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

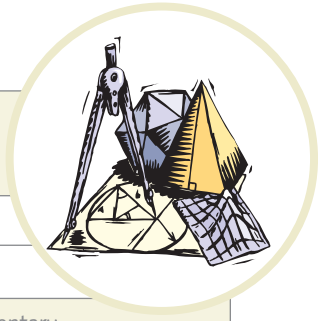
IMAGINATION PLACE!

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



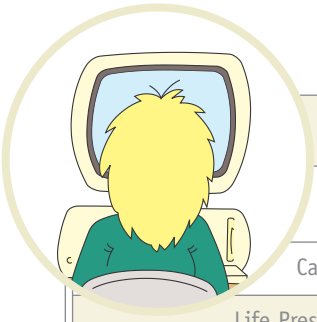
SCHOOL-BASED S.M.A.R.T. (SCIENCE, MATH, AND RELEVANT TECHNOLOGY)

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

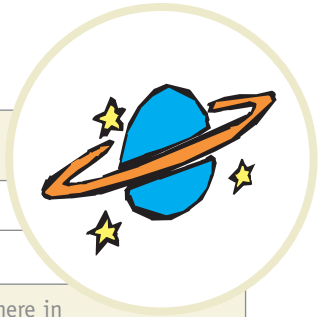
THE IMAGE OF ENGINEERING AND IMAGINARY LINES: ENGAGING GIRLS

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



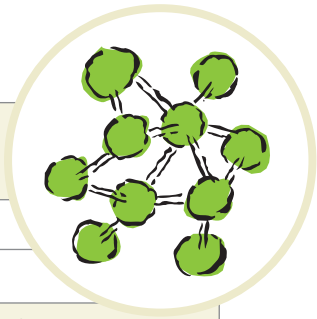
THROUGH THE GLASS WALL

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



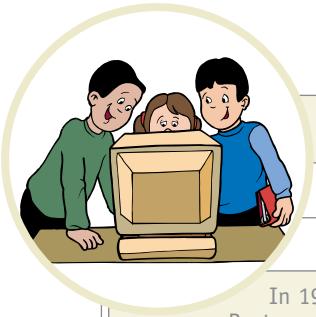
GIRLS' SCIENCE PRACTICES IN URBAN, HIGH-POVERTY COMMUNITIES

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

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

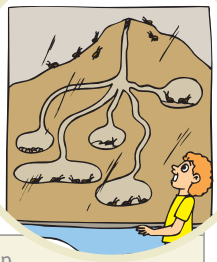
http://www.nyu.edu/classes/mcgee/digit/
http://www.girlsinc.org/

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

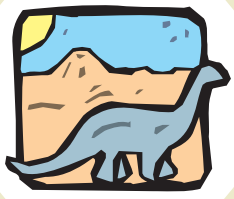
http://www.isof.org/SOP/default.aspx

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

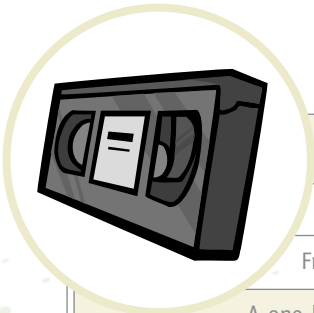
GENDER-BASED SCIENCE PERFORMANCE MODELS

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



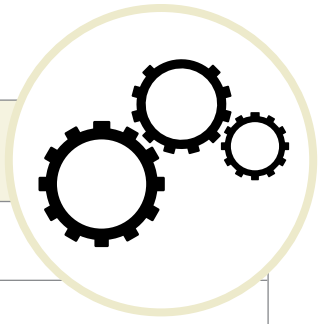
THE CASE OF MISSING HUMAN POTENTIAL

http://www.missingpotential.org/

Frank Wilson	WVIZ/PBS Ideastream℠, 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

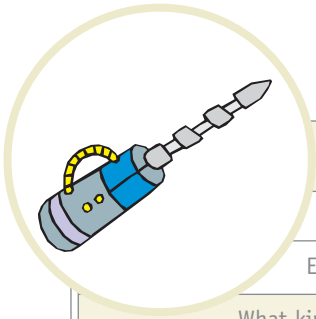
OPENING THE HORIZON: STRENGTHENING SCIENCE EDUCATION FOR MIDDLE SCHOOL GIRLS IN RURAL SOUTHWEST MISSOURI

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



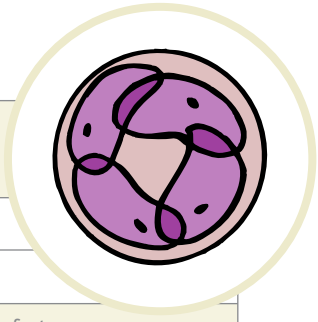
TECHBRIDGE

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



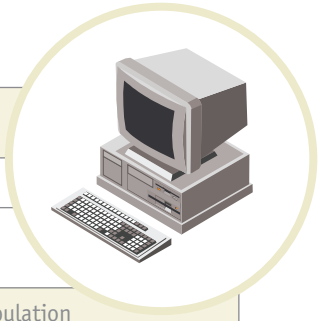
BIOINFORMATICS INITIATIVE FOR HIGH SCHOOL STUDENTS

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



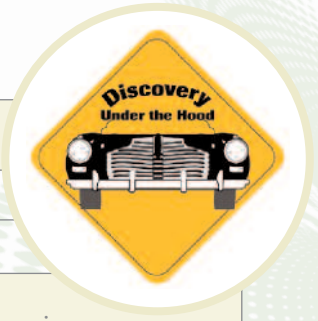
THE COMPUTATIONAL LABORATORY

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

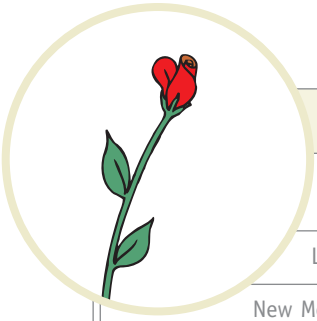
WIDENING THE USE OF EFFECTIVE PRACTICES TO KEEP WOMEN IN COMPUTING

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

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

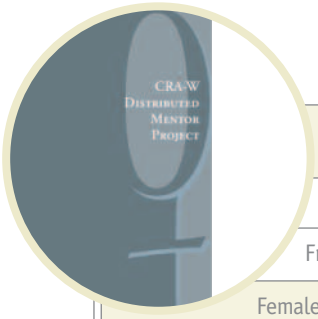
ASSESSING WOMEN IN ENGINEERING

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



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

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

FAIRERSCIENCE: MOVING BEYOND ANECDOTE TO INFORMED DISCUSSION

FAIRERSCIENCE

http://www.fairerscience.org

Susan Bailey	Patricia Campbell	

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

WOMEN AND SCIENTIFIC LITERACY: BUILDING TWO-WAY STREETS

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

Caryn McTighe Musil	Association of American Colleges and Universities

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

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 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

WOMEN IN INFORMATION TECHNOLOGY: PIVOTAL TRANSITIONS FROM SCHOOL TO CAREERS

http://www.wit.clahs.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)