison, WI
- Awareness training for faculty
- STEM Equity Pipeline NH Leadership Team Meeting
- School to Work Designee Workshop
- Annual Summer In-Service training for CTE teachers and counselors for local school district: Overview and short activity on Gender Equity for Student Achievement (GESA) and on the 5 Step Program Improvement Process
- Iowa Summit of Math and Science Teacher Educators

Activity Feedback and Suggestions for the STEM Equity Pipeline Project

For each reported activity, survey respondents were asked to briefly describe the feedback they received from participants, and 114 surveys included participant feedback for the reported activity. Overall, activities were well received by the attendees who found the sessions informational and appreciated the opportunity to learn more about issues surrounding gender equity. Several respondents reported requests for more activities and additional information and data on STEM Equity issues following the activity. A few also noted that some attendees were hesitant about the project.

Examples of activity feedback include:

- "Extremely positive feedback with two participants asking about the possibility of on-site workshops next year."

- "The discussion was beneficial and follow up plans have been made. I always look forward to additional opportunities to discuss progress and collaboration opportunities."

- "We will be running some data using the new, agreed-to definition of STEM to get a good idea about occupational opportunities in our state. We will also investigate how it might be possible to break the labor market projections down by gender…By using a common definition in our state, we will be able to talk education system to education system and education to labor."

- "Feedback was positive. Negative comments included time needed to plan and staff time needed to complete projects."

- "We felt it was a great day, well worth our time. We had to decide how to learn more, and when to bring this team in to meet our advisory group."

- "Students appeared to enjoy meeting as a group, although it was difficult to coordinate a common meeting time due to students' class schedules."

At the end of the survey, respondents were asked to provide suggestions for future professional development or curriculum development that would help them more effectively conduct their training. Ninety-two of the surveys had responses to this question. The majority of the responses concerned suggestions for additional resources on specific topics. Several respondents also commented on what they felt worked well. Selected examples are reproduced below:

- "Aligning information to career development. How best to get information to students."

- "At this point, we struggle to get our supervisors to understand the preliminary work they must do to get to the root causes THEN determine strategies. Honestly, I think some of them decided to do this because they would not have to worry about strategies until FY 11. We will continue to monitor those systems that indicated on the local plan they would follow the 5-Step process during the FY 10 school year…"

- "Introducing underserved populations to STEM activities requires the academic and the career and technical administrators to agree that there is a problem with recruiting females and that career and technical education provides a conduit to successful employment/future education in technology. Providing programming like this does not seem to be important to superintendents concerned with budgets and meeting state standards, although it provides a cost-effective solution. Follow-up structure and mentoring opportunities for rural schools is needed."

- "Participants remain uncomfortable with their own ability to handle the myriad of questions that might come up around these topics."

- "People coming to the workshop were just beginning to understand STEM and had yet to really think through the stem equity pipeline issues. Counselors in attendance were interested, but it seemed unlikely that they were prepared to take any post-workshop actions."

- "The Root Causes and Strategies document is excellent. It would be nice to have a webinar, led perhaps by Mimi, that would take people through the document, similar to what she did with the Improving Perkins III Performance, Chapter 6 presentation. We would prefer advanced announcement of more than a month if possible, as this would be a good event to promote widely and attract various groups to have wrap-around discussions."

- "This audience may result in a community project on advancing STEM. There was a variety of stakeholders, many people knew each other, and folks started making mental connections and cross audience connections as well. It was a six-hour drive one way to reach them for which they were very appreciative."

- "We may be able to create a new set of slides for our state that uses labor market statistics that use a common definition of STEM. We could look at STEM Cluster occupations and also look at

STEM Cluster and STEM related Pathways labor market data. We will want to create a Presentation Guide to use with the data."

- "We will need to go back and review Steps 3-5 as participants said that they felt these steps were rushed and lacked sufficient detail. A decision was made to host electronic meetings in the future unless there is a need or opportunity to have an all-day drive-in meeting again."

- "We're looking forward to the upcoming modules that are under development - to share with our project partners/faculty."

- "This training of the project and the five steps was more clearly understood by participants and a precursor to their own work in their own districts. This focus was really helpful and led to specific actions during the spring and summer."

- "We really felt like the panel was the strength of our presentation as our Career Center Directors (2) were there to tell their perspective and how it benefited the schools. So the audience gets both a facilitator's view and director's view of how the process unfolded, what worked or didn't work and resources that we developed that were needed and we didn't have. The next time we may shorten the "wrap-up," but otherwise we were happy with how the presented was shared."

- "Native American evaluation topics: design, access, ownership, MOU's/legality when working with sovereign Indian governments ("multi-jurisdictionality" of it), and IRB/Human Subjects policies, protocols, and best practices for state/federal/school collaborations with Native populations and Tribal governments."

- "Perhaps a webinar that features a panel of female STEM students at the post-secondary level discussing what motivated them to pursue a STEM field, and who specifically at their high school and/or technical college who provided support. It would also be good to know what colleges could do to improve. Perhaps these could be students from the Wisconsin Technical College System."

- "I'm thinking about creating a startling statements sheet specific to nanotechnology in bioengineering. That might help steer girls to the emerging fields that utilize nanotech methods in bioengineering. Bioengineering appears to have a pull for girls/young women simply because bio is in the label and it attracts the large pool of females in biology majors. "

- "Learning about effective strategies (and even ineffective ones) that others have implemented would give us some ideas of what has worked and what hasn't so we have some direction moving forward."

Interviews with STEM Equity Pipeline Project Participants

California, Illinois, Missouri, Oklahoma, and Wisconsin

To learn about the implementation process, activities, and accomplishments of the "graduated" states that had completed two years in the project, the MPR evaluation team conducted a series of interviews. The interviewees included state team leaders, participants, and extension agents from California, Illinois, Missouri, Oklahoma, and Wisconsin. Interviews were conducted by telephone from November 2009 to April 2010 using a semi-structured protocol, and they were recorded to help with clarification of notes.

Interviewees were asked to describe their teams' accomplishments and challenges, assess the project's services and materials, and describe their plan to continue project activities in the next few years. They were also asked to reflect on their team's success in meeting the project's goals, and whether the goals were realistic for a project of this scope and duration. Participants' answers were confidential, and only summary information was shared with the project team (information that might identify a state or individual was removed). The final analysis was based on a total of 15 interviews with 19 participants, and included from two to six interviews for each state.

The interview notes were coded for themes and patterns, and the general themes that emerged were synthesized into 15 statements, which have informed project planning and development. As a result of the interview findings and other participant feedback, new states are indentifying and targeting pilot sites early in their work with the project. The project has also introduced conference call meetings with participants from all the states, so that new states can learn from those that have participated for a year or more, and all states can learn from each other. The first of these calls is scheduled for July 2010. Finally, the project team is creating shorter modules for aspects of the 5-Step Program Improvement Process to ease understanding and break the training into smaller steps that participants will be able to share with colleagues

The 15 statements representing themes that emerged from the data include:

Understanding and Using Data

1. As a result of the training that they received through the NAPE STEM Equity Pipeline Project, participants reported working with their districts and institutions to develop a "culture of data" and being more actively engaged in using data to understand and improve their programs. Factors reported that are related to this theme included:
   - Improved data-keeping
   - Skill level needed to accommodate process that "can get very technical"
   - Related to project sustainability

2. Project participants reported changes in the way data are reported and used at both the state and local levels. Participation in the NAPE STEM Equity Pipeline project also encouraged participants to be more critical about the quality of the data reports they receive and the quality of the data itself.

Commitment and Awareness to STEM Equity Issues

3. Participants reported increased awareness of and commitment to improving STEM Equity in their state for females and other special populations. State informants varied in saying how much the increased awareness and commitment was evident at the state level as opposed to the local level, with some saying the former and some the latter. This depended on the nature of the activities that were undertaken.

4. The project has accomplished a fair degree of reach with many of the informants indicating that they are sharing the NAPE 5-step training in a range of venues—from state conferences to internal meetings.

Project Services and Resources

5. The five-step training and Webinars provided through the project were rated very highly by participants. The products and services provided through the project were generally deemed to be of high quality. Only one state reported less than positive reactions to the services, and there seem to have been extenuating circumstances that contributed to that reaction.

6. The 5-Step Program Improvement Process training was generally seen as being very valuable, although many thought it was quite complicated and required substantial involvement and time to build capacity for implementing it. Several informants reported ways that they had found to modify or adapt it to their local needs and resources. A number of people noted that it was applicable to many efforts to improve education.

7. Although comfort with using data increased, some participants felt overwhelmed by the 5-Step Process, and particularly by the data work, at the beginning of the training.

Implementation and Partnerships

8. Participation in the NAPE STEM Equity Pipeline Project resulted in new partnerships between state agencies, non-governmental organizations, and individual participants.

9. Developing a state team with the right members and support from high-level administrators and leadership takes time. Most saw strong value in having a state team, but they also pointed out drawbacks in how they operated. Most wanted more guidance on how state team should function.

10. Clear specific guidelines for the state plan would have helped focus the work at an earlier stage of the project.

11. States contributed staff time, meeting space, and other logistical support to the project.

12. Those interviewed identified a number of challenges associated with carrying out the intention of the project within their local contexts. These included the challenge of conflicting demands, the process of getting started and maintaining momentum, getting the right people to the table and garnering support from the right sectors, facilitator knowledge of the state, the need for more specific guidance, and the policy context.

Successes and Sustainability

13. Although program participations generally felt that two years was too short to see a difference in the number of females participating in STEM programs as a result of strategies introduced through the NAPE Pipeline Project, several offered examples of the types of implementation strategies and CTE program changes that are developing.

14. Although just two of the five states implemented pilot sites, the use of pilot or intensive sites seems to hold some promise for developing a systemic process and effecting changes at the student level.

15. State informants have reported some notable successes of the STEM Equity Pipeline project in instituting data-driven decision making for addressing STEM gender equity and other education issues.

Quantitative Data Collection

In year three, the evaluation team continued to work with state education personnel who work with career and technical education data to gather quantitative data for training and evaluation purposes. The two new states, Ohio and New Hampshire, were required to submit baseline Perkins data on participation and completion in STEM - related CTE programs for the two academic years preceding their joining the program. The requested information included aggregate statewide performance data, averaged across all providers in the state, and individual provider data for each secondary and postsecondary institution receiving federal Perkins funding.

Data collection in year three began with two conference calls in the fall of 2009 that involved Mimi Lufkin, the state facilitator, staff from the relevant state agencies, and the MPR evaluation team. The purpose of the calls was to clarify the data expectations and answer any questions the state data analysts might have. The calls also provided an opportunity to explore states' interpretation of the FERPA act which protects the privacy of education records. Through these calls, the evaluation team learned that there were no restrictions on the data requested from New Hampshire and that statewide enrollment data at the CTE program level would be available for all local education agencies and institutions of higher education in the state. In Ohio, however, the project learned that statewide postsecondary data could only be shared in the aggregate because it is required that cells with enrollments of less than 6 be suppressed. Statewide secondary data for the project were not available, and the state facilitator is investigating regional and local data sources for use in pilot site training and evaluation.

Follow-up calls and communications were conducted on a regular basis to review how the data would be analyzed and used, so that data analysts would have a fuller understanding of the project. As of July 2010, MPR researchers have obtained postsecondary data from both New Hampshire and Ohio, and secondary data from New Hampshire. For the analysis, MPR researchers used a crosswalk developed by NAPE to identify STEM-related CTE programs that are considered nontraditional. The matched data were used to create tables and figures comparing female enrollments in STEM-related CTE programs across the state and within individual districts and institutions. The results will used in training with the states' pilot sites and compared to data collected in the future to monitor changes in female enrollments and contribute to the evaluation of the states' work and of the project overall. A detailed overview of the quantitative analyses conducted for each state are available in the quantitative data section included in the project's year two report.

Appendix
Event Evaluations

STEM Equity Pipeline Project
Minnesota Meeting with State Team
July 7, 2009 Survey Results

INTRODUCTION

As part of the STEM Equity Pipeline Project, the Minnesota state facilitator, Howard Glasser, along with Mimi Lufkin, brought together the entire state team for a virtual meeting. The goals of this meeting included identifying available resources and expertise within the group, enhancing the team's understanding of the project, and developing ways to share information within the group. The virtual meeting was facilitated from Saint Paul College in St. Paul, Minnesota on July 7, 2009. Twenty-six people were in attendance.

At the end of the meeting participants were asked to complete a brief, anonymous survey to evaluate the session, and return it to MPR Associates. The survey included 9 statements around the meeting's format and content, and knowledge development of the project. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree, or "Not Applicable." The statistics for each corresponding question are provided in Appendix A. At the end of the survey, participants were given the opportunity to add additional comments and ask questions, asking that participants provide their names if requesting a response. A total of 8 attendees returned completed surveys. No respondents asked questions or provided their names.

This report is organized into four sections. The first summarizes the participants' opinions towards the session's format and content; the second section summarizes their responses to questions around knowledge development; and the third section provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format/Content

Most respondents strongly agreed that the session reflected careful planning and organization (average rating 3.8). Although the rating was slightly lower, all participants agreed that the meeting's content will be useful to them in their work around gender equity, and that the meeting's format was effective in achieving the desired outcomes (average ratings 3.3 and 3.4, respectively).

II. Knowledge Development

The second set of questions focused on what the participants learned about the current STEM Equity Pipeline Project and the team. Participants agreed most strongly that the projects have the potential to move their efforts around STEM equity forward (average rating 3.8). They also agreed strongly that they now have a good understanding of the purpose and goals of the project, as well as of the "Five-Step Process." Most agreed that they felt more aware of the activities and resources that can be leveraged to accomplish their project goals (average rating 3.3). They also mostly agreed that the session increased their knowledge of their team members' talents and areas of expertise, and that they incorporated what they discussed at the meeting into a plan for sharing expertise and supporting local teams (average rating 3.1). Overall, only two participants disagreed with any of the statements around knowledge development.

III. Open-ended questions/comments

Out of the 8 people surveyed, only 2 wrote a response to the open-ended question asking for any additional comments or what they wanted to know more about. The responses are listed as follows:

- There is more planning needed to determine how to support the teams who will implement projects. It is likely that the process will emerge in a planning fall meeting.
- Brenda did an excellent job of incorporating members by conference call and managing a webinar at the same time. Re: point 7. The Five-Step process was not covered in this meeting. I did learn it though the Nape Equity webinar series.

IV. Conclusion

Based on the surveys responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The participants felt that the session was well organized and that the virtual setting was a useful format. They ended the meeting with an increased understanding of the project and of the resources available to them, including the expertise of their colleagues.

Minnesota Meeting with State Team, July 7, 2009
To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree	Not Applicable
FORMAT/CONTENT					
1. The session reflected careful planning and organization. ***Average: 3.8***	❑	❑	❑	❑	❑
2. The content of the meeting will be useful to me in the work I do related to promoting gender equity. ***Average: 3.3***	❑	❑	❑	❑	❑
3. The format of the meeting worked very well for achieving the desired outcomes. ***Average: 3.4***	❑	❑	❑	❑	❑
KNOWLEDGE DEVELOPMENT					
4. I feel that I now understand the purpose and goals of the STEM Equity Project ***Average: 3.5***	❑	❑	❑	❑	❑
5. I am now more aware of STEM activities and resources that can be leveraged to accomplish the goals of the project. ***Average: 3.3***	❑	❑	❑	❑	❑
6. I believe the local STEM Equity Pipeline Projects have potential to move our efforts forward. ***Average: 3.8***	❑	❑	❑	❑	❑
7. As a result of the meeting, I have a good understanding of the "Five-Step Process." ***Average: 3.6***	❑	❑	❑	❑	❑
8. I have increased my knowledge about the talents and areas of expertise of the team members. ***Average: 3.1***	❑	❑	❑	❑	❑
9. We incorporated what we discussed at the meeting into a plan for sharing expertise and supporting local teams. ***Average: 3.1***	❑	❑	❑	❑	❑

Please use the space below to clarify any of your answers for the questions above or to make any additional comments about things you would like to know more about.

Iowa Community Colleges: Expanding Options for Women and Girls in STEM
STEM Equity Pipeline Project – Steps 3 and 4 of 5 Step Improvement Process
Iowa Western Community College
August 21, 2009 Survey Results

INTRODUCTION

The state facilitator for Iowa, Courtney Reed Jenkins, held a training session on steps 3 and 4 of the 5-step program improvement process on August 21, 2009 at the Iowa Western Community College in Council Bluffs, IA. The training session was for the Computer Science Program at the college. The session had eight participants.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 10 statements around the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. Out of the 8 people that attended the session, 7 completed the survey.

This report is organized into four sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content, and the third section provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format

Participant's responded very favorably to the format of the training. Almost all respondents strongly agreed that the training reflected careful planning and organization (average rating 3.9), and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.7).

II. Content Learning from Session

The next set of questions asked about what the participants learned about current Pipeline work and what they were able to take away from the meeting. Responses were positive on all items. Participants agreed most strongly that they believed that they would be able to use the resources and tools identified in the session to design an evaluation and to select a pilot site, and select outcome measures and data sources (average rating 3.7). They also strongly agreed that the presentation helped them understand how to match solutions to root causes that were identified (average rating 3.6).

As a result of the session, participants believed that they could develop an action plan for choosing and testing solutions (average rating 3.5). They felt that the session gave them a better understanding of what to consider for evaluation solutions, and increased their understanding of how to pilot test and evaluate possible solutions to address the critical root causes identified (average rating 3.4). Also, all participants agreed that because of session, they can now identify resources for potential solutions that can be implemented (average rating 3.3). Participants felt that they learned strategies that they can use to pilot test a solution (average rating 3.2). Almost all agreed that from this presentation, they now know what possible funding sources are available (average rating 3.1).

III. Open-ended questions/comments

Out of the 7 people surveyed, only 1 wrote a response to the open-ended question asking for a description of something they will do as a follow-up to the meeting. The low response rate may have been due to the fact that almost no space was provided for the participants to write. The one response was:

- Work on collaborating with Radio Station

V. Conclusion

Based on the survey responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants a better understanding of how to evaluate, identify and test solutions. It also provided an opportunity to learn about the available resources.

Iowa Western Community College
August 21, 2009
To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
10. The presentation reflected careful planning and organization. ***Average rating: 3.9***	❑	❑	❑	❑
11. The content of the meeting will be useful to me in the work I do related to gender equity. ***Average rating: 3.7***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
12. As a result of this session, I have a better understanding of what to consider for evaluation solutions. ***Average rating: 3.4***	❑	❑	❑	❑
13. From the presentation, I understand how to match solutions to root causes that have been identified. ***Average rating: 3.6***	❑	❑	❑	❑
14. As a result of this session, I can now identify resources for researching potential solutions that can be implemented. ***Average rating: 3.3***	❑	❑	❑	❑
15. As a result of this session, I have increased my understanding of how to pilot test and evaluate possible solutions to address the critical root causes identified from examinations of our data. ***Average rating: 3.4***	❑	❑	❑	❑
16. I believe that I will be able to use the resources and tools identified in the session to design an evaluation and to select a pilot site, and select outcome measures and data sources. ***Average rating: 3.7***	❑	❑	❑	❑
17. I now know strategies that I can use to test a solution before full implementation. ***Average rating: 3.2***	❑	❑	❑	❑
18. From this presentation, I know what possible funding sources are available. ***Average rating: 3.1***	❑	❑	❑	❑
19. I believe that I can develop an action plan for choosing and testing solutions. ***Average rating: 3.5***	❑	❑	❑	❑

In the space below, please write a brief description of something you will do next as follow-up to this meeting.

Thank you!

NCPN Conference – Atlanta, GA
October 2, 2009 Survey Results

INTRODUCTION

Mimi Lufkin did a presentation on the STEM Equity Pipeline Project on October 2, 2009 at the NCPN Conference in Atlanta, Georgia. The session had 13 attendees.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 8 statements around the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. At the end of the survey, participants were given the opportunity to add additional comments and ask questions, requesting that participants provide their names if requesting a response. Out of the 13 people that attended the session, 7 completed the survey.

This report is organized into four sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content, and the third section provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format

Participant's responded very positively to the format of the meeting. Almost all respondents strongly agreed that the training reflected careful planning and organization (average rating 3.8), and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.9). None of the respondents rated these items negatively.

II. Content Learning from Session

The next set of questions asked about what the participants learned about current Pipeline work and what they were able to take away from the meeting. Again, responses were very positive on all items. All of the participants strongly agreed that the resources on the website are of interest to them and that they would likely go look at them more later. Almost all strongly agreed that the materials and tools that were used in the presentation would be useful to them in their work, and that the session gave them ideas of what they can do to enhance their work related to gender equity (average rating 3.9).

All respondents agreed that they now have a better understanding of the STEM Equity Pipeline project and that they are now more familiar with the Five Step Program Improvement Process (average rating 3.4). Participants also agreed that the discussion of root causes had increased their knowledge of barriers women and girls face to entering STEM programs and careers (average rating 3.3). The same rating was given when participants were asked if they now have a better understanding of how to select best strategies and how to find Best Practices resources. The lowest rated item asked whether participants felt the exercises that were included in the discussion of root causes helped them understand it. Although two participants left this item blank and one disagreed, the average rating was still positive (3.2).

III. Open-ended questions/comments

Out of the 7 people surveyed, 4 wrote a response to the open-ended question asking for any additional comments or what they wanted to know more about. The responses were generally positive and are listed as follows:

- Tie the 5-step process description to the research question. I wasn't sure - without reading brochure very carefully - what statistics (performance in STEM?) you are using. Also - not clear whether you're acknowledging root causes for performance disparity that are not strictly gender-related. I need read the guidebook.
- Very informative session. We are a part of the project and I have received many emails but never had this practical explanation of the program's process and resources. Thank you!
- More than interested. Will offer to assist in Ohio implementation. Will put/embed PDFs on Perkins IV non-trad. research on my online course. Great resources - quality presentation!

- Thanks!!

IV. Conclusion

Based on the surveys responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants an opportunity to learn about the resources available to them, better understand the STEM Equity Pipeline project and the Five Step Process, and provided ideas about how they can further their work around gender equity.

STEM Equity Pipeline Workshop
NCPN Conference – Atlanta, GA
October 2, 2009

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

To what extend do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
20. The training reflected careful planning and organization. ***Average rating: 3.8***	❑	❑	❑	❑
21. The content of the meeting will be useful to me in the work I do related to gender equity. ***Average rating: 3.9***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
1. I now have a better understanding of the STEM Equity Pipeline project. ***Average rating: 3.4***	❑	❑	❑	❑
2. I am now familiar with the Five Step Program Improvement Process ***Average rating: 3.4***	❑	❑	❑	❑
3. The resources on the website are of interest to me and I am likely to go look at them more later. ***Average rating: 4.0***	❑	❑	❑	❑
4. The discussion of root causes has increased my knowledge of barriers women and girls face to entering STEM programs and careers. ***Average rating: 3.3***	❑	❑	❑	❑
5. The exercises that were included in the discussion of root causes helped me understand it. ***Average rating: 3.2***	❑	❑	❑	❑
6. I have a better understanding of how to select best strategies and how to find Best Practices resources. ***Average rating: 3.3***	❑	❑	❑	❑
7. The materials and tools that were used in the presentation will be useful to me in my work. ***Average rating: 3.9***	❑	❑	❑	❑
8. This session gave me ideas of what I can do to enhance my work related to gender equity. ***Average rating: 3.9***	❑	❑	❑	❑

Please use the space below to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response please write your name at the bottom of the form.

Name/contact information (only if you requested a personal response above):

Name _____

(only needed if you require a response)

5 Step Program Improvement Process Workshop
Minnesota
October 12, 2009 Survey Results

INTRODUCTION

The state facilitator for Minnesota, Howard Glasser, and Mimi Lufkin, held a meeting for members of four consortia participating in pilot site activities and others on October 12, 2009 at the Eisenhower Community Center in Hopkins, Minnesota. The session was held as an introduction to the Five Step Process. Sixty state members attended the session.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 10 statements around the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. At the end of the survey, participants were given the opportunity to add additional comments and ask questions, requesting that participants provide their names if requesting a response. Out of the 60 people that attended the session, 22 completed the survey.

This report is organized into four sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content, and the third section provides the responses to the open-ended question. The final section is a conclusion that provides a summary of the findings.

I. Format

Participant's responded fairly positively to the format of the meeting. All but 2 respondents agreed that the training reflected careful planning and organization (average rating 3.2). All agreed and that the meeting's content will be useful in the work they do around to gender equity (average rating 3.3).

II. Content Learning from Session

The next set of questions asked about what the participants learned about current Pipeline work and what they were able to take away from the meeting. Again, responses were generally positive on most items. All of the participants agreed or strongly agreed that they now have a better understanding of the purpose and goals of the STEM Equity Pipeline Project, that they can now find the Virtual Learning Community, and are now more familiar with the resources available there (average rating 3.5-3.6). In addition, almost all respondents agreed that they now have a good understanding of the Five Step Process (average rating 3.3). These results suggest that the meeting was successful in introducing the STEM Equity Pipeline Program.

Respondents were asked what they took away from the discussion on root causes. Overall, the participants viewed this discussion favorably. Of the 21 respondents who answered the question, all felt that the discussion helped them understand barriers that students face to entering nontraditional CTE programs (average rating 3.4). They also mostly agreed that they now have a better understanding of how to conduct root cause research, and where to find action research resources (average rating 3.3).

When asked about their understanding of the documentation process, responses were mixed with an average rating of 3.0. Responses were also mixed over how helpful the documenting performance results worksheet is in completing gap analysis of a college's Perkins data. Six respondents did not find the worksheet helpful (average rating 2.9). Overall, respondents did feel the materials and tools that were used in the presentation would be useful to them in their work (average rating 3.4), and they all agreed or strongly agreed that the session gave them ideas to enhance their work related to gender equity (average rating 3.3).

III. Open-ended questions/comments

Out of the 22 people surveyed, 11 wrote a response to the open-ended question asking for a description of what they will do as a follow up to the meeting. Respondents also provided general comments about the session. The responses were generally positive, though some concerns around time and data use were address. Comments are listed as follows:

- I think seeing a case study of acquiring data, analyzing it and applying it would have been more helpful than plotting a few points of data and seeing it graphed.[Q8] But we did not address how to design an effective strategy when probably a dozen root causes are all affecting the low enrollments.
- Good online resources. [Q8] Web page helpful.
- Session was too long. Goal setting presentation was a waste of time for many of us.
- Excellent workshop! The information was very useful.
- Need to get into it more and I'm sure will have questions.
- A well thought out process. Concise posting the goals and dilemmas of the day on the wall for people to refer to.
- [Q5] I had the Perkins Data here. Technology should be better for STEM conference.
- My concern is that this not a primary function for any of our team member (perhaps garnering 2-4 hours of their time a month). It is difficult to make progress when it does not have a higher priority.
- Our team could use more time to collaborate as a unit.
- Did not stay for entire session - may be reason for not covering certain material.
- Why was there no recycling of cans?? Great food!

IV. Conclusion

Based on the responses from the state team members, the session was viewed favorably by the participants and was useful in several respects. The meeting gave participants a solid introduction to the STEM Equity Pipeline and provided an opportunity to learn about the resources available to them. It also provided ideas to the members about how they can further their work around gender equity. However, in future sessions more attention may need to be given to the documenting process.

5-Step Program Improvement Process Workshop, MN, October 12, 2009
To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
22. The training reflected careful planning and organization. ***Average rating: 3.2***	❑	❑	❑	❑
23. The content of the meeting will be useful to me in the work I do related to gender equity. ***Average rating: 3.3***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
1. I have a better understanding of the purpose and goals of the STEM Equity Pipeline. ***Average rating: 3.5***	❑	❑	❑	❑
2. I can find the STEM Equity Pipeline Virtual Learning Community and am more familiar with the resources available there. ***Average rating: 3.6***	❑	❑	❑	❑
3. I now have a good understanding of the "Five-Step Process." ***Average rating: 3.3***	❑	❑	❑	❑
4. In general, I understand the process of "Documenting Performance Results." ***Average rating: 3.0***	❑	❑	❑	❑
5. The documenting performance results worksheet was helpful in completing a gap analysis of a colleges Perkins data. ***Average rating: 2.9***	❑	❑	❑	❑
6. The discussion of root causes helped me understand the barriers that students face to entering nontraditional CTE programs. ***Average rating: 3.4***	❑	❑	❑	❑
7. I have a better understanding of how to conduct root cause research and where to find action research resources. ***Average rating: 3.3***	❑	❑	❑	❑
8. I am more familiar with research based strategies that can have positive effects on removing root causes (barriers) to student's entrance and completion of nontraditional CTE programs. ***Average rating: 3.3***	❑	❑	❑	❑
9. The materials and tools that were used in the presentation will be useful to me in my work. ***Average rating: 3.4***	❑	❑	❑	❑
10. This session gave me ideas of what I can do to enhance my work related to gender equity. ***Average rating 3.3***	❑	❑	❑	❑

In the space below, please write a brief description of something you will do next as follow-up to this meeting.

5 Step Program Improvement Process Workshop
Wisconsin - October 13, 2009

Introduction
As part of the NAPE Stem Equity Pipeline project, state team members convened a meeting with various representatives of target sites in Wisconsin for the second time. The aim of this session was to review steps 3, 4 and 5 of the Five Step Improvement Process. The session was held on October 13, 2009 at the Lakeshore Technical College in Wisconsin and had 35 attendees.

At the end of the session, surveys were distributed to meeting attendants, asking them to rate the session's format and information taught. Almost all of the questions came in the form of statements, where the members denoted to what extent they agreed with them (on a scale of "1" -- Strongly Disagree, to "4" -- Strongly Agree). Members were also given space on the survey for additional questions, comments, or clarification on their responses to the scale questions. Finally, respondents could write their name and contact information if they required further response. Appendix A displays the original survey, along with the average rating for each question. Out of the 35 people that attended, 23 attendees completed the survey.

This report is organized into four sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content, and the third section provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format

Based on the ratings respondents gave for each question, state team members on average agreed that the training reflected careful planning and organization and that the meeting's content would be useful to them in their work related to gender equity (average rating 3.3). Two respondents did not agree that the content would be useful.

II. Knowledge Development

Participants were asked if they understood a variety of concepts discussed during the session. All respondents agreed that they now have a good understanding of the Five-Step Process (average rating 3.4). Interestingly, when asked if they understood the steps reviewed during the session, the average rating for each step was slightly lower. On average, respondents rated their understanding of step 3 at 3.3, and steps 4 and 5 at 3.2. Respondents also generally agreed that they now have a better understanding of the purpose and goals of the STEM Equity Pipeline (average rating 3.1) and that they understand the importance of completing an implementation plan before attempting to implement a solution (average rating 3.3). When asked if they know the difference between summative and formative evaluation, 3 respondents did not respond and 1 disagreed, but the average rating was still positive (3.5). Similarly, when respondents were asked if they can write process and outcome objectives for a selected solution, 2 disagreed and 2 did not respond, but overall respondents agreed (average rating 3.3).

The questionnaire also asked respondents about the knowledge they gained about the various tools available for use in their future work for the project. All respondents agreed or strongly agreed that they can find the STEM Equity Pipeline Virtual Learning Community and are more familiar with the resources there. Most respondents felt that the root causes and strategies document and online tool were useful for identifying potential resources to help them identify appropriate strategies for root causes (average rating 3.4). Respondents also agreed that they are now familiar with the project management tools and that they will be useful to their future work (average rating 3.1-3.3). Overall, it was agreed that the session provided ideas of ways to enhance the participants work around gender equity (average rating 3.4).

III. Open-ended questions/comments

Only 1 attendee who completed a survey left a response to the open-ended question:

- Left seminar before Step Five material was covered.

The person who left this comment still felt that they understood Step 5, and is therefore not responsible for the lower average rating of that step.

IV. Conclusion

Based on the survey responses from the state team members, the session was viewed very favorably by the participants. Respondents seemed to be confident in their general knowledge about the Five Steps, as well as their ability to use the resources available to them.

