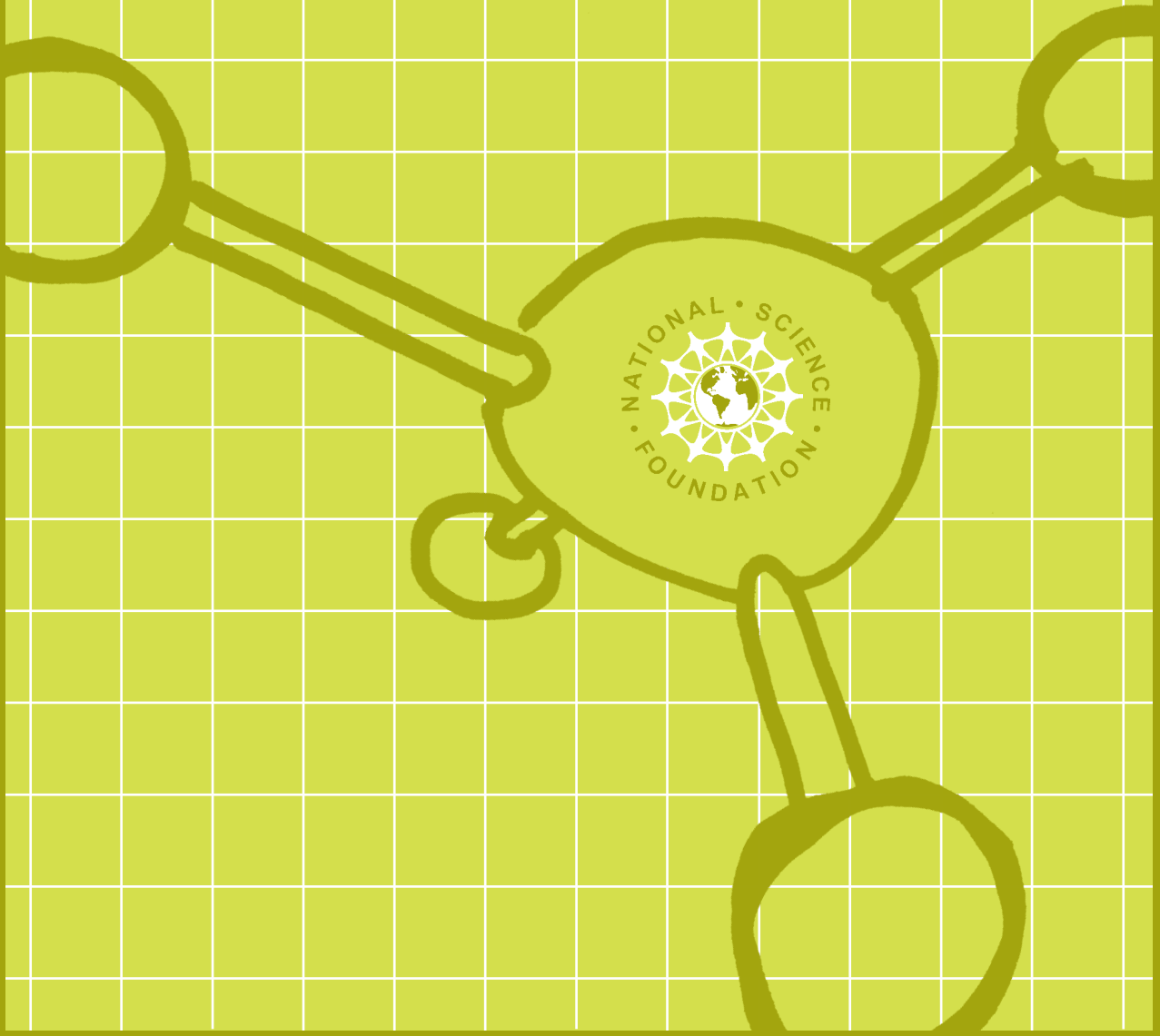


NEW TOOLS FOR AMERICA'S WORKFORCE
GIRLS IN SCIENCE AND ENGINEERING



ORIGINS

One of the National Science Foundation's key strategies is to cultivate a world-class, broadly inclusive science and engineering workforce and expand the scientific literacy of all citizens. Why is it important and timely to deepen the American talent pool in engineering and computer science? There are many reasons:

- After 9/11, the United States finds itself no longer able to depend as much on foreign talent for engineers and technology experts. We need more citizens available for classified work, especially to meet new challenges such as those presented by chemical and biological weapons and weapons of mass destruction.
- Companies are exporting jobs to meet their demands for talent in engineering and computer science.
- Having developed their own competitive educational institutions, other countries are growing their potential to produce more engineers and computer scientists than the United States.
- The diversity profile of faculty in the U.S. colleges and universities has not kept up with the profile of graduates in science, technology, engineering, and math (STEM) fields. Graduates are available but are not entering the academic or corporate workforces, are not choosing to stay, or are not advancing to leadership positions.
- Congress recently directed the General Accountability Office to assess the application of Title IX to higher education, and especially to the issues of equitable access, recruitment, and retention of underrepresented students in science and engineering.
- The National Science Board, the National Academies of Science and Engineering, the American Association for the Advancement of Science, and other leading policy entities continue to voice concerns about the lack of diversity in the science and engineering workforce.
- “Why aren’t women in science?” Former Harvard University president Lawrence Summers, launched a public discussion—including hundreds of pages of press coverage—on the topic. Subsequently, Harvard University invested \$30 million to change those of its policies and practices that contributed to the slow integration and advancement of women in faculty positions in these fields.
- While women’s participation in medicine, law, and business management has increased to parity or near parity, it remains slow in the high-demand fields of science and engineering, especially with regard to workforce participation and advancement.
- Cross-cultural studies show that occupational participation and segregation by gender is cultural. That is, a society can encourage and support different trends, even in a short period of time, that could lead to a more diverse and dynamic workforce.

In 1981 the Equal Opportunities for Women and Minorities in Science and Technology Act acknowledged that it was U.S. policy and in the national interest to encourage all groups to participate in science and engineering. The act mandated that the NSF report statistics on underrepresented groups and initiate programs fostering their more proportionate representation. Among the suite of programs that followed was the Program for Women and Girls, created in fiscal year 1993 and housed in NSF's Division of Human Resource Development, Directorate for Education and Human Resources.

The annual budget has varied from \$7 million to \$10 million. Although relatively small, the NSF program is the largest funding source, public or private, for efforts expressly addressing the need to broaden girls' and women's participation in STEM. To date, more than 350 grants have provided the national STEM education enterprise with new ideas, proven good practices, innovative products, research publications, and a leadership of savvy, experienced educators and education researchers. These grants are relatively small but reach nearly every state in the country.

The program aims to change education policy and practice by supporting research, student and educator programs, dissemination of findings, and technical assistance projects. Program findings and outcomes help us understand, for example, how to

- Maintain girls' interest in science past middle school
- Bring more girls into elective high school math and advanced-placement science courses
- Increase young women's enrollment in STEM undergraduate studies, particularly in engineering and computer sciences (where there is a national need for more experts and more diverse faculty)

A study of its impact from 1993 through 1996 showed that the NSF program has been successful. Yet while much has been accomplished, national statistics reveal that much more remains to be done. Since 1993—even since 2003—the national need for a larger, more diverse, more science- and computer-literate and skilled workforce has steadily grown, as we progress toward an increasingly technological job market, a more scientifically complex society, and more intense global competition in engineering and technology innovation.

ABOUT THE BOOKS

New Formulas for America's Workforce: Girls in Science and Engineering was published in September 2003. Within seven weeks of issue, the initial print run of 7,000 copies was exhausted and the NSF had to order reprints. Copies on CD and online were also in great demand. NSF's publications Web site showed *New Formulas* to be the second most requested print publication during October 2003. There were requests for up to 300 copies of the CD at a time, to be handed out at conferences. All copies (paper and CD) are free. The publication reached teachers, formal and informal educational practitioners, researchers, and even parents and students. Ensuing publicity in every major science publication (and the *Washington Post*) revealed the breadth of public interest.

The first *New Formulas* covered about 220 grants from 1993 through 2001. The publication led to

- New collaborations among education researchers
- New and greater investments in educational programs for female students
- Better understanding of gender differences in career interests and in how students engage in science and mathematics
- Awareness of and better access to widely scattered resources and information
- Deeper comprehension of the educational impacts of NSF's investments
- Faster and easier press access to findings and leading experts in a field of study that crosses many disciplines

In short, the book informed public discourse about the state of gender diversity in science and engineering, the critical role of education in preparing the workforce, and the constraints on national competitiveness that can result from failing to address diversity issues.

New Formulas 2 updates the first volume by describing the roughly 100 grants made between 2002 and 2005. There are fewer educational demonstration projects in that edition, but more social-science research studies, dissemination activities, and projects that will provide technical assistance for the implementation of best practices.

New Tools is the third volume in this series. This publication is a catalog of the products created by the program grant projects from 1993 through 2005. These products include CDs, DVDs, brochures, program guides, special reports, and informational Web sites. The CD-ROM attached to the back cover contains electronic versions of *New Formulas 2* and *New Tools*. Active links are placed throughout the CD-ROM, allowing the user to easily access the many Web resources featured in the publications. The grants covered in these two publications encompass programs conducted at all educational levels, and include both professional development and formal and informal activities.

We expect the same spectrum of groups to be interested in *New Tools* as in the first *New Formulas*: teachers, faculty, counselors, administrators, after-school program providers, researchers, deans, colleges of education, professional associations, foundations, industry, policymakers, the public media, parents, and students. All are interested in better education, better access to education, better student achievement, and more entrants (and more diverse entrants) into science and engineering careers.

MORE INFORMATION

About NSF:

<http://www.nsf.gov>

About the program:

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5475&org=HRD&from=home

Any NSF publication may be retrieved at <http://www.nsf.gov/publications/>. Type in the publication number, e.g., NSF 06-59, or the title.

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<http://www.nsf.gov/ehr/hrd/Newformulas/newformulas.jsp#three>.

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The 82 Principal Investigators and their teams who carried out these projects and who responded with additional information, reviews, and images

TRANSFORMING THE ROLE OF WOMEN AND GIRLS IN SCIENCE AND ENGINEERING

<http://www.womeninscience.org/>

Glenn Busby

Mary Darcy

WAMC Northeast Public Radio

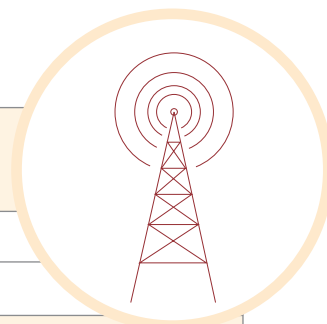
Listen to four **radio series** exploring different facets of girls' science education at this WAMC Northeast Public Radio-produced Web site. The Tech-Club interviews successful professionals; and Out-Loud features women's STEM education from varied perspectives.

04-36130

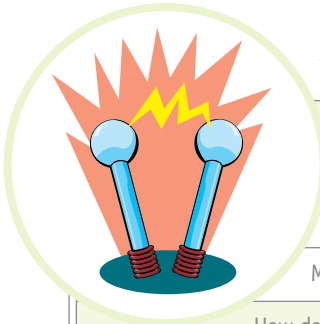
03-32765

02-25030

Grade level: elementary, middle, high school



See also: Audio Portraits of Women in STEM: HER-STORY CD Set (CD-ROMs)



EXPLORING PHYSICS— ELECTRICITY AND MAGNETISM

<http://www.exploringphysics.com/>

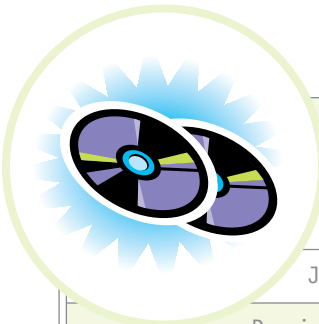
Meera Chandrasekhar

University of Missouri–Columbia

How does a circuit work? How does a capacitor differ from a battery? This **CD-ROM** guides girls through experiments designed to answer these and other physics questions through hands-on activities.

