

Celebrating 30 years of effective change!

Looking Backward ... Looking Forward

Remarks presented at the 30th Anniversary Celebration of the [Math/Science Network](#)
Lawrence Hall of Science, Berkeley CA, Sunday, November 14, 2004*

Lenore Blum
Carnegie Mellon University

Welcome everyone to the 30th Anniversary Celebration of the Math/Science Network! I am *Lenore Blum* and I am your MC for this part of the program.

This is a grand occasion ---an opportunity to reconnect with people who have been involved over the years, to meet new friends, and to celebrate the future. So let's first take out a minute to greet your neighbors sitting around you and to introduce yourself.



Before we go on with the show, I'd like to give a very brief history of the Math/Science Network culled from our collective memory. As *Jean Fetter Chu* emailed me when I asked for recollections, "It's wonderful that this event has brought us all together again. And it's amusing that none of us is too confident of the chronology!"

In the 1970s, way back in last century, a number of us in the San Francisco Bay Area were very concerned about the low numbers of girls and women studying or planning for careers in mathematics or science or technical fields.

Here at the Lawrence Hall of Science, *Nancy Kreinberg* and *Rita Liff Levinson* were concerned about the low numbers of girls participating in the after school math and science activities that were being offered. They reasoned that if young girls did not have early math/science experiences, they were unlikely to go on into mathematics or scientific or technical fields in the future. So they decided to DO SOMETHING about it. They created *Math for Girls*. Math for Girls was an after school *hands on* math class for elementary school girls led by women university students in math, science and engineering who also served as important *role models*. Math for Girls announced the message, loud and clear: *Math is for girls*.



← *Math for Girls in the 1970's.*

Lucy Sells, a sociology graduate student at UC Berkeley, hit the nail on the head when she labeled high school math "The *Critical Filter* in the Job Market." She pointed out that many young women graduating from high school lacked sufficient math background to take calculus in college, and so were cut off from the many many fields that required college level mathematics.

* <http://www.expandingyourhorizons.org/>

So, folks teaching at the other end of the educational spectrum, in colleges and universities, like myself at *Mills College* and *Diane Resek* (and later also *Carol Langbort*) at *San Francisco State* and *Len Feldman* at *San Jose State*, all decided to DO SOMETHING about it. We created a variety of quick and effective entry routes into calculus and college mathematics.

In the middle of the educational spectrum, *Flora Russ*, a math teacher at *Martin Luther King Middle School* in Berkeley, and *Kay Gilliland*, a math teacher in the *Emeryville school district*, and *Jan MacDonald*, a parent in the East Bay, noticed that girls were dropping out of math when it became optional. So they decided to DO SOMETHING about it. They became early members of the *EQUALS Teacher Training* program.

Down on the Peninsula, *Jean Fetter Chu*, then Associate Director of the *Center for Teaching and Learning* at *Stanford*, noticed that there were few women university professors in math and science areas. And *Teri Perl*, then a PhD student in math education also at *Stanford*, noticed that there was hardly anything known about the history of women in mathematics. So they decided to DO SOMETHING about it. Jean developed professional training programs and Teri wrote the book!



Back here in Berkeley, a young postdoc named *Elizabeth Stage*, noticed that the K-12 math/science curriculum could use a major overhaul, and so she decided to (EVERYONE join in) DO SOMETHING about it.

Elizabeth Stage, Rita Levinson, Nancy Kreinberg.

Thirty years ago, in the summer of 1974, I remember receiving a short purple mimeographed note in my mailbox. It read:

“Please join us at the Lawrence Hall of Science for a gathering of people interested in increasing the participation of girls and women in math/science/technical fields.”

Signed: *Nancy and Rita*

So about a month later, on one of those gorgeous Berkeley afternoons, we all got together here at the Hall to compare notes. We quickly discovered that, independent of age, level or institution, successful programs had fundamental components in common. Namely, they provided: *information* to girls and women about the importance of mathematics for their futures; *effective access* into the mathematics curriculum and *positive hand-on experiences* doing mathematics; and *role models* and *mentors*.

That first meeting seemed innocent enough. But what happens when you get a bunch of DOERs and SHAKERs together in one place? They decide to do something BIG. They decide to create a REVOLUTION! Well, one thing led to another ---we kept meeting informally here and at SF State--- and the *Math/Science Network* and its flagship activity, *Expanding Your Horizons* in Science and Mathematics (EYH), was born!