5 Step Program Improvement Process Workshop
Wisconsin – October 13, 2009

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
24. The training reflected careful planning and organization. ***Average: 3.3***	❑	❑	❑	❑
25. The content of the meeting will be useful to me in the work I do related to gender equity. ***Average: 3.3***	❑	❑	❑	❑
KNOWLEDGE DEVELOPMENT				
a. I have a better understanding of the purpose and goals of the STEM Equity Pipeline. ***Average: 3.1***	❑	❑	❑	❑
b. I can find the STEM Equity Pipeline Virtual Learning Community and am more familiar with the resources available there. ***Average: 3.6***	❑	❑	❑	❑
c. I now have a good understanding of the "Five-Step Process." ***Average: 3.4***	❑	❑	❑	❑
d. In general, I understand the process of Step Three – "Select Best Solutions." ***Average: 3.3***	❑	❑	❑	❑
e. The root causes and strategies document and online tool was useful for identifying potential resources to help me identify an appropriate strategy for our identified root cause ***Average: 3.4***	❑	❑	❑	❑
f. In general, I understand the process of Step Four – "Pilot Test and Evaluate Solutions." ***Average: 3.2***	❑	❑	❑	❑
g. I know the difference between a summative and formative evaluation. ***Average: 3.5***	❑	❑	❑	❑
h. I can write process and outcome objectives for our selected solution. ***Average: 3.3***	❑	❑	❑	❑
i. In general, I understand the process of Step Five – "Implement Solutions." ***Average: 3.2***	❑	❑	❑	❑
j. I am familiar with project management tools such as work breakdown structures and Gannt charts. ***Average: 3.1***	❑	❑	❑	❑
k. I understand the importance of completing an implementation plan before attempting to implement our selected solution.	❑	❑	❑	❑

	Average:3.3				
l.	The materials and tools that were used in the presentation will be useful to me in my work. ***Average: 3.3***	❑	❑	❑	❑
m.	This session gave me ideas of what I can do to enhance my work related to gender equity. ***Average 3.4***	❑	❑	❑	❑

13.

Please use the space below to clarify any of your answers for the questions above or to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response please write your name at the bottom of the form.

Name_____

(only needed if you require a response to Q15)

STEM Equity Pipeline Overview Workshop
ACTE Convention, Nashville, TN
November 19, 2009 – Survey Results

INTRODUCTION

Mimi Lufkin did a presentation on the STEM Equity Pipeline Project on November 19, 2009 at the ACTE Convention in Nashville, Tennessee.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 8 statements around the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. At the end of the survey, participants were given the opportunity to add additional comments and ask questions, requesting that participants provide their names if requesting a response. The total number of attendees was 16; 11 completed the survey.

Statement ratings

Participant's responded very positively to the format of the meeting. Almost all respondents strongly agreed that the training reflected careful planning and organization (average rating 3.9), and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.6).

Participants were asked about what they learned about current Pipeline work and what they were able to take away from the meeting. Again, responses were very positive on all items. All respondents strongly agreed or agreed that they have a better understanding of the purpose, goals and methods of the STEM Equity Pipeline (average rating 3.7). They also now have a better understanding of the "Five-Step Program Improvement Process (average rating 3.7). Respondents agreed that the "Starling Statements" exercise was effective in increasing their knowledge of the status of women in the workforce and STEM careers (average rating 3.6).

Participants agreed that they can now find the STEM Equity Pipeline Virtual Learning Community and are more familiar with the resources available there (average rating 3.7). They also felt that the resources on the website are of interest to them and that they would likely go look at them in more detail later (average rating 3.8). Overall, most respondents strongly agreed that the session gave them ideas of what they can do to enhance their work related to gender equity in STEM (average rating 3.8).

Open-ended questions/comments

Out of the 11 people surveyed, 3 wrote a response to the open-ended question asking for any additional comments or what they wanted to know more about. The responses were very positive and are listed as follows:

- Excellent session. Very interested!
- Helpful to see all that is out there. Thanks!
- NH looks forward to working with the STEM EPP.

IV. Conclusion

Based on the surveys responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The average ratings for all items were 3.6 or higher and not one respondent disagreed with any of the statements listed on the survey. The meeting gave participants an opportunity to learn about the resources available to them, better understand the STEM Equity Pipeline project and the Five Step Process, and provided ideas about how they can further their work around gender equity.

STEM Equity Pipeline Overview Workshop
ACTE Convention, Nashville, TN
November 19, 2009

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions.

To what extend do you agree or disagree with the following statements?

	Strongly Agree	Agree	Disagree	Strongly disagree
26. The workshop reflected careful planning and organization. ***Average rating: 3.9***	❑	❑	❑	❑
27. The content of the workshop will be useful to me in the work I do in career and technical education. ***Average rating: 3.6***	❑	❑	❑	❑
28. I have a better understanding of the purpose goals and methods of the STEM Equity Pipeline. ***Average rating: 3.7***	❑	❑	❑	❑
29. I can find the STEM Equity Pipeline Virtual Learning Community and am more familiar with the resources available there. ***Average rating: 3.7***	❑	❑	❑	❑
30. I now have a better understanding of the "Five-Step Program Improvement Process. ***Average rating: 3.7***	❑	❑	❑	❑
31. The "Starling Statements" exercise was effective in increasing my knowledge of the status of women in the workforce and STEM careers. ***Average rating: 3.6***	❑	❑	❑	❑
32. The tour of the Virtual Learning Community website has peaked my interest and I am likely to go there to use the resources. ***Average rating: 3.7***	❑	❑	❑	❑
33. This session gave me ideas of what I can do enhance my work related to gender equity in STEM. ***Average rating: 3.8***	❑	❑	❑	❑

Please use the space below to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response please write your name at the bottom of the form.

Name/contact information (only if you requested a personal response above):

Name _____

(only needed if you require a response)

Ohio State Team Meeting for the STEM Equity Pipeline Project
December 14, 2009 Survey Results

INTRODUCTION

As part of the STEM Equity Pipeline Project development, state facilitators bring together teams of state personnel who are involved with STEM and with the state's gender equity concerns. The state facilitator for Ohio, Katherine Wheeler, held a meeting for the team on December 14, 2009 in Columbus, Ohio. Mimi Lufkin provided a snap shot of the Ohio participation of secondary students and adults in nontraditional CTE courses and provided an overview about the STEM Equity Pipeline project. Fifteen state members attended the session.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 9 statements around the meeting's format, content, and general understanding of the STEM Equity Pipeline program. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. At the end of the survey, participants were given the opportunity to add additional comments and ask questions, requesting that participants provide their names if requesting a response. Eleven of the 15 attendees completed the survey.

This report is organized into five sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content, the third section summarizes their general understanding of the program, and the fourth provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format

Participant's responded positively to the format of the meeting. All respondents agreed or strongly agreed that the training reflected careful planning and organization (average rating 3.3). Almost all respondents felt that the exercises conducted during the session were effective in achieving the stated objectives (average rating 3.0).

II. Content Learning from Session

The next set of questions asked about what the participants learned about current Pipeline work and what they were able to take away from the meeting. Again, responses were mostly positive on each item. All of the participants agreed or strongly agreed that they now have a better understanding of the status of women and girls in STEM nationally and in Ohio (average rating 3.5). All but one respondent agreed or strongly agreed that they now know more about how the project will use Perkins and other data to inform program improvement efforts (average rating 3.2). Responses were mixed when participants were asked if they learned more about the professional development opportunities and the mechanisms in Ohio where the resources of the STEM Equity Pipeline might be used. Thought the majority of respondents agreed or strongly agreed with this statement, 3 respondents disagreed (average rating 2.9).

III. Understanding of STEM Equity Pipeline project

Participants were asked about their understanding of the STEM Equity Pipeline Project. All participants agreed or strongly agreed that they understand the purpose and goals of the project (average rating 3.5). Most felt that the session increased their awareness of the resources available through the Virtual Learning Community (average rating 3.2). In addition, most respondents said they understand how people can act as extension agents for this project (average rating 3.0). When asked if they were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in Ohio, responses were varied. Although the majority of respondents agreed or strongly agreed with this statement, several disagreed and 1 respondent strongly disagreed (average rating 2.7).

IV. Open-ended questions/comments

Lastly, the survey asked two open-ended questions. Respondents were asked to provide a brief description of something they would do as part of their involvement on the Ohio State team. They were also asked to clarify any of their ratings on the first three sections of the survey, make additional comments and to ask questions. Of the 10 respondents who answered the first open-ended question, only one provided answers to the second open-ended question. This may have been due to the fact that the second question was on the back of the survey. One respondent added additional comments under the first open-ended question. Therefore, all responses are listed below by subject:

Future Activities -

- Analyze data
- Participate in the next meeting and be willing to share STEM Equity data and messages with public audiences.
- Stress the importance to ODE to get program data as it relates to possible sanctions.
- Look carefully at disaggregated data for 2005 when it comes out in January 2010.
- Connect with Governor's office on STEM Equity Pipeline and STEM Month in March 2010.
- Explore faculty/staff resources on campus to execute/implement the projects.
- Present to the administration at my school.
- Get labor market data.
- Get clarity: 1) on CSCC involvement; 2) funding leverage.

Additional Comments -

- The agenda may have contained more than can be accomplished at the first face-to-face forming meeting.
- Under circumstances and limited technology and travel issues, the meeting was worthwhile. Too ambitious for one session.

V. Conclusion

Based on the surveys responses from the state team members, the session was viewed favorably by the participants and was useful in several respects. The meeting gave participants an opportunity to learn about the status of women and girls in STEM and how Perkins and other data can be used for program improvement. It also increased understanding of the project and of the available resources.

Ohio State Team Meeting for the STEM Equity Pipeline Project, December 14, 2009
To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
1. The meeting reflected careful planning and organization. ***Average rating: 3.3***	❑	❑	❑	❑
2. The exercises conducted were effective in achieving the stated objectives. ***Average rating: 3.0***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
3. I now have a better understanding of the status of women and girls in STEM nationally and in Ohio. ***Average rating: 3.5***	❑	❑	❑	❑
4. I know more about how the project will use Perkins and other data to inform program improvement efforts ***Average rating: 3.2***	❑	❑	❑	❑
5. I learned more about the professional development opportunities and mechanisms in Ohio where the resources of the STEM Equity Pipeline might be used. ***Average rating: 2.9***	❑	❑	❑	❑
UNDERSTANDING OF STEM EQUITY PIPELINE PROJECT				
6. I understand the purpose and goals of the STEM Equity Pipeline Project. ***Average rating: 3.5***	❑	❑	❑	❑
7. This session increased my awareness of the resources available through the Virtual Learning Community. ***Average rating: 3.2***	❑	❑	❑	❑
8. I understand how people can act as extension agents for this project. ***Average rating: 3.0***	❑	❑	❑	❑
9. We were able to create a preliminary plan for the application of the STEM Equity Pipeline resources for Ohio ***Average rating: 2.7***	❑	❑	❑	❑

10. In the space below, please write a brief description of something you know you will do next as part of your involvement on the Ohio State team.

Please use the space below to clarify any of your answers for the questions above or to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response please write your name at the bottom of the form.

New Hampshire State Team Meeting for the STEM Equity Pipeline Project
December 17, 2009 – Survey Results

INTRODUCTION

The state facilitator for New Hampshire, Mimi Lufkin, held an introductory meeting for the New Hampshire state team on December 17, 2009 at the New Hampshire Higher Education Assistance Foundation in Concord, New Hampshire. The group worked on the initial development of ideas for the state's action plan. Eighteen state members attended the session.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 9 statements around the meeting's format, content, and understanding of the STEM Equity Pipeline project. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. Twelve of the attendees completed the survey.

This report is organized into five sections. The first summarizes the members' feelings towards the session's format; the second section summarizes their responses to questions about the session's content; the third summarizes their understanding of the STEM Equity project, and the fourth section describes the responses to the open-ended question. The fifth and final part of the report is the conclusion.

I. Format

All of the state team members agreed or strongly agreed that the training session reflected careful planning and organization (average rating 3.5). The members also felt that the content of the meeting will be useful to them in the work they do that is related to gender equity (average rating 3.4).

II. Content learning from session

The next set of questions asked about the issues around STEM equity and the how the program may be used to address these issues. Most respondents strongly agreed that they now have a better understanding of the status of women and girls in STEM nationally and in New Hampshire (average rating 3.7). However, one respondent disagreed with this statement, and one found it not applicable for some reason. When asked if they now know more about how the project will use Perkins and other data to inform program improvement efforts, responses were more mixed. While the majority agreed with this statement, two respondents disagreed and one strongly disagreed (average rating 3.1). All but one of the respondents agreed or strongly agreed that they learned about the opportunities in New Hampshire where the resources of the STEM Equity Pipeline might be used (average rating 3.6).

III. Understanding of STEM Equity Pipeline project

The survey also asked questions reflecting the members' clarity about the STEM Equity project itself. All members agreed or strongly agreed that they understood the purpose and goals of the STEM Equity Pipeline project (average rating 3.7). Most respondents agreed that the session increased their awareness of the resources available through the Virtual Learning Community (average rating 3.3). Most respondents felt that they understand how people can act as extension agents for the project, and they were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in New Hampshire (average rating 3.5 and 3.8, respectively).

IV. Open-ended questions/comments

Out of the 12 people surveyed, seven wrote a response to the open-ended question asking participants to describe something they will do as part of their involvement with the state team. They are listed as follows:

- Start to plan online community. Start to develop online course for this effort.
- Share this initiative with colleagues. Participate in upcoming meeting.
- Support McKevitt and Mimi.
- Discuss program goals with LESCN.
- Make connection for NH State team with prospective members of Leadership Team on outreach groups.
- Contact Mark, Joyce - NHSAA, Discuss North County Issues, Work with Sue on State team
- Good Job! I'm glad to be a part of this important initiative!

V. Conclusion

Based on the surveys returned from the state team members, the session was useful in several respects. Members developed a better understanding of the issues around STEM equity for women and how these issues can be addressed in the state of New Hampshire. They also gained an understanding of how they can work with the STEM Equity Pipeline Project. The session also helped the members identify a plan for the team and gave them ideas of what they can do as part of it.

NH State Team Meeting, December 17, 2009
To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
34. The meeting reflected careful planning and organization. ***Average rating: 3.5***	❑	❑	❑	❑
35. The exercises conducted were effective in achieving the state objectives. ***Average rating: 3.4***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
36. I now have a better understanding of the status of women and girls in STEM nationally and in New Hampshire. ***Average rating: 3.7***	❑	❑	❑	❑
37. I know more about how the project will use Perkins and other data to inform program improvement efforts. ***Average rating: 3.1***	❑	❑	❑	❑
38. I learned more about the professional development opportunities and mechanisms in New Hampshire where the resources of the STEM Equity Pipeline might be used. ***Average rating: 3.6***	❑	❑	❑	❑
UNDERSTANDING OF STEM EQUITY PIPELINE PROJECT				
39. I understand the purpose and goals of the STEM Equity Pipeline Project. ***Average rating: 3.7***	❑	❑	❑	❑
40. This session increased my awareness of the resources available through the Virtual Learning Community. ***Average rating: 3.3***	❑	❑	❑	❑
41. I understand how people can act as extension agents for this project. ***Average rating 3.5***	❑	❑	❑	❑
42. We were able to create a preliminary plan for the application of the STEM Equity Pipeline resources in New Hampshire. ***Average rating 3.8***	❑	❑	❑	❑

10. In the space below, please write a brief description of something you know you will do next as part of your involvement on the New Hampshire State team.

Iowa State Team Meeting
STEM Equity Pipeline Project
December 18, 2009 Survey Results

INTRODUCTION

The state facilitator for Iowa, Courtney Reed-Jenkins, held a meeting for the team on December 18, 2009 with 12 attendees at Kirkwood Community College in Cedar Rapids, Iowa. The meeting was an annual planning and networking meeting for the state leadership team. Team members updated the rest of the team regarding activities and events and prioritized activities for the coming year.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 9 statements around the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. Out of the 12 people that attended the session, 8 completed the survey.

This report is organized into five sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content; the third section summarizes their responses to questions about their understanding of the STEM Equity Project, and the fourth section provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format

Participant's responded very favorably to the format of the training. Almost all strongly agreed that the training reflected careful planning and organization (average rating 3.8), and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.9). None of the respondents disagreed with these statements.

II. Content Learning from Session

The next set of questions asked about what the participants learned about current Pipeline work. All respondents strongly agreed that the needs assessment instrument of professional development and the discussion it prompted was an effective way to identify experts for professional development offerings (average rating 4.0). Respondents also strongly agreed that the session increased their awareness of other STEM/gender equity initiatives in Iowa, and of the data and information sources available (average rating 3.9). Lastly, all respondents agreed or strongly agreed that the session increased their awareness of data related to the lack of females in STEM careers (average rating 3.4).

III. Understanding of STEM Equity Project

The last set of questions asked about the participants understanding of the project. Again, responses were very positive. All respondents strongly agreed that they understand the purpose and goals of the STEM Equity Project (average rating 4.0). They also strongly agreed that they understand the roles and responsibilities of the Iowa state team, and that the session gave them ideas of what they can do to support the STEM Equity Network (average rating 3.9).

IV. Open-response questions

At the end of the survey, participants were asked 2 open-ended questions. First, they were asked to provide a brief description of something they will do as a follow-up to the meeting. Four participants responded:

- Network with stakeholders - public/private section.

- Move forward with the collaboration tasks that emerged as a result of the meeting.
- Communicate with 2 small groups to encourage closer work on these efforts with younger students (girls) and their parents.
- Thank you - this is always helpful and supportive for me as well.

Lastly, participants were asked if they had any additional comments. The two responses are listed here:

- Great job - time well spent.
- Thank you!

V. Conclusion

Based on the survey responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants a better understanding of data available around STEM and gender equity, and of STEM equity in general. It also provided an opportunity to learn about the initiatives in Iowa.

Iowa State Team Meeting, December 18, 2010

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
43. The presentation reflected careful planning and organization. ***Average rating: 3.8***	❑	❑	❑	❑
44. The content of the meeting will be useful to me in the work I do related to gender equity. ***Average rating: 3.9***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
45. This session increased my awareness of data and information sources. ***Average rating: 3.9***	❑	❑	❑	❑
46. This session increased my awareness of data related to the lack of females in STEM careers. ***Average rating: 3.4***	❑	❑	❑	❑
47. This session increased my awareness of other STEM/gender equity initiatives in Iowa. ***Average rating: 3.9***	❑	❑	❑	❑
48. The needs assessment instrument on professional development and the discussion it prompted was an effective way to identify experts for professional development offerings. ***Average rating: 4.0***	❑	❑	❑	❑
UNDERSTANDING OF STEM EQUITY PROJECT				
49. I understand the purpose and goals of the STEM Equity Project. ***Average rating: 4.0***	❑	❑	❑	❑
50. I understand the roles and responsibilities of the Iowa state team. ***Average rating: 3.9***	❑	❑	❑	❑
51. This session gave me ideas of what I can do to support the STEM Equity Network. ***Average rating: 3.9***	❑	❑	❑	❑

52. In the space below, please write a brief description of something you will do next as follow-up to this meeting.

Please use the space below (or the reverse side) to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response, please write your name at the bottom of the form.

Name _____

Iowa Project Lead the Way:
Expanding Options for Women and Girls in STEM
STEM Equity Pipeline Project
December 18, 2009 Survey Results

INTRODUCTION

The state facilitator for Iowa, Courtney Reed Jenkins, held a training session December 18, 2009 at Kirkwood Community College, in Cedar Rapids, Iowa. The session provided 5-step training to Project Lead the Way faculty in the eastern central region of Iowa. Faculty analyzed the participation and performance of female students in their Project Lead the Way classes. Nine faculty members attended the session.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 7 statements around the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. Five of the nine attendees completed the survey.

This report is organized into four sections. The first summarizes the participants' opinions towards the session's format; the second section summarizes their responses to questions about the session's content, and the third section provides the responses to the open-ended questions. The final section is a conclusion that provides a summary of the findings.

I. Format

Participant's responded favorably to the format of the training. All respondents agreed or strongly agreed that the training reflected careful planning and organization, and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.4).

II. Content Learning from Session

The next set of questions asked about what the participants learned about current Pipeline work and what they were able to take away from the meeting. Respondents strongly agreed that they now know about some of the Iowa resources available to them as they work to recruit and retain women in their STEM classes (average rating 3.8). Respondents all agreed or strongly agreed that they will be able to use data to identify gaps in performance between different student groups , and that they have a strong understanding of the performance and participation of females in STEM classes (average rating 3.4). As a result of this session, respondents all agreed that they now have an increased understanding of the root causes identified in research on participation and completion of females in STEM. When asked if this session led to an understanding of the concept of benchmarking and to an awareness of the sources of benchmarking data, responses were moderate, with all respondents either agreeing or disagreeing (average rating 2.4).

III. Open-ended questions/comments

At the end of the survey, participants were asked 2 open-ended questions. First, they were asked to provide a brief description of something they will do as a follow-up to the meeting. Five respondents responded:

- The resources and information provided were incredible. I will be using them soon.
- Work with school for public exposures using school events.
- I will discuss the information from this meeting with my colleagues at school to promote.
- Share the information with my PLTW advisory board!
- Meet with fellow PLTW teachers and discuss findings.

Lastly, participants were asked if they had any additional comments. The two responses are listed here:

- Thank you!
- With teaching, time is an issue…how can you get time to use these strategies? Costs of subs for schools etc.

V. Conclusion

Based on the survey responses from the state team members, the session was viewed quite favorably by the participants and was useful in several respects. The meeting gave participants a better understanding of the issues around STEM equity. It also provided an opportunity to learn about the available resources in Iowa.

Iowa Project Lead the Way: Expanding Options for Women and Girls, STEM Equity Pipeline Project
December 18, 2009

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
53. The presentation reflected careful planning and organization. ***Average rating: 3.4***	❑	❑	❑	❑
54. The content of the meeting will be useful to me in the work I do related to gender equity. ***Average rating: 3.4***	❑	❑	❑	❑
CONTENT LEARNING FROM SESSION				
55. I will be able to use the data presented (or similar data) to identify gaps in performance between different student groups after attending this session. ***Average rating: 3.4***	❑	❑	❑	❑
56. I have a strong understanding of the performance and participation of girls and women in STEM classes. ***Average rating: 3.4***	❑	❑	❑	❑
57. After this session, I understand the concept of benchmarking and know what sources of benchmarking data we can use. ***Average rating: 2.4***	❑	❑	❑	❑
58. As a result of this session, I have increased my understanding of the root causes identified in research on participation and completion of women and girls in STEM. ***Average rating: 3.4***	❑	❑	❑	❑
59. I now know some of the Iowa resources available as I work to recruit and retain women into my STEM classes. ***Average rating: 3.8***	❑	❑	❑	❑

In the space below, please write a brief description of something you will do next as follow-up to this meeting.

Please use the space below to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response, please write your name at the bottom of the form.

STEM Equity Pipeline Project
OHIO State Team Meeting
February 22, 2010 - Survey Results

INTRODUCTION

As part of the STEM Equity Pipeline project development, state facilitators bring together teams of state personnel who are involved with STEM and education gender equity work. The state facilitator for Ohio, Katherine Weber, held a meeting for the team on February 22, 2010 in Columbus, Ohio and 13 state team members attended the session.

At the end of the meeting, participants were asked to evaluate the session by competing a brief anonymous survey. The survey included 12 statements about the meeting's format and content. Participants rated each statement on a scale of "1" Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. All of the 13 people that attended the session completed the survey.

I. Format

Participants' responded very favorably to the format of the training. Most strongly agreed that the training reflected careful planning and organization and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.9).

II. Understanding of STEM Equity Project

As a result of this meeting, participants strongly agreed that they have a better understanding of the purpose and goals of the STEM Equity Project, including the importance and relevance of gender equity work and the Five-Step Process (average rating 3.7). They also strongly agreed that they now have a deeper understanding of the status of women at the post-secondary level from looking at the data presented in Step 1 (average rating 3.9). Participants believe they have a good understanding of the state implementation plan and believe the steps in the plan will help them meet their goals (average rating 3.6 – 3.7).

At the end of the session, participants left with a familiarity of the communication tools available to them. They also have specific ideas of how they will use what they learned and how they will share it with others (average rating 3.7 – 3.8).

III. Conclusion

Based on the survey responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants a better understanding of resources available and of STEM equity in general.

Ohio State Team Meeting, February 22, 2010

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
10. The meeting reflected careful planning and organization. ***Average rating: 3.9***	❑	❑	❑	❑
11. The content of the meeting will be useful to me in work I do related to gender equity. ***Average rating: 3.9***	❑	❑	❑	❑
KNOWLEDGE DEVELOPMENT				
12. I understand better the purpose and goals of the STEM Equity Project. ***Average rating: 3.7***	❑	❑	❑	❑
13. I have increased my understanding of the importance and relevance of gender equity work. ***Average rating: 3.7***	❑	❑	❑	❑
14. I have a good understanding of the "Five-Step Process." ***Average rating: 3.7***	❑	❑	❑	❑
15. In general, I understand the process of "Documenting Performance Results." ***Average rating: 3.7***	❑	❑	❑	❑
16. I have a deeper understanding of the status of women at the post-secondary level from looking at the data presented in Step 1 of the process. ***Average rating: 3.9***	❑	❑	❑	❑
17. I have a good understanding of the details of our state implementation plan. ***Average rating: 3.6***	❑	❑	❑	❑
18. I believe that the action plan steps we have identified will help us achieve the desired goals. ***Average rating:3.7***	❑	❑	❑	❑
19. I am now familiar with the communication tools that will be used in the project: the NAPE web site, SharePoint site, and STEM Pipeline Press. ***Average rating: 3.8***	❑	❑	❑	❑
20. I have specific ideas of how I will use what I learned at this meeting in the work I do. ***Average rating: 3.7***	❑	❑	❑	❑
21. I know how I will share this information with others. ***Average rating: 3.8***	❑	❑	❑	❑

Please use the reverse side to clarify any of your answers for the questions or to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response please write your name at the bottom of the form.

Thank you!

STEM Equity Pipeline Project
State Leadership Institute
April 12, 2010 - Survey Results

INTRODUCTION

The annual State Leadership Institute was held on April 12, 2010 in Chrystal City, Virginia the day before the NAPE Professional Development Institute. The meeting was an opportunity for participating states to share their previous year's achievements, challenges and plans. There were also presentations on the Project's evaluation process and the results of NSF Reverse Site Visit. Some 77 project participants attended the session.

At the end of the meeting, participants were asked to evaluate the session by competing a brief, anonymous survey. The survey included 12 statements about the meeting's format and content. Participants rated each statement on a scale of "1"—Strongly Disagree to "4" Strongly Agree. The statistics for each corresponding question are provided in Appendix A. Out of the 77 people that attended the session, 54 completed the survey. Of those who completed the survey, 9 were from CA, 9 were from IA, 2 came from IL, 9 were from MN, 3 were from MO, 8 were from New Hampshire, 5 were from OH, and 6 were from WI. Three participants did not specify a state.

I. Format

Participant's responded very favorably to the format of the training. Most strongly agreed that the training reflected careful planning and organization (average rating 3.7), and that the meeting's content will be useful in the work they do related to gender equity (average rating 3.5).

II. Understanding of STEM Equity Project

Participants felt that the institute allowed them to learn about the implementation strategies other states are using (average rating 3.7). They also agreed that they know more about the role that participating states must play in collection evaluation data and the importance of completing extension agent reports (average rating 3.2 – 3.3). When asked if they felt they benefited from the networking with other states, almost all agreed or strongly agreed (average rating 3.6). They also agreed that they gained ideas for things they can do to support the work of this project when they return to their states (average rating 3.5).

III. State Planning

Responses were slightly lower when asked about state planning. Most respondents agreed that their team was able to clarify their implementation plan for the upcoming year. They also generally agreed that their team was able to identify specific strategies for sustaining the work of the project in the coming years (average rating 2.9).

IV. Open-Ended Responses

Out of the 54 people surveyed, only 8 wrote a response to the open-ended question asking for additional comments. Comments were generally positive, however, several people suggested that time not be spent reading reports during the session. Selected responses:

- Didn't talk much at all about data – I'm still questioning what data you are seeking with this project.

- Everyone should read reports in advance and it should be question and answer…or at least don't spend time at meeting reading.
- Excellent day! Staff information and friendly - always willing to problem solve and work with you. Thank you!
- My understanding was we need these early so we would come ready to discuss and assist one another in the short time we have together.
- Rotation of groups were great!

V. Conclusion

Based on the survey responses from the state team members, the session was viewed very favorably by the participants and was useful in several respects. The meeting gave participants an opportunity to network and learn from other states members, and gave them ideas for the own work around gender equity.

STEM Equity Pipeline Leadership Institute, April 12, 2010

Please indicate which state you are in below and write in the position or role you have.

_ California _ Illinois _ Iowa _ Minnesota _ Missouri _ Wisconsin _ New Hampshire _ Ohio

Position/Role:_____

To obtain feedback about the content of this meeting, we would appreciate your honest answers to the following questions. The information you provide is confidential and will only used by the evaluator to convey general feedback on the work of the project.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
FORMAT				
22. The institute reflected careful planning and organization. ***Average rating: 3.7***	❑	❑	❑	❑
23. The content of the institute will be useful to me in the work I do related to gender equity. ***Average rating: 3.5***	❑	❑	❑	❑
UNDERSTANDING OF STEM EQUITY PROJECT				
24. I have learned about implementation strategies that other states are using. ***Average rating: 3.5***	❑	❑	❑	❑
25. I know more about the role that participating states must play in collecting evaluation data. ***Average rating: 3.2***	❑	❑	❑	❑
26. I understand the importance of completing extension agent reports. ***Average rating: 3.3***	❑	❑	❑	❑
27. I will make sure that I and others complete extension agent reports after any activities resulting from the STEM Equity Pipeline project. ***Average rating: 3.3***	❑	❑	❑	❑
28. I benefited from the networking with other states at this meeting. ***Average rating: 3.6***	❑	❑	❑	❑
29. The information provided about the project and the evaluation gave me ideas for things I want to do to support the work of this project when I return to my state. ***Average rating: 3.5***	❑	❑	❑	❑
STATE PLANNING				
30. Our team was able to clarify our implementation plan for the upcoming year. ***Average rating: 2.9***	❑	❑	❑	❑
31. Our team was able to identify specific strategies for sustaining the work of this project in the coming years. ***Average rating: 2.9***	❑	❑	❑	❑

Please use the reverse side to clarify any of your answers for the questions or to make any additional comments about things you would like to know more about or for which you need more information or assistance. If you require a response please write your name at the bottom of the form.

NAPE STEM Equity Pipeline Project
Measuring Progress in Wisconsin Pilot Sites
May 19, 2010 – Survey Results

Meeting Ratings

This meeting was conducted by the Wisconsin team leaders with the pilot site participants to gauge progress and develop future plans. The first section of the survey asked participants to rate their agreement with a statement about the format of the meeting on a scale of 1 – 4, 1 being "strongly disagree" and 4 being "strongly agree." On average, respondents agreed that the meeting reflected careful planning and organization (average rating 3.3). Respondents felt that the meeting focused on topics important to the work they are doing in their pilot projects (average rating 3.5). They also agreed that the content of the meeting would be useful to them in their gender equity-related work (average rating 3.3).

Participant Background

Almost all respondents stated that they have participated in at least one five-step program improvement process training session. Fourteen of the respondents participated in the April 23, 2009 training session, and 15 participated in a training session held on October 13, 2009. Participants were also asked about how much of the 5-Step Process they have completed at their local sites. Of the 15 who responded to the question, all have completed at least 2 steps, 10 have completed all 5 steps, and another two have completed up to Step 4.

Participants were asked about the resources from the STEM Equity Pipeline project they have used and what activities they have pursued based on what they have learned. Most have accessed the website and used the 5-Step Process training materials, and presented information about the project at a meeting or conference. The table below shows the number of respondents for each item.