94-50533

Grade level: elementary school, middle school, high school



SEEING GENDER: CD-ROM SET

<http://www.k-state.edu/seeinggender/index.htm>

http://www.meac.org/Resources/ed_services/SG_WEB/INDEX.HTM

Jacqueline Spears

Kansas State University

Do science and math classrooms inadvertently harbor gender biases? If so, what forms do these biases take, and how can educators address them? Questions like these, and many others, are discussed on this **CD-ROM** set. Footage includes interviews with middle and high school teachers.

02-25184

Grade level: middle school, high school, undergraduate

INTRODUCTION TO 3-D SPATIAL VISUALIZATION: AN ACTIVE APPROACH

<http://www.delmlearning.com>

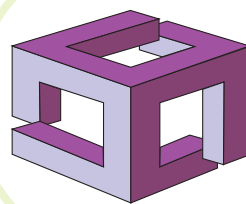
Sheryl Sorby

Michigan Technological University

Workbook and **instructional software** combine to sharpen students' ability to visualize three-dimensional shapes, a skill essential to success in STEM. The friendly, intuitive interface appeals to learners from diverse backgrounds. Includes Teacher's Resource Guide with sample syllabi and quizzes for smooth integration into any engineering, graphics, or geometry course.

04-29020

Grade level: undergraduate



AUDIO PORTRAITS OF WOMEN IN STEM: HER-STORY CD SET

<http://www.womeninscience.org/>

Glenn Busby

Mary Darcy

WAMC Northeast Public Radio

This two part **radio series** features HER-STORY: THEN, and HER-STORY: NOW. Did you know that the technology that operates your cell phone was designed by a silver screen goddess in the 1940's? Or, that the first computer programmer was actually the daughter of an 18th century English poet? Actress Kate Mulgrew (internationally known for her role as Captain Kathryn Janeway in Star Trek Voyager) narrates these and other fascinating tales of women's historical contributions to science and technology. Winner of a 2006 Gracie Award. Want to learn what today's women pioneers in science and technology are doing to encourage the next generation? HER-STORY: NOW explores award-winning programs that encourage and assist young women in pursuing education and careers in science, technology, and engineering.

03-32765

Grade level: all ages





POWERFUL SIGNALS: TRANSFORMING THE ROLE OF WOMEN AND GIRLS IN SCIENCE AND ENGINEERING CD SET

<http://www.womeninscience.org/>

Glenn Busby

Mary Darcy

WAMC Northeast Public Radio

Powerful Signals is a special radio series composed of two parts. First, 10 feature-length stories explore programs across the U.S., that are working with girls to encourage the next generation of women in science and engineering. Featuring

- **Techbridge Oakland:** Techbridge offers a "bridge" between middle and high school, including programs designed to encourage girls in science. Now after five years, this program has taught 1,250 mostly minority working class and middle income students.
- **The Gidget Pipeline Project K-12:** Ohio State University's After School Technology Club is educating girls to be technology designers, not just users. Gidget is generating a curriculum that will allow other educators to duplicate the after-school technology experience.
- **The Lincoln Experiment:** Ten years ago, the Lincoln School in Providence, Rhode Island developed a "physics-first curriculum." Today, 100% of the school's seniors have at least three years of lab science by graduation.

Second, three audio diaries follow the day-to-day lives of women who have chosen a course of study or career in science and technology. Featuring

- **Tracy Drain: The Mars Reconnaissance Orbiter — NASA's Jet Propulsion Laboratory:** A systems engineer, Tracy, describes her journey to launch . . . and the white knuckle wait to see if the project will successfully reach orbit.
- **Dr. Lori Polasek: Saving Harbor Seals — Alaska Sea Life Center:** Lori talks about her life as a marine biologist on land and sea, and her effort to help save the harbor seals.
- **Jennifer Ellsworth: Could Fusion Help Solve the Fuel Crisis? — Massachusetts Institute of Technology:** Jennifer and her team at MIT are attempting to create a fusion device that might lead to a new source of energy for the world. Jennifer talks about what life is like for a grad student involved in this work.

To listen to these and other mind-opening audio profiles about women in science, technology, engineering, and mathematics, visit the WAMC radio Web site at womeninscience.org. Users receive the **audio CD** set free when they send comments to the radio station.

03-32765

Grade level: all ages

DRAGONFLYTV®: AUTHENTIC INQUIRY VIDEOS

<http://www.pbskids.org/dragonflytv>

Richard Hudson Twin Cities Public Television, St. Paul–Minneapolis

Girls can build a Hovercraft or a mini water park ride, test how a hockey stick's "flex rating" can help score a goal, and find out if dogs are really colorblind. These and many other full-inquiry investigations can be found on DragonflyTV®, broadcast nationally on PBS. The **video segments** and activity guides can be downloaded from the Web site and are available as podcasts as well.

99-09828—Season 1
01-25738—Seasons 2 and 3

03-37350—Season 4
05-15566—Season 5

04-36260—SciGirls

Grade level: elementary, middle school

**TECH SAVVY GIRLS VIDEO AND RESOURCE GUIDE**

<http://www.aauw.org/research/all.cfm>
<http://www.fcps.edu/cpsapps/fairfaxnetwork/videostore/level2.cfm?ProductID=23>

Nancy Lark

American Association of University Women Educational Foundation

How can parents get their daughters interested in technology? How should schools and community programs get involved? These questions and many others are explored in the **video** Tech Savvy Girls. The accompanying resource guide provides discussion topics and helps viewers prepare for the video.

03-32841

Grade level: elementary school, middle school, high school





GIRLS CREATING GAMES

<http://programservices.etr.org/gcgweb/>

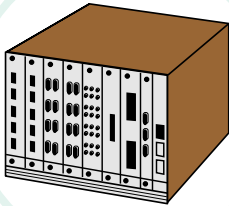
Jill Denner

Education, Training, Research Associates

Imagination soars in these **computer games** designed and programmed by middle school girls using Macromedia Flash MX. Among the highlights: "When Cheese Attacks," "Who Is Your Dream Date?" and "Cats on the Run." These choose-your-own-adventure style games feature cool sound tracks and vivid animation.

02-17221

Grade level: middle school



GIRLS REDESIGNING AND EXCELLING IN ADVANCED TECHNOLOGY

<http://www.miamisci.org/great/index.html>

Judy Brown

Miami Museum of Science, Inc.

If you believe, you can achieve! This **video** documents the success of science and technology programs for middle school girls at the Miami Museum of Science and Planetarium. Students, parents, and instructors attest to the transformative effect of gender-conscious pedagogy. Includes discussion of how to replicate the program locally.

01-14669

Grade level: middle school

YOU CAN BE ANYTHING! A MUSIC VIDEO TO ENCOURAGE GIRLS AND WOMEN TO EMBRACE TECHNOLOGY



<http://www.umbc.edu/be-anything>

Claudia Morrell

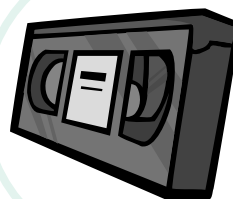
University of Maryland–Baltimore County

This high-energy music **video** shows girls that technology is everywhere—and that it isn't just for boys anymore. Involve girls in information technology by following online instructions for integrating the video into classroom activities. Or link to the Speakers' Bureau on the Web site, where educators can contact a female Information Technology professional specially trained to present the video.

02-25079

Grade level: middle school

THE CASE OF MISSING HUMAN POTENTIAL



<http://www.missingpotential.org>

Frank Wilson

WVIZ/PBS IdeastreamSM, Cleveland

A one-hour **videotape**, *The Case of Missing Human Potential*, tracks the root cause of the gender gap in the STEM workforce back to schools, exploring how teaching methods can be either a window of opportunity to young women or a closed door. The problem is presented as a fast-paced mystery, with top-selling mystery writer Les Roberts hosting the investigation, assisted by Dr. Kathryn Sullivan, the first woman to walk in space. The program describes efforts by schools, communities, and businesses to address gender representation in STEM.

02-17109

Grade level: professional development

See also:

Seeing Gender: CD-ROM Set (CD-ROMs)

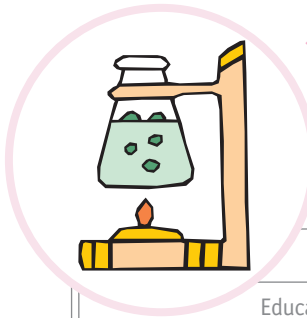
Through the Glass Wall (Web sites)

Computer Game Design: Involving Girls (Web sites)

Think Again . . . Girls Can! (Web sites)

Tech Team: Project-Based Education for Middle School Girls (Web sites)

Opening the Horizon: Strengthening Science Education for Middle School Girls in Rural Southwest Missouri (Web sites)



AFTER-SCHOOL SCIENCE PLUS

http://edequity.org/afterschool_materials.php

Barbara Sprung

Educational Equity Center at the Academy for Educational Development

Two **manuals** available on this Web site cover everything educators need to know to start community-based after-school science programs: a planning guide offers information on program development and staff training, and an activity guide leads instructors through inquiry-based lessons designed to improve gender representation in the sciences. The site also offers several other related publications for educators and parents. Visit the Web site to learn more.

96-32241

Grade level: elementary school, middle school, professional development



FIRST (FEMALE INVOLVEMENT IN REAL SCIENCE TECHNOLOGY)

<http://www.chabotspace.org/visit/programs/first.asp>

Etta Heber

Chabot Space and Science Center

Becoming a scientist or an engineer is not just a dream for girls who participate in real science experiences. FIRST provides informal settings for girls to engage in hands-on science at elementary and middle schools in the Oakland Unified School District. Students and their teachers, administrators, and caregivers explore critical environmental issues that affect their lives on a daily basis. Download the form to order a **resource guide** for parents and teachers to help encourage girls in science.

95-55807

Grade level: elementary school, middle school, professional development

NATIONAL SCIENCE PARTNERSHIP FOR GIRL SCOUTS AND SCIENCE MUSEUMS



<http://www.fi.edu/tfi/programs/nsp.html>

Dale McCreedy

Franklin Institute Science Center

The National Science Partnership's Hands-On Science Kits contain a **guidebook** and materials for five to seven weeks of science activities for groups of 15 Brownie or Junior Girl Scouts. Two kits have supporting videos starring female scientists. Originally designed to help Girl Scouts meet their badge requirements, these activities can be easily integrated into camp and after-school programs.

04-36249

Grade level: elementary, middle, high school

SPORT SCIENCE: USING SPORTS AS A VEHICLE FOR SCIENCE LEARNING



http://www.hiceducation.org/Edu_Proceedings/Penny%20L.%20Hamrich2.pdf

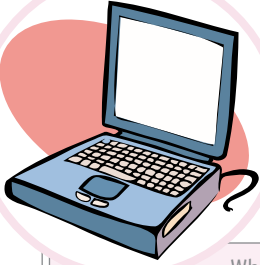
Penny Hammrich

Queens College, CUNY (formerly of Temple University)

Balance. Force. Speed. Trajectory. Girls in six Philadelphia middle schools investigate these science concepts while engaging in basketball, fencing, soccer, golf, and other sports. As explained in this comprehensive **report**, Sports Science uses sports as a vehicle to teach a standards-based science and math curriculum. Like Temple University's original Sisters in Science program, Sports Science offers after-school and Saturday programs to accommodate girls' learning styles.

00-02073

Grade level: middle school, undergraduate



LEARNING ONLINE

http://www2.edc.org/GDI/publications_SR/equity6_04_FULLBOOK.pdf

Katherine Hanson

Education Development Center, Inc.

What constitutes gender balance in e-learning? Through an online professional development course for middle school math and science teachers, "Engaging Middle School Girls in Math and Science," researchers investigated the effectiveness of training designed to improve gender representation. The final **report** provides practical guidelines and vital data for improving gender balance in e-learning course-design and implementation.

