

## 2004 EYH Committee Members

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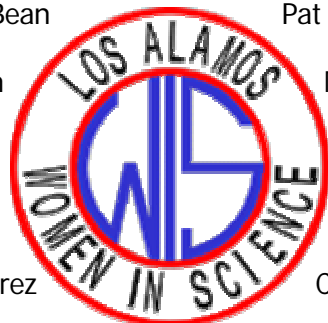
Denise George

Belinda Gutierrez

Catherine Hensley

Kathleen Kelly Carol LaDelfe Sandra Landry Angela Martinez

Meghan Quist Jody Shepard Christine Starr



## Special Acknowledgments

Hubble's Universe CD reprinted by LAWIS with permission from Ted Devilin - Box Turtle Share Ware.

"Space for Women" was reprinted with permission from the Harvard-Smithsonian Center for Astrophysics.

"Chemical Careers in Brief" was reprinted with permission for the American Chemical Society.

"Physics in Your Future" booklets and "Celebrate Women in Physics" posters were donated by the American Physical Society's Committee on the Status of Women in Physics.

Thanks to the Immaculate Heart of Mary Catholic Church for the use of the Parish Hall and Educational Building.

Books and Bags provided by NMWSE through donations from McCune Foundation, PNM Foundation, Honeywell International Foundation Inc.

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## Special thanks to these LANL organizations and individuals

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### Logistical Assistants (a.k.a Gofers):

Karen Brewer

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## Special thanks to these community sponsors

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New Mexico Network for Women in Science and Engineering and Los Alamos National Laboratory present:

# Expanding Your Horizons™

Technical Career Workshops for Young Women



**Thursday, March 11, 2004**  
**Los Alamos National Laboratory**  
**Los Alamos, New Mexico**

## Student Schedule

8:00-8:30	Registration, Welcome, and Morning Snack
8:30-8:45	LAHS NJROTC color guard, and Welcome
8:45-9:45	Team Activity
10:00-11:15	Student Workshop One
11:30-12:45	Lunch
1:00-2:15	Student Workshop Two
2:25-2:30	Afternoon Snack
2:30-3:25	Keynote Speaker Dr. Jill Tarter, Director, Center for SETI Research
3:30	Departure

## EYH Teacher Conference

8:00-8:30	Deliver Students to Immaculate Heart of Mary Catholic Church Parish Hall, 3600 Canyon Road, Los Alamos
8:30-8:45	Teachers take LA Public School Bus to Canyon Complex, Room 172, for EYH '04 Teacher Conference
8:45-9:00	"Welcome and Introduction of Keynote Speaker", Sandra Landry, Education Program Office, Los Alamos National Laboratory (LANL)
9:00-9:45	Keynote by Graciela Perez, Ergonomics Program Leader, LANL, "There is a Little Engineer in All of Us"
9:45-10:00	Break
10:00-10:30	NNMCEE Math and Science Academy
10:30-11:00	Lt. Commander Shumaker ROTC Presentation
11:00-12:30	Lunch (provided by Education Program Office) David Kratzer will talk about the Adventures in Supercomputing Challenge, 11:20-12:10; Jan Frigo will announce the annual Robotics Competition, 12:15-12:25
12:30-1:00	Peter Adams, "Math Counts" Competition
1:00-1:15	Vans take teachers to Mesa Public Library
1:15-2:15	Star Lab Training, Angela Martinez, Education Program Office, LANL
2:15-2:30	Return to IHM Parish Hall via LA Public School Bus
2:30-3:25	Teachers join Students for EYH '04 Keynote Speaker Dr. Jill Tarter, Director, Center for SETI Research. In her talk, Dr. Tarter will discuss the on-going search for extraterrestrial intelligence. We hope many of the young women attending EYH04 will be inspired to "shoot for the stars"

## Student Workshops

- 1. Acids and Bases in the World Around Us**  
**Roberta Mulford**  
We will use indicators to determine pH of foods and soaps and learn a bit about acidity, basicity, and pH.
- 2. The Low-Down on Climate Change**  
**Janet Lynch, Andrea Maestas, and Margo Bachman**  
Discuss the difference between climate and weather, roles of cloud in climate, hydrologic cycle, El Niño, and climate change around the world.
- 3. Secret and Hidden Writing: Survey of Cryptology and Steganography - Sarah Lownes**  
A survey of methods used to protect information, from Roman times to the computer age. Practical hands-on exercises are part of the workshop.
- 4. Designing Patterns using Programming Logic and Mobile Robots - Jan Frigo and Maya Gokhale**  
We will illustrate the concept of sequential programming by using the Mindstorm Robot system. The students will write their own programs to control a two motor mobile robot. They will send their programs via an IR link to a Robot that has three pens mounted to its base. The programs will execute the logic creating a unique pattern.
- 5. Explore the Roles of Pharmacists at Walgreens Pharmacy - Debra Candelaria and Jacky Casto**  
Interactive learning about Walgreens Pharmacy and the roles of pharmacists and pharmacy techs in a large pharmacy.
- 6. Fractals: Math Made That Picture!**  
**Meghan Quist and Scott Bucholtz**  
Participants will explore fractals, learning about the math behind them and the computers that generate them. Students will then have the opportunity to create a fractal of their own!
- 7. Tools for Studying the Past: Petroglyphs**  
**Beth Sanchez**  
We will use GPS units to show how we map the areas of petroglyphs and discuss why it is important to record and characterize the artwork of the past.
- 8. The Wonders of Polymers**  
**Debra Wroblewski and Cindy Welch**  
Hands-on learning of the properties of polymers through exploring cross-linking reactions and examining water absorbing polymers.

## Student Workshops (continued)

- 9. The Many Exciting Career Opportunities for Women in Dentistry - Haley Ritchey**  
I plan to talk about all the specialties in dentistry and have 2 to 3 stations where the girls can do some hands-on simulations of different procedures I perform each day. Examples: Pouring up a plaster model, fabricating 'temporary' teeth, waxing up a gold crown.
- 10. Radiation and Radioactivity**  
**J. Margo Clark**  
The students will develop a better understanding of radiation and radioactive materials. Hands-on activities include using radiation detection instruments to detect small amounts of radioactivity in demonstration materials.
- 11. The Application of Scanning Electron Microscopy to Material Science - Pallas Papin and Alicia Ayala**  
We will demonstrate the use of SEM and allow the young women a chance to operate the equipment
- 12. Spills, Ripples, and other Fun Properties of Fluids**  
**Cindy Zoldi, Karen Fisher, Melissa Douglas, and Cherie Goodenough**  
We will introduce the various properties of fluids, such as pressure, surface tension, and density. We use a hands-on, experimental style to determine how these properties affect the behavior of fluids. All of the techniques that we use can be taken home and repeated for friends and family.
- 13. Web Design**  
**Vera Vigil**  
This workshop will expose students to computer technical terms, software and networks. It will also provide students with hands-on experience in designing a web page.
- 14. Workplace Wellness: A Look at Careers in Physical Therapy, Fitness and Nutrition**  
**Marta Gentry Munger, Gail Fox, and Cindy Lawton**  
Tour of Wellness Center, Nutrition/Dietetic Career Opportunities; Physical Therapy. The students will learn the various specializations within physical therapy; various setting which one can work, and establish a good understanding of the responsibilities of a Physical Therapist.
- 15. Light and Lasers: Interaction with Matter**  
**Darla Graff Thompson**  
We will talk about visible light as electromagnetic energy and learn specifically about infrared spectroscopy as it relates to the vibrational energies of molecules.