Table 1. Percent of respondents who have participated in the specified STEM Equity Pipeline Project-related activities.

Activity	Number of Respondents
Presented information about STEM Equity Project at meeting or conference	14
Accessed the website to search for online resources	13
Used the 5-Step Process training materials	12
Developed materials to develop awareness or train on concepts	11
Planned new strategies to implement new learnings	10
Downloaded a handout or tool from the website and used it with others	9
Read the Pipeline Press	7
Participated in a live webinar	4
Used one of the training modules	3
Watched archived webinars	2
Used the "Stereotypes Turn Girls Off to Math and Science" brochure	2
Shared information through the WI STEM Equity Pipeline listserv	2
Shared the Pipeline Press with others	1
Presented information about STEM Equity Project at meeting or conference	14

Process

Participants were asked about the strategies they have implemented as a result of what they have learned from the STEM Equity Pipeline Project. All respondents said that they have shared what they have learned with others. When asked to specify the specific groups they have shared with, almost all said they have shared with teachers (14) and students (11). Half the respondents have shared with counselors and administrators, six shared with business/industry persons, and two shared with parents.

Almost all (15) respondents said that they know how and why they should complete Extension Agent Reports and12 reported having completed at least one report. Twelve also indicated that they have identified key partners with whom they can work to complete the goals stated in their action plan.

Almost all respondents identified a challenge and a success as a result of participating in this project to date. Lack of time was by far the most frequently mentioned challenge, and was mentioned by more than half of the 14 participants who commented. Other challenges mentioned included access to students who could best benefit from the project and shortage of resources. The 11 successes mentioned were much more varied, but included implementation, collaboration, and planning for the future.

Most respondents stated that they have identified at least one venue where they can continue to share what they have learned as a result of their participation in the program. When asked about the role that they feel data plays in affecting strategies to address gender equity, participants noted that data provides credibility, helps assess progress, and identifies areas to change.

Outcomes
The final section of the survey asked about the outcomes of the participants' involvement in the STEM Equity Pipeline Project, including on their own learning and what they have shared with others.

When asked how their participation in the project has changed the way they work, several participants mentioned an increased awareness of gender equity issues and increased collaboration with their colleagues. All respondents said that their participation increased the knowledge of STEM gender equity issues among those with whom they have shared the information. All but one felt that their participation increased their awareness of the need for increasing the participation of women and girls in STEM fields by those with whom they have shared the information. Twelve participants felt it has resulted in an increase of women and girls' interest in STEM careers at their sites. Nine believe that their participation has resulted in the improvement in the ability of their school to implement research-based practices focused on increasing the participation and success of women and girls in the STEM-related programs of study, and in girls' participation STEM-related programs at their site.

At the end of the survey, participants were asked to state the most important thing they have learned as a result of their participation in the STEM Equity Pipeline Project. Many responses emphasized an increased understanding of the need for a focus on gender equity in STEM. The responses are listed below:

- The resources available and the importance of encouraging girls
- The importance of identifying measurable and realistic goals - in order to be able to measure progress. The importance of motivating educators to see value in using data to affect day-to-day practice.
- Partnership is key
- Common challenges among partner sites we're on the same page and are committed to the cause.
- Ideas of projects to implement resources

- How much time it takes to develop both STEM and Equity Understanding in order to focus on the pipeline
- The need to promote participation of STEM education/career planning for all youth/genders
- To always model expected behaviors when working with others to promote NTO
- The need for a shift in beliefs
- Importance of the issue and the great opportunities we can provide our students
- Methods to increase participation
- Creating meaningful activities
- The need for more education to others in this field
- Awareness inequities in enrollment, course offerings
- Female participation in science and math classes equals or exceeds that of males
- That our team can make a difference in helping girls choose an interesting and rewarding career

When asked who in the education setting is responsible for introducing, encouraging, and preparing young people (and particularly girls) to the importance and relevance of STEM skills relative to future careers and higher education opportunities, the most frequently mentioned people were teachers and counselors. Administrators were also mentioned by several participants.

Lastly, participants were if they have any feedback for ways to improve the implementation of the project. The suggestions are listed below:

- Very good- maybe a two days in a row session to give folks time to process. Mandatory presentation on five-step to school board.
- A fairly simple and straight-forward process. Examples of how to use have been clear. The visuals created to describe the process are very and helpful and they help take away the fear factor.
- The process requires a lot of time and effort and collaborative partners.
- At first the process seemed a bit daunting but as I continue to work with it, it makes sense. Continue technical support/assistance.
- Continually re-evaluate the five step process- train us as we go through each stage. Too much to do it all in one day and recall the years later
- Need more attention to the specifics of the strategies and more sample evaluation tools - items/data/sample/surveys and evaluation forms
- I think it is very complicated and complex, it could be simplified
- More time
- Continued opportunities to collaborate
- Perhaps emails could be sent out to discuss what each group is doing each month to implement their STEM plan

In conclusion, participants have generally found their training helpful and have been actively using the resources available to them and have been sharing these tools with others.

Webinar Evaluations

Results from October 26, 2009 Webinar
"Improving Academic Achievement: Effects of Stereotypes, Beliefs about Intelligence, and Belonging"

Respondent's state:

AR	1	KS	1
CA	3	MD	1
CO	1	MN	1
DC	4	NH	1
FL	1	TX	1
GA	1	WI	1
IL	2	**Total:**	*19*

Scale questions:

1. The webinar reflected careful planning and organization. ***Average rating: 3.6***
2. The content of the webinar will be useful to me in the work I do related to gender equity. ***Average rating: 3.4***
3. I did not have any problem with the logistics of connecting to the webinar. ***Average rating: 3.0***
4. As a result of this webinar, I understand the concept of stereotype threat and how it contributes to students' underperformance. ***Average rating: 3.5***
5. From the presentation, I learned how a sense of belonging relates to and can mediate the effects of negative stereotypes. ***Average rating: 3.6***
6. I acquired ideas about how to reduce stereotype threat in the classroom. ***Average rating: 3.1***
7. I know more now than I did before about how a sense of belonging can affect intrinsic motivation. ***Average rating: 3.3***
8. I now understand the difference between incremental and entity theories of intelligence. ***Average rating: 3.5***
9. From the information presented, I understand the effects of incremental and entity classrooms (teachers' theories of teaching) on vulnerability to stereotype threat. ***Average rating: 3.3***
10. I have specific ideas of how I will use this information in the work I do with students, with teachers, or with other staff developers based on the information obtained through this webinar. ***Average rating 3.0***

Open-ended question:
I'd like to know more about… *Responses (1):*

- How we can make children more resilient to stereotyping?

Results from November 16, 2009 Webinar
Part 1 – "Subtle Micro-Messages Impact the Success of Women and Girls in STEM"

Respondent's state:

CA	1
GA	2
MA	1
MI	1
NH	1
NY	1
NJ	1
OH	3
WI	3
Total	14

Scale questions:

1. The webinar reflected careful planning and organization. *Average rating: 3.5*
2. The content of the webinar will be useful to me in the work I do that is related to gender equity. *Average rating: 3.4*
3. I did not have any problem with the logistics of connecting to the webinar. *Average rating:3.5*
4. As a result of this webinar, I understand the concepts of micro-messaging, micro-affirmation, and micro-inequity. *Average rating: 3.4*
5. From the presentation, I learned how micro-messaging can directly influence the performance of students and colleagues. *Average rating: 3.3*
6. I learned practical, hands-on techniques to recognize, challenge, and educate others about micro-inequities. *Average rating: 3.2*
7. I know more now about the vocabulary that will help me interact with others about micro-messages. *Average rating: 3.4*
8. From the information presented, I learned strategies for sending micro-messages that fuel positive behaviors and outcomes for women and girls in STEM fields. *Average rating: 3.1*
9. I know how I will use this information for personal development to communicate more intentionally and clearly with others. *Average rating: 2.9*
10. I have specific ideas of how I will use this information in the work I do with students, with teachers, or with other staff developers based on the information obtained through this webinar. *Average rating: 3.1*

Open-ended question:

I'd like to know more about… *Responses (14):*

- Nothing at this time
- Suggested ways to respond to the micro messages
- I look forward to part 2
- How to work with micro messaging occurring currently and would like to learn more about it next time
- How to implement. I am most interested in the follow-up webinar.
  The various activities and exercises that are used in connection with this issue, so that we can incorporate them into our online training of facilitators and developers for our online courses. We would also like to build an equity co8urse which we could
- Research specifically in STEM fields with respect to women's confidence
- How to differentiate between micro inequities and something just not "fitting in"?

- strategies
- I plan to participate in the subsequent webinar...
- If girls are using micro messages that are negative. How do we call them on it and still help them feel good about expressing themselves?
- This presentation was of high quality and offered a nice balance of scholarship with practical application. I wanted to know more about research linking the concepts presented to academic self-efficacy and the speaker already directed me to those resources
- I would like more information and/or examples of how public school students are hearing micro messages in science, math, or vocational classes. Why are so many girls choosing traditional fields or leaving the fields later.
- Even though my job focus is in a slightly different area, I find these webinars very informative and useful in the development of projects I work on. I will leave it to STEM people for other areas of focus.

Results from January 14, 2010 Webinar
"Step 4 of the 5-Step Program Improvement Process"

Respondent's state:

MN	2
IL	1

Scale questions:

1. The training reflected careful planning and organization. ***Average rating: 3.3***
2. The content of the webinar will be useful to me in the work I do that is related to gender equity. ***Average rating: 3.3***
3. From this session, I understand, in general, the process of Step Four - Pilot Test and Evaluate Solutions. ***Average rating: 3.3***
4. I am now clearer about the difference between a summative and formative evaluation. ***Average rating: 3.3***
5. I now understand better the difference between a goal and an objective. ***Average rating: 3.0***
6. I now understand better the difference between short-term and long-term goals. ***Average rating: 3.0***
7. From what I learned, I now feel I can write process objectives for our selected activities. ***Average rating: 3.0***
8. From what I learned, I now feel I can write long-term outcome objectives aligned with our long-term goal. ***Average rating: 3.0***
9. I can write short-term outcome objectives aligned with our short-term goals and activities. ***Average rating: 3.0***
10. After participating in this session, I plan to work with our implementation team to develop an evaluation plan aligned with our goals and objectives. ***Average rating: 3.3***
11. I am now more familiar with project management tools such as work breakdown structures and Gannt charts. ***Average rating: 3.0***
12. I now understand the importance of completing an implementation plan before attempting to implement our selected solution. ***Average rating: 3.0***
13. The materials and tools that were used in the presentation will be useful to me in my work. ***Average rating: 3.0***

Open-ended question:

Please use the space below to make any additional comments, particularly for any statement above that you strongly disagreed with. Also include comments about things you would like to know more about or for which you need more information or assistance. ***Responses (1):***

- Love the evaluation plan

Results from March 25, 2009 Webinar
Part 2: "Subtle Micro-Messages Impact the Success of Women and Girls in STEM"

Respondent's state:

AK	1	IA	1
CA	1	MN	1
CO	1	NH	1
FL	1	OH	1
GA	1	DC	1
IL	4	WA	1
IN	1	**Total:**	**16**

Questions:

1. The webinar reflected careful planning and organization. ***Average rating: 3.4***
2. The content of the webinar will be useful to me in the work I do that is related to gender equity. ***Average rating: 3.1***
3. I did not have any problem with the logistics of connecting to the webinar. ***Average rating: 3.1***
4. I participated in Session 1 of this Webinar on November 16. ***43.8% answered "yes"***
5. (If you participated in Session) Since the last webinar, I have tried out some of the strategies I learned. ***57.1% answered "yes"***
6. As a result of this webinar, I understand the concepts of micro-messaging, micro-affirmation, and micro-inequity. ***Average rating: 3.3***
7. From the presentation, I learned how micro-messaging can directly influence the performance of students and colleagues. ***Average rating: 3.2***
8. I learned practical, hands-on techniques to recognize, challenge, and educate others about micro-inequities. ***Average rating: 3.1***
9. In this session, I learned more advanced strategies for diagnosing or recognizing micro-inequities. ***Average rating: 3.1***
10. In this session, I learned more advanced strategies for addressing micro-inequities. ***Average rating: 3.0***
11. I know how I will use this information for personal development to communicate more intentionally and clearly with others. ***Average rating: 3.3***
12. I have specific ideas of how I will use this information in the work I do to build a more inclusive community. ***Average rating: 3.1***

Results from March 16, 2010 Webinar
"How to Market Your CTE STEM Program: Tell Your Story to the Right People the Right Way and Get the Right Results"

Respondent's state:

AR	1
AZ	1
CA	1
IL	1
IA	1
MN	1
MO	1
OK	2
SD	1
TX	1
WI	1

Scale questions:

11. The webinar reflected careful planning and organization. ***Average rating: 3.7***
12. The content of the webinar will be useful to me in the work I do that is related to gender equity. ***Average rating: 3.3***
13. I did not have any problem with the logistics of connecting to the webinar. ***Average rating: 2.8***
14. As a result of this webinar, I know more about do's and don'ts of successful marketing. ***Average rating: 3.1***
15. From the presentation, I learned how to create communication pieces that will work. ***Average rating: 3.1***
16. In this session, I learned how to establish a marketing objective and identify a target audience. ***Average rating: 3.2***
17. In this session, I learned how to develop appropriate messages to communicate. ***Average rating: 3.1***
18. I know how I will use this information to develop a marketing strategy for CTE STEM Programs. ***Average rating: 3.1***
19. I have specific ideas of how I will use this information to decide the best methods to communicate. ***Average rating: 3.1***

Results from June 2, 2010 Webinar
"Pink Brain, Blue Brain? Females and Males in Math and Science"

Respondent's state:

CA	9	NC	1
DC	4	OK	1
FL	1	OR	2
IL	2	PA	3
MD	1	TX	1
MN	2	VT	1
NH	3	WA	2
NY	2	WI	3

Scale questions:

1. The webinar reflected careful planning and organization. ***Average rating: 3.4***
2. The content of the webinar will be useful to me in the work I do that is related to gender equity. ***Average rating: 3.4***
3. I did not have any problem with the logistics of connecting to the webinar. ***Average rating: 3.3***
4. As a result of this webinar, I know more about female brain development. ***Average rating: 3.4***
5. From the presentation, I know more about the roles of hormones and learning in shaping cognitive development underlying STEM performance ***Average rating: 3.3***
6. In this session, I learned about the power of social factors on the learning of males and females. ***Average rating: 3.5***
7. In this session, I learned about the latest science on sex differences in the brain as they relate to STEM performance. ***Average rating: 3.4***
8. I now know some ways that I can help females control harmful stereotypes. ***Average rating: 3.3***
9. I now have specific ideas of how I can engage both females and males in STEM fields. ***Average rating: 3.2***

STEM Equity pipeline

2009-2010 NSF Annual Report Activities Attachment

STEM Equity Pipeline Project

HRD 0730456

July 2010

RESEARCH TRAINING SOLUTIONS

STEM Equity pipeline

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

STEM Equity Pipeline Project

Outreach

For the past thirty-six years the National Alliance for Partnerships in Equity has held an annual Professional Development Institute in Washington, DC. Since 2008, the STEM Equity Pipeline project has held its State Team Leadership Institute in conjunction with the conference and included a strand on gender equity in STEM in the Professional Development Institute program.

Date	Professional Development Institutes	#
2008	Working Together for Economic Equity	220
2009	Partners on the Path to Equity	165
2010	A New Decade for Equity	130
	Totals	515

Staff of the STEM Equity Pipeline have presented at national conferences across the country in an effort to provide professional development and conduct outreach regarding the project. Typically, these have been workshops included as part of a larger conference program.

	National Outreach Presentations	#
12/4/07	U.S. Department of Education, Office of Vocational and Adult Education, Washington, DC	40
6/8/08	Women in Engineering ProActive Network Conference, St. Louis, MO	50
7/2/08	Cisco Networking Academy Conferences, Saratoga Springs, NY, Portland, OR, Little Rock, AR	109
7/28/08	Association for Gender Equity Leadership in Education Conference, Boston, MA	15
8/6/08	National Defense Industry Association and the Aerospace Industry Association Joint Workforce Development Committee Meeting, Dallas, TX	25
9/11/08	Career Technical Education Equity Council Conference in Tulsa, Oklahoma	23
12/5/08	Association for Career and Technical Education Conference in Charlotte, NC	32
5/13/09	National Association of Career Technical Education Information in Albequerque, New Mexico	34
6/17/09	Women in Engineering ProActive Network Conference in Austin, TX	38
7/9/09	High Schools That Work, Atlanta, GA	57
8/1/09	Association for Gender Equity Leadership in Education Conference, Manhattan Beach, CA	17
9/11/09	SkillsUSA Staff Training, Leesburg, VA	35
9/17/09	Career Technical Education Equity Council Conference, Tulsa, OK	22
10/2/09	National Career Pathways Network Conference, Atlanta, GA	47
10/5/09	U.S. Dept of Ed., Office of Vocational and Adult Education, Washington, DC	12
10/5/09	U.S. Dept of Ed., Briefing with Secretary Arne Duncan and Assistant Secretary, OCR, Russlynn Ali, Washington, DC	8
11/9/09	Association for Career and Technical Education Conference, Nashville, TN	28
	Totals	592

Activity Statistics

Activity	Description	National Statistics	
Listserv	Number who have elected to receive information about the STEM Equity Pipeline Project	# of people 2140	
Webinar Participants	Numbers of who have attended the project's sponsored webinars	# of participants 986	# of unduplicated participants 581

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

STEM Equity Pipeline

Webinars

The STEM Equity Pipeline project includes online professional development primarily through webinars. The webinar presenters and content selected is informed by the results of the online professional development survey and identified professional development needs of participating states. The project has exceeded its planned webinar offerings each year as these tend to be very popular.

Date	National Webinar Titles	Presenter	#
3/19/08	STEM Equity Pipeline Project: What and Why	Mimi Lufkin, Susan Metz	42
5/21/08	Assessing Effectiveness: Do Your Program Activites Make a Difference? Insights Learned from the Assessing Women and Men in Engineering (AWE) Project	Tricia Berry	62
6/16/08	Building Effective Program Assessments: Adapting and Using Tools from the Assessing Women and Men in Engineering (AWE) Project	Tricia Berry	51
12/17/08	Interactive Effects in the Theory of Planned Behavior: Examining Attitudes, Norms, Control, and Stereotype Threat to Predict Girls' Math Performance and Intentions	Bettina Casad	70
6/4/09	Nontraditional Career Preparation: Root Causes & Strategies	Mimi Lufkin	109
6/18/09	GirlTech, Mentoring Girls in STEM	Jessica Bullock	35
10/26/09	Improving Academic Achievement: Effects of Stereotypes, Beliefs about Intelligence, and Belonging	Catherine Good	57
11/16/09	Subtle Micro-Messages Impact the Success of Women and Girls in STEM: part 1 of 2	Robbin Chapman	55
12/14/09	Subtle Micro-Messages Impact the Success of Women and Girls in STEM: part 2 of 2	Robbin Chapman	54
3/16/10	How to Market Your CTE STEM Program: Tell Your Story to the Right People the Right Way and Get the Right Results	Jill Chan	NA
9/5/08	Overview of the Five-Step Improvement Process	Mimi Lufkin	128
11/5/08	Documenting Performance Results: Step One of the Five-Step Program Improvement Process	Mimi Lufkin	58
12/1/08	Identifying Root Causes: Step Two of the Five-Step Program Improvement Process	Mimi Lufkin	88
1/13/09	The Five-Step Program Improvement Process Step Three: Select Best Solutions	Mimi Lufkin	45
2/11/09	The Five-Step Program Improvement Process Step Four: Pilot Test and Evaluate Solutions	Mimi Lufkin	40
3/11/09	The Five-Step Program Improvement Process Step Five: Implement Solutions	Mimi Lufkin	33
1/28/09	GESA Works! Generating Expectations for Student Achievement (GESA): Essential Classroom Instructional Elements to Improve Student Achievement in STEM	Dee Grayson	64
2/25/09	GESA Series: One	Dee Grayson	15
3/25/09	GESA Series: Two	Dee Grayson	11
4/22/09	GESA Series: Three	Dee Grayson	11

Demographic Information

Total Participants - 4127 Total Particpants with Demographic Data Available - 917

Gender	%	Ethnicity	%	Position	%
Female	78%	Hispanic	1%	Administrator	31%
Male	22%	American Indian or Alaskan Native	4%	Teacher	15%
		Asian	3%	Counselor	10%
		Black or African American	9%	State Education Agency Staff	10%
		Caucasion	76%	Community Based Organization	3%
		Native Hawaiian/Other Pacific Islander	1%	Business/Industry Representative	2%
		Chose not to answer	9%	Other	29%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

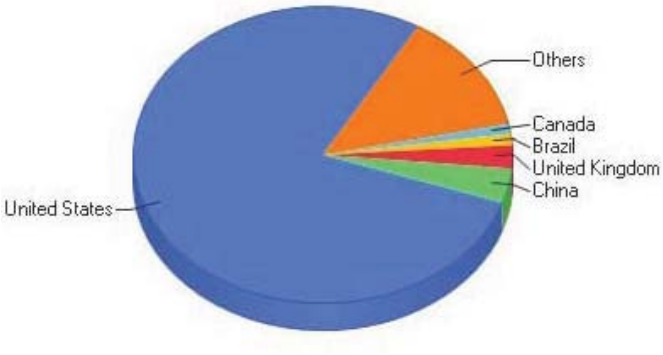
"Expanding Options for Women and Girls in Science, Technology, Engineering and Math"

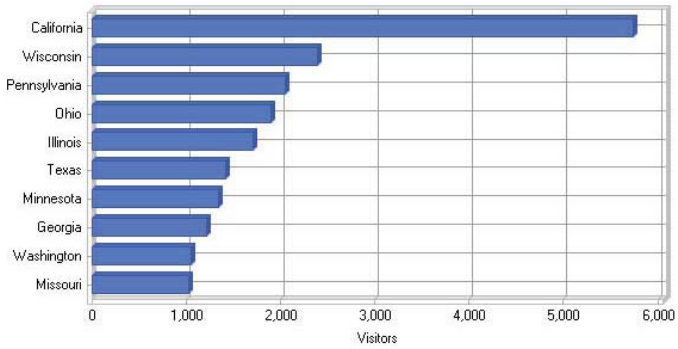
STEM Equity Pipeline Project

Virtual Learning Community (VLC)

The STEM Equity Pipeline Virtual Learning Community is a website that contains information about the project, resources, training materials, survey and reporting portals and archives of the Pipeline Press and webinars. In 2010, the project intends to create interactive tools that support the Five Step Program Improvement Process training and explore the potential of social networking to create more sharing of best practices among the participating states.

Website Statistics				
Total Website Hits	Unique Visitors	Visitor Sessions	Busiest Day of the Week	Next Busiest Days
803,553	26,030	141,153	Tuesday	Monday and Wednesday





Most Active			
Countries	Unique Visitors	States	Unique Visitors
United States	38,030	California	5,744
China	1,836	Wisconsin	2,391
United Kingdom	1,223	Pennsylvania	2,048
Brazil	623	Ohio	1,894
Canada	510	Illinois	1,709

Website Pages	Unique Visitors	Downloaded Files	Unique Visitors
STEM Equity Pipeline Homepage	25,423	Famous African American Women in STEM	870
The Five Step Program Improvement Process Training Resources	2,120	5 Step Process Handout	622
Archived Webinars	2,109	Defining STEM flyer	514
Professional Development Calendar	2,002	Small Slights Article	426
Promising Practices	1,969	Guidebook	319

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www.stemequitypipeline.org

STEM Equity pipeline

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

California

Activity Summary Oct 1, 2007 - Feb 28, 2010

State Contacts

Secondary

Russ Weikle
Education Administrator
California Dept. of Education

Postsecondary

Sharon Wong
Vocational Education Specialist
California Community College Chancellor's Office
Career/Technical Education

State Leadership Team Members

Diana Avila
Counselor, Southwestern College

Susan Handy
Principal/Director
Bakersfield Adult School/Kern High School

Laurie Harrison
Special Populations Consultant
Foothills Associates

Valerie Hesson
Coordinator
San Diego County
Office of Education/ROP

Jodi Loeffler
Assistant Principal
Bakersfield Adult School/
Kern High School

Marian Murphy-Shaw
Student Services Dirctor
Siskiyou County Office of Education

Elizabeth Wallner
Consultant, Wallner Consulting

Jim Greco
Administrator
CA Department of Education

Rita Thomas
Assistant Principal
William S. Hart Unified High
School District

State Implementation Strategy

The California Joint Special Populations Advisory Committee (JSPAC) is a joint initiative of the California Department of Education and the California Community College Chancellors Office. The JSPAC is a committee comprised of educators from the K-12, adult education, and community colleges as well as business, industry, and the trades who are committed to enhancing the Career and Technical Education field as well as encourage girls and women to explore and enter into training programs and careers that are non-traditional by gender as well as high-wage and high-demand. From the beginning, the JSPAC provided the leadership and direction for the implementation and integration of the work of the STEM Equity Pipeline project and integrated it into its work plan. The JSPAC conducts regional training meetings, puts on an annual professional development conference, and conducts research on the participation of special populations in career and technical education in the state. Their work is particularly focused on increasing the participation and completion of underrepresented gender students in nontraditional career and technical education. Determining the best project implementation strategy for a state of this size and the potential magnitude of the effort was difficult at best. Ultimately the leadership team, with advice from the full JSPAC and a diverse group of State Team members, has taken four approaches to meet the three goals of the project:

1. Brought together, at least annually, a diverse group of STEM stakeholders as their State Team to provide advice to the JSPAC's efforts and provide a state network to share STEM education resources from all stakeholders on increasing the participation and completion of women and girls in STEM related programs of study in secondary and community college programs
2. Conducted Five Step Program Improvement Process training with professional development staff of the JSPAC and leaders from interested K-Adult and community colleges across the state, to create a cadre of extension agents are sharing the information with their communities of practice.
3. Integrated resources and expertise available through the STEM Equity Pipeline project into the JSPAC's regional workshops and annual conference.
4. Included information about the resources available at the STEM Equity Pipeline virtual learning community through the JSPAC website and listserv

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

California

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

Sustainability & Investments

The California Joint Special Populations Advisory Committee has committed to continuing to support the gathering of the STEM Equity Pipeline State Team semi-annually for at least the next two years. They will also continue to integrate the training and resources provided through the project at their regional and statewide professional development activities.

Activity Statistics

Activity	Description	California Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 388		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 4	# of participants 98	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 132	# of unduplicated participants 86	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 2	# of participants 71	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 10	# of participants 678	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 20	# of participants 2809	
State Team Leadership and Professional Development Institute		2008 - 19	2009 - 16	2010 - 14

Website Statistics

Total Sessions	Unique Visitors from CA	Repeat hits from CA	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	5,744	95,370	923	1,100

Demographic Information

Total Participants - 757 Total Particpants with Demographic Data Available - 203

Gender	%	Ethnicity	%	Position	%
Female	76%	Hispanic	15%	Administrator	35%
Male	24%	American Indian or Alaskan Native	3%	Teacher	21%
		Asian	5%	Counselor	10%
		Black or African American	6%	State Education Agency Staff	13%
		Caucasion	66%	Community Based Organization	2%
		Native Hawaiian/Other Pacific Islander	1%	Business/Industry Representative	2%
		Chose not to answer	9%	Other	17%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

Illinois

Activity Summary Oct 1, 2007 - Feb 28, 2010

State Contacts

Lynn Reha
Co-Director
Illinois Center for Specialized Professional Support

Debbie Hopper
Principal Education Consultant
Illinois State Board of Education

Tricia Broughton
Director of Career & Tech Programs
Business & Technology Professor
IL Community College Board

State Leadership Team Members

Mitch Braun
Director, Data and Accountability
Chicago Public Schools

Tony Chen
Business and Technology Professor
College of DuPage

Aimee Julian
Research Coordinator
Illinois Center for Specialized Professional Support

Joy Lucht
Professor of Computer Technology
Heartland Community College

Lisa Matejka
Research Coordinator
Illinois Center for Specialized Professional Support

Tracy Miller
Coordinator of Statewide Student Initiatives
Illinois Math and Science Academy

Kristy Morelock
Assocate Director for CTE Programs of Study
Illinois Community College Board

Sarah Shirk
Director, Pre-College Outreach
University of Illinois at Chicago

Emilie Shoop
Technology Coordinator
Illinois Center for Specialized Professional Support

Brenda Pacey
Affiliate Director
Project Lead The Way
University of Illinois

Debbie Potts
Education Specialist
Illinois Office of Educational Services

Brian Durham
Senior Director for Academic Affairs/CTE
Illinois Community College Board

Rob Kerr
Director for Career & Technical Education
Illinois Community College Board

Wanda Andrews
Displaced Homemaker Program Manager
Illinois Department of Labor

Linda Bauer
Caterpillar

Bethany Herman
Local Customer Operations Manager
Verizon

State Implementation Strategy

The Illinois Center for Specialized Professional Support (ICSPS) at Illinois State University is funded by the Illinois Board of Education and the Illinois Community College System. ICSPS facilitates the improved performance of special populations' learners in career and technical education by assisting professionals in gaining the knowledge and skills needed for helping every learner to succeed. ICSPS provided the initial leadership to bring together a leadership team to plan and implement the following strategies:

1. Conducted the Five Step Program Improvement Process training with the leadership team so each of them, as extension agents, have trained others and shared resources with their communities of practice.
2. Integrated STEM Equity Pipeline training and resources into the ICSCP's NEW Look Projects who receive monetary awards, technical assistance and professional development to increase the participation and completion of underrepresented gender students in nontraditional career and technical education. New Look Projects use the improvement process.
3. Conducted training with the Illinois Project Lead the Way teachers at their fall and summer training institute.
4. Extension agents shared STEM Equity Pipeline resources through workshop presentations at Illinois professional development events.
5. Disseminated STEM Equity Pipeline virtual learning community resources through the ICSPS and Illinois Office of Educational Services, Illinois Community College and University of IL Chicago listservs for CTE educators.

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STEM Equity pipeline

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

Illinois

Sustainability & Investments

The Illinois Center for Specialized Professional Support has fully integrated the Five Step Program Improvement Process into their New Look Project and will continue, with support from the State Board of Education and the Community College Board, to provide mini-grant funding, professional development and technical assistance to local education agencies implementing the process in STEM related programs of study. The Board of Education is also exploring ways to extend the training to all secondary school districts as part of their Perkins nontraditional career preparation program improvement efforts. The board funds a Nontraditional and Gender Equity Specialist who disseminates STEM Equity resources and will continue.