00-02126

Grade level: middle school, professional development



ATHENA PROJECT

http://www.alphacenter.ucr.edu/Brochures/VolumeI_Issue1.pdf

Pamela Clute

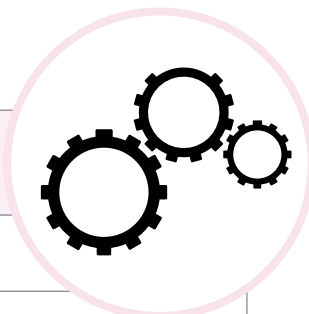
University of California–Riverside

On Athena Saturday, middle school girls gather with female college students to share stories about their "sheroes," or women heroes. Named for the Greek goddess of wisdom and victory, the Athena project links young girls and their teachers with female science and mathematics majors and faculty. Read about the tutoring, teacher-training, and mentoring services to help women excel in science and mathematics in this **newsletter**.

96-19060

Grade level: middle school, professional development

UNITED CONNECTICUT FOR WOMEN IN SCIENCE, ENGINEERING, AND MATHEMATICS



<http://www.easternct.edu/personal/faculty/cidc/ucwsme.html>
<http://www.cpep.org/index.html>

Carmen Cid

Connecticut Pre-Engineering Program, Inc.

Connecticut colleges, universities, school districts, professional organizations, and businesses all work together to encourage girls and women in science, engineering, and mathematics. The project uses recruitment and retention strategies to improve participation and achievement; a clearinghouse of research on girls and women in these fields; public awareness activities on issues of gender representation; programs to enhance self-esteem and learning for urban middle and high school girls and community college women; and classroom teaching approaches to help K-12 teachers address gender issues. Available resources include downloadable **tip sheets** for parents and teachers.

94-50026

Grade level: middle school, high school, professional development

BEYOND THE BEAKERS: SMART ADVICE ON ENTERING GRADUATE PROGRAMS IN THE SCIENCES AND ENGINEERING



<http://www.bcm.edu/smart/?PMID=2993>

Gayle R. Slaughter

Baylor College of Medicine

A comprehensive **guidebook** for undergraduate women planning to pursue STEM careers. Includes advice on acquiring mentors and gaining the most from research experiences, as well as female-friendly, ethnic-inclusive logic problems for GRE preparation.

99-06394

00-80662

Grade level: undergraduate



RETENTION OF WOMEN GRADUATE STUDENTS AND EARLY CAREER ACADEMICS IN SCIENCE AND ENGINEERING

<http://iupjournals.org>

Jill Bystydzienski

Iowa State University

Significant barriers still exist for women faculty and underrepresented groups in science and engineering fields. At this national conference, graduate students, faculty, and administrators in women's studies and STEM fields from more than 55 universities and colleges exchanged information and collaborated to encourage gender-balanced sciences. Read the **conference papers** on the status of women in STEM fields past and present in the *NWSA Journal, Special Issue: ReGendering Science Fields*.

00-94556

Grade level: undergraduate, postgraduate, professional development



REMOVING BARRIERS: WOMEN IN ACADEMIC SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

<http://www.nwsaj.engl.iastate.edu>

http://www.iupress.indiana.edu/catalog/product_info.php?products_id=22614

Jill Bystydzienski and Sharon R. Bird (eds.)

Iowa State University

This book complements the *NWSA Journal, Special Issue: ReGendering Science Fields* (vol. 16.1), granting even wider access to ideas shared and generated at the conference on the Retention of Women Graduate Students and Early Career Academics in Science and Engineering. Includes more **conference papers** on the status of women in STEM fields.

00-94556

Grade level: undergraduate, postgraduate, professional development

ACHIEVING GENDER EQUITY IN SCIENCE CLASSROOMS: A GUIDE FOR FACULTY

http://www.brown.edu/Administration/Dean_of_the_College/homepginfo/equity/Equity_handbook.html

Sheila E. Blumstein

Brown University

Supportive classroom environments can help to retain and attract more women science, math, and engineering majors. This **handbook** is developed as part of Brown's Women in Science and Engineering (WISE) program. Based on sociological, physiological, and educational research on gender differences in science learning, it presents techniques to foster gender diversity and to make classrooms more welcoming for women students.

94-53676

Grade level: undergraduate, professional development



THE PREPARATION OF GENDER-SENSITIVE SCIENCE TEACHERS IN THE UNIVERSITY OF DELAWARE'S SECONDARY SCIENCE EDUCATION PROGRAM

<http://www.nsta.org/main/pdfs/NSTStandards2003.pdf>

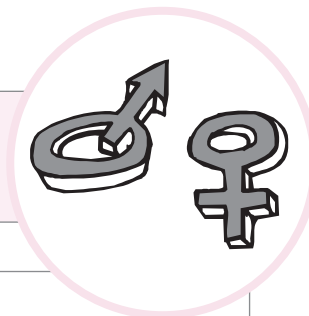
Kathryn Scantlebury

University of Delaware

Issued by the National Science Teachers Association and recently revised, the **resource guide** "Standards for Science Teacher Preparation" provides a model for preservice high school teacher education that emphasizes gender-sensitive teaching practices. This document discusses constructivist approaches to classroom instruction, the importance of relating science to everyday life, and the need for teachers to design lessons with student diversity in mind.

94-50022

Grade level: postgraduate





NORTHWEST GIRLS COLLABORATIVE PROJECT REPLICATION GUIDE

<http://www.pugetsoundcenter.org/ngcp/nwgcp/>

Karen Peterson

Puget Sound Center for Teaching,
Learning, and Technology

This model of regional collaboration has brought hundreds of organizations together to exchange ideas, information, and resources on girls' STEM education. The **replication guide** provides tips on everything an educator needs to set up a network in his or her community: recruitment, the effective use of technology, running conferences, and much more.

02-17212

Grade level: professional development

Science, Gender, and Afterschool A RESEARCH-ACTION AGENDA

SCIENCE, GENDER, AND AFTERSCHOOL: A RESEARCH-ACTION AGENDA

<http://www.afterschool.org/sga>

Merle Froschl

Educational Equity Center at the Academy for Educational Development

Girls become more engaged in STEM in the informal, collaborative atmosphere of after-school programs. This **report** from the 2002 Science, Gender, and Afterschool Conference addresses four key issues in the development of such programs: recruitment, content and strategy, professional development, and connecting school and after-school.

04-10552

Grade level: professional development

TECH SAVVY: EDUCATING GIRLS IN THE NEW COMPUTER AGE



http://www.aauw.org/research/girls_education/techsavvy.cfm

Nancy Lark

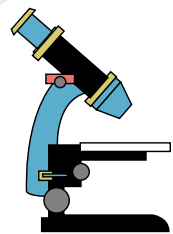
American Association of University Women (AAUW) Educational Foundation

Girls tend to be less engaged by technology than boys. But will getting more girls to sign up for computer science classes solve this problem? If not, how can educators get girls to develop a sustained interest in computers and computer technology? This **report**, prepared in 2000 by the AAUW Educational Foundation's Commission on Technology, Gender, and Teacher Education, presents timely discussions of these questions and others.

03-32841

Grade level: professional development

UNDER THE MICROSCOPE: A DECADE OF GENDER EQUITY PROJECTS IN THE SCIENCES



<http://www.aauw.org/research/microscope.cfm>
<http://www.aauw.org/k%2D12/>

Nancy Lark

American Association of University Women (AAUW) Educational Foundation

Over the last decade, the AAUW Educational Foundation and the National Science Foundation have invested close to \$100 million in more than 400 projects aimed at getting girls involved in the sciences and math. But what types of projects, specifically, have been funded? And have certain areas been overlooked? These questions and many others are explored in this influential **report**.

03-32841

Grade level: professional development



SISTERS IN SCIENCE NEWSLETTER

<http://qcpages.qc.cuny.edu/Education/new/sisnewsletter.html>

Penny Hammrich

Queens College, CUNY
(formerly of Temple University)

By teachers and for teachers, this quarterly **newsletter** talks about the practical challenges educators face in bringing gender fairness to the classroom. Read about Sisters in Science efforts to initiate urban girls into STEM, and use sample classroom activities to design gender-inclusive lesson plans.

04-36221

Grade level: professional development



GENDER DIFFERENCES IN THE PERCEPTION AND USE OF AN INFORMAL SCIENCE LEARNING WEB SITE: FINAL REPORT TO THE NSF

http://capsi.caltech.edu/research/documents/GenderDifferneceAschbacher_000.pdf¹

Pamela Aschbacher

California Institute of Technology

Researchers studied Whyville.net to determine which factors led to the site's documented success at raising girls' interest in technology. This 44-page final **report** lays out findings from their comprehensive survey of site users' motives and behaviors. An essential resource for developers of girls' online educational resources.

00-86338

Grade level: professional development

¹ This URL is correct despite the misspelling.

See also:

Introduction to 3-D Spatial Visualization: An Active Approach (CD-ROMs)

Tech Savvy Girls Video and Resource Guide (DVDs/Videos and Games)

United Connecticut for Women in Science, Engineering, and Mathematics (Web sites)

After-school and Summer Science Camps for Young Women (Web sites)

Midwest Rural–Urban Girls Collaborative (Web sites)

Tech Team: Project-Based Education for Middle School Girls (Web sites)

Engineering, Science, and Math Increase Job Aspirations (ES MIJA) (Web sites)

Connecting Women across the Computer Science Pipeline: From High School through the Ph.D. (Web sites)

Summer Medical and Research Training Program (Web sites)

CIC WISE Initiative (Web sites)

STEMTeams.org (Web sites)

Science, Gender and Afterschool Community of Practice (Web sites)

Summer Medical and Research Training Program (Web sites)

EXPLANATOIDS™<http://www.explanatoids.com>

Janet Stocks

Family Communications, Inc.

Why do we see fireworks before we hear them? Who spins fastest on a merry-go-round? The Explanatoids™ **Web site** explores the science behind everyday things. Young visitors to the site are encouraged to create their own “junior Explanatoids™” using the site’s step-by-step instructions. Links for educators detail Explanatoids™ techniques and research.

02-17033

Grade level: elementary school


IMAGINATION PLACE!http://www.edc.org/CCT/imagination_place/

Margaret Honey

Center for Children and Technology, Education
Development Center

Imagination Place! is an interactive, online club that invites boys and girls aged 8–12 into the world of design, involving them as shapers and makers of technology rather than just users. Employing powerful design, animation, graphics, chat, and sound tools, the Imagination Place! **Web site** offers engaging problem-solving activities that encourage learners to think deeply about the place of design and engineering in their lives. It’s a place where girls can realize their visions for the future of technology. (*Note: Imagination Place! can be accessed only via KAHootZ, a members-only Internet service for children.*)

97-14749

Grade level: elementary school

**SCHOOL-BASED S.M.A.R.T.
(SCIENCE, MATH, AND RELEVANT TECHNOLOGY)**<http://www.girlsinc.org/ic/page.php?id=1.2.1>

Jessica Drummer Ryan

Girls Incorporated of San Leandro

S.M.A.R.T. girls rule! School-based programs encourage and educate elementary school girls to understand that mathematics and science are important and relevant. Hands-on activities designed specifically for fourth- and fifth-grade girls encourage them to take risks, experiment, and work in teams to discover how math and science relate to their everyday lives. This **Web site** offers a list of programs and services available, and activities and information just for girls.

94-53748

Grade level: elementary school





COMPUTER GAME DESIGN: INVOLVING GIRLS

<http://gel.msu.edu/lifepreservers>
<http://aliengames.org>

Carrie Heeter

Michigan State University

Life Preservers is an online game designed to teach about evolution and adaptation. This **Web site** guides teachers on how to use the game, which can fit within a single class period and is grounded in national science standards. The game is part of a research project collecting information about male and female play and learning styles. Life Preservers grew out of research on girls' and boys' different approaches to computer games and education, which can be found at <http://aliengames.org/>.

02-17197

Grade level: elementary school, middle school



GAINING CONFIDENCE IN MATH: INTELLIGENT TUTORS WITH CUSTOM DESIGN FOR GIRLS

<http://k12.usc.edu/AW/index.html>

Carol Beal

University of Massachusetts–Amherst

AnimalWatch, an online prototype of computer-based mathematics tutoring software, is tailored to middle schoolers' instructional needs. On this **Web site**, girls in particular can strive for mastery by emphasizing exploration over competition and effort over innate ability. Hints and positive feedback increase girls' self-confidence, and math problems addressing girls' interests spark motivation.