Nancy and I became the first co-Directors of the Math/Science Network. I learned so much from Nancy, in particular to listen to the great wisdom of classroom teachers. Nancy and I traveled across the country, spreading the word and looking for funding. A large grant from the *Carnegie Corporation of New York* (shepherded by *Vivien Stewart*) enabled us to set up the *Resource Center* at Mills and consolidate our activities.

The first EYH conference was held at Mills College in March, 1976. The rest, as they say, is history. EYH was magic. As it turned out, it had all the right stuff! The conferences needed a diverse set of talents and so they became a perfect (and really quite unique) vehicle for people from diverse sectors of the community --- parents, teachers from across the educational spectrum, folks in government and industry, researchers--- to work together for a common goal. The conferences built on the best ideas of all of our own projects. There was always room for new people to become involved. Though there was a lot of work, a lot could be distributed. So putting on a conference was not an impossible task. And, of course, the events themselves were exhilarating!



The year after the first Mills conference, four more conferences were held in the Bay Area, funded in part by a grant from the *Women's Educational Equity Act* (WEEA) program. This grant enabled us to produce two films, *The Math/Science Connection: Educating Young Women for Today*,[†] a film documenting four model programs (including EYH), and a role model film, *Sandra, Zella, Dee and Claire: Four Women in Science*.[‡] It also funded the creation of an EYH handbook for conference coordinators (written by *Joanne Koltnow*), a blueprint for EYH

programs even today. The dissemination of this material enabled EYH to go national. Currently, about 90 conferences are held each year in more than 30 states and several other countries (most recently in Malaysia). Upwards of ¾ million girls across the country will have attended EYH conferences by this spring.

And, in high schools today, more than 50% of the advanced math students are female.

[†] See, <http://www.cs.cmu.edu/~lblum/MOVIES/MathScienceConnection/math.htm> with [Macromedia Flash](#).

[‡] This film stars astronomer *Sandra Faber*, mechanical engineer *Zella Jackson*, veterinarian *Dee Jacobson* and physicist *Claire Max* and is narrated by *Rita Liff Levinson*.

At dinner this evening, **Arlene Blum**, a biochemist and leader of the famous women's expedition up Annapurna (*A Woman's Place*, Sierra Club Books) and one of our first EYH *role models* told me this wonderful story:



"For years, I got elaborate invitations to space launches. Unsure who sent them, I never went to the launches. At a panel discussion, I met Ellen Ochoa, the first Hispanic woman astronaut and the head scientist on a recent space flight. I told her I was honored to meet her and she told me she'd been inviting me to her launches the past years. "I heard you speak about your plans to climb Annapurna and your scientific career at an *Expanding Your Horizons* conference when I was a student in San Diego" she told me. "It made me think very hard about setting high goals for myself and going for them. Though no one in my family had ever gone into science, your talk inspired me to major in physics and get a doctorate in electrical engineering from Stanford, and here I am." This is one of my favorite stories from my career as a climber and a scientist and exemplifies the incredible importance of role models for young women."

Looking to the future, we are proud and pleased to introduce the new *EYH 30/30 Ambassador program*. This program, created in honor of the 30-year anniversary of the Math/Science Network, enables past conference alumnae to become ambassadors for upcoming EYH conferences. In addition to enjoying a series of after-school hands-on workshops typical of EYH conferences, student Ambassadors will be involved in the design and distribution of the EYH Tasting Kit™, a new EYH recruitment tool being developed by the Network. The centerpiece of the kit will be the material for a fun, yet simple hands-on science experiment that can be performed at home. *Genentech* is a major sponsor of these kits and the corporate name and logo will be featured prominently on each kit. The first group of EYH Ambassadors and their parents are honored guests at this celebration. Just spend a few minutes with **Ambassador Amanda Meyer**, an 8th grade student from San Lorenzo, and you will be convinced that EYH is in incredible hands for the 21st century.



You may have seen the EYH Ambassadors working on making LED jewelry. They designed this jewelry in a workshop held at Mills College last week under the guidance of *Jamie Fenton*. Tonight they are back making jewelry for you to enjoy. At the end of tonight's festivities, please visit our *EYH Jewelry Shop* where you will be able to find a beautiful piece of jewelry just right for you. By the lights flashing in the audience, I see many of you have already made your visit!