Activity Statistics

Activity	Description	Illinois Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 43		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 5	# of participants 14	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 97	# of unduplicated participants 60	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 1	# of participants 14	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 0	# of participants 0	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 21	# of participants 692	
State Team Leadership and Professional Development Institute		2008 - 8	2009 -7	2010 - 6

Pilot Sites

Bement High School	College of DuPage	Danville Area Community College	Lincoln Land Community College
Sauk Valley Community College	Wilbur Wright Community College	Elgin Community College	Olney Central College Learning Ctr
John Wood Community College	Kaskaskia College	Kishwaukee College	Southwestern Illinois College

Website Statistics

Total Sessions	Unique Visitors from IL	Repeat hits from IL	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	1,709	39,205	668	779

Demographic Information

Total Participants - 172 Total Particpants with Demographic Data Available - 86

Gender	%	Ethnicity	%	Position	%
Female	84%	Hispanic	3%	Administrator	36%
Male	16%	American Indian or Alaskan Native	3%	Teacher	15%
		Asian	1%	Counselor	4%
		Black or African American	12%	State Education Agency Staff	5%
		Caucasion	67%	Community Based Organization	1%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	1%
		Chose not to answer	15%	Other	38%

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STEM Equity pipeline

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

Missouri

Activity Summary Oct 1, 2007 - Feb 28, 2010

State Contacts

Cathy Kahoe
Coordinator, Resources
Missouri Center for Career Education

Dennis Harden
Coordinator of Career Education
Missouri Department of Education

State Leadership Team Members

Michele Charlebois-Didreckson
Career Education Coordinator, Region VI
Ozark Technical Community College

Tanya DeGonia
Career Education Coordinator
Mineral Area College

Camille MacDonald
Career Education Coordinator, Region VII
Poplar Bluff Technical Career Center

Lori Mann
Career Education Coordinator
Northland Career Center

Larry Nash
Career Education Coordinator
Rolla Technical Institute

Candace Niemeyer
Coordinator/Counselor, New Traditions Program
St. Louis Community College

Charlene Piel
Career Education Coordinator, Northwest Region
Hillyard Technical Center

Janet Reppert
Career Education Coordinator
Southwest Area Career Center

Diana Reynolds
Career Education Coordinator
Kirksville Area Technical Center

State Implementation Strategy

Missouri's State Team has developed somewhat differently that the other four states due to a unique professional development model they made available to the project as an implementation vehicle. The Missouri Department of Elementary and Secondary Education, who administers career and technical education at the secondary and postsecondary level in Missouri, funds the Missouri Center for Career Education (MCCE). In turn, the MCCE has eight Career Education Coordinators (CECs) located throughout the state whose responsibility includes providing professional development and technical assistance to secondary and community college career and technical education programs. Central to their responsibility is to assist these local education agencies in improving their performance on the Perkins accountability measure requiring the increase in participation and completion of underrepresented gender students in nontraditional career and technical education programs (i.e. women and girls in STEM related CTE programs). Due to this connection, the State Director for CTE in Missouri chose to have the coordinator of the eight CECs be the State Contact and have the CECs become extension agents for the project. This is a very focused implementation model that is integrated into an existing system with a shared mission central to our implementation strategy. As a result their State Team consists of the eight CECs and an advisory group that provides advice and resources to the extension agent team (the eight CECs). The eight CEC's have been trained in the Five Step Program Improvement Process. They have each selected a pilot site in their region to work with and have implemented the process with local planning teams. Three of the CEC's have started with a second pilot site implementation. The eight CEC's have also integrated what they have learned from the training, participation in webinars and resources available from the virtual learning community into the professional development they do with teachers and programs with students in their regions. The CEC's have developed their own Five Step Program Improvement Process Toolkit to help them implement the process with additional sites in the future. They have also accessed experts through the project to supplement their knowledge and provide specific technical assistance with the pilot sites.

Sustainability & Investments

The STEM Equity Pipeline effort has been totally integrated into the work of the eight career education coordinators work responsibilities through the Missouri Center for Career Education. They have done an

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STEM Equity pipeline

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

Missouri

exceptional job mentoring each other, training new coordinators that have joined the team and developed Missouri specific materials to support their implementation. The Missouri Department of Elementary and Secondary Education, who funds the Missouri Center for Career Education is committed to seeing this work continue through their own efforts in the state.

Activity Statistics

Activity	Description	Missouri Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 68		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 1	# of participants 24	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 50	# of unduplicated participants 20	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 1	# of participants 22	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 4	# of participants 478	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 5	# of participants 300	
State Team Leadership and Professional Development Institute		2008 - 9	2009 - 8	2010 - 4

Pilot Sites

Excelsior Springs Career Center	Brookfield Career Center	Columbia Career Center	Linn State Technical College
Current River Career Center	Ozarks Community College	Crowder College	

Website Statistics

Total Sessions	Unique Visitors from MO	Repeat hits from MO	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	1,022	22,167	538	612

Demographic Information

Total Participants - 101 Total Particpants with Demographic Data Available - 23

Gender	%	Ethnicity	%	Position	%
Female	91%	Hispanic	0%	Administrator	30%
Male	9%	American Indian or Alaskan Native	0%	Teacher	13%
		Asian	0%	Counselor	9%
		Black or African American	4%	State Education Agency Staff	13%
		Caucasion	92%	Community Based Organization	0%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	0%
		Chose not to answer	4%	Other	35%

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STEM Equity pipeline

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

Oklahoma

Activity Summary Oct 1, 2007 - Feb 28, 2010

State Contacts

Lou Ann Hargrave
TANF Coordinator
Oklahoma Department of Career and Technical Education

Janet Cooper
Applications Coordinator
Oklahoma Department of Career and Technical Education

Jeremy Zweiacker
Tech Prep Coordinator
Oklahoma Department of Career and Technical Education

State Leadership Team Members

Oklahoma Department of Career and Technical Education:

Becki Foster
Manager

Belinda McCharen
Associate State Director
Career Services

Cheryl Bell
ISS Manager and HSTW State Coordinator

Debbie McElroy
Senior Secretary
Innovative Initiatives & Services

Janet Hawkins
Career Information Specialist

Jim Bullington
Assistant Program Manager
Trade and Industrial Education

Joe Robinson
Manager
Technology Services Center

Kelly Arrington
Guidance Coordinator

Kevin Terronez
Assistant Manager of Technical Education

LaMecia Stidham
Instructional Services Manager

Linnie Berkenbile
BITE State Program Manager

Robin Schott
Manager
Innovative Initiatives & Services

Tina Fugate
Math/Science Specialist

State Implementation Strategy

Leadership for the STEM Equity Pipeline project in Oklahoma has been with the Oklahoma Department of Career and Technology Education (ODCTE). Leadership for the work in Oklahoma by both ODCTE and the STEM Equity Pipeline project has been tumultuous making implementation difficult to accomplish. The March 2008 kick-off meeting was a great success but building an implementation strategy with proper support from ODCTE leadership was never accomplished. During the first year (2008) of the projects implementation the State Contact retired without a replacement, the STEM coordinator was promoted, and the State Facilitator replaced. In late 2008, with the staff changes also came a change in focus, from a STEM initiative that was outside of ODCTE's area of responsibility (and being measured by Carl Perkins data collection) to a CTE focus requiring the education and support of a new set of ODCTE leadership. In addition, ODCTE was in the process of changing its management information system so they were unable to provide the data necessary to measure success of the project.

With a change in focus, the strategic plan that was developed in March 2008 was changed in December 2008, adding several different career and technical education (CTE) based leadership groups who were invited to participate in the project. In January 2009, there was a major effort on the part of the team to enlist the support of CTE administration in the effort. On three separate occasions, the STEM Equity Pipeline staff conducted Five Step Program Improvement Process training with faculty and staff from 20 career tech centers and secondary school districts across the state. The result of this effort was that 44 people were trained in the 5 step process and another 192 educators received information about the training and the online resources available.

A recent follow-up survey conducted by the STEM Equity Pipeline staff discovered that eight of the forty-four individuals who had received training had shared the information with 12,000 students, teachers, administrators, parents, and business/employers, without support from the state STEM Equity Leadership team. One of the eight respondents accounted for 96% of the individuals contacted.

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STEM Equity pipeline

Oklahoma

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

Sustainability & Investments

At the end of the second year the Oklahoma Department of Career and Technology Education chose not to continue their involvement with the STEM Equity Pipeline project. The STEM Equity opportunity was not seen on the part of CTE leadership as a priority issue. In 2009 budgets were being cut back, other larger issues such as education reform and the restructuring of CTE were perceived as more important than the STEM Equity issue. The original leadership, who had originally embraced the idea, lost interest with the change in focus and ceased to participate by the end of 2008. If this work is to be sustained in the state it will have to come as a "grassroots effort" with those who have participated in the training. Invitations to access online professional development conducted through the virtual learning community will continue for anyone in Oklahoma that wants to participate.

Activity Statistics

Activity	Description	Oklahoma Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 238		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 1	# of participants 42	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 43	# of unduplicated participants 27	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 3	# of participants 44	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 9	# of participants 322	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 9	# of participants 11,362	
State Leadership and Professional Development Institute		2008 - 3	2009 - 5	2010 - 3

Website Statistics

Total Sessions	Unique Visitors from OK	Repeat hits from OK	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	888	31,882	981	1,219

Demographic Information

Total Participants - 462 Total Particpants with Demographic Data Available - 83

Gender	%	Ethnicity	%	Position	%
Female	83%	Hispanic	1%	Administrator	25%
Male	17%	American Indian or Alaskan Native	10%	Teacher	17%
		Asian	0%	Counselor	27%
		Black or African American	8%	State Education Agency Staff	11%
		Caucasion	73%	Community Based Organization	1%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	0%
		Chose not to answer	8%	Other	19%

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STEM Equity pipeline

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

Wisconsin

Activity Summary Oct 1, 2007 - Feb 28, 2010

State Contacts & Leadership Team

Secondary
Barbara Bitters
Asst. Director, CTE Team
WI Dept. of Public Instruction

Postsecondary
Karen V. Showers
Education Director, Counseling and Student Support
Wisconsin Technical College System

Charlie Daniel
Education Director
Wisconsin Technical College System

State Implementation Strategy

Wisconsin's leadership has been provided by the Perkins "equity coordinators" of the Wisconsin Department of Public Instruction and the Wisconsin Technical College System. These two individuals have many years of experience providing professional development and technical assistance to local education agencies on gender equity issues. Initially, there appeared to be no professional development mechanism in the state, beyond the work of these two state staff members, where the STEM Equity Pipeline resources and training could be integrated. They adopted a strategy to develop a State Team of diverse STEM education stakeholders to serve as extension agents to conduct professional development with their communities of practice. The Five Step Program Improvement Process training and other gender equity in STEM training was conducted with the team. However, the work was not being disseminated by the State Team members as widely as was expected due to a lack of comfort and experience with the content. The leaders then decided a pilot site approach would help them create some local traction that could be replicated statewide. An application for participation was released and a pilot site consisting of a community college and three feeder high schools was selected. Teams from each of the schools gathered twice to participate in the training, conducting a performance gap analysis using local data and completing action research to identify root causes between the two trainings, ultimately resulting in strategy implementation plans. In addition, Wisconsin developed a STEM Equity Pipeline newsletter to keep members of the State Team informed of project activities and developed, in collaboration with the Wisconsin Department of Workforce Development, a STEM Fact Sheet for use when conducting outreach.

Sustainability & Investments

Technical assistance with the four pilot sites is continuing through the efforts of the two state equity coordinators. The secondary sites are receiving $5000 incentive grants from the Department of Public Instruction each year for three years to implement their selected strategy. The members of the teams at the four sites are expected to conduct professional development with other interested sites once they have completed their initial strategy implementation and evaluation. Also, the networking conducted by the State Team helped create the WI STEM Portal, Wisconsin's source for all things STEM (www.wistem.org), with the STEM Equity Pipeline as one of its partners. The project will continue to collaborate with the WI STEM portal to provide online professional development through the virtual learning community.

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STEM Equity pipeline

Wisconsin

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

Activity Statistics

Activity	Description	Wisconsin Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 187		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 4	# of participants 52	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 138	# of unduplicated participants 59	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 3	# of participants 80	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 1	# of participants 19	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 10	# of participants 2337	
State Team Leadership and Professional Development Institute		2008 - 6	2009 - 9	2010 - 6

Pilot Sites

Lakeshore Technical College	Manitowoc School District	Plymouth School District	Sheboygan School District

Website Statistics

Total Sessions	Unique Visitors from WI	Repeat hits from WI	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	2,391	78,409	1,127	1,392

Demographic Information

Total Participants - 265 Total Particpants with Demographic Data Available - 128

Gender	%	Ethnicity	%	Position	%
Female	69%	Hispanic	2%	Administrator	34%
Male	31%	American Indian or Alaskan Native	2%	Teacher	16%
		Asian	1%	Counselor	9%
		Black or African American	3%	State Education Agency Staff	7%
		Caucasion	90%	Community Based Organization	2%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	2%
		Chose not to answer	3%	Other	30%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

Iowa

Activity Summary Oct 1, 2008 - Feb 28, 2010

State Contact

Jeanette Thomas Equity/Perkins Consultant, Iowa Department of Education

State Leadership Team Members

Jenny Becker
Community Relations/K-12 Outreach
Rockwell Collins

Christine Brus
Director, Women in Science and Engineering.
University of Iowa

Donna Burkett
Data Dissemination Bureau
Iowa Workforce Development

Mary Chapman
Community & Workforce Development
Des Moines Area Community College

Roger Foelske
Administrative Consultant
Iowa Department of Education

Bob Driggs
Dean Math/Science
Kirkwood Community College

Karen Swanson
Coordinator, High School Programs
Indian Hills Community College

Linda Bisgaard
Collaborations & Advocacy Director
Girl Scouts of Greater Iowa

Carol Heaverlo
Outreach Program Coordinator
Iowa State University

Leann Jacobson
President, Technology Association of Iowa

Rachel Scott Hoepker
Liaison/Public Information Officer
Iowa Commission of the Status of Women

Paul Osborn
Dean, Applied Science and Technology
Hawkeye Community College

Linda Linn
Consultant, Prairie Lakes AEA 8

Yvette McCully
Science Consultant
Iowa Department of Education

Jeff Weld
Director, Iowa Mathematics and Science Education Partnership

Vicki Bachman
Math Consultant, Grant Wood AEA

Nicole Franta
Post Secondary Perkins/ Dual Enrollment Coordinator Iowa Western Community College

Michelle Garris
School to Work Administrator
John Deere Waterloo Works

Kamali Muthukrishnan
Division Chair
Western Iowa Tech Community College

Maria Slaughter
Program Coordinator - College Now
Western Iowa Tech Community College

Jason Taylor
Kirkwod Community College

Fidelis Ubadigbo
Math/Science Department Coordinator
Iowa Department of Education

Karen Zunkel
Program Audit & Evaluation
Iowa Department of Education

State Implementation Strategy

The Iowa Department of Education has taken on the leadership for the STEM Equity Pipeline project. A very broad group of organizations was convened as a State Team to develop the implementation plan for the state. Iowa does not have a central professional development mechanism or professional development staff that conducts professional development in the state so the team focused on identifying potential organizations and strategies where the resources being made available could be instituted. The implementation strategy has included:

1. Conducted Five Step Program Improvement Process training with four community college pilot sites. The pilots have resulted in the deans from all the community colleges in Iowa requesting training in the institutional change model. This training will be conducted in April.
2. Conducted Five Step Program Improvement Process training with eastern central region Project Lead the Way faculty.
3. Conduct Five Step Program Improvement Process training with the state's construction trades program faculty as part of the Master Builders of Iowa's $100,000 program improvement investment.
4. Collaborated with the Iowa Math and Science Education Partnership on the 2009 Summer Institute for members of the Iowa Association of Teacher Educators (33 teacher preparation institutions of higher education). The project sponsored the keynote speaker and was involved in the planning of the institute.
5. Members of the leadership team have presented at professional development conferences and workshops across the state

Sustainability & Investments

The Iowa Department of Education state staff will be meeting with STEM Equity Pipeline project director and state facilitator to develop a long-term technical assistance strategy that includes integration of this effort into the state's Perkins funding application process for both secondary and community colleges in Iowa. Beginning in Spring 2010, the

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STEM Equity pipeline

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

Iowa

Iowa Department of Education will align discretionary Perkins funds with the STEM Equity Pipeline's 5-Step Program Improvement Process training. $150,000 will be awarded to regional consortia to participate in the training with Iowa's fifteen community colleges bringing teams comprised of their dean, STEM faculty, equity staff, and secondary STEM faculty from their feeder schools. In addition, $50,000 will be set aside for statewide STEM initiatives. The State Team has developed a request to the State Legislature to provide funds to continue this effort in the state and have included this work as part of their state's Race to the Top application to the U.S. Department of Education. The Iowa Department of Education is committed to continuing this work beyond the investment available through the NSF grant.

Activity Statistics

Activity	Description	Iowa Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 114		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 4	# of participants 27	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 23	# of unduplicated participants 16	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 5	# of participants 22	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 3	# of participants 202	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 10	# of participants 422	
State Team Leadership and Professional Development Institute		2008 - 4	2009 - 8	2010 - 11

Pilot Sites

Regional Consortium Lead			
Hawkeye Community College	Iowa Western Community College	Indian Hills Community College	Kirkwood Community College
Participating Schools:	Participating Schools:	Participating Schools:	Participating Schools:
Clarksville Community Schools Denver School District	Tri-Center High School Shenandoah High School	Albia Community High School	Williamsburg High School Iowa City West High School Cedar Rapids School District Mount Vernon High School

Website Statistics

Total Sessions	Unique Visitors from IA	Repeat hits from IA	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	674	19,920	447	525

Demographic Information

Total Participants - 148 Total Particpants with Demographic Data Available - 42

Gender	%	Ethnicity	%	Position	%
Female	71%	Hispanic	0%	Administrator	19%
Male	29%	American Indian or Alaskan Native	0%	Teacher	21%
		Asian	3%	Counselor	5%
		Black or African American	6%	State Education Agency Staff	19%
		Caucasion	94%	Community Based Organization	2%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	10%
		Chose not to answer	0%	Other	24%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

Minnesota

Activity Summary Oct 1, 2008 - Feb 28, 2010

State Contacts

Brenda Lyseng
STEM Project Specialist
Minnesota State College and Universities

Dan Smith
Supervisor of Career and Technical Education Programs
Minnesota Department of Education

State Leadership Team Members

Minnesota Department of Education:

Marlys Bucher
Research

Al Hauge
Career Development Work Based Learning

John Rapheal
Trades & Industrial/Technology Education Specialist

Minnesota State Colleges and Universities:

Susan Carter
Senior Research Associate

Cyndy Crist
System Director, P-16 Collaborations

Lynda Milne
System Director
Faculty Development

Gail O'Kane
System Director, Education-Industry Partnerships

JoAnn Simser
Interim System Director, Perkins Federal Grants

Eva Scates-Winston
Equity Liaison, Perkins Unit

Yvonne Shafer
Faculty Development Coordinator, Center for Teaching and Learning

State Implementation Strategy

The STEM Equity Pipeline project in Minnesota is being managed by the STEM Coordinator for MNSCU. She has been able to integrate the state's participation in the STEM Equity Pipeline into her job description. The Minnesota State Leadership Team consists of twelve staff from both the Minnesota Department of Education and Minnesota State Colleges and Universities (MNSCU). A larger State Team, consisting of STEM faculty, curriculum coordinators, professional development experts, administrators, and representatives from STEM outreach organizations. Minnesota has an established network of Perkins consortia linking secondary and post-secondary Career and Technical Education program. The team has chosen to focus on the implementation of the Five Step Program Improvement Process with pilot sites in each of the four regional consortia. Members of the State Leadership Team conducted regional orientation workshops with faculty and staff from high schools and community colleges in the four areas of the state. Perkins Consortia were invited to apply for participation based on their commitment to increase the participation rate of females in nontraditional STEM programs. Four sites were accepted for participation: Hennepin West with a focus on engineering; Mid-Minnesota, with a focus on engineering and drafting; Southwest Metro, with a focus on engineering and manufacturing; and St. Paul, with a focus on computer programming, construction, and engineering. Members of the State Team and teams from each of the pilot consortia were trained in the Five Step Program Improvement Process. The State Team has created technical assistance teams that are working with each of the pilot site consortia. Once the pilot sites completed their performance gap analysis (step one) and root cause research (step two) they were eligible to apply for funding ($2000 per consortia) for their strategy implementation (steps three, four and five). The sites participate in monthly technical assistance calls with members of the State Team and the STEM Equity Pipeline State Facilitator. Members of the State Team have also presented at professional development events in the state.

Sustainability & Investments

The work in Minnesota will continue through the work of the STEM Coordinator at the Minnesota State Colleges and Universities and the work of the members of the State Team. The pilot site funding was provided from Perkins federal funds that will continue to be available to provide support for this effort in the future. This work was also conducted in collaboration with the Minnesota New Look Project, where the Illinois Center for

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STEM Equity pipeline

Minnesota

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

Specialized Professional Support, another participant of the STEM Equity Pipeline project, was contracted to provide training and technical assistance to other funded projects working on increasing the participation and completion of underrepresented gender students in nontraditional career and technical education programs.

Activity Statistics

Activity	Description	Minnesota Statistics		
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 111		
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 5	# of participants 71	
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 84	# of unduplicated participants 48	
5-Step Process Trainings	Number from the state who have been trained in the use of the Five Step Program Improvement Process	# of trainings held 1	# of participants 53	
Professional Development Workshops	Outreach workshops and content specific professional development conducted in the state by NAPE staff or STEM Equity Pipeline Experts	# of trainings held 0	# of participants 0	
Extension Agent Activity	Extension agents are those who have participated in project sponsored training and have shared what they have learned with others	# reporting 8	# of participants 3091	
State Team Leadership and Professional Development Institutes		2008 - 2	2009 - 5	2010 - 8

Pilot Sites

Consortium leads			
St. Paul Consortium	Mid-Minnesota Consortium	Hennepin West Consortium	Southwest Metro Consortium
Participating Schools:	Participating Schools:	Participating Schools:	Participating Schools:
St. Paul College	Ridgewater College	Wayzata High School	Normandale Community College
St. Paul Public Schools	Gibbon-Fairfax-Winthrop Schools	Hopkins High School	Bloomington Schools
Career Pathways Academy	Hutchinson Schools	North Hennepin Community College	Kennedy High School
		Eden Prairie High School	Jefferson High School
			Shakopee High School

Website Statistics

Total Sessions	Unique Visitors from MN	Repeat hits from MN	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	1,339	43,791	515	723

Demographic Information

Total Participants - 150 Total Particpants with Demographic Data Available - 61

Gender	%	Ethnicity	%	Position	%
Female	74%	Hispanic	2%	Administrator	30%
Male	26%	American Indian or Alaskan Native	3%	Teacher	25%
		Asian	2%	Counselor	5%
		Black or African American	0%	State Education Agency Staff	13%
		Caucasion	88%	Community Based Organization	1%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	5%
		Chose not to answer	7%	Other	21%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

New Hampshire

Activity Summary Oct 1, 2009 - Feb 28, 2010

State Contact

Susan McKevitt
Education Consultant
New Hampshire Department of Education

State Leadership Team Members

Diane Chin
Vice President of Academic Affairs
Great Bay Community College

Lisa Danley
Administrator
Career & Technology Education
New Hampshire Department of Education

Rosabel Deloge
Director of Technical Studies
Milford High School
& Applied Technology Center

Beth Doiran
Perkins Project Manager
Community College System of NH

John Dyer
Director of Community & Corporate Affairs
White Mountains Community College

Regina Fiske
Program Specialist II
New Hampshire Department of Education

Stan Freeda
OPEN New Hampshire Project Coordinator
New Hampshire Department of Education

Kasey Landry-Filion
School Psychologist
Allenstown School District

Mary Laturnau
Regional Tech Prep Director
Information Technology
& Manufacturing Partnership

Michele Munson
Educational Consultant
White Mountains Community College

Melissa Ritchings
Program Assistant I
Bureau of Career Development
New Hampshire Department of Education

Betsy Stefany
Owner/Consultant
The SABEN's Group

Beverly Straneva
Director
Southwest NH Educational Support Center
Keene State College

Tracy Untiet
Assistant Director
Career & Technology Education
Pinkerton Academy

State Implementation Strategy

New Hampshire's implementation strategy is being led by the New Hampshire Department of Education. A state team has been formed and met where they developed a implementation strategy that they will be implementing over the next two years.

1. Three pilot sites consisting of secondary/postsecondary teams will learn the Five Step Program Improvement Process and then work with administrators/faculty in their respective sites to pass on the knowledge and infuse equity into their STEM related programs. In addition, those who have been so trained will make themselves available to help in other schools or at conferences to "extend" the work.
2. A cadre of independent professional development providers has been identified and will be trained on infusing equity into STEM related programs so they would include it in the professional development they provide and/or train their organization's professional development providers to do so, once again "extending" the work.
3. The STEM Equity Pipeline will collaborate with the Online Professional Education Network of New Hampshire (OPEN NH) to provide online professional development on gender equity in STEM and as a portal to access resources on the virtual learning community.

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STEM Equity pipeline

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

New Hampshire

Activity Statistics

Activity	Description	New Hampshire Statistics	
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 24	
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 1	# of participants 18
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 10	# of unduplicated participants 6
State Team Leadership and Professional Development Institute		2010 - 10	

Website Statistics

Total Sessions	Unique Visitors from NH	Repeat hits from NH	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	314	10,142	0	0

Demographic Information

Total Participants - 45 Total Particpants with Demographic Data Available - 25

Gender	%	Ethnicity	%	Position	%
Female	92%	Hispanic	0%	Administrator	32%
Male	8%	American Indian or Alaskan Native	0%	Teacher	4%
		Asian	0%	Counselor	4%
		Black or African American	4%	State Education Agency Staff	28%
		Caucasion	96%	Community Based Organization	0%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	0%
		Chose not to answer	0%	Other	32%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

Ohio

Activity Summary Oct 1, 2009 - Feb 28, 2010

State Contact

Dr. Ben Williams
Advisor, Admissions
Columbus State Community College

State Leadership Team Members

Dr. Brad Mitchell
Director
Battelle/Ohio STEM Steward

Dan Schroer
Vice President of Secondary Workforce Education
Butler Technology and Career Development Schools

Timothy Nolan
Center for Innovative Technologies
Cincinnati State Technical and Community College

Jack Cooley
Dean of Arts & Sciences
Columbus State Community College

Melissa Cardenas
Director
Academic Quality Assurance
Ohio Board of Regents

Cloyd Thomas
Temp. Services Support
Ohio Board of Regents

Bridgette Sloan
Education Consultant
Ohio Department of Education

Dwight Anstaett
Assistant Director
Administrative Field Services
Ohio Department of Education

Sarah Luchs
Director
Middle and High School Transformation
Ohio Department of Education

Kathy Shibley
Director, Career-Technical Education
Ohio Department of Education

Nenna Davis
Consultant
College Tech Prep & Advanced Placement Ohio Department of Education

George Viebranz
Executive Director
Ohio Mathematics & Science Coalition

Debbi Perkul
Workforce Development
University Hospitals

Peggy Kasten
Executive Director
Ohio Resource Center (Mathematics, Science and Reading)

Dave Majesky
Associate Director
Ohio Resource Center (Mathematics, Science and Reading)

Tamara Williams
Interim Vice Provost
Owens Community College

Jenny Spegal
Chair of Allied Health Instruction
Sinclair Community College

Kelly Mullane
Counselor
Stark State College of Technology

Gregg Busch
Dean of Arts & Sciences
Washington State Community College

Dr. Mike Snider
Project Coordinator
Ohio Association of Community Colleges

State Implementation Strategy

The Ohio STEM Equity Pipeline project is being led by the Ohio Association of Community Colleges. The individual who started as the state contact passed the responsibility on to a community college colleague at the second state team meeting. As a result of the outcomes of the first State Team meeting the staff conducted a performance gap analysis and benchmarking of nontraditional STEM related career and technical education programs of every community college and secondary planning district in the state. The team has tentatively developed a plan that includes the following:

1. State Team members will participate in the Five Step Program Improvement Process training to build their capacity to conduct outreach and training at state level professional development activities with their communities of practice.
2. Conduct outreach and identify pilot sites, the number yet to be determined, in three communities of practice in Ohio: the Ohio STEM Learning Network sites; Tech Prep consortia through the career technical centers; and community colleges.
3. Partner with the Ohio STEM Learning Network to conduct outreach to STEM educators to access online professional development through the virtual learning community.
4. Develop Ohio specific marketing materials, such as a STEM data fact sheet, for State Team members to use when conducting outreach activities.

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STEM Equity pipeline

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

Ohio

Activity Statistics

Activity	Description	Ohio Statistics	
Listserv	Number from the state who have elected to receive information about the STEM Equity Pipeline Project	# of people 28	
State Team Meetings	Number of meetings the state team has assembled and the number of participants who attended	# of meetings 2	# of participants 14
Webinar Participants	Number from the state who have attended the project's sponsored webinars	# of participants 31	# of unduplicated participants 10
State Team Leadership and Professional Development Institute		2010 - 6	

Website Statistics

Total Sessions	Unique Visitors from OH	Repeat hits from OH	Unique Visitors to State Team Page	Total Visitors to State Team Page
163,157	1,894	16,272	0	0

Demographic Information

Total Participants - 67 Total Particpants with Demographic Data Available - 27

Gender	%	Ethnicity	%	Position	%
Female	44%	Hispanic	3%	Administrator	44%
Male	56%	American Indian or Alaskan Native	6%	Teacher	4%
		Asian	0%	Counselor	0%
		Black or African American	10%	State Education Agency Staff	18%
		Caucasion	74%	Community Based Organization	0%
		Native Hawaiian/Other Pacific Islander	0%	Business/Industry Representative	4%
		Chose not to answer	7%	Other	30%

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

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

NATIONAL ADVISORY BOARD MEETING
The American Federation of Teachers
555 New Jersey Avenue, N.W.
Washington, DC 20001

Tuesday, October 27, 2009
10:00 a.m. to 5:00 p.m.

AGENDA

10:00 a.m.	Welcome Introductions – Mary Wiberg, NAPEEF Chair
10:30 a.m.	Review of Project Design – Freda Walker
11:00 a.m.	Activities Conducted to Date – Mimi Lufkin
12:00 noon	Lunch
1:00 p.m.	Overview of Virtual Learning Community
1:30 p.m.	Evaluation Results/Data Analysis – Bev Farr
3:00 p.m.	Break
3:15 p.m.	Feedback/Recommendations/Next Steps/Needs/Resources/ Vision of the future
4:30 p.m.	On the Horizon – advising on all fronts
5:00 p.m.	Reception with National Girls Collaborative Project Champions Board

Next meeting: Thursday, April 15, 2010 10:00 a.m. to 5:00 p.m.
Doubletree Hotel Crystal City, Arlington, VA

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity Pipeline National Advisory Board Meeting
October 27, 2009
Federation of Teachers Building
Washington, DC
8:00 – 5:00 pm

Present: Mimi Lufkin, Joyce Ayers, Barbara Bitters, Jan Bray, Bridgett Brown, Connie Cordovilla, Norman Fortenberry, Fatima Goss Graves, Kenneth Mason, Diane Matt, Claudia Morrell, Karen Peterson, Andrea Prejean, Ann Schreiber, Betty Shanahan, James Stone, Leroy Tripette, Mary Wiberg, Freda Walker and Beverly Farr.

Absent: Gene Bottoms, Kevin Christian, Jill Cook, Kim Green, William Howe, Diana Jensen-Dooling, Joan Kuriansky, Tim Lawrence, Carroll McGillin, Harilyn Russo, Virginia Stern, Niel Tebbano, and Samuel Truesdale.

Action:

1. Norman Fortenberry, email him, as he knows a faculty member at University of IL – UC who is in an education dept. works with engineers and has a marketing background. He will send contact info. Maybe for MO expert request.
2. Collaborate at state level with those focused on disability, disability centers funded by NSF Laureen
3. Bridgett Brown, Diane Matt may know a person to assist IL with presentations about Green careers/jobs at Connection Conf. March 2010
4. Mimi re-mind NACTE (Jim Stone) about the nontraditional performance criteria. Kathy Oliver and Belinda McCarran both serve on the board. NACTE report Contact Jay Noell 202-401-1026 jay.noell@ed.gov
5. Make is so people must register to download modules and the resources attached, do not make the front end too cumbersome, " you are free to download but you must register.
6. Mimi meet with newly appointed person in admin, Brenda Dann-Messier and Glenn. To talking about data, data collection systems and correction of data.
7. Mimi add to your challenges PPT slide and mind Bureaucratic inertia, add chaos, fear (fear due to loss of $ for education)
8. Agenda for next advisory board meeting: sustainability (evaluation and implementation) What would be realistic? Claudia has a paper for starting the conversation.
9. Set up a professional group on WEPAN
10. Mary W. call Ann O'Leary, editor of Woman's Nation. Mimi and Mary write a response to the report.
11. Call Lisa Maatz, pre-lease of book by Christine Hoff Summers (Betty mentioned it)
12. ID some strong spokeswomen to respond on talk show to Christine HS book
13. Follow-up with Kenneth about curriculum review of PLTW, also approach Judy about

Ideas for the Website

1. If someone downloaded then send a how did you use (in about so many days) who uses
2. Do not make too front end hard to get in or download
3. Are there resources for parents and students?
4.

