

Panel: Why Women are Turned Off by Technology and How to Overcome It

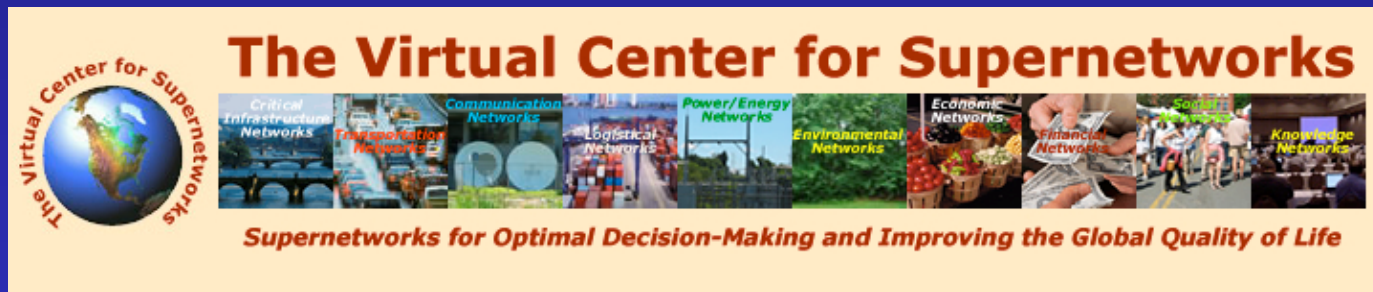
Anna Nagurney, PhD

John F. Smith Memorial Professor

Isenberg School of Management

and

Director - Virtual Center for Supernetworks



Mind the Gap! Career Summit for Women & Technology

UMass Amherst - Thursday, September 27, 2007



Is There a Problem?

Yes!!!

The participation by women in Computer Science (CS) has been steadily decreasing at the undergraduate level.

Today, the percentage of CS Bachelor's degrees granted to women at research universities is at 14%, the lowest ever!

<http://www.cra.org/info/taulbee/women.html>

Many of the top CS departments are reporting female enrollments at fewer than 10% in the major.

At the doctoral level, the situation is a bit better, with between 15%-18% of CS Doctorates being awarded to women over the past seven years.

The percentage of female faculty in CS departments has been steadily increasing.

The State of the Union

The Opportunities in IT are HUGE
and have never been better!

The Field is Interdisciplinary --
You don't need a degree in CS to
be part of IT.

What Does it Take for Success in IT?

- Technology is constantly changing and evolving so a successful career in IT involves always learning new skills.
- Need to learn the fundamentals but also have a passion for learning in a very dynamic environment.
- An individual needs to be willing to evolve in new directions.
- Being creative, a problem-solver, an innovator, and seizing new opportunities.

The Fundamentals are Essential!

- Communication Skills derived from reading and writing
- Mathematics
- Coding/programming to understand the underlying logic involved in problem-solving

What Leaders Can Do!

Generate Excitement about the Terrific Opportunities in IT and its Applications

- IT and Energy and the Environment
- IT and Finance
- IT and Healthcare
- IT and Transportation and Logistics
- IT and Social Networking
- IT and Marketing
- IT and the Arts and Entertainment
- IT and Education

What Else can Leaders do?

Create Positive Change for Others -- There are
So Many Opportunities to Do This!

Show the Impact of Your Work on Society!

Advocate for Women in IT through
Management!

When you get contacted for interviews by students from elementary, middle, and/or high schools agree to be interviewed and talk about your experiences as a professional and researcher.

Share your life stories. Nothing like hearing back that the student got an A+ on her science project because she wrote about you!

Get Students Involved Early!

<http://student.som.umass.edu/informs>

**Welcome to the UMASS Amherst
Student Chapter of INFORMS Website**



Operations Research / Management Science Seminar Series



September 14, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Services Science: a New Opportunity for Operations ResearchDr. Brenda Dietrich

IBM Thomas J. Watson Research Center
Yorktown Heights, NY



September 28, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Latest Trends of Global Equity Trading: The New Technology, the Players, and the New Legislation: Differences Between the US and the Rest of the WorldDr. Stavros Siokos (UMass - '98 Ph.D.)

Citigroup
London, United Kingdom
(Joint Management Science/Finance Seminar)



October 19, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Music and Operations Research - The Perfect MatchProfessor Elaine Chew

University of Southern California (USC)
and
2007-2008 Science Fellow at the Radcliffe Institute for
Advanced Study, Harvard University, Cambridge, MA



October 26, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Learning and Exploiting Statistical Dependencies in NetworksProfessor David Jensen

Department of Computer Science
University of Massachusetts at Amherst



November 2, 2007 - Isenberg School of Management
Room 210, 1:30 - 3:00

Investment Strategy Design Meets Capital Markets - The Fit and Misfit of Operations Research

Dr. Joanne Hill

Goldman Sachs
(Joint Management Science/Finance Seminar)