Now I would like to INTRODUCE all the Math/Science Network and EYH folk who are here to help us celebrate. (Please stand as recognized):

- **Math/Science Network Founders.** *Nancy Kreinberg, Lenore Blum, Rita Liff Levinson, Flora Russ, Diane Resek, Lucy Sells, Bella Feldman for Len, Jean Fetter Chu, Teri Perl, Carol Langbort, Cherrill Spencer, Sheila Humphreys, Joanne Koltnow, Barbara LiSanti, Sherry Fraser, Alice Kaseberg,...*

Math/Science Network Board Members. *Teri Perl (President), Cherrill Spencer (vice-President), Aileen DeSoto, Peg McPartland, TK Subramanian, Daphne Tirado, Helen Moore, Carol Langbort, Ludmila Kiseleva, Tania Madfes*



M/SN Board members Peg McPartland and Tania Madfes pose for a picture with Elizabeth Wheeler and Sarah Roberts.

- **EYH National Coordinator,** *Stacey Roberts-Ohr*
- **EYH Coordinators and others who have worked on conferences.**
- **8 Coordinators who are here under the NSF/Puget Sound funding initiative.**



← left to right:

- Vickie Geisel, Tyler Texas EYH*
 - Adrienne Dare, Silver City New Mexico EYH*
 - Sarah Gillooly, Girls Inc of the Berkshires EYH*
 - Victoria Banales, Rolla Mo, EYH*
 - Karen Peterson, Seattle University EYH* (who got the grant to bring the Coordinators here)
 - Julia Fallon, Tacoma Washington EYH*
- Not in photo:**
- Joyce Hililard-Clark, North Carolina State U EYH*
 - Jennifer McDaniels, University of Central Florida EYH.*

- **EYH Alumna.** *Carrie Austin, Elizabeth Wheeler, Amy Wu*
- **EYH Ambassadors and their parents.**
- **Anniversary Planning Committee.** *Jean Fetter Chu, Nancy Kreinberg, Carol Langbort, Rita Levinson, Margo Nanny, Teri Perl, Stacey Robert-Ohr*
- **Director of the Lawrence Hall of Science,** *Elizabeth Stage* (who made this site available for our Anniversary Celebration)



A SPECIAL PRESENTATION:

It is my great pleasure to introduce *Stacey Roberts-Ohr, National EYH Coordinator*, who will be giving a special presentation on behalf of the Math/Science Network to:



Cherrill Spencer, physicist, magnet designer at SLAC, a Board member for many years, President of the Board for many years, currently and for several years Vice-President of the Board.

“I am thrilled that we are honoring Cherrill Spencer for her long commitment to the Math/Science Network. Over the past two and a half years, I’ve gotten a chance to know Cherrill quite well. There are so many things I like and respect about working with Cherrill and I know many of you in the audience feel the same way. It’s an honor to work with a volunteer who never quits...a volunteer who sends me e-mail well after mid-night and who calls me several times each week to “check in”. It’s an honor to work with a volunteer who encourages you to do your best, and role models the same in return. It’s an honor to work with someone who cares so passionately about the Math/Science Network, who never says no when I need help or guidance with a specific project. I’ve never met anyone with so much energy, and someone who is so detailed oriented. At times, her energy makes me dizzy and floors me, but I always get back up, because I know that Cherrill Spencer loves the Network and loves what we do. I always feel like I am working in partnership with her and that’s a really great feeling.”

Stacey Roberts-Ohr

Before we continue to the entertainment part of our program, there is a very special person I would like to recognize, a person who has been a role model for me all these years, and a person without whom this great event would never have happened. She has been the



energetic, inexhaustible, and enthusiastic driving force behind this evening’s event (not to mention the many years in the Math/Science Network). It was her vision for this celebration to be a reunion of reconnections and making new friends. Please join me in applauding our great friend, and *Math/Science Network President, Teri Perl*.

Lenore Blum thanks Teri Perl, M/SN President.

And now for your ENJOYMENT:

- **A Film. *Celebrating 30 Years.***

Elizabeth Pearson developed the film from vintage footage and film captured since the mid 1970's. Elizabeth has worked as a producer for several television networks including two series for PBS. Her films have been screened nationally and internationally (including at the Beijing Film Festival).



- **The Physics Chanteuse. *Lynda Williams.***



Lynda Williams has performed for scientists all over the world and has been featured in the *NY Times*, *People Magazine* and *Good Morning America*. She currently teaches physics and astronomy at *Santa Rosa Junior College* and owns and operates a science media content company, *Science Entertainment*.

“Every scientist dreams of seducing people with the beauty and wonder of the natural world. But few take it as far as Lynda Williams - the Physics Chanteuse - who puts her microphone where her mouth is.”