Ideas for 5-Step Improvement Process Training

1. A way for PD trainers to communicate and share with each other
2. Are trainers the main source of knowledge or the ones transferring the knowledge
3.

Ideas for Webinars

1. Advance Q to be answered by speaker during webinar
2. Speaker has 30 days after webinar to answer questions
3. Greg check-out www.moodle use for webinars for voice over/phone without cost for each person phoning in. Hook up can be hard but once set up works very well.

Issues with design,

1. Only two years for intense TA
2. Need to be selective in strategies, ID specific sties for 5 step tr
3. Need strong higher level support in Iowa the Deans at CC are at and involved in the 5 step training
4. Data, needs to be by program and public, not suppressed
5. Those that sign on really knowing what they are committed to do
6. Pick states that have data system that make our work easy
7. Disparity between schools and education system and now we need to do nation building and the proposal is not about nation building. Maybe a report that can affect public policy. Goat ropers convention or herding cats
8. How are we capturing the volunteer project and expect a big effect? Not much $ per student. Flip side think in a structured way about what you are discovering. Important piece of feedback, come in some actionable format.
9. Biggest barrier you have is DOL not interested in programs that bring it down to a specific group but they are interested in a qualified workforce. You look at STEM. What would be more interested to show is the 5 Step program and does that open access to more persons. A state must have a foundation to use the 5-step process. Say it worked here and it did not work here do what are the differences? Current fed administration want to look across the board not a specific group, need to look at what you are doing, cannot be a silo but be a part of the big picture. This is not true at NSF so project is caught between. Looking at some of what is learned collecting data from one group and then shared and there are other groups that are doing comparable thing for other underrepresented groups and then there is a bigger picture. Collective data. To have a broader impact then the message can be related to the boarder picture and get your message out. A way to make an impact. What to make something happen but not under the NSF grant. Many groups coming together in a summit to see similarities of special populations. Obama Admin. is saying there is too much duplication. At project level what we can do is highjack the HRJAM. Must find a better way for program officers to include the underserved groups, underpril do not get funded and some

get funded over and over again. A way to get more people that are not working on diversity get involved in diversity work. How to raise teacher expectations of all including those with disability, minority, poor, etc.? Kids are getting left out that could be bright. Any way to link us with ITEST community. Betty says some of linked with Girls Collaborative but only happens because there are those of us that are in both groups not because NSF links groups/projects together. There are female projects, Mimi how do we link? (this was lively discussion, sparked a few emotions)

10. Takes lots of time just to work through the definition of STEM. Takes time to slog through and get players on board with the definition before beginning the work.

Issues with nontraditional in general

1. Not in the mainstream. How to push into the mainstream?
2. Young generation coming up does not see this as a issue, not aware of barriers
3. Those that could speak up do not at times when recommendations and policy. Person are too shy and do not have a voice, individual or collectively
4. Business and industry does not have a clue how educations works, need to connect dots and give ideas of how to get involved
5. Slow starts due to reluctance to take o this issue, will be get educators at the table maybe need business to take up issues
6. Will the report by Marie Shriver and others be taken by the media and say "oh the gender difference is no longer a problem?"

New Information

1. WEPAN wepanknowledgecenter.org, data base of knowledge etc women in engineering website a sub collection of resources developed by Pipeline and give a window, developed a widget to take people from our website to theirs specific about Pipeline or the big site most stay for 10-11 minutes and 50% return

Ideas about project

1. Send the bd the topics where we have needs to see if they know persons who can speak or if they know there is a webinar on the topic.

What is the impact and the result? What is the impact on the classroom, teachers and students?

This is a very modest effort so expect of impact needs to reflect a similar level not such a s big impact on the logic model. There are so many other factors that will influence the outcome. Do not set yourself up for failure. Probably reasonable that you may change some attitude and maybe to get states to think about moving the ball but do not try to measure the movement of the ball. You are expecting too much for a modest intervention.

Wondering if there are some measures out there to measure students liked it better and men students liked it better as opposed to head count.

If talking about movement maybe on a 1-5 point scale. By looking in shift of attitude of the state contacts. How to make more frutal ground?

Objectives could be on a state-by-state basis.

Be cautious as you have 3 goals for the project and need to meet those goals. But helping state with their data collection systems and may set your self up for failure. Close on those goals. How to evaluate to see if goals were met, how do you measure? Do not reach beyond the goals as these 3 Pipeline goals are reasonable. Jim Stone. NSF will be asking for points of impact and sometimes this is not reasonable but NSF does ask and expect?

Betty translation of Jim Stone's ideas: Because of this grant we saw these measurement and saw these things. Not the specific goals. Some are for difference purposes just remember the purpose.

Betty already thinks Perkins is ineffective and what needs to be done about CTE.
She is fearful about administration is going with education. Be careful what you ask for and keep Kim Green and me in the loop about what you are thinking.

Norman F comments: Reversed site visit, you must answer the questions they ask regardless of all the other discussion. So you are on the right track by saying this is what we are doing with the state, power of project is reaching state level influencers and have example. Institutionalized in some states at the best the state can.

DATA

1. Big impact. Two states are now correctly reporting NT data to the Feds. CA and WI. Consultation with state has made a change.
2. What are the factors that allow the project to have the greatest impact? Ex leadership, grassroots, data. We created conditions where……
3. Maybe compare and contrast when there are informal systems that already are oiling the system. Where are there connectivity?
4. Impact maybe a function of where a state started. How to show NFS knowing there is some tension in doing this? Back to grading each state on specific points.
5. THINK To build capacity maybe we need to know what capacity the state started with or the school or agency etc. If states had these in place or this level of things in place then we can expect this to Happen. Being able to identify that there are different starting place and what those staring points look like. Unexpected results can be reported.
6. Identify the groups related to specific projects. Ask each group to contribute $ to do a summit and take the info the NSF, if a well founded idea. Maybe a GSC grant to start this happening.
7. Maybe IL could be a good case study

8. How much time has the state contacts or state team members have put in that is in-kind.
9. Have there been changes in budgeting or in curriculum or in staffing since the project started?
10. Sustainability will be an issue when it is dependent on volunteers. Pool of volunteers is also very small.

Challenges

1. Too many local agencies to not work at the state level but working with w local without the state should not be ruled out as sometimes the wave can move up.
2. Did you promise you would give NSF a model to be used, tell them it is taking more time than 2 years so. What is the best use of their funding? To continue to work with those that started so there is more success.
3. There are current conditions that were not in place when Mimi applied for the NSF grant, such as economic in ed, new administration?
4. Do not recruit sites because it is competitive the relationship is different.
5. If worked only with the current states, what would they say they needed or want if there was more time or money?
6. Clearly criteria for selection is being more targeted so shall we keep throwing good money after bad or invest in picking more winners? This could give you a clear answer.

Mimi maybe bring into the states where you have worked that are not states.
Coming to the PDI is not the most impactful event, more impactful would be more time for a state facilitator to be in state working on the training. I

Sustainability

1. Often treated as evaluation but maybe another project
2. What do you want to see happen or in place when project is over?
3. Do not wait too late to address this. Do not limit thinking to financial.
4. What does sustainability mean?
5. Who and what is in place?
6. Capacity question plays a part.

Technology Ideas

1. Leroy does not think this project lends itself to social networking.
2. WEPAN could set up a professional networking group on their site.
3. Betty says getting a dialog going on your own website to find out what others are doing, either a blog or a professional group
4. Claudia says group site is free
5. Diane Matt ……..
6. Council of women and girls, Mary asked Jan, maybe another place to consider for collaboration. Mary believes the admin has a strong commitment to gender equity. Jan does not believe the DOE thinks STEM is part of CTE. ACTEonline.org under publication look for STEM equity brief

Things Freda can think about using

1. “Let me push back a little” when responding to someone’s comments

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

STEM Equity Pipeline National Advisory Board Meeting

Double Tree Hotel Crystal City, Arlington, VA
Thursday, April 15, 2010

Luncheon – Washington Ballroom

12:00 Welcome
Mary Wiberg, President, NAPE Education Foundation

Remarks
Jessie DeAro, Senior Policy Analyst, White House Office of Science and Technology Policy

National Advisory Board/State Team Dialogue Session

- Successes – What strategies have you implemented that have been successful in meeting these goals?
- Impact – What has changed as a result of your work in state or local level policy or practice, classroom/teacher impact, and/or female participation or completion of STEM programs?
- Challenges - What challenges have you faced in implementing your strategies?
- Sustainability - How will you sustain the effort and what will you be able to sustain when the assistance is no longer available?
- Recommendations - What recommendations do you have to improve the assistance that is provided through the STEM Equity Pipeline project?

2:00 Break

National Advisory Board Meeting – Harrison Room

2:15 pm Introductions

2:30 pm National Advisory Board/State Team Dialogue Reflections

3:45 pm Project Status Report
Mimi Lufkin, CEO, NAPE Education Foundation

4:15 National Advisory Board Feedback Session
Sustainability
Words of advice

5:00 Adjourn

National Alliance for Partnerships in Equity Education Foundation
P.O. Box 369
Cochranville, PA 19330
610-593-8038 phone
610-593-7283 fax
www.napequity.org

Funded by the National Science Foundation
HRD-0734056

STEM Equity Pipeline Project National Advisory Board Meeting
April 15, 2010
Arlington, Virginia

I. Introductions
   a. 15 board members in attendance: Barbara Bitters, Bridget Brown, Nancy Connelly for Kim Green, Connie Cordovilla, Norman Fortenberry, Linda Hallman, William Howe, Joan Kuriansky, Diane Matt, Karen Peterson, Anne Schreiber, Betty Shanahan, Jim Stone, Laureen Summers, Mary Wiberg,
   b. Jolene Jesse NSF
   c. Mary Wiberg - President of the NAPE Foundation Board
   d. Mimi Lufkin - NAPE CEO and STEM Equity Pipeline Project Director
   e. PJ Dempsy - NAPE Assistant Director
   f. State Facilitators
      i. Howard Glasser - Wisconsin and Minnesota
      ii. Mimi Lufkin – California and New Hampshire
      iii. Courtney Reed-Jenkins – Iowa
      iv. Katherine Weber – Ohio
      v. Freda Walker – Illinois and Missouri

II. Greeting from Mary Wiberg and Jolene Jesse
   a. Mary Wiberg
      i. Welcome and Greetings from the foundation board
      ii. Appreciation and thanks for your time, ideas and contributions
   b. Jolene Jesse
      i. How to define STEM is an issue and has implications.
      ii. Artificial divide between K-Adult and Community College and University and CTE. Not very easy to talk with each other much less collaboration on a project.
      iii. Reverse Site Visit: The panel was extremely kind and impressed with what NAPE has been able to accomplish in the past three years. Mimi Lufkin indicated that a RSV causes stress.

III. National Advisory Board/State Team Dialogue - Comments from the board members from their interaction with state level participants during lunch.
   a. How are we going to sell this?
      i. Not about bodies but see the faces.
      ii. People need to be engaged from an emotional point of view. The five-step process is perfect except it does not hook people emotionally at the beginning. Use an initial hook to get people passionately, so they get on board. How to get them on board in a more personal way? Thus thinking about change theories that invest in the person/emotions. I think this idea is important in a

much larger context. If you are rowing up stream you need support. Build the passion not building the case yet we know they are intertwined. What are the "aha" moments and how can you build on it? What was the turning point? Hearing from students what it feels like to be excluded. Is the Attribution Theory at work in the field?

iii. Think Proxy. Project Lead The Way might be a proxy, they are not known for equity but they are making progress. A proxy might be needed to step up to the plate. What does that look like? Once people do that then they are more ready.
iv. ID readiness as it contributes to success.
v. ID intermediate benchmarks in moving towards goals. State here are some measures of success. This would help with motivation and the push to keep moving. Question to Norman Fortenberry: Any benchmarks from your project that could be useful to this project? Answer: Not at this time but in the future.
vi. There are three major STEM initiatives in one state and they not talking together, they are not linked. One of them is SEPP. It is important to link to the boarder issue such as college and career. Imbed into things with a larger initiative. Link into something that has a broader appeal. Linda indicated there is a Foundation of AZ that is really linked. Look at their method.

b. How do we get business involved?
    i. It surprising how many states did not have businesses on their leadership team, but just had equity people talking to equity people. If we want to sustain this initiative then we need business involved.
    ii. IL business and industry dropped out because we did not have a task for them.
    iii. We need to coach educators to talk (use the correct language) with business and industry and when to bring them to the table.
    iv. Business people are not willing to meet for long period of time vs. educator who dedicate a half or full day to meeting.
c. How to integrate labor into the conversation?
d. How did you have access to others in the state other than the state leadership? How do we get below the state and work with local institutions?
    i. Usually leadership teams provide contacts.
    ii. The project ought to be able to contact locals directly without going through the state.
    iii. How do you get extension agent with passion and commitment? In one state the project followed it's model and housed the project with the state level Professional Development persons but they lacked commitment. In another state they lacked control and had to ask state agency persons for permission to take action. Every state

is so different, so if you have this then this is what you do or if you have this then this is what you do.

e. Language/Terms:
    i. Are we using an old terminology with a new concept? Nontraditional. There are legal definitions. Do we want to continue to say this occupation is nontraditional? Does it help attract females into those careers? Green is a term girls think OK, a new context to create a new opportunity to get women involved to jobs that have been there.
    ii. State persons indicate using the term “extension agent” simply does not work and is confusing and people do not identify themselves as extension agents or others they work with as extension agents.
    iii. Think about the language “best and brightest” You do not need to be the "b and b," one just needs to have the opportunity.

IV. Project Status Report

a. State Reports
    i. States starting in year 1 of the project
        1. California: CA Joint Special Populations Advisory Committee has included this project in their 3-year plan. Thinking they would like to ID a couple of places to do some intensive work as pilot sites and see if there are some shinning stars. There are a couple of colleges and one wants to contract with a professional development provider to work with them and get TA from SEPP. They would like to bring together other state STEM initiatives (meet twice a year) to ask where is equity in your work.
        2. Illinois: The Illinois STEM Equity Pipeline Project completed a third year receiving technical assistance by conference calls, emails, one in person meeting at the annual meeting held in conjunction with NAPE PDI. Persons utilized the Pipeline Press, the virtual learning community and webinars. Next year in the fourth year the project will be sustained through 1) implementation of the 5-Step Improvement Process in pilot sites which are post-secondary New Look Projects funded with Carl Perkins mini grants by the Illinois Center for Specialized Professional Support, 2) collaboration between ICSPS and Project Lead The Way by making presentations to teachers and administrators in training sessions 3) presentations or workshops at CTE conferences 4) individual use of project webinars and the Virtual Learning Community and 5) distribution of the Pipeline Press to state-wide listservs. Illinois project outcomes for the 2009-10 year include: 1) 12 New Look pilot site projects improvement process was

strengthened with the use of STEM Equity Pipeline 5-Step resources. Projects gained a greater understanding of what constitutes a program improvement process, which is at the heart of the design of Improving Nontraditional Programs. 2) There was a greater emphasis for nontraditional careers promotion in programs and courses and 3) Equity resources were brought to the forefront of PLTW trainings, Pre-College Outreach conferences and mentoring programs.

3. Missouri: The Missouri STEM Equity Pipeline Project completed a third year receiving technical assistance by conference calls, emails, one in person meeting at the annual meeting held in conjunction with NAPE PDI. MO Career Educators Coordinators (CEC) provided regional leadership to local secondary career and technical centers with their feeder schools. CECs and educators utilized the Pipeline Press, the virtual learning community and webinars. Next year in the fourth year the project will be sustained through: 1) implementation of the 5-Step Improvement Process at pilot sites in each region. Sites are at different stages of the process with some implementing solutions and evaluating outcomes and process. Some sites will survey students and staff to determine changes in perceptions and enrollment of courses, 2) sharing success of the 5-Step Process and other project resources to local programs and appropriate agencies and 3) participation in project webinars and the Virtual Learning Community. Missouri project outcomes for the 2009-10 year include: 1) 10 Pilot sites used the 5-Step Improvement Process to increase collaboration between career centers and feeder schools, gain knowledge about data collection, increase awareness of STEM and nontraditional careers and to increase the marketing of career and technical centers. 2) CECs Developed and refined a 5-Step Improvement Process Toolkit to be used by the CECs and other educators and 3) CECs made STEM presentations and distributed STEM Pipeline Project resources to students grade 8^{th} – high school, staff at CTE centers and statewide conferences.
4. Oklahoma: OK had spits and starts, changes in leadership and this project became a political football and bounced around then they opted out. Did do training and thought there was something happening at the local level. Jumped over the state structure and did an on-line survey (Survey Monkey) and 9 sites responded indicated impact to about 11,000 people. Impressive.

5. Wisconsin: WI has gone through several stages and also field-tested some strategies to get organized. Now targeting a few pilot sites. People are trying to do this project with heavy workloads.

ii. States starting in year 2 of the project
    1. Iowa: Learned from states already in the project but even that learning and jumping right in the process is slow. Then after 1.5 yrs now seeing remarkable changes at the state level (putting $ forward for 5-step process) A two year time period is just two start and cannot implement and capture data at the local level in that time period. We do not have the chance to see that kind of data in a two-year period. IA thinks the model is working and adding one more year to a third year will help. Q What would you do in the third year? Mimi Lufkin answer: Additional work would be with the leadership at the local level and to help to problem solve. Q Does it means tracking impact and seeing what has changed by the end of the game? Training for 15 Regional CC (all in state) for 5-step improvement process will be the agencies Perkins Plan.
    2. Minnesota: One person had part of their job to include SEPP work, which provided support for the project to get up and running. This will change this summer as the position will be gone and the person gone. Distributing job responsibilities to a variety of people. Pilot sites selected, taken on ownership, have a Goggle group. How to turn this around to two more target sites?

iii. States starting in year 3 of the project
    1. New Hampshire: Had a great first state meeting. Three-prong approach, pilot sites and will meet in May to develop a pitch to their organizations. Second meeting to train a cadre of Professional Development vendors (independent that do not receive state money). Third: Ed. department has OPEN (on-line courses), which will develop training and other communication tools. Waiting to see.
    2. Ohio: Has a passionate team and they jelled at this conference (PDI). Workforce development piece has been brought in by one of the members. Team is very big on special populations. Secondary has goal for sustainability. Connecting to federal legislation and state level with governor. They are extremely excited to be in for a third year not just two.

b. RSV Reverse Site Visit
    i. Strengths: many praises about project in the work completed in a short period of time. The report is available to read.

ii. Weakness: there were two and they are issues we knew and grappling with it.
    1. Understanding the research in gender equity and articulate the research well in training.
    2. Second is the process itself.
        a. Ideas and Questions:
            i. Project Model graphic needs redesign so we can align impact with the model as related to the 5-Step Improvement Process.
            ii. Curriculum for the 5-Step Improvement Process: This summer project plans to hone the training into user-friendly documents, templates, etc. There are already videos of Mimi Lufkin doing the training and are now on DVD.
            iii. How to train others beyond the facilitators and ML and the few others that have learned the process? (MO - CEC's, CA - EW, IL - New Look)
            iv. Need assistance with evaluation. Need evaluation design. Look at Donna Milgram's NSF project.
            v. In the process: Who is gathering the data? What is the data? What strategies are chosen in step 4?

iii. RSV committee questions and statement related to adding new states for the last two years and focusing on case studies. Two Questions to considered: 1) Using this grant for case study? (Which is not in the scope of the project) and 2) Do you trade off sustainability vs. adding new states?
    1. Questions and Statements from advisory board
        a. What is most important?
        b. How much does it cost to bring another state onto the project?
        c. Do you go back and pick up OK to see what has happened at the local level even though the state level does not want to continue to participate? One member said: do not go back and pick up OK.
        d. What makes sense?
        e. When I think about the purpose of this project: is it to get coverage or to determine variables that influence success?
        f. I question if you will get any new knowledge by adding a new state.
        g. Look at the participating states. Is it true you are missing the whole southern part of the country?

How important is that in your overall assessment in how this process works? Are there variables in the southern state that could make a difference?

h. What were the criteria for selecting states? How do states control education? This seems it would make a lot more sense as criteria to choose another state.
i. I do not think you will learn much by adding states.
j. How to figure out sustainability? How to get systematic reform? Research says Leadership makes the difference. Which five states have done systemic reform at the state education level? NC, IL, MS….. Hard to say
k. Is there is diversity of structure and process in each state?
l. If you were going to pick another state do you know an end point, what would you pick?
m. Consider case studies and Items 7 vs. no 4, 6, 7 and 10. Consider 6 vs. 4 or 7. Ten we need to do.
n. Do you want to do cross case analysis?
o. Consider case studies not just of the pilot sites but also the state structure/level. How do different state structures influence the process? Do state level and local case studies of all 8 states.
p. Need to know from the beginning how impact will be measured? Having that measurement piece is important. State may have an action plan but not impact. What are the intermediate benchmarks/goals? Do we have formative evaluation data? Looks like you have summative.
q. NSF monitor's budget was slashed 1 million.
r. Suppose you are sitting on a panel and Mimi Lufkin says the project would do 13 states and then only did 7 and did case study as pilots were introduced. How will she spin the fact that she did five fewer states? Going from 8 states to 9 does not get you closer to 13. Could say, this is what we learned and an external review panel gave these ideas and the project responded to what they said because it is of value.
s. Can the case studies be funded as another part of the NSF vs. this grant, as this is an extension agent grant.
t. Is there something you would tweak with what you have done to get results? Mimi Lufkin: We have not been prescriptive and we could be seeing how fast it can go.

u. How to you want to articulate impact? We want to do more to understand the impact of picking difference state models. How would the lessons be learned to change the number of states. The rational would need to be very strong as now we are only at 60% of doing the number of states at stated in the grant application. What is the difference between being a pilot and being an extension agent project? One of the learning will help you set up… In fact you reach more than the 8 because you drilled down and did deeper work to produce impact.
v. Do we have staff to take on two new states? Mimi Lufkin responded yes. Then we need to add states.
w. If we try to do both: add states and make sustainability happen, and we have very few staff resources, it can be risky.
x. Look at overall goals of grant and NAPE and decide if organization will go after another grant. Will NAPEEF go after another grant? Mimi response: yes, if it fits in our strategic goal.
y. Question related to principal: Is this grant about getting another grant or about making changes/difference.
z. Do GA or TX want to join?
aa. Case studies where not in the grant. Should they be in another grant?
bb. Follow-up over years is important.
cc. Will the project be judged on whether it meets its goals or if it made a difference?
dd. If the STEM Equity Pipeline Projects are still going when we are not in the states was the effort sustained? To me this will matter.

V. National Advisory Board Feedback Session
    a. Sustainability
        i. States talked about sustainability being difficult since the current economic climate is bad thus education, states, counties, communities and personal budgets are tight.
        ii. Equity is an add-on. How to make it part of the core is a big question. IL PLTW is the foundation. Can one national level agency or organization talk to another national level group to put equity forward and into the core?
        iii. The project has webinar for professional development. How do we recognize that a person participated in the webinar. How do we know if they disseminated information to others?
        iv. Wonderful marketing produces have been developed for the project.

1. Is there any branding that you were able to develop that could move this forward and sustain it?
2. Need language. Do you have any resources or could you use some of your resources to do this? Brand the work in an exciting and clear way.
3. What are the various kinds of experiences you can take from the project?
4. How to make a 50 second elevator speech? Think how to do this for sustainability.

b. Words of Advice
   i. Consider mixed media for marketing the 5-Step Improvement Process.
   ii. Consider branding the project and a 50 second elevator speech. Check out the group called Spitfire for ideas.
   iii. Three years are needed for this kind of process and that time frame is supported by literature.
   iv. During hard economic times when education agencies do not want to release staff for training, look for buzz words such as AYP and accountability etc. so administrators will let teachers go to trainings.
   v. Do what the grant said and go after other funding for case studies. . REESE would be a funding source for case study and that one is due in the fall. Case study could be outsourced.
   vi. How are you reaching back to researchers? This is becoming an important component. Need to get more researches on the advisory group and this will show the project is completing the loop to get info back to researchers.

VI. Action Items:
   a. Redesign the project model graphic to show what is really happening and align impact with the model as related to the 5-Step Improvement Process.
   b. Jolene Jess Talk to Lucy Anderson on marketing our tools.
   c. Add researchers to the National Advisory Board for the STEM Equity Pipeline Project.
   d. Focus on pilot sites and impact.
   e. Add two new states that have accessible data, are passionate with commitment, have components in place to start immediately and have already received some 5-Step Improvement Process training.
   f. Mimi: send an email to Jim Stone asking about the case study he is doing currently. Find out what they are doing and the resources available.
   g. Mimi needs support letters from the board members.

VII. Thanks for your time and the project appreciates all the input.

VIII. Next Meeting: Group will meet again next year at PDI. Please mark your calendars.

Staff Training
Sunday, July 26 – Tuesday, July 28, 2009
Dallas Airport Wyndham Inn
Dallas, TX

Sunday, July 26, 2009

2:00 PM	Welcome	Mimi
	Staff Update	
	NAPE and NAPE Education Foundation Update	
2:30 PM	Status of the Project	
	NSF Annual Report Review – the Big Picture	Mimi
3:00 PM	State Reports – SWOT Analysis (20 minutes each)	
	California	Mimi
	Illinois	Freda
	Missouri	Mimi and Freda
	Oklahoma	Rick
	Wisconsin	Howard
	Iowa	Courtney
	Minnesota	Howard
6:00	Break for dinner	

Monday, July 27, 2009

8:30 AM Review of the Process with states – Mimi

Reflection on Year Two – SWOT Analysis – What this means for Year 3 Goals
- State start-up
- State contact roles and relationships
- State team composition
- State team orientation
- Development of the State Implementation Plan
- 5 step process training and implementation
- Use of the experts
- On site visits vs. virtual visits
- State facilitator
  - Best use of time
  - Realistic time investment
- Pilot site development and implementation
- Support from national office
  - Share point sites
  - Website
  - listserv
  - Pipeline Press
  - Webinars
  - Materials development
  - Contract management
- Weaning States at Year 2 end

Setting Goals for Year Three – Five
- First group expectations and follow-up
- Cross-state communications and networking

11:00 Professional Development
- Coaching models vs. Train-the-trainer — Courtney
- What to do when there is no professional development system or providers in the state to train?

12:00 Lunch

1:00 Professional Development Tools — Howard
- What needs to be developed in Year 3

Five Step Program Improvement Process Training Review
- Documenting Performance Results — Courtney and Howard
- Identifying Root Causes — Rick
- Selecting Best Strategies — Freda
- Pilot Testing and Evaluation — Mimi
- Implementation — Mimi

5:00 Review and discuss state applications and external review results
Select next states
- Communication schedule
- Start-up schedule

6:00 Adjourn

Tuesday, July 28, 2009

8:30 AM Evaluation Discussion — Bev and Sandra

Data Collection, Analysis and Use
- Data collection from states
- Data analysis and use
- Additional data requests
- Do we need all this data?

Process Evaluation
- Participant demographic data collection
  - Demographic data elements
  - Website registration
  - Presentation evaluations
  - Webinar registration/evaluation
  - Archived webinar registration/evaluation
- Presentation evaluations
  - State team meetings
  - Outreach presentations
  - Five Step Program Improvement Process Training
- Webinar evaluations – live and archived
- State facilitator reports
- State facilitator interviews
- State action plans
- Pilot site implementation

Outcome Evaluation
- Extension agent reports
- Connecting the state data to participant involvement- impact?
- Participant follow-up and interviews
- Pilot Site evaluation process

Effective Practices Collection – State Implementation Handbook
- Process
- Content

12:00 Working Lunch

1:00 NSF Reverse Site Visit

1:30	Next steps Evaluation of this meeting
2:00	Adjourn

Materials (All available online)

- NSF Annual Report
- Each State SWOT Analysis
- Each State Action Plan
- NAPE Ex. Committee Directory
- NAPEEF Board Directory
- State Team Roles and Responsibilities handout
- All STEM Equity Pipeline Print Materials
- Professional Development Modules
- Wisconsin Data Sheet
- State Applications and reviews

Equipment

- LCD Projector
- Laptop (Mimi's)
- Marking Pens

Expanding options for women and girls in science, technology, engineering and mathematics

New Hampshire Leadership Team Meeting
Thursday, December 17th, 2009
NH Higher Education Assistance Foundation
Concord, New Hampshire

Agenda

8:30-9:00	Coffee and Informal Networking
9:00-9:15	Welcome Susan McKevitt, New Hampshire STEM Equity Pipeline State Contact Mimi Lufkin, CEO, National Alliance for Partnerships in Equity Education Foundation
9:15-9:45	Startling Statements
9:45-10:45	STEM Equity Pipeline Project Overview Mimi Lufkin Overview of the STEM Equity Pipeline Project's goals, objectives and activities, role of the New Hampshire Leadership Team, what other states have done and the project evaluation.
10:45-11:00	Break
11:00-11:30	Status of Women and Girls in STEM in New Hampshire Data on the participation of women and girls enrolled in STEM clusters in New Hampshire high schools and community colleges.
11:30- 12:00	Professional Development Needs Assessment Results Mimi Lufkin Results of the Professional Development Needs Assessment will be presented and initial priorities identified as well as potential experts
12:00-1:00	Lunch
1:00-2:00	Professional Development Systems Brainstorm what organizations, agencies, or institutions manage/provide in-service or pre-service to both career and technical education and academic teachers. Identify most likely to be successful mechanisms to integrate training
2:00-2:30	Development of New Hampshire Objectives and State Plan for STEM Equity Pipeline
2:30-3:00	Action Items and Next Steps Share Point Site use Set a date in January for state leadership conference call to finalize the plan
	Evaluation and Wrap-Up
	Adjourn

Expanding options for women and girls in
science,
technology,
engineering and
mathematics

Ohio State Team Meeting
Monday December 14th, 2009
Ohio Association of Community Colleges
Columbus, OH

Agenda

8:30-9:00	Coffee and Informal Networking
9:00-9:15	Welcome Michael Snider, Ohio STEM Equity Pipeline State Contact Mimi Lufkin, Executive Director, National Alliance for Partnerships in Equity Katherine Weber, Equity Consultant, STEM Equity Pipeline Project
9:15-9:45	Startling Statements
9:45-10:45	STEM Equity Pipeline Project Overview Mimi Lufkin, NAPEEF CEO Mimi will give a brief overview of the STEM Equity Pipeline Project's goals, objectives and activities, outline the role of the Ohio State Team, evaluation and update on other states' activities.
10:45-11:00	Break
11:00-11:30	Status of Women and Girls in STEM in Ohio Katherine Weber, Equity Consultant Data on the participation of women and girls enrolled in STEM clusters in Ohio high schools and community colleges.
11:30- 12:00	Professional Development Systems Brainstorm what organizations, agencies, or institutions manage/provide in-service or pre-service to both Career and Tech as well as academic teachers.
12:00-1:00	Lunch
1:00-200	Professional Development Systems continued
2:00-2:30	Development of Ohio State Plan for STEM Equity Pipeline
2:30-3:00	Action Items and Next Steps • Professional Development Needs Assessment • Goals and Objectives for Ohio - SharePoint Evaluation and Wrap-Up Adjourn

Exhibit 1

State of Iowa
Department of Education
Division of Community Colleges and Workforce Preparation
Grimes State Office Building
Des Moines, Iowa 50613

Request for Application (RFA)

Due Date: July 30, 2010

Title: Increasing Retention and Graduation of Students in Nontraditional Career Areas

Eligible Recipients: Iowa Community Colleges

Period of Performance: August 15, 2010, through June 30, 2011

Funding Sources: PL 109-270, Title 1, Section 112 (C) Perkins Reserve Account

I. General Information:

With the reauthorization of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 113(b)(2)(A)(vi), local recipients of the funds were required to support student participation in and completion of career and technical education programs that lead to nontraditional fields. These requirements included the following:

(1) to provide support for career guidance and academic counseling programs designed to promote improved career and education decision making by students (and parents, as appropriate) regarding education (including postsecondary education) and training options and preparations for high skill, high wage, or high demand occupations and nontraditional fields;

(2) to make available to students, parents, teachers, administrators, faculty, and career guidance and academic counselors, and to improve accessibility with respect to, information and planning resources that relate academic and career and technical educational preparation to career goals and expectations;

(3) to provide academic and career and technical education teachers, faculty, administrators, and career guidance and academic counselors with the knowledge, skills, and occupational information needed to assist parents and students, especially special populations, with career exploration, educational opportunities, education financing, and exposure to high skill, high wage, or high demand occupations and nontraditional fields, including occupations and fields requiring a baccalaureate degree;

(4) to assist appropriate State entities in tailoring career related educational resources and training for use by such entities, including information on high skill, high wage, or high demand occupations in current or emerging professions and on career ladder information.