95-55737

Grade level: elementary school, middle school



THE IMAGE OF ENGINEERING AND IMAGINARY LINES: ENGAGING GIRLS

<http://www.sallyridescience.com/>

Sally Ride

Tam O'Shaughnessy

Imaginary Lines Inc.

Led by the pioneering former astronaut, the Sally Ride Science **Web site** empowers girls to explore the world of science—from astrobiology to zoology and from environmental engineering to rocket science. Parents and teachers will find publications, newsletters, and CDs to encourage girls in STEM. Girls will find links to science activities, camps, and other resources. In the "Engaging Girls" section, you can read profiles of women role models in science, search through pictures of earth taken from the International Space Station, or explore the solar system through high-resolution photographs on NASA's Planetary Journal. For links to these and other fascinating resources, visit the area of the site titled "Activities & Homework."

05-33491

04-36230

Grade level: elementary school, middle school

THROUGH THE GLASS WALL

<http://mathequity.terc.edu/gw/html/web.html>

Andee Rubin

TERC, Inc.

How do children learn math from computer games? What patterns are there in how girls and boys play and learn from computer games? To find the answers, researchers went to store shelves to find games that were strong in math and appealing to both genders. The Glass Wall project investigates the interaction of computer games, mathematics learning, and gender by examining these and other questions. Take a look at the game reviews and descriptions, research summary, and more on this **Web site**.

95-55641

Grade level: elementary school, middle school



GIRLS' SCIENCE PRACTICES IN URBAN, HIGH-POVERTY COMMUNITIES

<http://ed-web3.educ.msu.edu/CalabreseBarton/urban.girls.html>

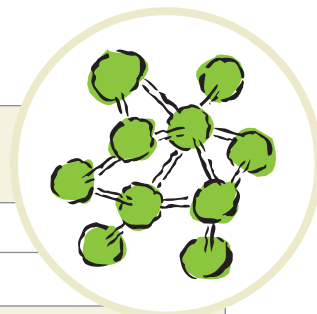
Angela Calabrese Barton

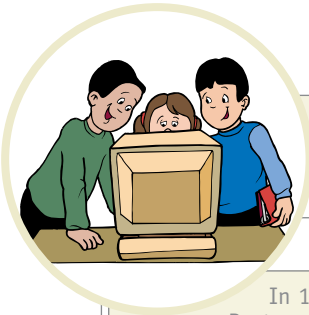
Columbia University

Researchers at Teachers College, Columbia University, investigated the ways in which girls who attend urban schools with high poverty rates acquire science literacy, and how they integrate this knowledge into their understandings of themselves and their community. Using data gathered from four middle schools in Harlem and the South Bronx, the project is developing a framework to describe urban girls' "science practices" (that is, their manner of engaging in science and their motives for doing so) according to three interrelated categories: understanding of science concepts, development of scientific habits of mind, and participation in science activities. With this framework, researchers aim to give a full picture of the way urban girls bring science into their lives—how, for example, do they use the science they've learned in school to choose a healthful diet, or conserve natural resources such as water and petroleum? Visit the project's **Web site** to view an overview of the methodology and findings from this fascinating study.

04-29109

Grade level: elementary school, middle school, high school





HEAR OUR VOICES AND THE COMPUTER CLUBHOUSE

<http://www.computerclubhouse.org/programs/hov/index.htm>

Gail Breslow

Computer Clubhouse, Boston Museum of Science

In 1993 the Computer Clubhouse opened its doors at the Computer Museum in Boston as an after-school resource for young people aged 8 through 18 to explore their own ideas and interests through technology, guided by the support of adult mentors who serve as role models. The Hear Our Voices program for girls was created in 2002, and now over 20 Computer Clubhouses in the United States receive funding and support to hire and train staff dedicated to gender diversity and girls' programming. Visit the Computer Clubhouse **Web site** to learn more about Hear Our Voices and the other ways that the Computer Clubhouse is reaching out to girls with technology.

02-17138

Grade level: elementary school, middle school, high school



STEMTEAMS

<http://engineering.tufts.edu/stemteams/about.html>

Katherine Ziemer

Northeastern University

On STEMTeams, university faculty, engineers, teachers, and students work together to get girls from kindergarten through high school interested in science. Four universities have already started STEMTeams. Visitors to the **Web site** can learn how to launch their own STEMTeams by downloading a PDF version of the manual, located on the site's "Products" page. Also available: the STEMteams bibliography of research on gender-inclusive teaching.

02-17110

Grade level: elementary school, middle school, high school



TELEMENTORING YOUNG WOMEN IN ENGINEERING AND COMPUTING: PROVIDING THE VITAL LINK

<http://www.edc.org/CCT/telementoring/index2.html>

Margaret Honey

Center for Children and Technology, Education Development Center

At the Center for Children and Technology **Web site**, you will learn about projects that engage girls in engineering and design. Find articles, research, and software to support online mentoring, a program where girls create computer graphics, and another where girls engineer solutions to everyday problems.

94-50042

Grade level: elementary school, middle school, high school

THINK AGAIN . . . GIRLS CAN!<http://www.girlscan.org>

Janice A. Grackin

Stony Brook University, SUNY

From this **Web site**, download video interviews with eight female scientists who discuss the challenges and rewards of their careers. A biochemist, a geologist, a pediatrician, and others talk about their lives and their passion for science. Essential viewing for girls and young women who want to know what it's really like to be a scientist. Also available is a free DVD of the interviews.

02-17200

Grade level: elementary school, middle school, high school


 The logo for Girls Can.org, featuring the text "Girls Can.org" in a stylized, blue and white font.
MIDWEST RURAL-URBAN GIRLS COLLABORATIVE<http://www.missouristate.edu/mru/home>

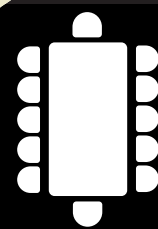
Paula Kemp

Southwest Missouri State University

Advocates of better gender representation from Missouri, Kansas, and northeastern Oklahoma connect at the Midwest Rural-Urban Girls Collaborative Project **Web site**. Educators can learn about MRU events and conferences and check newsletter updates. Organizations can apply for minigrants or register with the program directory.

05-33581

Grade level: elementary school, middle school, high school, undergraduate, postgraduate

**AFTER-SCHOOL AND SUMMER SCIENCE CAMPS FOR YOUNG WOMEN**<http://www.spokanecitylab.wsu.edu>

Sylvia Oliver

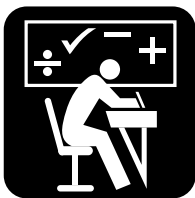
Washington State University

"Science at the Summit" after-school camps and programs give girls a chance to explore science, mathematics, and technology related to outdoor themes in the Northwest. Visitors to CityLab's **Web site** will find biology, chemistry, and biotechnology lab project resources for teachers and an archive of monthly newsletters for students.

00-86440

Grade level: elementary school, middle school, high school, professional development





AIMING FOR ALGEBRA

<http://www.clubgirlstart.org/>

Rachel Muir

Girlstart

Browse computer games that inspire kids to excel at math. Read a guide for university faculty on gender diversity in science classrooms. Learn what the Women's Equity Resource Center has to offer. These and other valuable resources are available on the Girlstart **Web site**. For a closer look, click first on "Educator Resources" and then on "Educator Links."

02-17038

Grade level: middle school



CAN ROBOTICS KEEP GIRLS IN SCIENCE?

<http://www.botball.org/>

Jerry Weinberg

Southern Illinois University–Edwardsville

Southern Illinois University–Edwardsville studied participants in the KISS Institute for Practical Robotics' Botball program. A team-based activity that engages thousands of middle and high school students in regional and national robotics competitions and exhibitions, Botball offers a unique educational, hands-on STEM experience that can influence a student's self-perceptions of their achievement and abilities in STEM areas. Visit Botball's **Web site** to learn more about the program, and to find out how your school can get involved.

05-22400

Grade level: middle school, high school



COMPUTER PROGRAMMING FOR MIDDLE SCHOOL GIRLS

<http://www.rapunsel.org/>

Kenneth Perlin

New York University, Hunter College, and University of Southern California

To address the serious shortage of women in computer science, researchers at New York University, Hunter College, and the University of Southern California are developing a software environment for "real-time applied programming for underrepresented students' early literacy" (RAPUNSEL). The project, aimed specifically at teaching computer programming to middle school girls, involves a simulation game in which girls create and manipulate on-screen "character agents." Visit the RAPUNSEL **Web site** to read about the project details and to see the prototypes, experiments, and designs of the play systems developed in this project.

03-32898

Grade level: middle school

GIRLS DIG IT

<http://www.nyu.edu/classes/mcgee/digit/>
<http://www.girlsinc.org/>

Heather Johnston Nicholson

Girls Inc.

With brushes and spoons to lift and a mesh screen to sift, girls dig up the past. Girls Dig It: An Archaeology Program for Girls Ages 12–14 encourages low-income girls and girls of color to engage in real, reconstructed, and simulated archaeological discovery. Aspiring archeologists can share their results and ask questions of women scientists on this **Web site**, which offers a remarkable online learning environment.

99-08759

Grade level: middle school



GIRLS IN ENGINEERING HANDS-ON MUSEUM EXHIBIT DEVELOPMENT

<http://engineering.tufts.edu/ggs/proginfo.htm>

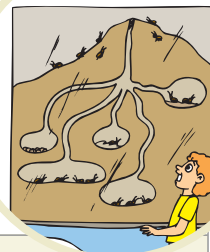
Ioannis Miaoulis

Tufts University

Light It Up. Twirl A World. The Wheel of Rhythm. Middle school girls team up with a science teacher, an engineering faculty member and female student, and museum staff to create hands-on exhibits. Called “Girls Get Set for Life,” the program is a model for collaboration among schools, universities, and museums nationwide in enhancing learning experiences of girls and young women. Learn more on the **Web site** about the science and engineering principles used to develop the exhibits.

96-32175

Grade level: middle school



GO-GIRL: GAINING OPTIONS—GIRLS INVESTIGATE REAL LIFE

<http://www.gogirls.wayne.edu>
<http://www.smartgirl.org>

Pamela T. Reid

Roosevelt University, Chicago (formerly of the University of Michigan, Ann Arbor)

Visit the GO-GIRL **Web site** to learn about the program where middle school girls join university mentors for 10 Saturdays of social science research and career exploration. Then visit SMART-GIRL the Web site that makes the GO-GIRL experience available everywhere: girls can contribute to discussion groups, write about what interests them, and complete an online survey about social issues. At the SmartCenter, live mentors (female University of Michigan undergraduates) guide girls through data analysis to interpret survey results.

01-14683

05-07902

Grade level: middle school



Assessing Media Influences

MEDIA LITERACY TRAINING FOR MIDDLE SCHOOL STUDENTS

http://homepages.wmich.edu/~steinke/projects/assessing_media/index.html

Jocelyn Steinke

Western Michigan University

Researchers at Western Michigan University examined the efficacy of a media literacy program in teaching children to recognize and resist gender stereotypes. The investigators assessed how the training affects middle school children's perceptions of women in STEM, their ability to recognize stereotypes in the media, and their attitudes toward STEM and STEM careers. Visit the project's **Web site** to learn more about the methodology, media literacy training, and findings from the study. The site also features helpful links and access to reports and other publications from the project.

04-29005

Grade level: middle school



TECH TEAM: PROJECT-BASED EDUCATION FOR MIDDLE SCHOOL GIRLS

<http://www.knowitall.org/techteam>

Betsy Newman

Educational Television Endowment of South Carolina

From this **Web site**, download manuals on how to start a Tech Team for girls to create their own Web sites, learn about computers and programming, and create and edit "community-based" videos. The site also has manuals and teaching aids on Web design plus links to other Web design resources, more sites aimed at girls and science, and other educational sites just for kids. See samples of games, Flash animations, Web sites, and journals created by Tech Team girls in South Carolina. The site is hosted by South Carolina Educational Television and sponsored by the Girl Scouts and the National Science Foundation.