K.C. Cole, LA Times



Teri, Art, Alice Kaseberg. →

In CLOSING:

We would like to express our heartfelt APPRECIATION and THANKS to our

- **Anniversary Sponsors** (Please refer to your program).
- **Our Publicist**, *Sylvia Paull, Founder*, Gracenet, www.gracenet.net
- **Our Caterer**, *Karen Bevels* (510) 881-7719
- **And all the friends and relatives of EYH and the Math/Science Network.**



← *Joyce Beattie, Martin Perl, Lucy Sells and Bella Feldman.*

→ *EYH Ambassadors with Sierra Leder (far right) having fun!*



On the way out of the event, don't forget to pick up your *souvenirs* consisting of a poster, a biography with letters of Ada Lovelace (*Ada, The Enchantress of Numbers* by Betty Toole), a necklace (*EYH Forever*), and LED Jewelry made by the EYH Ambassadors.

Thank you all for helping us celebrate and please join us upstairs for Birthday Cake!



Math Science Network 30th Anniversary Party - *The Movie* (by Margo Nanny).

http://eyh.mills.edu/images/MSN_30thAnniv_Medium.mov

THE END

Photo Credits: All photos by Cherrill Spencer except: the photo of Cherrill by Rick Leder; the *Math for Girls in the 1970's* photo from the film *The Math/Science Connection*; and the photos of Lenore and Jean, of Stacey, and of *EYH Forever!!* from the M/SN 30th Anniversary Party *Movie*.



← *Jane Daniels with Carol Muller, Jean Fetter-Chu and M/SN Board President Teri Perl.*

→ *Joanne Koltnow, Sherry Fraser and Elizabeth Stage.*



← *Flora Russ and Carrie Austin.*

→ *Rick Leder, Lucy Sells and Madeline Mixer.*



Lenore Blum and Jean Fetter Chu.



Stacey Roberts-Ohr.



Carol Langhort (right) talking with Jane Bernard-Powers.



Ellen Spertus talking with Sylvia Paull (sideview).



Teri Perl and Diane Resek toasting EYH.



Elizabeth Stage wearing EYH buttons.





La Jolla, San Diego EYH, 2003

Individual Sponsors

as of 11-10-04

Sonya Kovalevskaya Equation (\$500)

Jean Fetter Chu

Teri Perl

Barbara Simons

Barbara McClintock Code (\$250)

Becky Failor

Rita Levinson

Cherill Spencer

TK Subramanian

Admiral Grace Hopper Program (\$75)

Sherry Fraser

Sheila Humphreys

Alice Kassberg

Melissa Koch

Nancy Kreinberg

Carol Langbort

Charlene Morrow

Judy Tejada

Daphne Tirado

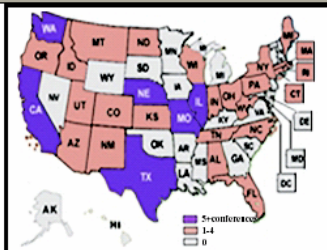
Special thanks to Karen Petersen, the National Science Foundation

and The Puget Sound Center for Teaching, Learning and Technology

for securing the funding to support the attendance of six EYH

coordinators from around the country.

Kudos to Betty Alexandra Toole
author of *Ada: The Enchantress of Numbers*
for the contribution of copies of her biography of
Ada Byron Lovelace to attendees at our
30th anniversary celebration.



Over the years conferences have taken place across the nation.

See current site locations at
www.expandingyourhorizons.org.

EYH Alumnae Speak!!

"It [EYH] was a fantastic experience that I remember fondly even today! Participating in the conferences helped clarify my own career goals and was an experience that shaped the engineer and woman that I am today."

"I remember meeting professionals for the first time in many areas such as architecture and software engineering. It really helped me to get a better idea of what those careers entailed."

"I fell in love with the topic of the speaker ... I went to college to be a marine biologist in part because of her speech."

"I felt important and right at place at the conference and as if studying science was a natural thing to do. Because of so much encouragement, I never felt the stigma that "science is for boys."

"My interest in Environmental Engineering came from attending Expanding Your Horizons as an 8th grader. I was able to take the classes I needed in high school to enter a quality engineering program."

"I thought EYH ... was fabulous and ... I loved hearing the success stories of the keynote speakers and being inspired by their drive and professionalism."

"I have been a career panelist and moderator and workshop presenter ... for the last six years. I love it! It is very rewarding to me to provide the young women with access to a professional engineer."