November 16, 2007 - Isenberg School of Management
Room 128, 11:00 - 12:00

Decision Model Development in Engineering DesignProfessor Sundar Krishnamurty

Department of Mechanical and Industrial Engineering
University of Massachusetts at Amherst



December 7, 2007 - Isenberg School of Management
Room 128, 11:00 - 12:00

Is it Really Safe to Fly?Professor Arnold Barnett

George Eastman Professor of Management Science
Sloan School of Management
Massachusetts Institute of Technology
Cambridge, MA

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Operations Research / Management Science Seminar Series



February 23, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Competition and Efficiency in Congested NetworksProfessor Asu Ozdaglar

Department of Electrical Engineering and Computer Science
Massachusetts Institute of Technology
Cambridge, MA



March 9, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Simple Models of Influenza Progression and ControlProfessor Richard Larson

Mitsui Professor and Director
Center for Engineering Systems Fundamentals
Department of Civil and Environmental Engineering
Massachusetts Institute of Technology
Cambridge, MA



March 16, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Coke and Steel: The Strategic Significance of Their Regional Development in China in the Global Supply ChainProfessor Karen R. Polenske

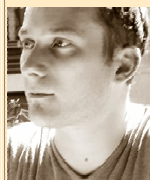
Department of Urban Studies and Planning
Massachusetts Institute of Technology
Cambridge, MA



March 30, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Transportation Modeling and Simulation: an Effort of 50+ YearsProfessor Daiheng Ni

Department of Civil and Environmental Engineering
University of Massachusetts at Amherst



April 13, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Adaptive Online Allocation Mechanisms for Single-Valued DomainsProfessor David Parkes

John L. Loeb Associate Professor of the Natural Sciences and
Associate Professor of Computer Science
Division of Engineering and Applied Science
Harvard University
Cambridge, MA



April 27, 2007 - Isenberg School of Management
Room 112, 11:00 - 12:00

Chasing Interdisciplinarity while Chasing Tornadoes: an Overview of the CASA Engineering Research CenterProfessor David J. McLaughlin

Director, ERC for Collaborative Adaptive Sensing of the
Atmosphere (CASA)
Department of Electrical and Computer Engineering
University of Massachusetts at Amherst

Increase the Visibility of Women

- In the Media
 - Make sure that the Media Features Professional Women in IT!
- As Plenary Speakers
- As Leaders of Professional Societies
- As Authors
- As Holders of Patents
- As TOP-Level Managers