02-17199

Grade level: middle school

THE NATIONAL SCIENCE PARTNERSHIP FOR GIRL SCOUTS AND SCIENCE MUSEUMS

<http://sln.fi.edu/tfi/programs/nsp.html#top>

Dale McCreedy

Franklin Institute Science Center

Visit this **Web site** to order the National Science Partnership's Hands-On Science Kits. Each kit contains five to seven weeks of hands-on science activities for groups of 15 girls. Originally designed to help Girl Scouts meet their badge requirements, these activities can be easily integrated into science curricula and after-school programs.

04-36249

Grade level: middle school, high school



SCIENCE ON PATROL

<http://www.isof.org/SOP/default.aspx>

Bonnie Brownstein

Institute for Schools of the Future, Police Athletic League, New York City, and others

The Institute for Schools of the Future, the Police Athletic League, and other partners, including detectives and police officers, are working together to continue Science on Patrol, a project aimed at motivating underrepresented minorities and middle and high school students, especially girls, to get involved in the sciences. In particular, the project encourages students to link science knowledge and skills with the real-world applications of forensic science. By allowing participants to use science to "solve crimes," this informal project helps them see how abstract concepts, when put to use, can be exciting. Visit the **Web site** to learn more and to view project materials and presentations.

02-17188

Grade level: middle and high school, informal education



WOMEN WHO WALK THROUGH TIME

<http://www.earth.utah.edu/women>

Marjorie Chan

University of Utah

Explore earth science with women who are making significant contributions to society. The Women Who Walk Through Time **Web site** introduces young people to the fascinating field of earth science, including links to other sites on volcanoes, earthquakes, dinosaurs, fossils, and much more. The site is targeted to girls aged 12 through 18, and conveys the idea that women can enjoy and be successful in earth science careers.

96-25566

Grade level: middle school, high school





CHALLENGING GENDER STEREOTYPES WITH COMPUTER-BASED SOCIAL MODELS

http://ritl.fsu.edu/_Website/projectsPals.asp

Amy Baylor

Florida State University Center for Research of Innovative Technologies for Learning

Researchers at Florida State University are employing “pedagogical agents” to investigate how different aspects of computer-based social models affect young women’s beliefs and stereotypes about engineering. Pedagogical agents are three-dimensional, animated, computer-based characters that can serve as teachers. Visit this **Web site** to access more information on the project, as well as reports and presentations on the topic.

04-29647

Grade level: middle school, undergraduate



GENDER-BASED SCIENCE PERFORMANCE MODELS

<http://www.immex.ucla.edu>

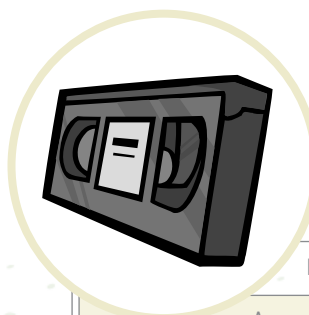
Ronald Stevens

University of California–Los Angeles

The IMMEX **Web site** is designed to provide an innovative online environment where teachers can track the development of students’ problem-solving strategies as they work. Teachers can access problem sets, a full-text database of IMMEX research, and training videos for effective classroom implementation.

04-29156

Grade level: middle school, high school, undergraduate



THE CASE OF MISSING HUMAN POTENTIAL

<http://www.missingpotential.org/>

Frank Wilson

WVIZ/PBS IdeastreamSM, Cleveland

A one-hour videotape, “The Case of Missing Human Potential,” tracks the root cause of the gender gap in the STEM workforce back to schools, exploring how teaching methods can be either a window of opportunity to young women or a closed door. The problem is presented as a fast-paced mystery, with top-selling novelist Les Roberts hosting the investigation, assisted by Dr. Kathryn Sullivan, the first woman to walk in space. The program describes efforts by schools, communities, and businesses to address gender representation in STEM. Visit the **Web site** to learn more about the project, and to access a storehouse of carefully selected links for adults and kids that provide them with the resources to help them close the gender gap. The site also features information to help find the best science and math camps and organizations, and to learn how to do several at-home activities and experiments.

02-17109

Grade level: middle school, high school, undergraduate, professional development

UNITED CONNECTICUT FOR WOMEN IN SCIENCE, ENGINEERING, AND MATHEMATICS

<http://www.easternct.edu/personal/faculty/cidc/ucwsme.html>
<http://www.cpep.org/index.html>

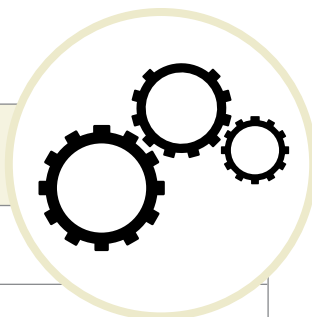
Carmen Cid

Connecticut Pre-Engineering Program, Inc.

Connecticut colleges, universities, school districts, professional organizations, and businesses all work together to encourage girls and women in science, engineering, and mathematics. The project uses recruitment and retention strategies to improve participation and achievement: a clearinghouse of research on girls and women in these fields; public awareness activities on issues of gender representation; programs to enhance self-esteem and learning for urban middle and high school girls and community college women; and classroom teaching approaches to help K–12 teachers address gender issues. On these **Web sites**, parents and teachers can find tip sheets available for downloading.

94-50026

Grade level: middle school, high school, professional development



ENGINEERING, SCIENCE, AND MATH INCREASE JOB ASPIRATIONS (ES MIJA)

<http://www.idra.org>

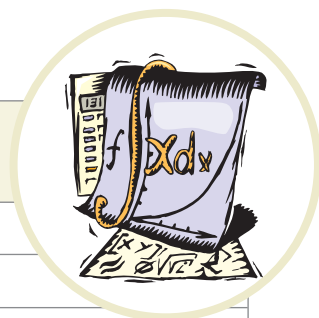
Maria “Cuca” Robledo Montecel

Intercultural Development Research Association

Hispanic girls can break down gender stereotypes and see themselves as scientists, mathematicians, and physicians. Through a partnership of universities, school districts, and businesses, Hispanic sixth-grade girls in San Antonio, Texas, participated in creative lessons to increase their interest and skills in mathematics and science. The program included curricular, instructional, training, and support components along with parent engagement. Information gleaned from this project helped form the curriculum *Minority Women in Science: Forging the Way*, a student notebook and teacher guide set with profiles of minority women scientists, science lessons, and life-skills lessons. For more information, please visit the **Web site**.

95-53423

Grade level: middle school, professional development





WOMEN IN SCIENCE AND ENGINEERING (WISE)

<http://www.wise.sunysb.edu>

Edith Steinfeld

SUNY at Stony Brook

This **Web site** helps to foster a positive climate of WISE students and mentors to sustain interest, curiosity, and achievement to pursue careers in STEM. The program links distinguished scientists, mathematicians, and engineers with clubs through Adopt-a-Club; offers mentoring experiences; provides teacher training and curriculum enhancement; and offers a Parent Advisory Council.

94-50018

Grade level: middle school, professional development



OPENING THE HORIZON: STRENGTHENING SCIENCE EDUCATION FOR MIDDLE SCHOOL GIRLS IN RURAL SOUTHWEST MISSOURI

<http://www.cnas.missouristate.edu/eyh/default.htm>

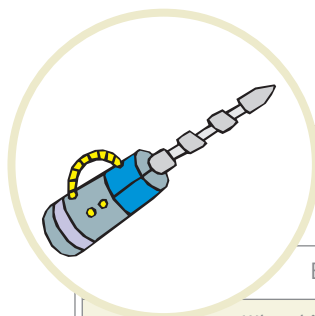
Paula Kemp

Southwest Missouri State University

In rural southwest Missouri, middle school girls participate in an annual conference to increase their interest in science, mathematics, and technology. Opening the Horizon helps students get involved with scientific learning and talk with women scientists and professionals about their careers, work experience, and education. Teachers and parents also learn how to provide enriching science learning experiences for girls. Activity summaries containing processes and procedures needed to design and carry out award-winning computer science, chemistry, biology, and anthropology projects can be found on the **Web site**.

00-02129

Grade level: middle school, professional development



TECHBRIDGE

<http://www.techbridgegirls.org>

Etta Heber

Chabot Space and Science Center

What kinds of technology projects appeal to girls? Working with tools, building robots, and solving problems at school and in neighborhoods are all part of Techbridge, a technology program designed just for middle school girls. Through after-school activities, field trips, family events, and role models, girls are introduced to various applications of technology and encouraged to pursue technical and scientific fields in college and beyond. Publications, sample curriculum, and other resources are available on the **Web site**.

00-80386

Grade level: middle school, professional development

BIOINFORMATICS INITIATIVE FOR HIGH SCHOOL STUDENTS

<http://www.immaculata.edu/bioinformatics/>

Susan Cronin

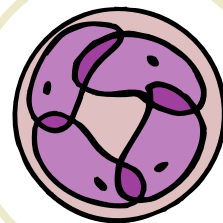
Charlotte Zales

Immaculata University

Bioinformatics, the integration of biology and information technology, is a fast-emerging scientific field. Hands-on laboratory work, field trips, and use of the NSF-funded, Web-based Biology Student Workbench are all a part of this summer program designed to familiarize female high school students with bioinformatics. Participants strengthen their computer skills, increase problem-solving abilities, and enhance communication skills. Resources and research tools from programs held in 2001, 2003, and 2005 can be found on the **Web site**.

00-86360

Grade level: high school



THE COMPUTATIONAL LABORATORY

<http://tangent.krellinst.org/scied/>

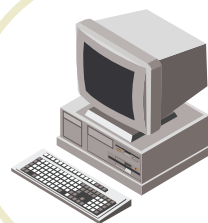
Margaret Honey

Center for Children and Technology,
Education Development Center

The Computational Literacy Project teaches four core science topics (population dynamics, the spread of disease, the carbon cycle, and the rock cycle) through interactive Web-based simulations that include graphing and tabular data features. The **Web site** features an "Introduction to Simulations" presentation that helps teachers and students understand the relationship between basic science and the modeling processes fundamental to computational science, the underpinning of much of today's research.

04-37787

Grade level: high school



DISCOVERY UNDER THE HOOD

<http://discoveryunderthehood.com/>

Mary Parks

Colgate University

Communities everywhere have replicated Discovery Under the Hood, the innovative program that introduces high school girls to automobile engineering and repair through a summer of hands-on exploration. This **Web site** is a portal for educators who want to learn more about these programs.

02-17146

Grade level: high school





IMPROVING GIRLS' SELF-EFFICACY WITH VIRTUAL PEERS

<http://www.create.usu.edu/mathgirls.html>

Yanghee Kim

Utah State University

A multidisciplinary research team at Utah State University is trying to help girls overcome their negative self-images when it comes to STEM. In particular, the team will test the potential of virtual peers in creating a constructive social environment for girls to learn math. These peers are called pedagogical agents as learning companions, or PALs, and they have been developed in line with findings related to human peer research. Visit the **Web site** to learn more about the project, and to read some of the publications related to this growing field of online learning technologies.

05-22634

Grade level: high school



PROGRAMMING WITH A PURPOSE

http://cct.edc.org/project_summary.asp?numProjectId=3008

Cornelia Brunner

Education Development Center

According to research, computer programming is not intrinsically interesting to many girls. They are more likely to be attracted to learning that involves a meaningful context, especially as a way to solve a genuine social, personal, or environmental problem. Object-oriented programming languages (such as JAVA) allow one to program by manipulating the relationships between objects in a narrative context rather than executing abstract, linear code. The Center for Children and Technology (CCT) at the Education Development Center (EDC) in New York investigated whether this approach makes programming more accessible to girls. In this experimental research project, ninth-grade girls in an introductory computer programming class at a predominantly Latino urban high school learned how to use flexible, "drag and drop" software to choreograph ice-skating routines. Visit the CCT's **Web site** to learn more about the study, and to read the report "Alternative Pathways Into Computer Science: Investigation of Narrative-Bound Interactive Learning Environments for Teaching Girls Programming."

03-32862

Grade level: high school



SOCIAL CONTEXT AND GENDER DIFFERENCES IN STEM

<http://www.prc.utexas.edu/ahaa/index.html>

Chandra Muller

University of Texas at Austin

Researchers at the University of Texas at Austin are examining how social context influences male and female students' choices about high school math and science courses and college majors in the Adolescent Health and Academic Achievement (AHAA) study. Visit the **Web site** to find data, reports, and more information about the project.