1974 to 2004 Math/Science Network



EXPANDING
YOUR
HORIZONS

in Science & Mathematics

Sunday, November 14th, 2004

Lawrence Hall of Science
Berkeley, California

30 Years of effecting change!!
A Celebration!!!

Mission Statement

The Math/Science Network, a non-profit organization composed of educators, scientists, mathematicians, parents, students, community leaders, and government and corporate representatives, pursues as its mission the promotion of the continuing development in mathematics and science of all people, with particular emphasis on the needs of women and girls. Our primary goal is to increase the participation, retention, and advancement of girls and women in mathematics, science, engineering, and technology.

History of the Math/Science Network

1974: An informal group of women scientists and educators in the San Francisco Bay Area, concerned about low female participation in math courses at all educational levels, and as scientists in industry, founded the Math/Science Network. The group began efforts to strengthen the existing programs of individual members that encouraged young women to persist in math and to establish mutual support strategies for women already in science.

1978: The Carnegie Corporation awarded the Network a two year grant to establish a formal organization. During the grant period, the Network initiated technical assistance to those who wished to institute Network programs, coordinated existing activities, and consolidated resources.

1980: The Network established the Math/Science Resource Center to provide information and assistance. The Network became an independent non-profit organization in 1982.

To the present time: The Network relies on individuals, corporations, foundations, private associations, and government agencies for support and oversight of its national Expanding Your Horizons™ in Science & Mathematics conferences.

A Glimpse of the Future

The Ambassadors Program

The EYH 30/30 Ambassador program was created in honor of the 30-year anniversary of the Math/Science Network. The first group of EYH Ambassadors are honored guests at the Network's 30th anniversary celebration, introducing a new program where past conference alumnae become ambassadors for upcoming EYH conferences.

In addition to enjoying a series of after-school hands-on workshops typical of EYH conferences, student ambassadors will be involved in the design and distribution of the EYH Tasting Kit™, a new EYH recruitment tool being developed by the Network. The centerpiece of the kit will be materials for a hands-on science experiment that can be performed at home. Genentech is a major sponsor of these kits and the corporate name and logo will be featured prominently on each kit.

Program

5:30 — 7:00 PM Food, Drink, Conversation

7:00 — 8:00 PM Program (in auditorium)

- Greetings (Lenore Blum)
- Introductions
- Introducing The Ambassadors
- Celebrating 30 Years (Film)
- Physics Chanteuse

8:00 — 9:00 PM Birthday cake, beverages



Ambassadors meet!

Program Committee

Jean Fetter Chu

Nancy Kreinberg

Carol Langbort

Rita Levinson

Margo Nanny

Teri Perl

Stacey Roberts-Ohr



MC: Lenore Blum, Carnegie Mellon University

Film Producer: Elizabeth Pearson

Publisher: Sylvia Paull, Founder, Gracenet

Caterer: Karen Bevels, 510.881.7719
www.gracenet.net

Anniversary Sponsors

Genentech Foundation for Biomedical Sciences is an independent, nonprofit organization that supports biomedical education and research in the San Francisco Bay Area. Genentech is the primary funder of the Networks new Ambassador program.
<http://www.genetech.com/genetech/about/community/>

Henry Luce Foundation/Clare Boothe Luce Program promotes the advancement of American women through higher education in the sciences, engineering, and mathematics.
<http://www.hluce.org/4bclides.html>

ACM-W: ACM Committee on Women in Computing celebrates, informs and supports women in computing, and works with the ACM-W community of computer scientists, educators, employers and policy makers to improve working and learning environments for women.
<http://women.acm.org/>

American Institute of Mathematics (AIM) is a non-profit organization based in Palo Alto, whose major activity is hosting focused workshops for researchers in mathematics. AIM is also involved in some community outreach programs.
<http://www.aimath.org/>

Anita Borg Institute was founded by the late Anita Borg to provide platforms that enable women's voices, ideas, and spirits to influence technology.
<http://aniborg.org/>

Key Curriculum Press is the leading publisher of innovative mathematics textbooks, supplementary materials, and dynamic mathematics software for middle school and high school students.
www.keypress.com/

KinderMagic software provides excellence in designing interactive media that enriches and instructs children and adults through engaging multimedia simulations and creativity/productivity tools. Publisher of Mosaic Magic.
www.kindermagic.com/index.html

Sally Ride Science was founded by former astronaut Sally Ride, America's first woman in space, to provide support for all the girls who are, or might become, interested in science, math, and technology. Its declared mission is to increase the number of girls who are technically literate and who have the foundation they need to go on in science, math, or engineering.
www.imaginarylinesinc.com/