Books and Resources

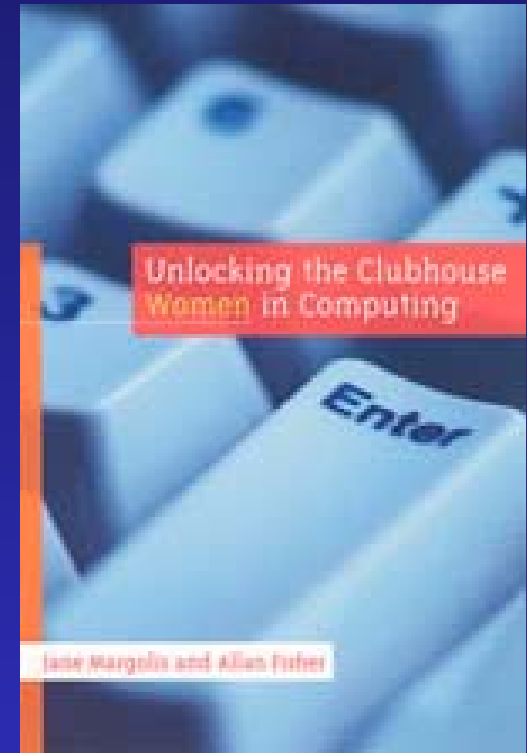
Unlocking the Clubhouse

Women in Computing

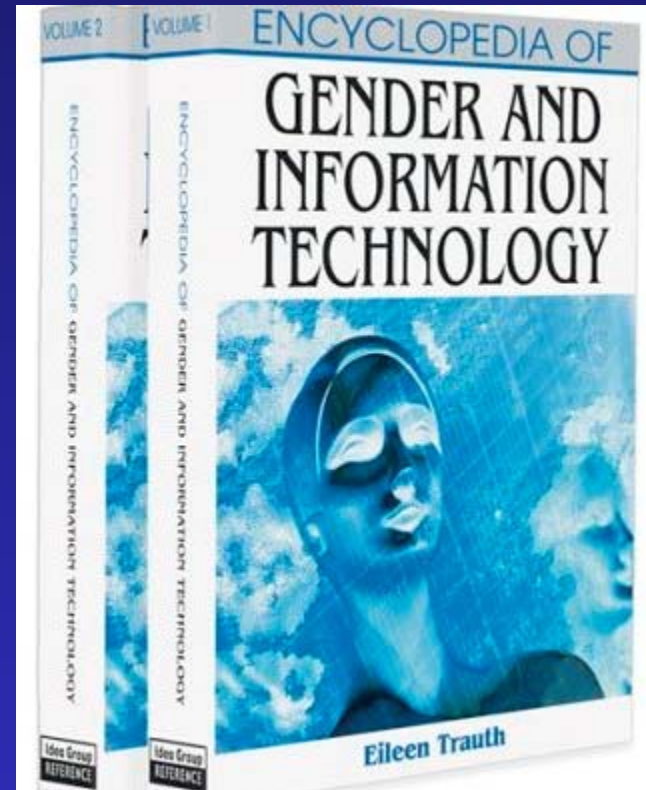
Jane Margolis and Allan Fisher

MIT Press, 2003

“The information technology revolution is transforming almost every aspect of society, but girls and women are largely out of the loop. Although women surf the Web in equal numbers to men and make a majority of online purchases, few are involved in the design and creation of new technology. It is mostly men whose perspectives and priorities inform the development of computing innovations and who reap the lion's share of the financial rewards. As only a small fraction of high school and college computer science students are female, the field is likely to remain a *male clubhouse*, absent major changes.”



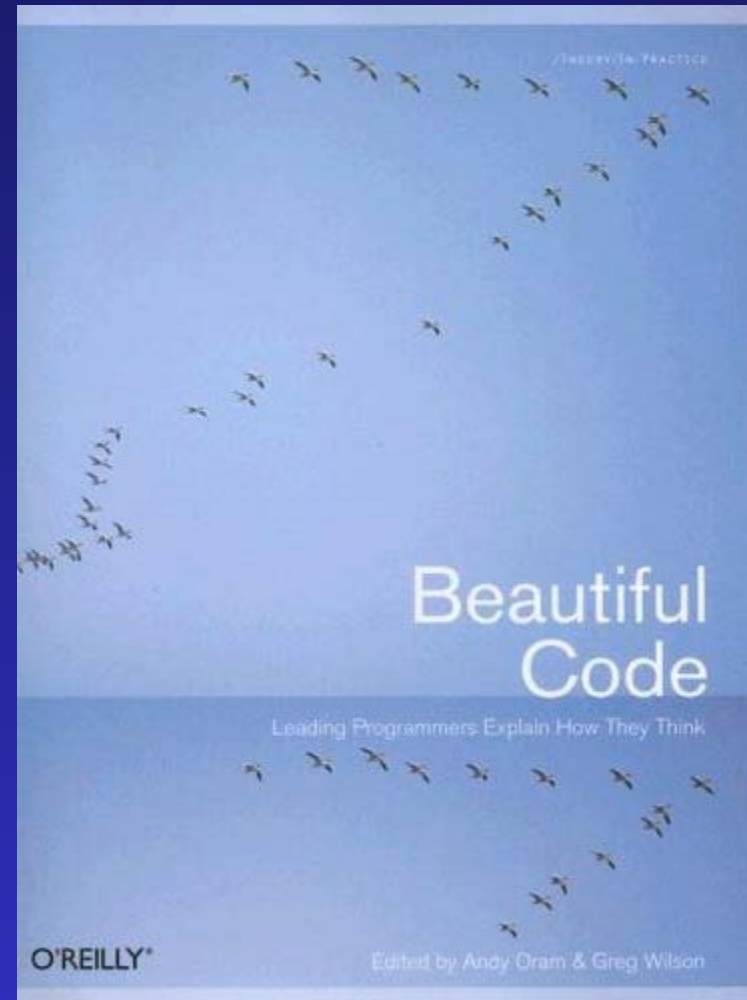
*Encyclopedia of Gender And
Information Technology*
Eileen Moore Trauth, Editor
Idea Group Publishing, 2006



*Beautiful Code: Leading
Programmers Explain How
They Think*

Andy Oram and Greg Wilson
O'Reilly, 2007

Out of 38 Chapters, only 1 is
by a female.



It's not just an IT issue!!

Additional Books

Stories of women in the Life
Sciences in the San Francisco Bay
Area.

Chapters include:

*Out of Control: Managing Time and
Establishing Equilibrium*

*Boss, Mother, Friend, Role Model:
Working with Students and
Employees*

*Putting It Out There: Writing and
Giving Talks*

*Nobody Taught Us This in School:
Institutional Politics and Strategy*

Reviewed in *Physics Today*, April
2007.

Every Other Thursday

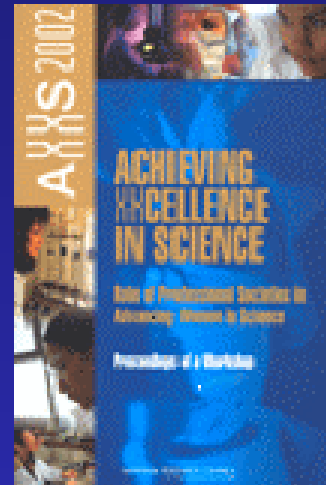
STORIES AND STRATEGIES FROM
SUCCESSFUL WOMEN SCIENTISTS



ELLEN DANIELL

*Achieving XXcellence in
Science: The Role of
Professional Societies
in Advancing
Women's Careers in
Science and Clinical
Research*

National Academy of
Sciences Press, 2002



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