05-23046

Grade level: high school

WAYANG OUTPOST: VIRTUAL TUTORING FOR HIGH STAKES MATH ACHIEVEMENT TESTS

<http://k12.usc.edu>

Carol Beal

Information Sciences Institute,
University of Southern California

Click on the Wayang Outpost SAT Tutor **Web site** for tips on using familiar math concepts to solve unfamiliar problems. This prototype of an online tutor allows students to learn test-taking skills from virtual teachers—based on real female scientists—who encourage girls to pursue math-intensive fields of study. Includes links to innovative research in online pedagogy.

04-29125

Grade level: high school



CONNECTING WOMEN ACROSS THE COMPUTER SCIENCE PIPELINE: FROM HIGH SCHOOL THROUGH THE PH.D.

<http://www.scu.edu/SCU/Projects/NSFWorkshop99/html/walker.html>
<http://www.cs.duke.edu/csed/rodger/papers/necc.pdf>

Ellen Walker

Rensselaer Polytechnic Institute

How do you encourage women students to pursue careers in computer science? Through PipeLINK, a program to attract high school students to computer science and retain undergraduate and graduate students. Summer research programs, mentoring networks, and teacher training help retain women in the computer science pipeline. Learn more about results and outcomes from the project papers available on the **Web site**.

94-50007

Grade level: high school, undergraduate, graduate



DIVERSITY IN PHYSICS: LEARNING FROM WOMEN'S COLLEGES WHAT WORKS

<http://www.coloradocollege.edu/dept/PC/WhatWorks2004/web%20pages/Home.htm>

Barbara Whitten

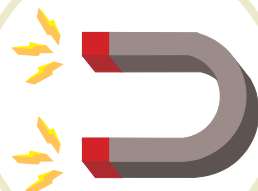
Colorado College

Women's colleges produce female scientists at twice the rate of coeducational institutions. Colorado College researchers are studying the pedagogy, curriculum, and culture of physics departments at six women's colleges to determine which factors lead to their success in recruiting and retaining female physics majors. The project builds on a previous NSF-sponsored study that compared the practices of undergraduate physics departments with low proportions of female majors against those with higher proportions. The project's **Web site** provides detailed recommendations for students, faculty, and administrators based on the study's findings. The site also features helpful links and publications.

03-32874

01-20450

Grade level: undergraduate





PATHWAY TO A STEM BACCALAUREATE DEGREE: RESEARCH TRENDS, EXEMPLARY PRACTICES, AND SUCCESSFUL STRATEGIES

<http://www.pathway2stemdegree.org>

Frankie Santos Laanan

Iowa State University

This project seeks to give students enrolled in community colleges the tools to succeed academically in their pre-STEM preparation as well as in the transfer process to four-year colleges or universities. Three products are under development at Iowa State University: an instructional video series about the transition from two- to four-year colleges; the Transfer Student Guide (available in Spanish for the benefit of Spanish-speaking parents), which will contain research, recommendations, students' reflections, a time line, and a transfer checklist; and a **Web site** through which these two products and other educational resources will be disseminated to students in two-year colleges, educators in both two-year and four-year institutions, academic counselors and advisors, transfer-center coordinators, personnel in business and industry, researchers, policymakers, and the public.

05-07882

Grade level: undergraduate



SUMMER MEDICAL AND RESEARCH TRAINING PROGRAM

<http://www.bcm.edu/smart/?PMID=0>

Gayle R. Slaughter

Baylor College of Medicine

Undergraduates can prepare for STEM Ph.D. programs at the Summer Medical and Research Training Program at the Baylor College of Medicine. Visit the program's **Web site** for application forms and to order a free copy of the guidebook *Beyond the Beakers: SMART Advice on Entering Graduate Programs in the Sciences and Engineering*.

00-80662

Grade level: undergraduate

WHY DOES IT WORK? A STUDY OF SUCCESSFUL GENDER EQUITY IN INDUSTRIAL ENGINEERING AT THE UNIVERSITY OF OKLAHOMA



<http://www.ou.edu/rise/Publication/PGE-RES/PGE-RES.htm>

Teri Murphy

University of Oklahoma

As of fall 2001, 58 percent of the undergraduate majors in the School of Industrial Engineering at the University of Oklahoma were women, a proportion strikingly higher than both the nationwide proportion in industrial engineering and the proportion in other STEM degree programs at the University of Oklahoma. Furthermore, the proportion more than doubled in the space of five years, having increased steadily from 27 percent in 1996. This phenomenon was especially puzzling because industrial engineering at the University of Oklahoma did not set out specifically to accomplish sex parity among its undergraduate majors. A multidisciplinary team of researchers investigated this phenomenon using an ethnographic research methodology, including interviews with students and faculty in the Industrial Engineering Department, in other STEM departments, and at other institutions. As expected, aspects of industrial engineering as a field were relevant to the achieved sex parity. However, a series of proactive efforts on the part of the department to advertise industrial engineering as a broad field may have also contributed to the recruitment of women. Furthermore, the achievement of sex parity at the undergraduate level was related to aspects of department culture that were visible to students and disproportionately meaningful to women, such as the passion of the faculty for the field and for working with students, elevated collegiality among the faculty, and the ability of women to succeed without compromising their femininity. Visit the program's **Web site** to learn more about the project, and to view relevant publications and links.

02-25228

Grade level: undergraduate

WIDENING THE USE OF EFFECTIVE PRACTICES TO KEEP WOMEN IN COMPUTING



<http://www.ncwit.org/>

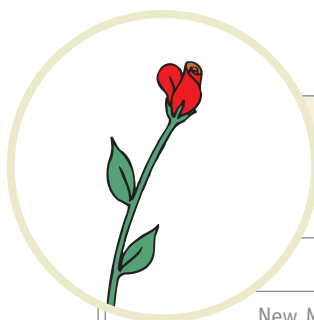
Lucinda Sanders

National Center for Women and Information Technology

The National Center for Women and Information Technology (NCWIT) is aiming to effect a significant and sustained increase in women's enrollment in and graduation from information technology bachelor's programs nationwide. Through its Unified Program of Change, the Center is creating an extension service with the initial objective of working with an existing coalition of academic departments. Known as the NCWIT Academic Alliance, the partners in this coalition will strive to implement practices that increase women's participation in their programs. Visit NCWIT's **Web site** to learn more about the project.

05-33580

Grade level: undergraduate



EFFECTIVE STRATEGIES TO DIVERSIFY ACADEMIC STEM

<http://diversefaculty.nmsu.edu/index.html>
<http://www.cpst.org>

Lisa Frehill

Mary O'Connell

Elba Serrano

New Mexico State University

University deans and department heads play a critical role in bringing about reform at their institutions. Such officials must translate the broad goals outlined by high-level committees, such as boards of regents, into effective policy and results. For this reason, New Mexico State University assembled leading academic administrators from six Carnegie Doctoral/Research University institutions to develop a publication along with a PowerPoint presentation that synthesize—in an accessible format—existing literature on gender, race, and ethnicity as they relate to the recruitment of students and faculty in STEM. In doing so, they have assembled a set of effective, concrete strategies to increase participation of women and minorities in science and technology fields. Access the PDF and PowerPoint materials on the **Web site**, and learn more about what university faculty and administration can do to make better decisions regarding women and STEM.

04-36071

Grade level: undergraduate, graduate



CIC WISE INITIATIVE

<http://www.cic.uiuc.edu/groups/WISEPanel/>

Jean Girves

University of Illinois at Urbana-Champaign

Twelve universities collaborate on this Web site to share resources and offer educational opportunities for increasing the number of women pursuing STEM degrees and for supporting women faculty in advancing their careers. Online resources include links to a directory of women in science, technology, engineering, and mathematics; **Web sites** of participating schools; best-practices guidebooks; and an evaluation report on the outcomes of the CIC WISE Initiative.

95-55812

Grade level: undergraduate, graduate, professional development

MENTORNET, THE E-MENTORING NETWORK FOR DIVERSITY IN ENGINEERING AND SCIENCE



<http://www.mentornet.net>

Carol Muller

San Jose State University Foundation

Finding time to be a mentor and to be mentored has become easy with MentorNet, the E-Mentoring Network for Diversity in Engineering and Science. Since 1997 this organization has offered award-winning, research-based, technology-leveraged mentoring programs that pair undergraduate and graduate students, postdocs, and early career faculty in engineering, sciences, and mathematics with scientific and technical professionals working in industry, government, and higher education, for structured, eight-month-long e-mail-based mentoring relationships. One-on-one encouragement and advice, online topic-based discussion groups, and a résumé database for job-seekers are just a few of the many benefits for MentorNet community members. MentorNet serves a growing partnership of institutions of higher education, corporations, government labs, and professional societies, all working together to create and sustain positive mentoring relationships on a large scale. The **Web site** also features links to evaluation reports.

00-01388

Grade level: undergraduate, graduate, professional development

TUTORIALS FOR CHANGE: GENDER SCHEMAS AND SCIENCE CAREERS



<http://www.hunter.cuny.edu/gendertutorial/tutorials.htm>

Virginia Valian

CUNY Hunter College

Four half-hour online tutorials use slides and voice-over narration to discuss the underrepresentation of women in STEM. Visit the **Web site** to read “Sex Disparities in Rank and Salary,” which reviews current data and common explanations. “Gender Schemas and Our Evaluations of Others” explains negative evaluations of women. “Gender Schemas and Our Evaluations of Ourselves” explains sex differences in entitlement. “Remedies: What You Can Do” suggests how students and faculty can improve diversity. The tutorials are useful for classrooms, workshops, and individuals.

01-20465

Grade level: undergraduate, graduate, professional development


 AAREA

UNDERSTANDING WHAT KEEPS PEOPLE IN STEM

<http://web3.cas.usf.edu/main/depts/ANT/AAREA/STEM.html>

Kathryn Borman

University of South Florida

At present, it is not well understood how the responses to school- and work-related experiences of individuals who pursue careers in STEM differ from those who do not. Researchers at the University of South Florida's Alliance for Applied Research in Education and Anthropology (AAREA) are looking at results from two interrelated studies to understand how structural supports and barriers affect student outcomes, including students' motivation to embark on STEM-career pathways. Combining and analyzing the results of these studies will provide information on the key background factors and experiences that affect STEM career persistence. Investigators will examine in detail the differences in career paths of individuals who have pursued different types of STEM careers. Both studies are informed by an interest in the economic outcomes of affirmative action policies in higher education. To learn more about the project, visit AAREA's **Web site**.

03-37543

Grade level: high school, undergraduate, graduate, professional development


 Assessing Women in Engineering

ASSESSING WOMEN IN ENGINEERING

<http://aweonline.org>

Rose Marra

University of Missouri–Columbia

Download a wide range of tools to develop and assess engineering outreach programs for girls. **Web site** includes survey instruments, data management software, research bibliographies, and much more, all designed to help institutions leverage their resources to benefit girls in engineering.

01-20642

Grade level: undergraduate, professional development


 CRA
DISTRIBUTED
MENTOR
PROJECT

THE CRA DISTRIBUTED MENTOR PROJECT

<http://www.cra.org/Activities/craw/dmp/>

Frederick Weingarten

Computing Research Association

Female computer science majors link to faculty mentors from across the country and chronicle their summers of mentorship in online journals. This **Web site** is also a comprehensive career guide for women pursuing graduate degrees in computer science: find program applications, awards listings, publications, research bibliographies, and links to allied organizations.

95-07756

Grade level: undergraduate, professional development

EXPANDING WOMEN'S OPPORTUNITIES THROUGH MATHEMATICAL SCIENCE

<http://www.clas.niu.edu/ewoms/index.html>

Amy Levin	Diana Steele	Northern Illinois University
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Increase your institution's retention of women in undergraduate calculus courses by replicating Northern Illinois University's Expanding Women's Opportunities through Mathematical Science program. Resources available on the **Web site** include teaching tools for female learners and a campus ad campaign that counters negative perceptions of women in math.