II. Purpose:

The Iowa Department of Education (DE) will award $9,000.00 to each of the 15 Iowa community colleges to support and extend college efforts related to implementing strategies to increase the retention and graduation of students in a career programs that are nontraditional for their gender. The term 'nontraditional fields' refers to occupations or fields of work, including careers in computer science, technology, and other current and emerging high skill occupations, for which individuals from one gender comprise less than 25 percent of the individuals employed in each such occupation or field of work.

The Department of Education (DE) and the National Alliance for Partnerships in Equity (NAPE) are partnering to provide training and resources to increase the number of under-represented groups in nontraditional and STEM-related careers. Grant recipients for the 2011 Nontraditional Incentive grant dollars will be required to develop a team of stakeholders to participate in a 5-Step Improvement Training Process, a component of the STEM Equity Pipeline Project.

Each community college team will receive training in a 5-STEP Improvement Process to apply research-based strategies to increase nontraditional participation and completion rates in accordance with Perkins IV indicators 5P1 and 5P2. As a result of the training, and in an effort to increase these accountability measures, team members should be prepared to:

- Develop an implementation plan (within 60 days of the training) identifying root causes and barriers, selected strategies for implementation, project goals, timeline, benchmarks, and objectives.
- Participate in ongoing training initiatives, i.e., onsite visits, webinars, and webcasts.
- Conduct professional development with local educators particularly focusing on high schools and community college programs with low participation of women and under-represented in STEM cluster programs
- Integrate the training received into at least one existing professional development vehicle in the community college as a way to share research-based practices
- Provide summative and formative feedback regarding the effectiveness of the training provided

Data reports covering Perkins nontraditional indicators 5P1 and 5P2 enrollment and participation rates for community college nontraditional and STEM-related programs **will be sent to the colleges under separate cover**. This data will be used to select three programs* with a focus on increasing participation rates for students underrepresented in those program areas. The three programs shall encompass:

- One nontraditional program for females
- One nontraditional program for males
- One STEM program with low female participation.

*Please note that a low number of participants in a particular program should not be the deciding factor when selecting targeted programs. Additional indicators may include faculty readiness to implement change; the size and scope of the program; or economic indicators such as industry demand in your service region.

III. Targeted Population:

The targeted populations include students from both secondary schools and postsecondary colleges.

IV. Funding Provisions:

The intent of the RFA is to promote collaboration between secondary and postsecondary institutions to promote and encourage CTE participants, especially those from under-represented groups, to enroll in and complete career and technical education programs that lead to employment in nontraditional fields for their gender.

The applicants RFA must give evidence of collaboration with another agency (school district, community college, college and university, business or community based organization) in the implementation of grant activities. At the minimum, regional teams shall be developed to include career and technical education (CTE) deans, Tech Prep coordinators, CTE faculty, equity coordinators, and two to three secondary partners. Please describe how the initiative will be sustained through basic Perkins program grants or broader college diversity efforts.

Upon completion of the 5-Step training process training, community colleges will submit for approval a plan to DE for the use of the funds in its region prior to the college incurring costs for their projects or initiatives. The plan will include detailed goals, benchmarks, and timeline for the project. When submitting the preliminary itemized budget (Attachment B), projected costs incurred should reflect the allowable use of funds items referenced below.

Please remember to report the receipt of the Nontraditional Careers Incentive Grant in your college's year-end audit.

V. Eligible Recipients:

Iowa community colleges

VI. Requirements for Reporting and Requesting Reimbursement:

Each community college shall submit a plan to the DE for the use of funds in its region to be approved prior to the college incurring costs for their project or initiative. To receive funds, the community college shall submit the reimbursement form (Attachment C).

Deliverables

The approval and the reimbursement of expenditures are contingent upon the rules and regulations per the U.S. Department of Education General Administrative Rules, EDGAR and the submittal of two reports. In the first report, the recipient should include evidence or progress toward meeting the goal and objectives of the program plan. Deliverables shall include a mid-year report due December 31, 2010 and a final report to be submitted to the DE no later than July 1, 2011. Information included in the report must consist of evidence showing:

- Regional meetings held (minutes, agendas)
- Description of activities to-date
- Impact of the 5-Step Improvement process training and subsequent progress towards meeting regional objectives

Final report

The final report (due no later than July 1, 2011) must include:

- Final reporting of how funds were used
- Meeting minutes from committees assigned to the targeted programs
- Description of
    - 5-Step Improvement process findings
        - How goals and objectives were attained
        - Strengths and weaknesses of the project
        - How the information will be used for future work
    - Evidence of collaboration with secondary partners in the region and current progress of development in region for each school

- A complete financial accounting of expenditures incurred at the object purpose level per the State of Iowa Accounting procedures as outlined in the I-3 accounting manual

The Department's guidelines for reimbursement of expenditures incurred by the fiscal agent of this grant allow the issuance of partial payments in addition to a final payment. 20% of funds shall be remained by the DE pending acceptance of the Final Report. Requests will be processed on a quarterly basis and must be mailed to:

Attn: Jeanette Thomas
Bureau of Career and Technical Education Services
Iowa Department of Education
Grimes State Office Building
400 East 14th Street
Des Moines, IA 50319-0146

VII. Procedure for Submitting Proposals

Proposals must be submitted to the Department by **July 30, 2010**, in order to receive funding considerations. Submit two copies of the proposal to:

Attn: Jeanette Thomas
Bureau of Career and Technical Education Services
Iowa Department of Education
Grimes State Office Building
400 East 14th Street
Des Moines, IA 50319-0146

VIII. Assistance:

Questions concerning the guidelines should be directed to Jeanette Thomas, Education Consultant for Career and Technical Education, Bureau of Career and Technical Education Services, via e-mail at jeanette.thomas@iowa.gov or telephone at 515-281-3636.

IX. Guidelines and Format for Submitting Proposals:

A. Cover Page (Applicant Information)
    a. Community college name, city, contact person and title, telephone, mailing address, and e-mail address (Attachment A)
B. Identify current programming/initiatives in place to recruit, retain, and graduate under-represented students in nontraditional programs.
    a. Describe your team's plan in targeting at least **ONE** nontraditional program for females, **ONE** nontraditional program for females, and **ONE** STEM related program with low female participation.
    b. Identify school, program, etc. that will be the focus of the RFA
        i. Provide rationale for program and secondary schools selected.
        ii. List of team members and school/college/organization affiliation, including contact information
    c. Identify timetable for work
    d. Provide project implementation plan including goals and benchmarks
    e. Demonstrate readiness to complete proposal
    f. Describe opportunities for collaboration between secondary and postsecondary institutions

C. Describe methods that will be used to collaborate with all partners
    a. Secondary
    b. AEA
    c. Perkins fiscal agents
    d. Department of Education
    e. Community College
D. Describe methods for monitoring performance in meeting benchmarks
E. Describe evaluation methods
F. Provide budget
    a. Completion of Attachment B
    b. What is the projected cost of the proposal? Provide budget justification or summary of the budget details, as appropriate
    c. Are the funds available sufficient to complete the project
    d. How will the funding be sustained with federal (Perkins) and local resources
G. Provide Minority Impact Statement (Attachment E)
H. Assurances (Attachment F)

Items to be Submitted with Completed Application:

- ☐ Grant Agreement [sign & return an original signature with required Attachments]
- ☐ Cover page (Attachment A) [complete]
- ☐ Nontraditional Careers RFA Budget Summary (Attachment B) [complete]
- ☐ Targeted Programs & Contacts Table (Attachment D) [complete]
- ☐ Minority Impact Statement (Attachment E) [complete & sign]
- ☐ Assurances (Attachment F) [sign]

Other Attachments:

Attachment C: Reimbursement Request [sample form]

Attachment A

Iowa Department of Education
Nontraditional Careers Incentive Grant
RFA COVER PAGE

Community College Name _____

Grant Contact Person _____
(Official grant contact person who received all grant inquiries and information)

Street Address _____

_____
City State Zip

Phone Number_____ Fax Number _____

E-Mail Address_____

Proposal Submission Deadlines: Must be received by
4 P.M. CST, July 30, 2010

This cover sheet MUST be complete and used as the cover sheet for the RFA.
The original and one copy of the Proposal must be included.
The signatures on each copy must be original. Signature stamps are not acceptable.

Copies should be mailed to the individual listed below.

Attn: Jeanette Thomas
Bureau of Career and Technical Education Services
Iowa Department of Education
Grimes State Office Building
400 East 14th Street
Des Moines, IA 50319-0146

THIS PAGE IS REQUIRED FOR THE APPLICATION.

Attachment B

Nontraditional Careers RFA Budget Summary		Total
Budget Categories		
Personnel Services		
Contracted Services (substitute costs, stipends)		
Instructional materials/supplies/printing		
Travel		
Professional Development		
Equipment		
Other		
Other Description		
Total		
TOTAL BUDGET		*$9,000.00*

(Add or delete rows as appropriate for your application.)

Personnel Services	**Travel**
1) Sub Pay: Substitute teacher pay for community college instructors shall be reimbursed at district rates, if applicable. 2) Off-employment compensation: A stipend in the amount of $21.88/ hour up to a maximum of $175.00/day can be paid to off-contract employees who provide services during off-employment time as long as employee is not receiving compensation by the AEA, LEA or community college through standard employment/ contract. Stipend is inclusive of all travel and other related expenses. 3) On-employment compensation: No stipend will be paid as the employee is already being compensated by the employer. If the employee is providing services during employment hours, the employee may be reimbursed for travel/ meals/ lodging only (as applicable).	1) Travel shall be reimbursed per state guidelines: Mileage $0.39/ mile Meals: $8.00 breakfast/ $12.00 lunch/ $23.00 dinner Lodging: $75.00 plus tax per night Alcohol is not a reimbursable expense.

Attachment C

Reimbursement Request

Date:
To: Jeanette Thomas, jeanette.thomas@iowa.gov
From (fiscal agent):
RE: Nontraditional Careers Incentive Grant Request for Partial Payment

Please issue a warrant for $

For partial payment to (community college):

Please complete the table below to indicate RFA expenditures. Categories listed below should match your application.

Nontraditional Careers RFA Budget Summary		**Total**
Budget Categories		
Personnel Services –		
Contracted Services (substitute costs, stipends)		
Instructional materials/supplies/printing		
Travel		
Professional Development		
Equipment		
Other		
Other Description		
Total		
TOTAL BUDGET		

Program Consultant

Bureau Chief

Attachment D

Targeted Programs

Directions: Utilizing the enrollment data that will be provided for you, select **two** nontraditional programs (one targeting females and one targeting males), and **one** STEM program (targeting females) that will be the focus for the incentive grant. Then, indicate the community college program contact person and selected secondary partners.

Targeted Programs	Program Contact	Secondary Partners
Nontraditional Program for Females:		1.
		2.
		3.
Nontraditional Program for Males:		1.
		2.
		3.
STEM Program for Females:		1.
		2.
		3.

*Please note that a low number of participants in a particular program should not be the deciding factor when selecting targeted programs. Additional indicators may include faculty readiness to implement change; the size and scope of the program; or economic indicators such as industry demand in your service region.

Attachment E

Minority Impact Statement

Pursuant to 2008 Iowa Acts, HF 2393, Iowa Code Section 8.11, all grant applications submitted to the State of Iowa which are due beginning January 1, 2009, shall include a Minority Impact Statement. This is the state's mechanism to require grant applicants to consider the potential impact of the grant project's proposed programs or policies on minority groups.

Please choose the statement(s) that pertains to this grant application. Complete all the information requested for the chosen statement(s).

☐ The proposed grant project programs or policies could have a disproportionate or unique positive impact on minority persons.

Describe the positive impact expected from this project

Indicate which group is impacted:

___ Women
___ Persons with a Disability
___ Blacks
___ Latinos
___ Asians
___ Pacific Islanders
___ American Indians
___ Alaskan Native Americans
___ Other

☐ The proposed grant project programs or policies could have a disproportionate or unique negative impact on minority persons.

Describe the negative impact expected from this project.

Present the rationale for the existence of the proposed program or policy.

Provide evidence of consultation of representatives of the minority groups impacted.

Indicate which group is impacted:

___ Women
___ Persons with a Disability
___ Blacks
___ Latinos
___ Asians
___ Pacific Islanders
___ American Indians
___ Alaskan Native Americans
___ Other

☐ The proposed grant project programs or policies are not expected to have a disproportionate or unique impact on minority persons.

Present the rationale for determining no impact.

I hereby certify that the information on this form is complete and accurate, to the best of my knowledge:

Signature of Executive Officer:_____,

Date:_____

Title: _____

Definitions

“Minority Persons”, as defined in Iowa Code Section 8.11, mean individuals who are women, persons with a disability, Blacks, Latinos, Asians or Pacific Islanders, American Indians, and Alaskan Native Americans.

“Disability”, as defined in Iowa Code Section 15.102, subsection 5, paragraph “b”, subparagraph (1):b. As used in this subsection:
"Disability" means, with respect to an individual, a physical or mental impairment that substantially limits one or more of the major life activities of the individual, a record of physical or mental impairment that substantially limits one or more of the major life activities of the individual, or being regarded as an individual with a physical or mental impairment that substantially limits one or more of the major life activities of the individual.
"Disability" does not include any of the following:

(a) Homosexuality or bisexuality.

(b) Transvestism, transsexualism, pedophilia, exhibitionism, voyeurism, gender identity disorders not resulting from physical impairments or other sexual behavior disorders.

(c) Compulsive gambling, kleptomania, or pyromania.

(d) Psychoactive substance abuse disorders resulting from current illegal use of drugs.

“State Agency”, as defined in Iowa Code Section 8.11, means a Department, board, bureau, commission, or other agency or authority of the State of Iowa.

It is the policy of the Iowa Department of Education not to discriminate on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, gender, disability, religion, age, political party affiliation, or actual or potential parental, family or marital status in its programs, activities, or employment practices as required by the Iowa Code sections 216.9 and 256.10(2), Titles VI and VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000d and 2000e), the Equal Pay Act of 1973 (29 U.S.C. § 206, et seq.), Title IX (Educational Amendments, 20 U.S.C.§§ 1681 – 1688), Section 504 (Rehabilitation Act of 1973, 29 U.S.C. § 794), and the Americans with Disabilities Act (42 U.S.C. § 12101, et seq.). If you have questions or grievances related to this policy, please contact the Legal Consultant, Department of Education, Grimes State Office Building, Des Moines, Iowa 50319-0146, 515/281-5295.

Attachment F

Assurances

1. The community college acting as the fiscal agent over this application agrees to maintain financial records and provide such information to the Iowa Department of Education as may be required for fiscal audit.
2. The eligible recipient agrees to provide two reports: one mid-year report to be submitted on December 31, 2010 and the final report is due no later than July 1, 2011.
3. The eligible recipient certifies the agency and its principal officers are not suspended or debarred. *(98-III-USDE-282-7).*
4. Funds will not be used to acquire equipment, including computer software, in any instance in which such acquisition results in a direct financial benefit to any organization representing the interests of the purchasing entity, its employees, or any affiliate of such an organization. *PL 109-270 (Perkins Act), Title III Section 122(c)12)*
5. Funds will not be used for the purpose of directly providing incentives or inducements to an employer to relocate a business enterprise from one state to another state if such relocation will result in a reduction in the number of jobs available in the state where the business enterprise is located before such incentives or inducements are offered. *PL 109-270 (Perkins Act), Title III Section 322*
6. No federal appropriated funds have been, or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress in connection with making of any federal grant, the entering into any grant or cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal grant or cooperative agreement. Sec. 1352, Title 31
7. I CERTIFY that, to the best of my knowledge, the information contained in this Request for Application is true, accurate, and complete.

The undersigned certifies their institution will abide by these assurances during the period of this grant and to the best of his/her knowledge; the information contained in this application is correct and complete.

Signature of Executive Officer:
☐Dr.☐Mr.☐Ms. _____
Date:

Institution: _____ County-District No:___-
(Community College)

Name of College Here Community College
Implementation and Evaluation Plan
SY 2010-2011

Step 1: Document Performance Results

Targeted Programs	Program Contact	Secondary Partners
Nontraditional Program for Females: Name enter the name of the program	Name enter the name of contact for the program Phone enter contact's number Email enter email address for the contact here	1. enter partner school name
		2. enter partner school name
		3. enter partner school name

Step 2: Identified Root Causes

To check boxes double click on box and change the default value to checked

EDUCATION	
Root Cause	**Evidence**
☐ **Academic Proficiency**	enter evidence
☐ **Access to and Participation in Math, Science and Technology**	enter evidence
☐ **Curriculum**	enter evidence
☐ **Instructional Strategies**	enter evidence
☐ **School/Classroom Climate**	enter evidence
☐ **Support Services**	enter evidence
CAREER INFORMATION	
Root Cause	**Evidence**

☐ **Materials and Practices: Assessment, Interest Inventories, and Marketing and Recruitment**	enter evidence
☐ **Early Intervention**	enter evidence
☐ **Characteristics of an Occupation: Job Satisfaction/Career-Family Balance/Occupational Perception/Wage Potential**	enter evidence

FAMILY	
Root Cause	**Evidence**
☐ **Family Characteristics**	enter evidence

INTERNAL/INDIVIDUAL	
Root Cause	**Evidence**
☐ **Self-Efficacy**	enter evidence
☐ **Attribution**	enter evidence
☐ **Stereotype Threat**	enter evidence

SOCIETAL ISSUES	
Root Cause	**Evidence**
☐ **Media (negative)**	enter evidence
☐ **Medica (positive)**	enter evidence
☐ **Peers**	enter evidence
☐ **Role Models/Mentoring**	enter evidence
☐ **Collaboration**	enter evidence

Implementation and Evaluation Plan

Goal: By date**, we will increase the percentage of male/female students in the** name of program **from** current participation or completion rate**% to** projected rate**%.**

Benchmark/Strategy/Activity to Increase Participation or Completion	Tasks to Accomplish Benchmark	Person(s) Responsible	Timeline	Evaluation Plan	
				Process measures	Outcome measures
1.1 benchmark, strategy or activity planned	1.1 task one	name	completion date	enter measures	enter measures
	1.2 task two	name	completion date		
	1.3 task three	name	completion date		
	1.4 task four	name	completion date		
	1.5 task five	name	completion date		
	1.6 task six	name	completion date		
	1.7 task seven	name	completion date		
	1.8 task eight	name	completion date		

To add more Activity blocks copy and paste the above table

VOLUME 5 ISSUE 1

New Look View

December 2009

Inside This Issue

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3 NTO: Men in Nursing
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4 Men in Nursing Publications
4 Request for information

Financial Details

A review of some of the fiscal information shared at the New Look Launch:

Subcontracts

All New Look sites are being funded through subcontracts this year. This brings benefits to sites, but also takes more time initially. Several of you have likely received your subcontracts by now, but if you have not, or you are not sure, you should contact the individual you listed as your fiscal agent on your application; he or she will be the one to receive your subcontract and process it at your institution. ISU should have the subcontracts processed by December 18th, at the latest. Your award letter (e-mail) serves as a Letter of Intent to Award Funds, allowing you to leverage funds from your institution until subcontracts are fully executed. If your institution will not accept a letter of intent and you still have not received your subcontract, please contact your liaison (Aimeé or Lisa) or Connie as soon as possible. ICSPS will then work with ISU to process your subcontract as quickly as possible.

Invoices

Invoice forms are found on the flash drives that were distributed at the Launch, as well as on the New Look website under Participant Resources. These forms are for your convenience; if your institution has a standard invoice template, feel free to use that form instead.
Remember these are *reimbursement* requests, so you must spend your money first, then submit your request with valid receipts (copy is sufficient), and then signed by your fiscal agent. We recommend that you submit invoices quarterly if applicable. Please contact your liaison if you need assistance or have further questions on this process.
Also, please be sure that you spend all of the funds awarded to your project. If you find yourself unable to spend the money in the manner that you originally budgeted, you will need to talk with your liaison about a budget amendment (see below).

Budget Amendments

When plans change, budgets often have to as well. If you find yourself unable to spend your awarded funds in the manner that you had anticipated, you will need to talk with your liaison and submit a Budget Amendment Form. Frequently these budget requests can be processed right in our office without need for adjustment to your subcontract, however, you will need to discuss the details with your liaison to know for sure. If you find yourself unable to spend the total of your awarded funds, please contact your liaison right away. She will assist you in brainstorming ways to expend these funds to accomplish your goals.

Final Reports

This year final reports should be filled out within a few weeks following your final New Look activity for the fiscal year. Please let your liaison know if you will be unable to meet this requirement.

December resource feature: Non-traditional for Gender Occupations

Non-traditional Occupations (NTO's)

As defined by the Carl D. Perkins Career and Technical Education Improvement Act of 2006, non-traditional occupations include individuals preparing for occupations in fields in which individuals from their gender comprise less than 25% of the workforce. Abbreviated as "NTO's", the full title will now sport a hyphen in the opening word in all new ICSPS publications to match with the updated spelling in the 2006 Legislation.

Resource Spot: Products, Effective Practices, New Research

Taking the Road Less Traveled II: Educator's Tool Kit to Prepare Students for Nontraditional Careers is a great professional development resource that is designed to help states meet the Perkins IV Core Indicator regarding participation and completion of secondary and postsecondary students in non-traditional programs. In this updated version, information about non-traditional occupations is aligned with Career Cluster Pathways, and new strategies are featured. If photos of students and workers representing different cultures working in non-traditional careers are needed for marketing, an updated photo gallery is available. Each EFE Director in the State should have received a complimentary copy of this publication at the close of the FY09 fiscal year. Please check with your partnering EFE for access to this helpful tool. Additional copies can be ordered at http://www.napequity.org/page.php?196.

Packed with supports for improving non-traditional programs, the updated Educator's Tool Kit is available now.

Pink Brain, Blue Brain *How Small Differences Grow Into Troublesome Gaps -- and What We Can Do About It* Reporting on her ground-breaking research, Lisle Eliot examines gender-based assumptions and how they can be magnified into dangerous perceptions as they move from parent to child.

Non-traditional for Gender CIP code lists have been cross referenced and organized according to Career Clusters and Programs of Study, one for each gender and another specifically for STEM careers (primarily NTO's for women). Download a copy today!

- Non-traditional careers for females
- Non-traditional careers for males
- Non-traditional careers for females within STEM fields

Featured Female NTO: STEM (Science, Technology, Engineering, and Mathematics)

National Girls Collaborative Project provides support nationwide for collaborations which sponsor girl-serving STEM activities. The Program Directory allows programs to offer and be informed about available resources nearby and across the Nation.

Illinois Professional Development Opportunity

Women in Green: Opportunities in Environmentally Responsible Occupations

Sponsored by the Illinois Community College Board, the Illinois State Board of Education, and the Women's Bureau of the U.S. Department of Labor, this exploration event will help participants discover:

- Programs and initiatives which are in place to support the development and advancement of green jobs
- Possibilities for women in green careers
- The unique role of women in "greening" existing careers
- Examples of effective green programs and practices

This professional development opportunity, which features a heavy dose of information on careers in STEM fields, will be offered twice; once on each end of the State. The first presentation will be a pre-session to the Connections Conference in St. Charles, IL on March 9th, 2010; the second is a pre-session to the CSI-CIA Retreat at Rend Lake Resort in Whittington, IL on June 2nd, 2010. Registration and further information will be available soon at www.icsps.ilstu.edu. For other professional development opportunities, please see the "Save the Date" list on the left.

Featured Male NTO: Men in Nursing

Role Models

Role models and mentors have been shown to be a significant factor in a student's decision to pursue a non-traditional career. There are many strategies to address this root cause, including showcasing role models with good work/life balance. Local role models are ideal, but if you need some further examples, here are a few:

Patrick Conlon RN-BC, CFNP, CDE, CCM, BC-ADM, PNR MSN, FAA – program manager of diabetes education and management at St. Anthony Hospital in Chicago, IL.

John Lowe, PhD, RN, FAAN, American Indian nurse scientist and associate professor at Florida Atlantic University (FAU)'s Christine E. Lynn College of Nursing in Boca Raton, FL.

The U.S. Army's Nurse Corps profiles feature quick biography sketches of army nurses and short videos to introduce website visitors to their stories. Two men who pursued a path of leadership in nursing, are featured, Captain Samuel Sama, Critical Care Nurse in Fort Sam Houston, TX, and Captain Kevin Gormley, Psychiatric Nurse Practitioner in Fort Lewis, WA.

Save the Date

March 9, 2010

Women in Green, St. Charles, IL (Pre-session to the Connections Conference)

March 10-11, 2010

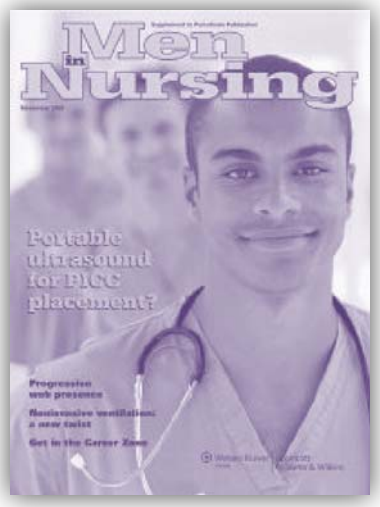
Connections Conference, St. Charles, IL

May 6, 2010

New Look Symposium, Alumni Center, Illinois State University, Normal, IL

June 2, 2010

Women in Green, Rend Lake Resort (Pre-session to the CSI-CIA Retreat)



A journal written by male nurses for male nurses and those that recruit and hire them, Men in Nursing provides articles and information like those highlighted in "Men as Change Agents".

Publications

Men in Nursing is "the first journal of its kind to address the clinical and professional needs of male nurses and those who recruit and hire them. This publication is a bimonthly supplement to Nursing 2009 and features articles on overcoming gender stereotypes and obstacles to professional growth, clinical guidelines to ensure top-quality patient care, practical tips for managing career goals, and strategies for effective collaboration with all members of the healthcare team. Regular departments offer insight into finance, career development, high-tech equipment, men's health issues, and professional advice for men, written by men."

The Online Portal for *Men in Nursing* has some free articles for each issue, and shows featured articles from the last three years of publication, including the article featured below. See the current issue.

Men as Change Agents (*Men in Nursing*, December 2008), an article by Michael Burnett, RN, MSA, BSN, explores the contributions men have made to the nursing profession by advancing the art and science of nursing in ten nursing domains. Burnett identifies these domains as education, leadership in professional organizations, administration/management, advanced practice nursing (including men's health), multicultural nursing, research/evidence-based practice, mentorship, health policy, military nursing, and community service (including athletics). In addition to describing each of the domains in which the author proposed male nurses have made significant contributions in the field of nursing, the article provides one or two real-life examples of male nurses in that field. He hopes that "acknowledging the contributions of male nurses to advance the art and science of nursing can help increase the number of men that enter the profession" (18).

Look for this article at your local library or in your December 2008 issue of *Men in Nursing*, ***or*** contact your Liaison for a PDF copy of the article.

Update Request/Site Information

Please contact your Liaison with any updates on your project, most especially activity date and location changes.

► Please be sure to contact your Liaison with the specific dates of your New Look Events so that we can do our best to support you as your project continues.

► To have your project featured in the next issue of the New Look View (good press to share with your partners and other funders/potential funders!), please contact your liaison to complete a quick interview.

► If you have a resource to share with your peers, please e-mail Lisa.

News You Can Use

CA Perkins Nontraditional & Special Populations Joint Advisory and Leadership Committee (JSPAC)

2009—2010

Greetings from the JSPAC Co-Chairs

Officially, the ground hog has seen his shadow and winter will be with us for a few more weeks. Just like the winter weather we have endured—we have tightened our budgets, cut services, eliminated waste and are still finding new ways of functioning in this austere climate!

We remain committed to students who face barriers to education, training, and employment — especially those in fields that are non-traditional by gender. Proof of this was the **HUGE** response we had at the **Tools For Change** conference, December 2-3, 2009 in Sacramento! We expanded from previous years, had teams from all over the state register for the event, and Mimi Lufkin, Stem Equity Pipeline, trained us on the use of the MAVCC Toolkit for recruiting underrepresented populations into CTE programs. Your dedication in getting the word out was amazing! We had over 250 committed CTE educators attend the conference.

Our Special Populations workshops schedule filled up fast. If you want one in your area next year, contact Elizabeth Wallner (eawallner@gmail.com). This is one Professional Development activity that fits your entire school. You can see the workshop schedule on page two. Your resolve to serve the most at risk students remains solid!

The JSPAC annually conducts research into areas related to CTE & special populations. **Green Technology** is by all accounts, the newest career trend. **Green Technology** opens many new doors to high-wage high-demand careers, many of which women and other underrepresented persons may not have yet considered. Help us reinforce and develop California's workforce diversity by telling us of your **Green Technology** programs. *Tell us about the programs as well as how you are able to recruit and retain students who meet the definition of Perkins Special Populations* including: Single Parents (inc. Single Pregnant Women), Displaced Homemakers, Students with Disabilities, Students who are Limited English Proficient, Students from Economically Disadvantaged families (inc. Foster Youth) and those preparing for a career that is non-traditional by gender. If you are part of a **Green Technology** program, **Toot you Own Horn** (or that of your neighbors!) and send your information to Laurie Harrison (laurierharrison@gmail.com).

Valerie Hesson,
San Diego ROP, Coordinator
K-Adult Co-Chair

Diana Avila,
Southwestern College, Counselor
Community College Co-Chair

Inside this issue:

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California Special Populations

www.jspac.org

Nontraditional Careers Statewide Leadership Project (NTCSLP)

The NTCSLP launched a new website: FIGHT THE TYPE.ORG! Stereotypes hold us all back, they limit our dreams and options! This website is designed to provide information to refute the stereotypes. The NTCSLP has taken resources, research & effective practices from all areas of media and sorted it by students (high school & adult), educators, administrators, and the legislature to create a living website that will be updated & modified as your resource for years to come!

"The problem with stereotypes is not that they are wrong, but that they tell only a single story! Chimamanda Adichie: The danger of a single story"

As you finalize your local plans for professional development for 2011, be sure to include a JSPAC workshop and the annual conference. **Set aside funds** to attend the conference in

Free **Perkins IV** Nontraditional & Special Populations **Tools For Change** Workshops

Register now for a comprehensive workshop designed to provide you and your CTE and Equity partners with tools to meet Perkins requirements and identify & meet the needs of students in CTE programs — **K-12, adult education, ROCP, community college & social service, etc**...

Who should Attend: Perkins coordinators; administrators; special populations coordinators; Title IX 504/equity coordinators; CTE/occupational education deans; K-12, adult, ROP, and community college CTE educators; counselors; CalWORKs One-Stop directors and staff; student support staff; grant writers; institutional researchers; etc.

California Special Populations

Join us as we:

- **Review** Perkins IV
- **Discover** the steps students should take as they select a career or educational program
- **Learn** about the STEM Equity Pipeline 5-Step Process for Program Improvement
- **Explore the Root Causes and Strategies for addressing** the internal, situational, & school based barriers that prevent students from being successful in CTE programs & occupations
- **Receive** FREE resources that assist you in making changes at your site, in your classroom, & with your students!