00-86310	Grade level: undergraduate, professional development
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FAIRERSCIENCE: MOVING BEYOND ANECDOTE TO INFORMED DISCUSSION

<http://www.fairerscience.org>

Susan Bailey	Patricia Campbell
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Wellesley College and Campbell-Kibler Associates

Through their work at www.FairerScience.org, the Wellesley Centers for Women at Wellesley College and Campbell-Kibler Associates seek to help researchers in gender and the sciences better communicate their work to the media, policymakers, and advocates while helping the media better understand issues associated with gender and STEM. The **Web site**, www.FairerScience.org, includes a variety of materials to do this, such as tips sheets, multimedia segment, links to resources, and a blog.

05-33486	Grade level: undergraduate and beyond
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WOMEN AND SCIENTIFIC LITERACY: BUILDING TWO-WAY STREETS

<http://www.aacu.org/womenscilit/index.cfm>

Caryn McTighe Musil	Association of American Colleges and Universities
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Curricular tools bridge the gap between STEM and women's studies. This **Web site** includes sample science syllabi that integrate gender issues and sample women's-studies syllabi that integrate science content, as well as an extensive bibliography of resources.

95-55808	Grade level: undergraduate, professional development
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GENDER EQUITY PROJECT: CHANGING FACULTY THROUGH LEARNING COMMUNITIES

<http://equity.tamu.edu>

Karen Watson

Texas Engineering Experiment Station

This **Web site** helps STEM faculty explore deep-seated attitudes toward women in these fields. Downloadable syllabi model faculty development seminars in four areas: making STEM inviting to women, investigating how faculty preconceptions affect students' performance, determining personal vision, and changing the culture of STEM. The site includes links to "learning communities" research.

01-20825

Grade level: graduate, postgraduate, professional development



THE NATIONAL GIRLS COLLABORATIVE PROJECT

<http://www.pugetsoundcenter.org/ngcp>

Karen Peterson

Puget Sound Center for Teaching, Learning, and Technology

At this **Web site**, advocates of girls' STEM education and after-school programs can share ideas and information with organizations across the United States. It is a tremendous networking resource. New to the network? Click on the Northwest Girls Collaborative Project link for an introduction to the collaborative model.

02-17212

Grade level: professional development

Science, Gender, and Afterschool

A RESEARCH-ACTION AGENDA

SCIENCE, GENDER AND AFTERSCHOOL COMMUNITY OF PRACTICE

<http://www.afterschool.org/sga/>

Merle Froschl

Educational Equity Center at the Academy for Educational Development

More than just a **Web site**, this online community hosts a listserv and dialogue forum and regularly updates its resources for research into the innovative field of after-school girls' science education. Keep up with the latest ideas in informal educational practices and exchange insights with educators from across the country.

04-10552

Grade level: professional development

WOMEN IN CHEMICAL BUSINESS AND INDUSTRY

http://www.education.umd.edu/EDCP/enhance_site/

Ruth Fassinger

University of Maryland—College Park

Much research has explored why women are underrepresented in academic STEM settings, but there are virtually no data regarding why women fail to enter industrial settings in predictable numbers or what happens to women who do. Moreover, little is known about the prevalence or effectiveness of strategies currently used to address the scarcity of women in industry. Through Project ENHANCE, investigators at the University of Maryland—College Park are seeking to understand the experiences of women scientists and engineers. Project ENHANCE uses the chemical industry as a model sector to document and analyze the career paths of women formally trained in science and engineering and then identify effective corporate practices for recruiting, retaining, and promoting women. Preliminary study results are available at the Project ENHANCE **Web site**, which also offers links to resources for women in science.

02-28007

Grade level: professional development



PROJECT
ENHANCE

WOMEN IN INFORMATION TECHNOLOGY: PIVOTAL TRANSITIONS FROM SCHOOL TO CAREERS

<http://www.wit.claohs.vt.edu/>

Carol Burger

Virginia Polytechnic Institute and State College

What influences girls' perceptions of choosing a career in information technology? How do family, peers, schools, and communities shape girls' views of technology as friendly or unfriendly to them? K-12 and university educators and administrators learn about the transitional points in girls' lives that affect their career choices. Research findings, success stories of women scientists, and links to science and education resources can be found on the Women in Technology **Web site**.

01-20458

Grade level: professional development



See also:

Exploring Physics—Electricity and Magnetism (CD-ROMs)

Audio Portraits of Women in STEM: HER-STORY CD Set (CD-ROMs)

DragonflyTV: Sample Video Segments (DVDs/Videos and Games)

You Can Be Anything! A Music Video to Encourage Girls and Women to Embrace Technology (DVDs/Videos and Games)

Gender Differences in the Perception and Use of an Informal Science

Learning Web Site: Final Report to the NSF (Publications)

Science, Gender, and Afterschool: A Research-Action Agenda (Publications)

After-School Science PLUS (Publications)

Audio



Transforming the Role of Women and Girls in Science and Engineering

To Order

Visit the Web site at
<http://www.womeninscience.org>

Grant No.

04-36130
 03-32765
 02-25030

Principal Investigators

Glenn Busby (gbusby@wamc.org)
 Mary Darcy (mdarcy@wamc.org)

CD-ROMs



Exploring Physics—Electricity and Magnetism

To Order

Visit the Web site at
<http://www.exploringphysics.com>

Grant No.

94-50533

Principal Investigator

Meera Chandrasekhar (meerac@missouri.edu)

Seeing Gender: CD-ROM Set

To Order

Visit the Web site at
http://www.meac.org/Resources/ed_services/SG_WEB/INDEX.htm

Grant No.

02-25184

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Jacqueline Spears (jdspears@ksu.edu)

Audio Portraits of Women in STEM: HER-STORY CD Set

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<http://www.womeninscience.org>

Grant No.

03-32765

Principal Investigators

Glenn Busby (gbusby@wamc.org)
 Mary Darcy (mdarcy@wamc.org)

Introduction to 3-D Spatial Visualization: An Active Approach

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The book is available through <http://www.delmarlearning.com>.
 Search using the book's ISBN, 1-4018-1389-5

Grant No.

04-29020

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Sheryl Sorby (sheryl@mtu.edu)

Powerful Signals: Transforming the Role of Women and Girls in Science and Engineering CD Set

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<http://www.womeninscience.org>

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Principal Investigators

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 Mary Darcy (mdarcy@wamc.org)

DVDs/Videos and Games



Dragonfly TV® Authentic Inquiry Videos

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Visit the Web site at
<http://www.pbskids.org/dragonflytv>

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04-36260
03-37350
01-25738
99-09828

Principal Investigator

Richard Hudson (rhudson@tpt.org)

Tech Savvy Girls Video and Resource Guide

To Order

The video is available through the Fairfax Network Video Store at:
<http://www.fcps.edu/cpsapps/fairfaxnetwork/videostore/level2.cfm?ProductID=23>

Grant No.
03-32841

Principal Investigator

Nancy Lark No contact information available for former
 PI. Current contact at the American
 Association of University Women is Ashley
 Carr, in Media Relations, at carra@aauw.org

Girls Creating Games

To Order

Visit the Web site at
<http://programservices.etr.org/gcgweb/>

Grant No.
02-17221

Principal Investigator

Jill Denner (jilld@etr.org)

Girls Redesigning and Excelling in Advanced Technology

To Order

Visit the Web site at
<http://www.miamisci.org/great/index.html>

Grant No.
01-14669

Principal Investigator

Judy Brown (jabrown@miamisci.org)

You Can Be Anything! A Music Video to Encourage Girls and Women to Embrace Technology

To Order

Visit the Web site at
<http://www.umbc.edu/be-anything>

Grant No.
02-25079

Principal Investigator

Claudia Morrell (cmorrell@umbc.edu)

The Case of Missing Human Potential

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Visit the Web site at
<http://www.missingpotential.org/>

Grant No.
02-17109

Or write to
Missing Potential Video
1375 Euclid Ave
Cleveland, OH 44115-1835

Or call (216) 916-6354

Principal Investigator

Frank Wilson (frank.wilson@ideastream.org)

Publications



After-School Science PLUS

To Order

Visit the Web site at
http://edequity.org/afterschool_materials.php

Grant No.
96-32241

Principal Investigator

Barbara Sprung (bsprung@aed.org)

FIRST (Female Involvement in Real Science Technology)

To Order

Visit the Web site at
<http://www.chabotspace.org/visit/programs/first.asp>

Grant No.
95-55807

Or call (510) 336-7382 to order the Girls FIRST resource guide

Principal Investigator

Etta Heber (eheber@chabotspace.org)

National Science Partnership for Girl Scouts and Science Museums	
To Order Visit the Web site at http://www.fi.edu/tfi/programs/nsp.html	Grant No. 04-36249
Principal Investigator Dale McCreedy (mccreedy@fi.edu)	

Sport Science: Using Sports as a Vehicle for Science Learning	
To Order Type in the URL to view the report directly: http://www.hiceducation.org/Edu_Proceedings/Penny%20L.%20Hamrich2.pdf	Grant No. 00-02073
Principal Investigator Penny Hammrich (penny_hammrich@qu.cuny.edu)	

Learning Online	
To Order Type in the URL to view the report directly: http://www2.edc.org/GDI/publications_SR/equity6_04_FULLBOOK.pdf	Grant No. 00-02126
Principal Investigator Katherine Hanson (khanson@edc.org)	

Athena Project	
To Order Type in the URL to view the newsletter directly: http://www.alphacenter.ucr.edu/Brochures/VolumeI_Issue1.pdf	Grant No. 96-19060
Principal Investigator Pamela Clute (pamela.clute@ucr.edu)	

United Connecticut for Women in Science, Engineering, and Mathematics	
To Order Visit the Web site at http://www.easternct.edu/personal/faculty/cidc/ucwsme.html	Grant No. 94-50026
Principal Investigator Carmen Cid (cid@easternct.edu)	

Beyond the Beakers: SMART Advice on Entering Graduate Programs in the Sciences and Engineering

To Order

Visit the Web site at
<http://www.bcm.edu/smart/?PMID=2993>

Grant No.

99-06394
00-80662

Principal Investigator

Gayle R. Slaughter (gayles@bcm.tmc.edu)

Retention of Women Graduate Students and Early Career Academics in Science and Engineering

To Order

Visit the Indiana University Press Journals Web site and search for the journal title "Retention of Women . . ." at:
<http://www.iupjournals.org>

Grant No.

00-94556

Principal Investigator

Jill Bystydzienski (bystydj@iastate.edu)

Removing Barriers: Women in Academic Science, Technology, Engineering, and Mathematics

To Order

Visit the Indiana University Press Web site and search for the book title "Removing Barriers . . ." at:
http://www.iupress.indiana.edu/catalog/product_info.php?products_id=22614

Grant No.

00-94556

Principal Investigators

Jill Bystydzienski (bystydj@iastate.edu)
 Sharon R. Bird (eds.)

Achieving Gender Equity in Classrooms: A Guide for Faculty

To Order

Type in the URL to view the handbook directly:
http://www.brown.edu/Administration/Dean_of_the_College/homepginfo/equity/Equity_handbook.html

Grant No.

94-53676

Principal Investigator

Sheila E. Blumstein (sheila_blumstein@brown.edu)

The Preparation of Gender-Sensitive Science Teachers in the University of Delaware's Secondary Science Education Program

To Order

Type in the URL to view the resource guide directly:
<http://www.nsta.org/main/pdfs/NSTAstandards2003.pdf>

Grant No.

94-5022

Principal Investigator

Kathryn Scantlebury (kscantle@udel.edu)

Gender Differences in the Perception and Use of an Informal Science Learning Web Site: Final Report to the NSF

To Order

Type in the URL to view the report directly:

http://capsi.caltech.edu/research/documents/GenderDiffernecesAschbacher_000.pdf

Grant No.
00-86338

Principal Investigator

Pamela Aschbacher (pama@caltech.edu)

Web Sites



Explanatoids

To Order

Visit the Web site at

<http://www.explanatoids.com>

Grant No.
02-17033

Principal Investigator

Janet Stocks (stocks@andrew.cmu.edu)

Imagination Place!