Register for workshops at www.jspac.org

Location	Date	Time
Northern OC CCD, Anaheim	Friday, March 19, 2010	9:00 AM
Imperial Valley ROP, Imperial Valley	Tuesday, March 30, 2010 Wednesday, March 31, 2010	4:00 pm — 7:00 pm & 1:00 pm — 4:00 pm
Modesto JC, Modesto	Thursday, April 01, 2010	1:00 PM
Alameda COE, Hayward	Wednesday, April 21, 2010	9:00 AM
CA CC Chancellor's Office, Sacramento	Friday, April 23, 2010	12:30 PM
Southwestern CC, San Diego	Friday, April 30, 2010	12:00 PM
Solano Community College	Thursday May 6, 2010	1:00 PM
San Bernardino	Wednesday, May 20, 2010	TBD
Tulare	Thursday, May 21, 2010	12:30 PM

Diversifying the STEM Pipeline: The Model Replication Institutions Program

Author: Jenna Cullinane and Lacey H. Leegwater

The research report, *Diversifying the STEM Pipeline: The Model Replication Institutions Program*, describes effective practices and policies that have enhanced and strengthened the STEM offerings at nine Minority Serving Institutions (MSIs). These institutions participate in the National Science Foundation's (NSF) Model Replication Institutions initiative, which builds on best practices in STEM undergraduate education identified previously by a NSF- and NASA-supported, 11-year-old program called the Model Institutions of Excellence. Download this report and MANY others at the Institute for Higher Education Policy

Race to the Top Recovery Funds

"In the end, we fundamentally believe that Career Technical Education improves academic achievement, makes school more relevant, provides students with new career and educational opportunities and is vital for the long-term health of California's economy." (CA RTTT Application, Appendices page 18)

In August, President Obama challenged every state across the country to create the conditions for education reform and take bold steps to turn around failing schools with his Race to the Top (RTTT) initiative. He is offering $4.35 billion in competitive grants to states that take the lead in pushing reform. California is eligible for up to $1 billion.

About the Race to the Top Fund
The Race to the Top Fund provides competitive grants to encourage and reward States that are creating the conditions for education innovation and reform; implementing ambitious plans in the four education reform areas described in the *American Recovery and Reinvestment Act of 2009* (ARRA); and achieving significant improvement in student outcomes, including making substantial gains in student achievement, closing achievement gaps, improving high school graduation rates, & ensuring that students are prepared for success in college and careers.

Description of Funding
The ARRA provides $4.35 billion for the Race to the Top Fund, a competitive grant program designed to encourage and reward States that are creating the conditions for education innovation and reform and implementing ambitious plans in four core education reform areas:

- Adopting internationally-benchmarked standards and assessments that prepare students for success in college and the workplace;
- Recruiting, developing, retaining, and rewarding effective teachers and principals;
- Building data systems that measure student success and inform teachers and principals how they can improve their practices; and
- Turning around our lowest-performing schools.

The first step was to pass critical legislation that makes the state eligible and sets the platform for reform. In January, the Legislature passed SB X5 1 and SB X5 4, which were signed by Governor Schwarzenegger. The application was submitted on January 18, 2010.

Late Update:
Frustratingly, California found out recently that it did not receive funding in the first round of applications. However, there is a second round which the CA Department of Education is looking at applying for in June 2010.

Find out more at:

CA Race to the Top website

Association of CTE: California CTE State Profile — www.acte.org

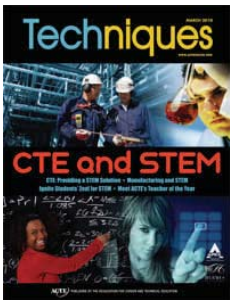
Student & Teacher Information (Section 1)
According to 2006-2007 data from the U.S. Department of Education (the latest numbers publicly available), the total number of CTE students in California was 3,396,644. (Including the following: Secondary: 1,554,611, Postsecondary: 1,472,656, and Adult: 369,377). Secondary enrollment appears to be trending up, while post-secondary enrollment is trending down. For the 2006-2007 school year, there were 7,777 secondary CTE teachers (including full and part time), for a total full-time equivalent of 4,890.3. This number has been slowly decreasing in recent years.

State Education & Workforce Agenda (Section 3)
California Governor Schwarzenegger is supportive of CTE and has been an out-spoken advocate. At the same time, there has been huge and unprecedented interest from business and industry to improve and rebuild CTE in California. The overwhelming interest has placed CTE at the forefront of the state's education and workforce agenda.

The governor and legislative leaders have worked to reverse the under-funding of CTE, including through facilities funding in the Strategic Growth Plan education bond and providing grant funds for specific initiatives and pilots. Key priorities of the governor outlined in his proposed 2007-2008 budget include:

- Reforming high school CTE coursework
- Expanding student exposure to career options
- Increasing professional development opportunities
- Raising the quality & quantity of courses in high-growth & emerging industry sectors.
- Increasing the number of CTE courses that meet the "A-G" entrance requirements
- Streamlining and simplifying teacher credentialing .

Read more of this article from Association for CTE



Additionally, ACTE has a wonderful e-magazine, Techniques. *This resources provides online articles, reports, essays, etc. on all things CTE. Take a look at this months copy by clicking here! Clicking the links on the pages will take you to articles in an interactive product much more like reading a magazine.*

The ACTE 2010 National Policy Seminar was held March 8-10 in Arlington, Virginia. Almost 400 career and technical educators, administrators and partners came together to learn about federal policy priorities and upcoming legislative activities. Visit their website to read all about it!

A Host of Green Technology Resources…

Resources Providing an Overview of Green Technology

- **CA Labor Market Information "Green" jobs overview:** www.labormarketinfo.edd.ca.gov/?pageid=1032
- **Centers of Excellence (COE)** www.coeccc.net/green

  The COE point out that one of the challenges in understanding the "Green" movement is the ambiguous definitions of the green economy. Because it is important to understand what "green" means in industries, occupations & education, COE has provided definitions: for "Green Jobs," "Types of Green Jobs," and "Green Industry Clusters." COE resources available for download at the website include: "*Understanding the Green Economy in California*" & "*Crosswalk linking Green jobs to TOP codes*"
- **Environmental Defense Fund**, "Green Jobs Guidebook" www.edf.org/cagreenjobs
- **Clean Technology and the Green Economy** (2008) http://www.coecon.com/cleantech.html
- **Green Technology Electronic Magazine** http://www.green-technology.org/subscribe.htm
- **Resources Listing Existing Green Technology Instructional Programs**
- California Community Colleges' Green College Master Course List www.cccco.edu
- Green Technology: Strategies & Leadership for Clean and Sustainable Communities: http://www.green-technology.org/
- Our Green School — Directory of California School District Sustainability Programs
- Our Green College — Directory of Sustainability Programs at California Community Colleges
- California Partnership "Green" Academies
- SF Bay Area Community Colleges Clean Energy & Environmental Technology Courses and Programs
- Advanced Transportation Technology and Energy program: http://www.attecolleges.org

JSPAC Member Information

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California Special Populations
www.jspac.org

Thirty committee members, representing the diversity of California K-Adult (10 members), Community College (10 members), and Industry (10 members), meet a minimum of three times per year to plan activities that will support the purpose of the project. A representative from the California Department of Education and a representative from the California Community Colleges serve as co-chairs to the committee.
Complete Committee Membership Contact Directory

Save the Date!

A Decade of Growth; A Decade of Goals!

Career Technical Education & Equity through STEM Careers

When: **Monday, November 29, 2010 — Wednesday, December 1, 2010**

Where: Sheraton Grand, Sacramento, CA

What: CA Perkins Nontraditional and Special Populations Conference

Who: Perkins coordinators; administrators; special populations coordinators; Title IX 504/equity coordinators; CTE deans; K-12, adult, ROP, and community college CTE educators; counselors; CalWORKs One-Stop directors and staff; student support staff; grant writers; institutional researchers; etc.

Why: Meet Perkins IV requirements, improve access, success, and participation of all students of students in Nontraditional careers, improve success in the lives of students from special populations who face barriers to success

JSPAC is supported by the CA Department of Education and CA Community College Chancellor's Office via Carl D. Perkins grants 10-342-002 and 10-0386. No person shall on the grounds of sex, race, color, national origin, or handicap, be excluded from participation in, be denied the benefits of or be subject to discrimination under this program.

JSPAC

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phone (619) 644-7713
fax (619) 644-7937

Program Coordinator:
Tammy Montgomery

About Joint Special Populations Advisory Committee (JSPAC)

The JSPAC is a committee comprised of educators from the K-12, adult education, and community colleges as well as business, industry, and the trades who are committed to enhancing the Career and Technical Education field as well as encourage students to explore and enter into training programs and careers that are non-traditional by gender as well as high-wage and/or high-demand.

Research & Resources

The JSPAC conducts research and develops resources a requested by the field and the State. Visit the JSPAC Website to find reports, position papers, training materials, brochures, etc. that are developed, supported, or sponsored by the JSPAC.

Currently we are conducting research into **Green Careers**, resources & ways to assist students from special populations enter into and be successful in these careers. Preliminary results are included in this newsletter on page 4. Are YOU involved in a **Green Career program** that we missed—or know someone who is? Please let us know and we will include the program and their successes in the final research report!

As we develop or update informational, marketing, or other products (including PowerPoint presentations from our conference), we post them on the website on the **Resource and Research** page as camera-ready art work for you to print as well as have them available in small quantities to send out to you! **Join us at a workshop to get more!**

We are on the web at: www.jspac.org

However, we are undertaking a revision of our website this spring! **Do you have ideas on ways that would make the JSAPC Website (and Resources) work better for YOU?**

Let us know by completing a **QUICK** survey at: http://www.surveymonkey.com/s/LLJ88BY

And finally LINKS to fabulous sites…

- The Ed Source: Clarifying Complex Educational Issues: http://www.edsource.org/
- Education News: A Global Leading News Source: http://www.educationnews.org/
- Edutopia: The George Lucas Educational Foundation: http://www.edutopia.org/

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VOLUME 1 ISSUE 4

MN STEM Equity Pipeline & MN New Look Newsletter

April 2010

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1 Cool Career Academy

2 Final Report Due Date

3 Showcase Symposium Information

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Saint Paul's Career Pathways Acdemy, a project supported by STEM Equity Pipeline-MN funds and resources, was featured in Kare 11's What's Cool in School. This excerpt is reprinted from the website.

Saint Paul's Career Pathways Academy is Cool for High Schools by Kim Insley

Saint Paul, Minn. -- Saint Paul Public Schools is in its second year of a partnership with Saint Paul College that is giving high school students a leg up on their college studies.

Career Pathways Academy offers high school students a chance to take college level courses at the community college in areas of engineering, manufacturing, health services, informatioin technology, business and more, and earn both college and high school credit.

It differs from the states so-called post secondary option because these courses are for high school students only, and generally have high school teachers who work with college staff.

Students using the post secondary option take regular college courses with college students.

"Students basically come here during their junior and senior year," said Peggy Kennedy, who is Vice President for Academic Affairs and Student Development at Saint Paul College.

"It's a competitive process. The school district does a really good job of choosing students that they know will succeed in this program," said Kennedy.

The students they are after are those not served in either gifted or special education programs.

This document was prepared pursuant to grants from the Minnesota State Colleges and Universities and funded through the Carl D. Perkins Career & Technical Education Improvement Act of 2006. This project is also funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056.

Cool Career Academy continued

Kennedy calls them the "students in the middle," who could benefit from some extra direction, or a chance to start over on a career or academic direction.

Save the Date:

June 15

Final Reports Due

Jill Johnson oversees STEM (science, technology, engineering and math) prorams within the Saint Paul School District. She also teaches engineering at Career Pathways Academy.

Johnson says it's proving to be a real stepping stone from high school into college.

"I had 19 students last spring semester," said Johnson,"18 of them were enrolled in the engineering colleges around the state of Minnesota. One went into computer science, which is still very good," Johnson said.

Kennedy said Saint Paul College is hoping some of those students might come back to that school, making Career Pathways Academy a good way to recruit students, like Alex Escarcega, a senior at Highland Park High School.

"I want to go to community college because their classes are smaller," said Escarcega.

"Now that I'm in this class, I found out that Saint Paul College just got an engineering program, so I may come here next year."

Students take these classes tuition-free thanks to grant money.

This story, plus a video showcasing students in the Career Pathways Academy, is available at http://www.kare11.com/life/community/schools/coolschool/coolschool_article.aspx?storyid=842957&catid=148

Phot courtesy Lake Land College

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Showcase Symposium

May 27

In Conjunction with

CAO/CSAO/Deans

Spring 2010 Conference

St. Paul College

8:00-5:00

Sites are asked to bring materials for a poster session.

	Tentative Agenda
8:00	Registration
8:30	SAGE Works: Student Achievement Grounded in Equity
10:40	Equity Showcase: Concurrent Session for Academic and Student Affairs Showcase
11:30	Lunch
12:30	Equity Showcase: Sharing Ideas with Other Teams
1:30	5 Step Program Improvement Process: Review and Reflect
2:00	Small Group Discussion: Root Causes
2:45	Minnesota STEM & Equity issues and Iniitiatives
3:15	FY11 Local and State Equity Planning
4:00	State Team Planning Meeting

The MN STEM Equity Pipeline /MN New Look Showcase Symposium will provide existing and prospective site teams with opportunities to network, to receive resources, and to gain innovative ideas from other sites. In addition, teams will be asked to reflect on their experience with the 5 Step Program Improvement process.

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Resources

All-female team pours heart and soul into car-building contest By Eric Stevick, Herald Writer GRANITE FALLS — The ShopGirls, as they call themselves, wanted a name that had some heft. Neither Gertrude, Betsy nor Edna was substantial enough. For the nine Granite Falls High School students, the forest green and hot pink car they designed, engineered and built from scratch needed a bold name. They wanted something with an attitude that would reflect the hours they spent molding metal and the pride they have in being an all-girl team. Their car would be called the Iron Maiden. http://www.heraldnet.com/article/20100321/NEWS01/703219917/-1/NEWS#All-f

Photo, courtesy Lake Land College

Surgical Tech Careers in High Demand The latest issue of ACTE's Techniques magazine highlights a surgical techology program that allows students to "immediately enter the workforce making $12 to $16 per hour, [and] can also serve as a starting point for any number of medical careers" including nursing. Surgical technology is a field that is non-traditional for males, as is nursing. Read more about this "high demand" program. Learn more about non-traditional for gender careers, or view a list of careers non-traditional for males.

Funding: Why Money Is Missing When It Comes To Creating and Sustaining Female Leaders in High Tech The Glass Hammer Recently, the New York Times reported on the lack of access to funding for women playing in the start-up environment of Silicon Valley. The numbers reveal just how underrepresented both professional executive women and female entrepreneurs are, citing that women account for just 6% of CEOs of the 100 top tech companies. Women create only 8% of venture capital money to fund tech companies – despite women owned businesses providing 40% of the US's company revenues. In fact, in 2009, Techcrunch's The Funded list included only one woman. http://www.theglasshammer.com/news/2010/05/06/funding-why-money-is-missing-when-it-comes-to-creating-and-sustaining-female-leaders-in-high-tech/

This document was prepared pursuant to grants from the Minnesota State Colleges and Universities and funded through the Carl D. Perkins Career & Technical Education Improvement Act of 2006. This project is also funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056.

Wisconsin STEM Equity Pipeline: Target Sites Meeting #2
Tuesday, October 13, 2009

Objectives:

1. Further understand the Five-Step Improvement Process and its usefulness in meeting some goals
2. Review work completed since last meeting and how these products can affect future steps
3. Explore possible solutions and ways to implement and evaluate proposed solutions
4. Develop next steps and ways to disseminate experiences and information with other people

Tuesday, October 13. 2009		
8:30	Registration and networking	
9:00	Overview of the purpose and plans for this session • Introductions • Review last visit and the Five-Step Improvement Process • Discuss the plan for today	Mimi Lufkin & Howard Glasser
9:30	Groups report out on their work since last on-site session • Environmental Scans, Action Plans, Identifying Root Causes and possibly more	Howard Glasser & Mimi Lufkin
10:45	Break	
11:00	Five-Step Improvement Process • Step 3: Select Best Solutions o Review some solutions at NAPE's websites and elsewhere o When might specific solutions be best? o Given your data, what are next steps for addressing concerns?	Mimi Lufkin
12:00	Lunch	
12:45	Five-Step Improvement Process • Steps 4 & 5: Pilot Test and Evaluate Solutions; Implement Solutions o How can you evaluate the effectiveness of your solutions? o What initial information would you want? What follow up information could you collect? o Other resources (e.g., technical assistance, training, materials) needed? Who will be responsible for different components? o Create plans for implementing solutions	Mimi Lufkin
2:30	Break	
2:45	In-state work and ownership: Passing the baton • What is going on locally and in the state • What are our next steps?	Karla Zahn
3:15	Closing: Reporting results, successes, concerns, and next steps – Extension Reporting • Develop your own timeline; establish next meeting window • What to discuss in a follow-up meeting? Where do you hope to be in this spring with this work? • How can this work be sustained for subsequent years? How can it be disseminated to other people at your site and elsewhere? How can it be promoted in ways that might allow for additional resources that will help with sustainability?	Mimi Lufkin & Howard Glasser
3:45	Evaluations and adjourn	
4:00	Adjourn	

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 Program Improvement Process focused on school-identified needs
- Maintain a virtual web-based professional learning community
- 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

RESEARCH TRAINING SOLUTIONS

National Alliance for Partnerships in Equity Education Foundation

2010 Participating States Update

Mimi Lufkin, Principal Investigator,
National Alliance for Partnerships in Equity
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610.593.8038 Fax 610.593.7283

California

Participant since 2007

Sponsoring Organizations
California Dept of Education
California Community College Chancellor's Office
Joint Special Populations Advisory Committee (JSPAC)

Extension Agents Trained
71
Extension Agents Have Trained
2809
STEM Equity Pipeline Webinar Attendance
132
Listserv Members
388
Pilot Sites
3

Illinois

Participant since 2007

Sponsoring Organizations
Illinois State Board of Education
Illinois Community College System
Illinois Center for Specialized Professional Support (ICSPS)

Extension Agents Trained
14
Extension Agents HaveTrained
692
STEM Equity Pipeline Webinar Attendance
97
Listserv Members
43
Pilot Sites (ICSPS New Look Projects)
12

Missouri

Participant since 2007

Sponsoring Organizations
Missouri Department of Education
Missouri Center for Career Education

Extension Agents Trained
22
Extension Agents Have Trained
300
STEM Equity Pipeline Webinar Attendance
50
Listserv Members
68
Pilot Sites
7

Oklahoma

Participant since 2007

Sponsoring Organizations
Oklahoma Department of Career and Technology Education
Oklahoma State University

Extension Agents Trained
44
Extension Agents Have Trained
11,362
STEM Equity Pipeline Webinar Attendance
43
Listserv Members
238
Pilot Sites
14

Wisconsin

Participant since 2007

Sponsoring Organizations
Wisconsin Department of Public Instruction
Wisconsin Technical College System

Extension Agents Trained
80
Extension Agents Have Trained
2337
STEM Equity Pipeline Webinar Attendance
138
Listserv Members
187
Pilot Sites
4

Iowa

Participant since 2008

Sponsoring Organizations
Iowa Department of Education

Extension Agents Trained
22
Extension Agents Have Trained
422
STEM Equity Pipeline Webinar Attendance
23
Listserv Members
114
Pilot Sites
13

Minnesota

Participant since 2008

Sponsoring Organizations
Minnesota Office of the Chancellor
Minnesota Department of Education

Extension Agents Trained
53
Extension Agents Have Trained
3091
STEM Equity Pipeline Webinar Attendance
84
Listserv Members
111
Pilot Sites
15

New Hampshire

Participant since 2009

Sponsoring Organizations
New Hampshire Department of Education
State Team Members
15
STEM Equity Pipeline Webinar Attendance
10
Listserv Members
24
Pilot Sites
4

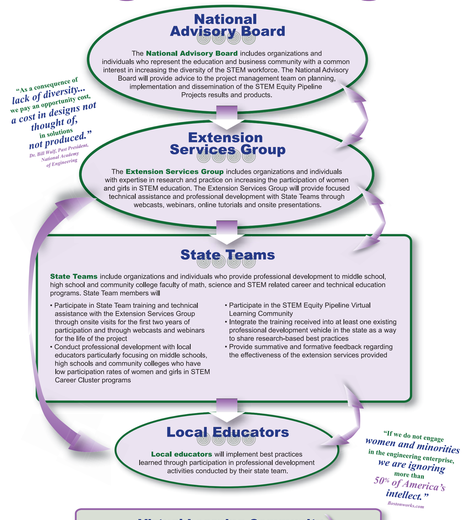
Ohio

Participant since 2009

Sponsoring Organizations
Ohio Department of Education
Ohio Board of Regents
Ohio Association of Community Colleges

State Team Members
21
STEM Equity Pipeline Webinar Attendance
31
Listserv Members
28
Pilot Sites
5

Program Design



www.stemequitypipeline.org

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

5-Step Program Improvement Process

Step 1: Document Performance Results.
The first step in the process is to describe state and school/college performance on the core indicators by comparing performance levels between schools/colleges, student populations, and programs over time. This step uses summary statistics and basic graphs and charts to document performance and identify improvement priorities.

Step 2: Identify Root Causes.
The second step is to analyze performance data and use additional information and methods to determine the most important and most direct causes of performance gaps that can be addressed by improvement strategies and specific solutions. This step encourages states to use multiple methods to identify and evaluate potential causes and select a few critical root causes as the focus of improvement efforts.

Step 3: Select Best Solutions.
The third step is to identify and evaluate potential solutions to performance problems, including both improvement strategies and program models, by reviewing and evaluating the underlying logic of these solutions and the empirical evidence of their effectiveness in achieving performance results.

Step 4: Pilot Test and Evaluate Solutions.
The fourth step is to conduct pilot testing and evaluation of solutions. This step presents practical yet rigorous methods and tools for evaluating solutions before full implementation at the state or institutional levels.

Step 5: Implement Solutions. The fifth step is to implement fully tested solutions based on plans that evaluate the success of the solution in reaching the expected performance results. This step also addresses how to use evaluation results to plan the next steps in state and local improvement efforts.

www.stemequitypipeline.org

National Alliance for Partnerships in Equity
The Equity Professionals

Spatial Visualization Using the Technoblock Exercise

This technoblock exercise, taken from the book ***Introduction to 3D Spatial Visualization: An Active Approach*** by Sheryl Sorby, Anne Wysocki and Beverly Baartmans is designed to exercise a student's 3 dimensional visualization and spatial skills.

In the first exercise, students will use the blocks to build shapes that correspond to a 2 dimensional grid. Once built, the student can rotate the blocks and view them from different directions to select the shape that fits the grid.

In the second exercise, students will select the letter that corresponds to the direction from which the shape is being viewed.

For the third exercise, students will work in reverse to look at various shapes made from the blocks and record on a grid the number of blocks that are in each stack.

Exercise 1: Circle the letter beneath the isometric sketch of the object that corresponds to the coded plan shown on the left.
Answers: 1. A 2. C 3. D

Exercise 2: Circle the letter on the coded plan (W, X, Y, or Z) that corresponds to the isometric sketch.
Answers:
1. X 2. Y 3. W 4. Z 5. Y 6. W

Exercise 3: Complete the coded plan for the object show in an isometric sketch on the right. Answers:

1.

2		
2	1	
2	1	1

2.

	2	3
1	1	2
		1

3.

	1	3
1	1	1
		2

4.

1	1
1	2
1	3

5.

1	1	
2	3	1

6.

1	3
	2
	1

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

STEM Equity pipeline

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

The Book
Introduction to 3D Spatial Visualization: An active Approach

Ordering Information:

Workbook with Software

Introduction to 3D Spatial Visualization: An Active Approach
By Sheryl Sorby , Anne Wysocki and Beverly Baartmans
Published by Cengage Learning, 2003
ISBN-10 1401813895 ISBN-13: 9781401813895

Snap Cubes (Blocks)

15 Snap Cubes are sufficient to construct objects in workbook.
Order from EAI Education: http://www.eaieducation.com/530095.html

Selected Bibliography

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"Assessment of a "New and Improved" Course for the Development of 3-D Spatial Skills," S. A., Sorby, Engineering Design Graphics Journal, Volume 69, No. 3, pp. 6-13.

"A Course in Spatial Visualization and its Impact on the Retention of Women Engineering Students," S. A. Sorby, Journal of Women and Minorities in Science and Engineering, Vol. 7, No. 2 2001, pp. 153-172.

"The Development and Assessment of a Course for Enhancing the 3-D Spatial Visualization Skills of First Year Engineering Students," S. A. Sorby and B. J. Baartmans, Journal of Engineering Education, Vol. 89, No. 3, 2000, pp. 301-307

Questions? Please contact us:

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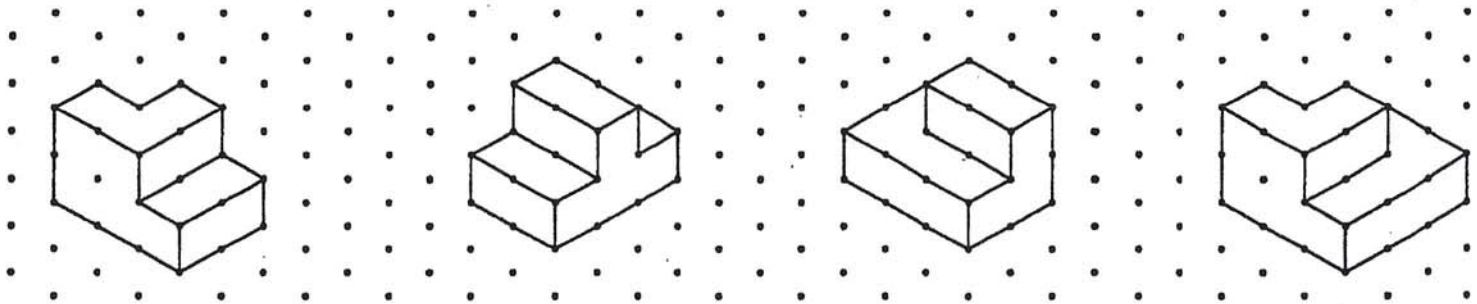
906.487.3393	906.487.3047	906.487.2681
Mechanical Engineering	Engineering Fundamentals	Engineering Fundamentals
Michigan Tech	Michigan Tech	Michigan Tech

Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

Circle the letter beneath the isometric sketch of the object that corresponds to the coded plan shown on the left.

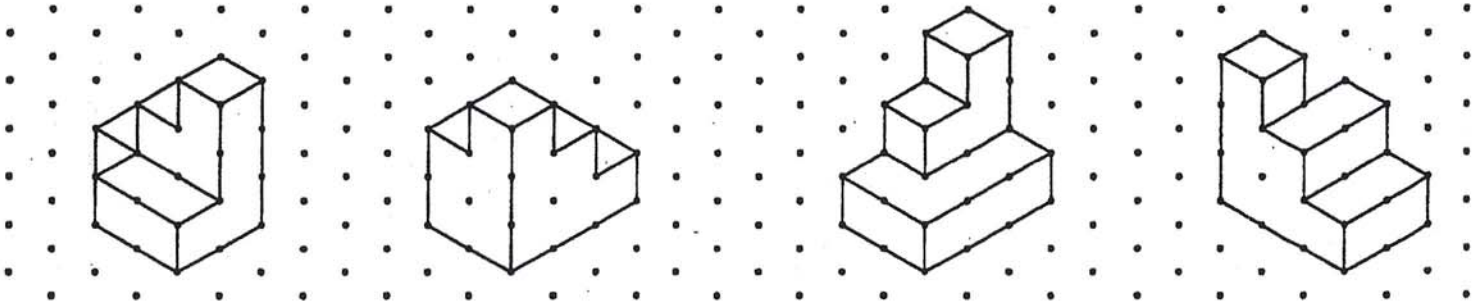
1.

2	1
2	2
1	1



2.

3	1
2	1
1	1



3.

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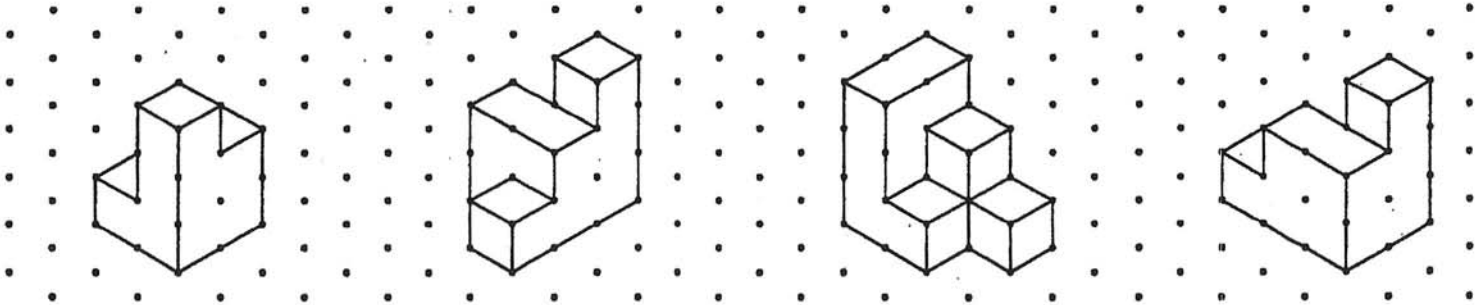
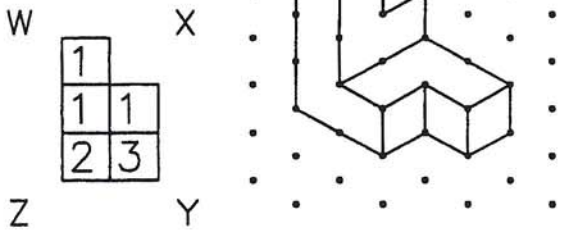


Name: Class: Section: Date:	Introduction to 3-D Spatial Visualization	Grade:	Page 4

Circle the letter on the coded plan (W, X, Y, or Z) that corresponds to the given isometric sketch.

1.



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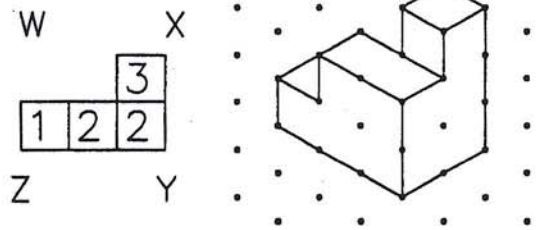

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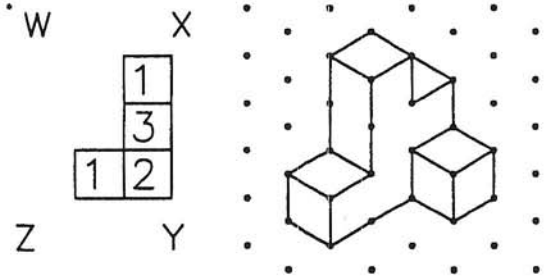

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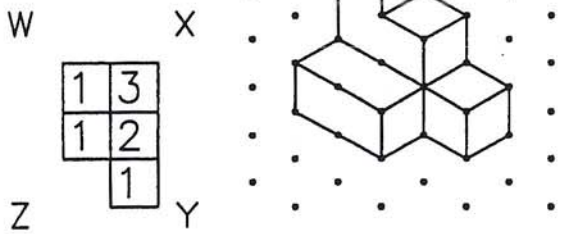

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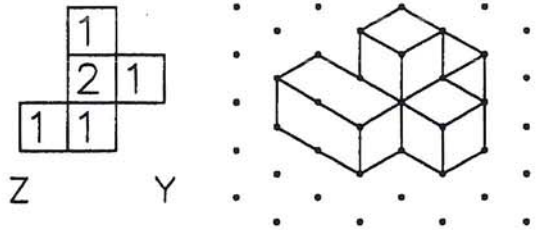

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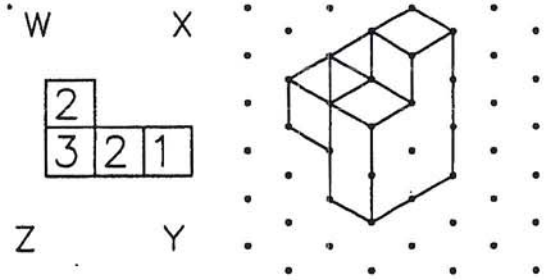
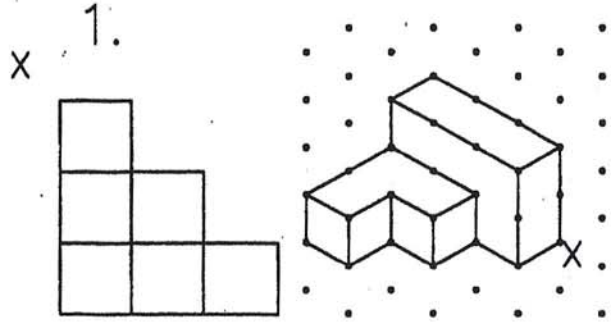


Name:			Introduction to 3-D Spatial Visualization	Grade:	Page
Class:	Section:	Date:			10

Complete the coded plan for the object shown in an isometric sketch on the right.

1.



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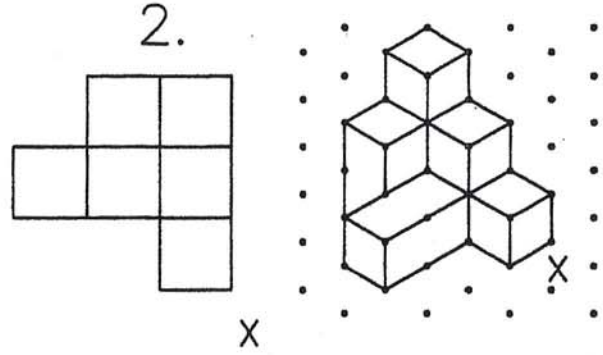

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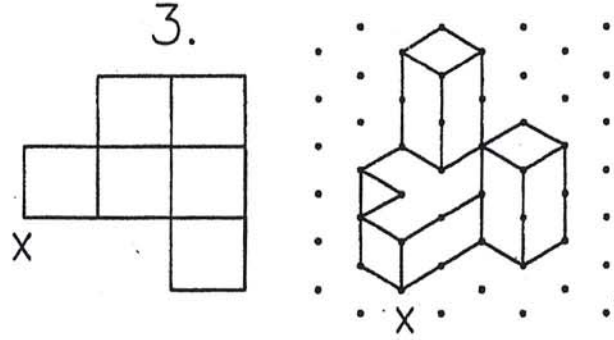

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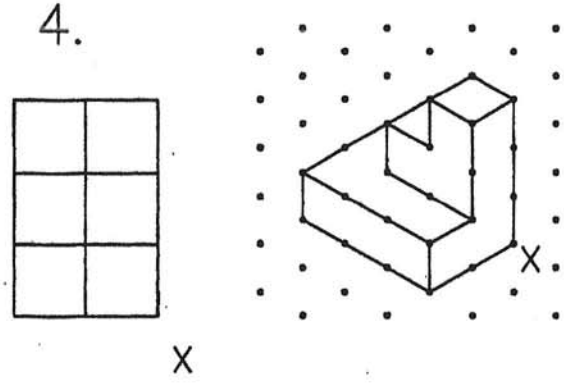

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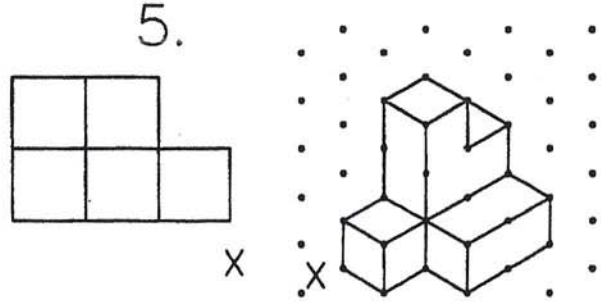

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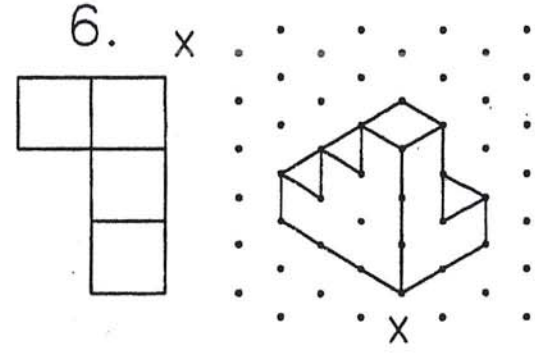


Name:			Introduction to 3-D Spatial Visualization	Grade:	Page
Class:	Section:	Date:			7

National Alliance for Partnerships in Equity Education Foundation

Certificate of Participation

presented to

Name Lastname

for participating in the

Webinar

date

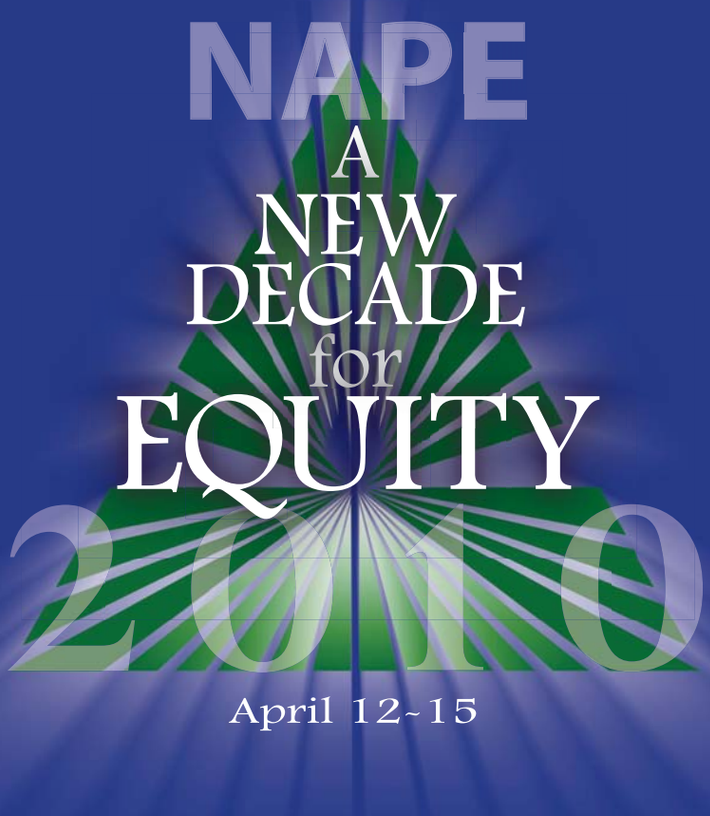
Funded by a grant from the National Science Foundation, GSE/EXT: STEM Equity Pipeline Project, Grant No. HRD-0734056

Mimi Lufkin, CEO, National Alliance for Partnerships in Equity Education Foundation

STEM Equity pipeline

2010

NAPE Professional Development Institute



April 12-15

WELCOME!

Welcome!

Dear Colleagues and Friends,

On behalf of the National Alliance for Partnerships in Equity (NAPE), it is my pleasure to welcome you to the Professional Development Institute (PDI). I am especially pleased that you have chosen NAPE PDI as your source for current and proven best practices and resources that will assist you in removing barriers to opportunities that our nation's diverse population encounters at school and at work. Your presence is greatly appreciated given our nation's economic status.

Building your professional capacity is the major mission of the PDI workshops. These sessions will include a wide range of experts and advocates from education, workforce development, and direct-service communities.

This will be the first PDI where three Assistant Secretaries representing the US Departments of Labor and Education will present their views on the progress made and the work that needs to be done in the areas of career and technical education, employment and training, and civil rights. This is a unique opportunity for attendees to gain insight as to how these federal agencies operate and collaborate to implement federal law.

You will be given the opportunity to learn about policy creation, modification, and implementation during Advocacy Day. This day policymakers and advocates will brief you on the direction Congress is moving as laws are authored and/or reauthorized. We hope that you will educate your policymakers in Congress and in your home community by explaining how proposed changes will impact your work as you strive for equitable educational opportunities for students.

Lastly, we hope you will join other attendees during the NAPE Education Foundation Silent Auction and Theatre Night. These special events provide you an opportunity to network in ways that cannot be replicated in other venues. What has been said in past years remains true – in the enduring struggle for economic equity, our greatest resource is each other. Welcome to our nation's capitol and enjoy your chance to strengthen the connections among our network of members.

Sincerely,

Lou Ann Hargrave, Ed.D.
President
National Alliance for Partnerships in Equity

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Tuesday Workshop Descriptions 5
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Schedule at a Glance

Monday, April 12, 2010	
Commonwealth Room	
8:30 am - 9:00 am	Continental Breakfast
9:00 am - 5:00 pm	STEM Equity Pipeline Leadership Institute Pre-Conference
3:00 pm - 9: 00 pm	NAPE Education Foundation Board Meeting & Dinner in the Board Room

Tuesday, April 13, 2010 For detailed workshop descriptions turn to page 5

	Commonwealth Room	Wilson	Madison	Monroe
7:30 am - 9:00 am	Breakfast & Registration			
8:00 am - 9:00 am	Registration & Setting the Future for a New Decade for Equity			
9:15 am - 10:30 am Session I	Registration	Women in Green: Opportunities in Environmentally Responsible Occupations	Crafting a Comprehensive Pre-Engineering Strategy, with Special Focus on Pre-Engineering Programs	Overview of the 5-Step Improvement Process Utilized with Missouri Career Centers
10:45 am - Noon Session II	Registration	Training Teachers to Attract Girls to High School Computer Science Classes: An NCWIT Extension Services Train-the-Trainer Workshop	Gender Equity and Technical Education in Vermont: One State's Collaborative Effort to Address the Ever-Changing Needs of Both Girls and Boys in Nontraditional Career Studies	Challenging the Gender Gap in Emerging Technologies: Strategies for Recruiting Girls and Women in the Blue and Green Collar Fields
Noon - 2:00 pm	Luncheon and NAPE Education Foundation Leadership Award in the Commonwealth Room			
2:00 pm - 3:15 pm Session III	Registration	Women on the Wires: Bringing Women into Nontraditional Careers in Electric Utilities	Why So Few? What Research Tells Us About Girls and Women in Science, Technology, Engineering and Math	A Continuum of Alternative Education Opportunities for All Ages
3:30 pm - 4:45 pm Session IV	Registration	Single Sex Education in a CTE Context: Forward or Back to the Future?	Successful Workforce Initiatives That WORK for Latinos	Women in the Trades Go Green
5:00 pm - 6:00 pm	Silent Auction Bid-off and Networking in the Commonwealth Room (light refreshments)			
6:00 pm - 9:00 pm	NAPE Executive Committee Meeting & Dinner in the Board Room			

Wednesday, April 14, 2010	
Public Policy Day	
7:30 am - 8:00 am	Continental Breakfast - Commonwealth Room
8:00 am - 10:00 am	Federal Policy and Its Impact on Local Programming - Commonwealth Room
10:00 am - 11: 00 am	Travel to the Hill - Dirksen Senate Office Building, Room 106
11:00 am - 12: 30 pm	Public Policy Panel/Congressional Leadership Award
2:00 pm - 5: 00 pm	Hill Visits or Phelps Architecture, Construction and Engineering High School Tour
7:00 pm - 10: 00 pm	An Evening at the Theatre: See page 4 for details, tickets purchased with registration.

Schedule at a Glance

Thursday, April 15, 2010 For detailed workshop descriptions for Thursday see page 8			
	Commonwealth Room	**Monroe**	**Van Buren**
8:00 am - 9:00 am	NAPE Membership Meeting Everyone is welcome		
9:15 am - 10:30 am Session V	Preparing Women to Succeed in the Green Economy	Transformation to Excellence: Discussing Racism and Beyond	Beyond the "Culture of Poverty" Myth: A Model for Class Equity in Schools and Organizations
10:45 am - Noon Session VI		Title IX: By...and Beyond... the Numbers	Leveraging Grant-Funded Science, Technology, Engineering and Mathematics (STEM) Undergraduate Programs to Optimize Student Success
Noon - 2:00 pm	STEM Equity Pipeline State Teams & National Advisory Board Luncheon - Commonwealth Room		
2:00 pm - 5:00 pm	STEM Equity Pipeline National Advisory Board Meeting - Commonwealth Room		

Events

STEM Equity Pipeline Pre-Conference

Monday, April 12, 2010
9:00 am - 5:00 pm

Representatives from the STEM Equity Pipeline State Teams will meet to share their accomplishments and challenges in implementing professional development efforts in their states. Participants will have the opportunity to provide input to the project's future implementation. Team members will receive technical assistance and conduct future planning for their states' activities. (registration is required for this event for individuals who are not members of a participating state)

Silent Auction

Tuesday, April 13, 2010
5:00 pm

This year the bidding of items will be open all day with the final bidding round at 5:00 pm during the networking reception. Check out the unique donations, state-specific products, or equity-related items that are donated to our Silent Auction. All proceeds are used to support the NAPE Education Foundation and its projects and are tax deductible. This event is included in your registration fee.

Tour of Phelps Architecture, Construction and Engineering High School

Wednesday, April 14, 2010
2:00 pm

This event is included in your registration fee and is for those who don't wish to visit their representatives on Public Policy Day. Transportation is provided.

Phelps is the first public high school in the country to offer both college preparatory and career and technical education exclusively dedicated to the design professions and construction trades. The school is anticipated to be the first LEED for Schools certified building in Washington, D.C. Students can monitor energy gained from photovoltaic solar arrays, helical wind turbines, and a geothermal cold water loop. The entire building is designed as a teaching tool, with walls serving as master lessons in bricklaying and exposed plumbing providing examples of best practices in construction.

Illustration by Sterling Hundley

An Evening at the Lincoln Theatre

Wednesday,
April 14, 2010
7:00 pm

The Duke comes home to the Lincoln with Sophisticated Ladies, the award-winning musical revue that explores the legacy of a local jazz hero starring Broadway legend Maurice Hines. This glorious re-creation of the big band sound features some of the most memorable music from the Roaring Twenties to the Swing Era, including such classic songs as "It Don't Mean a Thing If It Ain't Got That Swing," "Take the 'A' Train," "Satin Doll" and the haunting "In a Sentimental Mood." With one show-stopping number after another, this stylish and brassy retrospective travels through a history of American song and dance, from Charleston to swing to virtuosic tap dancing. It's an abundance of riches from the most sophisticated and sassy jazz king of all. Tickets were purchased with your registration. Check at registration desk for additional tickets. Meet at the Lincoln Theatre at 7:00 pm where tickets will be distributed.

Tuesday, April 13 – Workshop Descriptions

WORKSHOP SESSION I
Tuesday, 9:15 AM – 10:30 AM

"Women in Green: Opportunities in Environmentally Responsible Occupations"

Lynn Reha, Director
Aimee LaFollette Julian, Assoc. Director of Professional Development
Illinois Center for Specialized Professional Support, Normal, IL
PJ Dempsey, Assistant Director, National Alliance for Partnerships in Equity, Cochranville, PA

This presentation will explore programs and initiatives that are in place to support the development and advancement of "Green-Collar Jobs". Also outlined in this presentation are the skills that will be required for students to take the lead in "clean power" and technological industries. Session leaders will discuss the possibilities for women in green-collar career opportunities and explore the unique role of women in contributing to the "greening" of many existing careers. Many of the jobs in the future will use technologies that have not even been created yet, requiring workers to develop skills through on-the-job training. By including businesses in the educational process, students learn real skills that make them more competitive and successful in the workforce of tomorrow.

"Crafting a Comprehensive Pre-Engineering Strategy, with Special Focus on Pre-Engineering Programs"

Jennifer Schelly, Principal Electro-Optics System Engineer, BAE Systems, Nashua, NH

Are you looking to start a fun, creative pre-engineering program to engage female students and get them jump started in engineering? If you are, then this workshop is for you! We will review the case for pre-engineering education and then dive into strategies to put into operation, including programs already implemented. A well-liked student activity will be carried out in the workshop. This workshop will be an enjoyable review of programs that will engage your students!

"Overview of 5-Step Improvement Process Utilized with Missouri Career Centers"

Lori Mann, Career Education Coordinator, Platte City
Janet Reppert, Career Education Coordinator, Monett
Camille MacDonald, Career Education Coordinator, Popular Bluff
All of Missouri Center for Career Education, MO

Coordinators, who facilitate the 5-Step Program Improvement Process from the various regions in Missouri, will share how the 5-Step Process has been implemented in Missouri with their career centers and sending high schools. In particular, Career Education Coordinators will share Perkin's nontraditional participants and completer data, how they look at trend data, what tools were utilized to collect additional data and the analysis and "next steps" that have been taken toward implementing promising practices. A summarization of the challenges and success of the process will be shared. A website for a 5-Step Process Facilitator's Guide will be shared.

WORKSHOP SESSION II
Tuesday, 10:45 AM – 12:00 PM

"Training Teachers to Attract Girls to High School Computer Science Classes: An NCWIT Extension Services Train-the-Trainer Workshop"

Joanne McGrath Cohoon, Senior Research Scientist, Charlottesville, VA
Lecia Barker, Senior Research Scientist, Austin, TX
Both of National Center for Women and Information Technology

Workshop participants will learn why there is a need to actively recruit girls into high school computer science classes. They will learn how they can train others to: create messages that influence girls, deliver those messages effectively, and track their results. Participants will practice applying these evidence-based practices, preparing them to help others learn to use the practices in their own environments. Attendees will receive professional quality materials to guide their efforts.

WORKSHOP SESSION II
10:45 AM – 12:00 PM continued

"Gender Equity and Technical Education in Vermont: One State's Collaborative Effort to Address the Ever — Changing Needs of both Girls and Boys in Nontraditional Career Studies"

Kelly Walsh, Program Coordinator, Vermont Works for Women, Winooski, VT
Ruth Durkee, Adult Education Coordinator, Randolph Technical Career Center, Randolph, VT
Lynn Vera, Guidance Counselor, Center for Technology, Essex, Essex Junction, VT

This workshop highlights innovative strategies for engaging and supporting nontraditional students. The collaborative efforts of Vermont Works for Women (VWW), the Center for Technology, Essex (CTE), Randolph Technical Career Center (RTCC) - and others in Vermont - have brought about successful programs such as the statewide "Women Can Do!" conference, RTCC's "Career Challenge Day", and CTE's "Introduce a Girl to Engineering Day" activities. This workshop will focus on the strength of Vermont's collaborative efforts to benefit students, technical centers, and the state.

"Challenging The Gender Gap in Emerging Technologies: Strategies for Recruiting Girls and Women in the New Blue and Green Collar Fields"

Brigitte Watson, Equality Works Program Coordinator, Equality Works Program, Legal Momentum, New York, NY
Sandra McGarraugh, Director, Center for Technology, The Net Project, Center for Women in Government & Civil Society, Univ. at Albany, Albany, NY
Ivana Nunez, SVA Apprentice: Electrical Installation, Female CTE Graduate, Thomas A. Edison Career and Technical High School, Queens, NY

Although careers in green and blue collar jobs provide new and rewarding opportunities, gender stereotypes are a significant factor in educational choices. Thirty-five years after Title IX, girls are still underrepresented in technology classrooms and are graduating with significantly less earning potential than their male counterparts. This workshop will review the factors that contribute to the gender imbalance and discuss targeted interventions within the Career and Technical Education system that are challenging the status quo.

WORKSHOP SESSION III
Tuesday, 2:00 PM – 3:15 PM

"Women on the Wires: Bringing Women into Nontraditional Careers in Electric Utilities"

Linda Mihalik, Education Consultant, American Electric Power Transmission, Gahanna, OH
Carol Wintz, Workforce Planning and Development Consultant, Hard Hatted Women, Cleveland, OH
Terri Burgess Sandu, Executive Director, Hard Hatted Women

American Electric Power, the nation's third-largest electric utility, reached out to Hard Hatted Women, a community-based organization, to join in employing more women in nontraditional jobs. You will learn from both organizations how they crafted their partnership and a program that meets their joint and individual goals, while benefiting women with high-wage, high-demand, sustainable employment.

"Why So Few? What Research Tells Us About Girls and Women in Science, Technology, Engineering and Math"

Catherine Hill, Director of Research, American Association of University Women (AAUW), Washington, DC

The AAUW will present recent research findings that help explain the small numbers of women in certain science, technology, engineering, and math (STEM) fields profiled in a Spring 2010 AAUW report. The presentation will be organized around seven research findings and recommendations for change. Topics include: malleability of intelligence, spatial skills learning, stereotype threat, self-assessment, college/university departmental culture, implicit bias, and bias against women in maledominated environments.

"A Continuum of Alternative Education Opportunities for All Ages"

Dr. Kara Gae Neal, Superintendent
Dr. Richard Palazzo, Director of Alternative Ed.
Both of Tulsa Technology Center, Tulsa, OK

Tulsa Tech is a comprehensive Career Tech facility providing Alternative Education for a wide range of vulnerable populations ages 12-adult. Largest of the alternative programs are the SUCCESS CENTERS located at four campuses providing credit recovery, GED/ACT/SAT preparation, Math & Reading Enhancement, and EOI tutoring. The Youth Build program engages unemployed adults (18-22) dropouts. YouthBuild provides GED preparation, Construction Skill training, Work-Based experience,

Tuesday, April 13 – Workshop Descriptions

and Life Skill instruction. Project H.I.R.E., M.E.N.D.S., and Project M.O.V.E.S. are all unique programs preparing different high-risk adult populations for productive career pathways and employment.

WORKSHOP SESSION IV

Tuesday, 3:30 PM – 4:45 PM

"Single Sex Education in a CTE Context: Forward or Back to the Future?"

Barbara Bitters, Assistant Director, Wisconsin Department of Public Instruction, Madison, WI

This session will explore the reasons why CTE educators want to offer single sex classes; the legal landscape under Title IX; the steps required of districts if the Board of Education elects to take affirmative action through single sex course offerings; and alternative strategies for promoting nontraditional enrollment in CTE courses. Discussion of a Wisconsin survey of technology education and pre-engineering teachers on single sex education will be shared, along with results.

"Successful Workforce Initiatives That WORK for Latinos"

Surabhi Jain, Manager, Career Pathways Initiatives, National Council of La Raza, Chicago, IL
Aracelly Watts, Workforce Program Manager, Carlos Rosario International Public Charter School
Juliate Machado-Pacanins, Program Manager for Social Services, Spanish Catholic Center

The National Council of La Raza (NCLR) and its Affiliates will present a workshop on successful workforce initiatives that help Latinos achieve upward economic mobility through education and training. Attendees will learn about "best practices" in job training programs in the health care industry, customer service, retail industry, and the green-collar jobs field. Presentations in this workshop will provide attendees with program models that can be replicated within their communities for their respective constituencies.

"Women in the Trades Go Green"

Berta Lloyd, Director of Grant and Special Projects
Mavis McAllister, STRIPE Pre-Apprenticeship Coordinator
Both of American River College, Sacramento, CA

American River College's Sacramento Transportation Regional Infrastructure Partnership in Education (STRIPE) Preapprenticeship training program is providing opportunities for women to learn about renewable energy and energy efficiency applications for entry into apprenticeship training. In a 16-week course, students learn about the tools, equipment, materials, construction, and safety techniques used for building roads, bridges, levees, and rail and learn how "green" is applied. Career choices include Bricklayers/Stone Masons, Carpenters, Cement Masons, Drywall/Lathers, Electricians, Iron Worker, Laborers, Operating Engineers, Pile Drivers, Plumbers, Sheet Metal, Surveyors, and Teamsters. This training provides disadvantaged populations with opportunities that result in high-skill, high-wage employment.

WORKSHOP SESSION V

Thursday, 9:15 AM – 10:30 AM

"Transformation to Excellence: Discussing Racism and Beyond"

Leilani Nalua'I Russell, Director/Educational Leadership, Pathways to Excellence, Vancouver, WA
DaVerne Bell, Director/Educational Leadership, Transformation to Excellence, Tacoma, WA

Racism and discrimination continues to be a part of our society, having adverse affects on our neighborhoods, institutions of learning, and the workplace, especially for our young women and women of color. In order to ensure that all have equal access to equitable education and employment that is free of racism, bias, and prejudice that support the intellectual development and growth of women and populations of color, stakeholders must be actively engaged in public conversations about racism and biasness and their impact on the future of our communities, schools, and workforce.

"Beyond the 'Culture of Poverty' Myth: A Model for Class Equity in Schools and Organizations"

Paul Gorski, Founder, EdChange, Fairfax, VA

The national discourse on poverty centers on the "culture of poverty", despite literature that clarifies low income families do not, in fact, share a common set of values or behaviors. As a result, many common practices for addressing poverty focus on "fixing" supposedly low-income people rather than eliminating class inequities. This presentation will demonstrate how the culture of poverty myth promotes class injustice and will share research-based strategies for creating class-equitable organizations and schools.

Thursday, April 15 – Workshop Descriptions

"Preparing Women to Succeed in the Green Economy: The Women's Bureau Approach"

Jenny Erwin, Regional Administrator, Region IX, San Francisco, CA,
Karen Hornstein Shapiro, Program Analyst, U.S. Dept of Labor, Women's Bureau, Washington, DC

Do you have the tools and resources to help women learn about career opportunities in the emerging green economy? Are you aware of best practices or pilot training projects that help women gain skills and employment in green jobs? In this interactive session, you will learn about new Women's Bureau resources including "A Woman's Guide to Green Jobs", Fact Sheets, and Webinar series. You will also learn how to become more involved with the Bureau to help increase women's participation in nontraditional jobs.

WORKSHOP SESSION VI
Thursday, 10:45 AM – 12:00 PM

"Title IX: By…and Beyond… the Numbers"

Cathy Pieronek, Chair Government Relations and Public Policy Committee, Notre Dame, IN
Betty Shanahan, Executive Director & CEO, Chicago, IL, Both of the Society of Women Engineers

The focus on Title IX enforcement in intercollegiate athletics has skewed perception of what the law can and should do. Title IX is a law that says any school receiving federal funding must provide equal opportunities for girls. This session will review a number of SWE's strategies for increasing the participation of women in the STEM fields, with a focus on using Title IX as a high-impact legal tool to achieve this goal.

"Leveraging Grant-Funded Science, Technology, Engineering and Mathematics (STEM) Undergraduate Programs to Optimize Student Success"

Dr. Candice Foley, College Associate Dean for Curriculum Development
Nina Leonhardt, College Associate Dean for Continuing Education
Both of Suffolk County Community College, Selden, NY

With RFP's being issued to support STEM undergraduates, it is now possible to leverage these resources so that students are fully funded, have access to support services, such as participation in a community of STEM scholars and individualized tutoring sessions, and may experience STEM research through paid internships. In addition, the ability of applicants to demonstrate the leveraging of resources is now an important criterion for those making funding decisions. Learn how Suffolk County Community College is leveraging local, state, NSF, business, and industry resources to deliver full-service STEM education.

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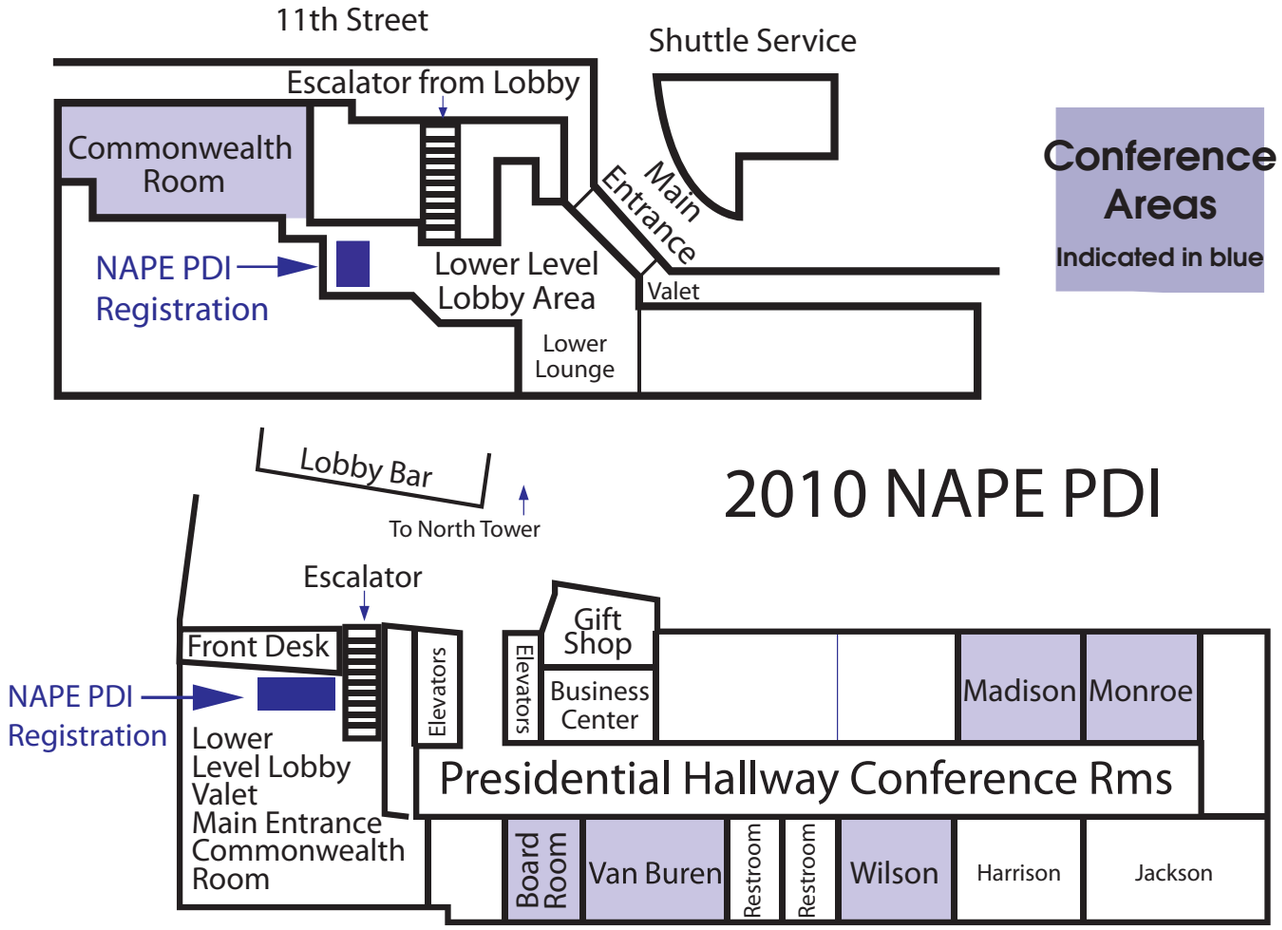

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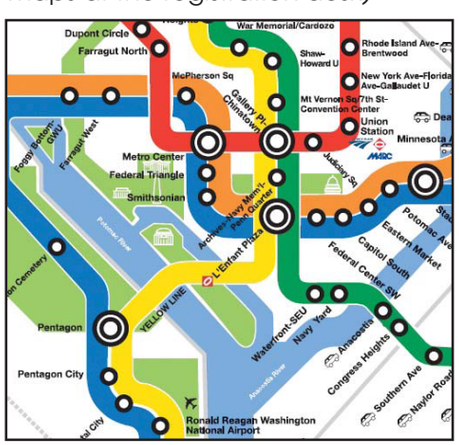

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- When you exit the Pentagon City Metro you will be on S. Hayes Street right in front of the Pentagon City Mall.
- Make a left onto S. Hayes Street. Pass the front of the shopping mall and walk along S. Hayes Street until you reach Macy's or go by Macy's, which faces Army Navy drive.
- Make a right onto Army Navy Drive and go three blocks. You will reach the Doubletree on the right hand side.
- This is about a 10-12 minute walk from the Pentagon City Metro Station to the Double-tree Hotel Crystal City.

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Recommended by the Hotel
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Arlington, Virginia 22202
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