To Order

Visit the Web site at

http://www.edc.org/CCT/imagination_place/

Grant No.
97-14749

Principal Investigator

Jessica Drummer Ryan (info@girlsinc-alameda.org)

Computer Game Design: Involving Girls

To Order

Visit the Web site at

<http://gel.msu.edu/lifepreservers>

<http://aliengames.org>

Grant No.
02-17197

Principal Investigator

Carrie Heeter (heeter@msu.edu)

Gaining Confidence in Math: Intelligent Tutors With Custom Design for Girls

To Order

Visit the Web site at

<http://k12.usc.edu/AW/index.html>

Grant No.
95-55737

Principal Investigator

Carol Beal (cbeal@isi.edu)

The Image of Engineering and Imaginary Lines: Engaging Girls	
To Order Visit the Web site at http://www.sallyridesience.com/	Grant No. 05-33491 04-36230
Principal Investigators Tam O'Shaughnessy (toshaugh@mail.sdsu.edu) Sally Ride	

Through the Glass Wall	
To Order Visit the Web site at http://mathequity.terc.edu/gw/html/web.html	Grant No. 95-55641
Principal Investigator Andee Rubin (andee_rubin@terc.edu)	

Girls' Science Practices in Urban, High-Poverty Communities	
To Order Visit the Web site at http://ed-web3.educ.msu.edu/CalabreseBarton/urban.girls.html	Grant No. 04-29109
Principal Investigator Angela Calabrese Barton (acb@msu.edu)	

Hear Our Voices and the Computer Clubhouse	
To Order Visit the Web site at http://www.computerclubhouse.org/programs/hov/index.htm	Grant No. 02-17138
Principal Investigator Gail Breslow (gbreslow@mos.org)	

STEMTeams.org	
To Order Visit the Web site at http://stemteams.org	Grant No. 02-17110
Principal Investigator Katherine Ziemer (kziemer@coe.neu.edu)	

Telementoring Young Women in Engineering and Computing: Providing the Vital Link

To Order

Visit the Web site at
<http://www.edc.org/CCT/telementoring/index2.html>

Grant No.
94-50042

Principal Investigator

Margaret Honey (mhoney@edc.org)

Think Again . . . Girls Can!

To Order

Visit the Web site at
<http://www.girlscan.org>

Grant No.
02-17200

Principal Investigator

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Midwest Rural–Urban Girls Collaborative

To Order

Visit the Web site at
<http://www.missouristate.edu/mru/home>

Grant No.
05-33581

Principal Investigator

Paula Kemp (paulakemp@missouristate.edu)

After-School and Summer Science Camps for Young Women

To Order

Visit the Web site at
<http://www.spokanecitylab.wsu.edu>

Grant No.
00-86440

Principal Investigator

Sylvia Oliver (olivers@wsu.edu)

Aiming for Algebra

To Order

Visit the Web site at
<http://www.clubgirlstart.org/>

Grant No.
02-17038

Principal Investigator

Rachel Muir (rachel@girlstart.org)

Can Robotics Keep Girls in Science?	
To Order Visit the Web site at http://www.botball.org/	Grant No. 05-22400
Principal Investigator Jerry Weinberg (jweinbe@siue.edu)	

Computer Programming for Middle School Girls	
To Order Visit the Web site at http://www.rapunsel.org/	Grant No. 03-32898
Principal Investigator Kenneth Perlin (perlin@mrl.nyu.edu)	

Girls Dig It	
To Order Visit the Web site at http://www.nyu.edu/classes/mcgee/digit/ http://www.girlsinc.org/	Grant No. 99-08759
Principal Investigator Heather Johnson Nicholson (hjnicholson@girls-inc.org)	

Girls in Engineering Hands-On Museum Exhibit Development	
To Order Visit the Web site at http://engineering.tufts.edu/ggs/proginfo.htm	Grant No. 96-32175
Principal Investigator Ioannis Miaoulis (imiaoulis@mos.org)	

Go-Girl: Gaining Options—Girls Investigate Real Life	
To Order Visit the Web site at http://www.gogirls.wayne.edu http://www.smartgirl.org	Grant No. 01-14683 05-07902
Principal Investigator Pamela T. Reid (preid@roosevelt.edu)	

Media Literacy Training for Middle School Students

To Order

Visit the Web site at
http://homepages.wmich.edu/~steinke/projects/assessing_media/index.html

Grant No.
04-29005

Principal Investigator

Jocelyn Steinke (jocelyn.steinke@wmich.edu)

Tech Team: Project-Based Education for Middle School Girls

To Order

Visit the Web site at
<http://www.knowitall.org/techteam>

Grant No.
02-17199

Principal Investigator

Betsy Newman (bnewman@sctev.org)

The National Science Partnership for Girl Scouts and Science Museums

To Order

Visit the Web site at
<http://sln.fi.edu/tfi/programs/nsp.html#top>

Grant No.
04-36249

Principal Investigator

Dale McCreedy (mccreedy@fi.edu)

Science on Patrol

To Order

Visit the Web site at
<http://www.isof.org/SOP/default.aspx>

Grant No.
02-17188

Principal Investigator

Bonnie Brownstein (bonniebrownstein@aol.com)

Women Who Walk Through Time

To Order

Visit the Web site at
<http://www.earth.utah.edu/women>

Grant No.
96-25566

Principal Investigator

Marjorie Chan (chan@earth.utah.edu)

Challenging Gender Stereotypes With Computer-Based Social Models

To Order

Visit the Web site at
http://nitl.fsu.edu/_Website/projectsPals.asp

Grant No.
04-29647

Principal Investigator

Amy Baylor (Baylor@fsu.edu)

Gender-Based Science Performance Models

To Order

Visit the Web site at
<http://www.immex.ucla.edu>

Grant No.
04-29156

Principal Investigator

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The Case of Missing Human Potential

To Order

Visit the Web site at
<http://www.missingpotential.org/>

Grant No.
02-17109

Principal Investigator

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United Connecticut for Women in Science, Engineering, and Mathematics

To Order

Visit the Web site at
<http://www.easternct.edu/personal/faculty/cidc/ucwsme.html>
<http://www.cpep.org/index.html>

Grant No.
94-50026

Principal Investigator

Carmen Cid (cid@easternct.edu)

Engineering, Science, and Math Increase Job Aspirations (ES MIJA)

To Order

Visit IDRA's Web site at:
<http://www.idra.org>

Look under "Publications" for the report "Minority Women in Science: Forging the Way."

Or type in this URL to access the report directly:

http://www.idra.org/page.shop.product_details/flypage.shop.flypage/product_id,22/category_id,1/manufacture_id,0/option,com_virtuemart/Itemid,301/

Grant No.
95-53423

Principal Investigator

Maria "Cuca" Robledo Montecel

No contact information available for former PI. Current contact at IDRA is Bradley Scott, IDRA's senior education associate and director of the South Central Collaborative for Equity at bradley.scott@idra.org.

Women in Science and Engineering (WISE)

To Order

Visit the Web site at
<http://www.wise.sunysb.edu>

Grant No.
94-50018

Principal Investigator

Edith Steinfield

No contact information available for former PI. Current contact at WISE is Director Carrie-Ann Miller at camiller@notes.cc.sunysb.edu

Opening the Horizon: Strengthening Science Education for Middle School Girls in Rural Southwest Missouri

To Order

Visit the Web site at
<http://www.cnas.missouristate.edu/eyh/default.htm>

Grant No.
00-02129

Principal Investigator

Paula Kemp (paulakemp@missouristate.edu)

Techbridge

To Order

Visit the Web site at
<http://www.techbridgegirls.org>

Grant No.
00-80386

Principal Investigator

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Bioinformatics Initiative for High School Students

To Order

Visit the Web site at
<http://www.immaculata.edu/bioinformatics/>

Grant No.
00-86360

Principal Investigator

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The Computational Laboratory

To Order

Visit the Web site at
<http://tangent.krellinst.org/scied/>

Grant No.
04-37787

Principal Investigator

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Discovery Under the Hood

To Order

Visit the Web site at
<http://discoveryunderthehood.com/>

Grant No.
02-17146

Principal Investigator

Mary Parks (meparks@mail.colgate.edu)

Improving Girls' Self-Efficacy With Virtual Peers

To Order

Visit the Web site at
<http://www.create.usu.edu/mathgirls.html>

Grant No.
05-22634

Principal Investigator

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Programming With a Purpose

To Order

Visit the Web site at
http://cct.edc.org/project_summary.asp?numProjectId=3008

Grant No.
03-32862

Principal Investigator

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Social Context and Gender Differences in STEM

To Order

Visit the Web site at
<http://www.prc.utexas.edu/ahaa/index.html>

Grant No.
05-23046

Principal Investigator

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Wayang Outpost: Virtual Tutoring for High Stakes Math Achievement Tests

To Order

Visit the Web site at
<http://k12.usc.edu>

Grant No.
04-29125

Principal Investigator

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Connecting Women Across the Computer Science Pipeline: From High School Through the Ph.D.

To Order

Visit the Web site at
<http://www.scu.edu/SCU/Projects/NSFWorkshop99/html/walker.html>
 Or type in this URL to directly access the report:
<http://www.cs.duke.edu/csed/rodger/papers/necc.pdf>

Grant No.
94-50007

Principal Investigator

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Diversity in Physics: Learning From Women's Colleges What Works

To Order

Visit the Web site at
<http://www.coloradocollege.edu/dept/PC/WhatWorks2004/web%20pages/Home.htm>

Grant No.
03-32874
01-20450

Principal Investigator

Barbara Whitten (bwhitten@coloradocollege.edu)

Pathway to a STEM Baccalaureate Degree: Research Trends, Exemplary Practices, and Successful Strategies

To Order

Visit the Web site at
<http://www.pathway2stemdegree.org>

Grant No.
05-07882

Principal Investigator

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MentorNet, the E-Mentoring Network for Diversity in Engineering and Science

To Order

Visit the Web site at
<http://www.mentornet.net>

Grant No.
00-01388

Principal Investigator

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Tutorials for Change: Gender Schemas and Science Careers

To Order

Visit the Web site at
<http://www.hunter.cuny.edu/gendertutorial/tutorials.htm>

Grant No.
01-20465

Principal Investigator

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Understanding What Keeps Women in STEM

To Order

Visit the Web site at
<http://web3.cas.usf.edu/main/depts/ANT/AAREA/STEM.html>

Grant No.
03-37543

Principal Investigator

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Assessing Women in Engineering

To Order

Visit the Web site at
<http://aweonline.org>

Grant No.
01-20642

Principal Investigator

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The CRA Distributed Mentor Project

To Order

Visit the Web site at
<http://www.cra.org/Activities/craw/dmp/>

Grant No.
95-07756

Principal Investigator

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Expanding Women's Opportunities Through Mathematical Science

To Order

Visit the Web site at
<http://www.clas.niu.edu/ewoms/index.html>

Grant No.
00-86310

Principal Investigators

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 Danielle Steele

FairerScience: Moving Beyond Anecdote to Informed Discussion

To Order

Visit the Web site at
<http://www.fairerscience.org>

Grant No.
05-33486

Principal Investigators

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 Patricia Campbell (campbell@campbell-kibler.com)

Women and Scientific Literacy: Building Two-Way Streets

To Order

Visit the Web site at
<http://www.aacu.org/womenscilit/index.cfm>

Grant No.
95-55808

Principal Investigator

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Gender Equity Project: Changing Faculty Through Learning Communities

To Order

Visit the Web site at
<http://equity.tamu.edu>

Grant No.
01-20825

Principal Investigator

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The National Girls Collaborative Project

To Order

Visit the Web site at
<http://www.pugetsoundcenter.org/ngcp>

Grant No.
02-17212

Principal Investigator

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Science, Gender and Afterschool Community of Practice

To Order

Visit the Web site at
<http://www.afterschool.org/sga/>

Grant No.
04-10552

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Women in Chemical Business and Industry

To Order

Visit the Web site at
http://www.education.umd.edu/EDCP/enhance_site/

Grant No.
02-28007

Principal Investigator

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Women in Information Technology (WIT): Pivotal Transitions From School to Careers

To Order

Visit the Web site at
<http://www.wit.clahs.vt.edu/>

Grant No.
01-20458

Principal Investigator

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