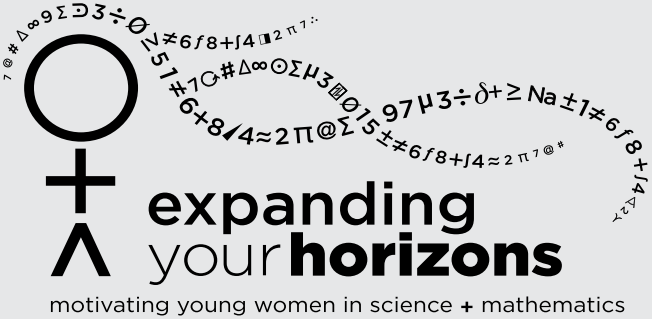
# SAN JOSÉ STATE UNIVERSITY

# EYH 2007

## 29TH ANNUAL CONFERENCE




**Saturday, March 17, 2007**
**www.expandingyourhorizons.org**

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**For 6th to 9th grade young women and interested adults, presented by SAN JOSÉ STATE UNIVERSITY and the EXPANDING YOUR HORIZONS™ NETWORK**

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# EXPANDING YOUR HORIZONS™

### SATURDAY, MARCH 17, 2007
### SAN JOSÉ STATE UNIVERSITY

## Conference Schedule

The conference begins **promptly** at 9:15 am Saturday, March 17. Please pick up your conference information packet (containing your workshop assignment) between 8:15 am and 9:10 am on the day of the conference at the Morris Dailey Auditorium in Tower Hall, San José State University. ***Groups should arrive before 8:30 am***.

| | |
|---|---|
| 8:15 | Registration begins at the Morris Dailey Auditorium in Tower Hall |
| 9:15 | Welcome: **Vida Kenk**<br>Past Interim Dean of the College of Science<br>Professor, Department of Biological Sciences<br>San José State University |
| 9:20 | The Brainiacs<br>Lawrence Hall of Science |
| 10:10 | Snack |
| 10:25-11:30 | Morning Workshop I |
| 11:45-12:50 | Morning Workshop II |
| 12:50 | Lunch |
| 1:40-2:45 | Afternoon Workshop |
| 3:00 | Closing Remarks, Door Prizes, Conference Evaluation |
| 3:30 | End of Conference |

*Participants are expected to remain on campus and attend all scheduled activities.*

## CONFERENCE SPONSORS

### ***Expanding Your Horizons Network***

*American Association for Artificial Intelligence*
*Amgen*
*Association for Computing Machinery*
*Bayer Pharmaceuticals*
*Genentech Foundation for Biomedical Sciences*
*Google*
*HOME Campaign-Lawrence Livermore National Laboratory*
*Lam Research*
*Lockheed Martin*
*Puget Sound Center for Teaching, Learning and Technolgy*
*Seagate Technologies*
*The Henry Luce Foundation*
*Underwriter Laboratories*

### ***San Jose Conference***

*American Assoc. of University Women:*
*Sunnyvale-Cupertino, San Jose, and Los Gatos Branches*
*Expanding Your Horizons Network*
*Offices of Education:*
*Monterey, San Benito, Santa Clara, and Santa Cruz Counties*
*San José State University - College of Engineering & College of Science*
*Seagate Technologies*
*Society of Women Engineers, Santa Clara Valley Chapter*
*Women in Science and Engineering, SJSU Chapter*

# EXPANDING YOUR HORIZONS™

## Saturday, March 17, 2007
## San José State University

### STUDENT REGISTRATION FORM

*PRINT CLEARLY. USE ONE FORM PER STUDENT.* ***INCLUDE A SELF-ADDRESSED STAMPED ENVELOPE*** *AND A CHECK TO COVER* ***$18*** *PER STUDENT (INCLUDES LUNCH).*

NAME _____
Last First

MAILING ADDRESS _____

CITY _____ ZIP _____

PHONE _____ GRADE _____

SCHOOL &
SCHOOL DISTRICT _____

☐ *Check if you want a VEGAN lunch.*
☐ *Check to request fee waiver (applies only to girls in school lunch programs)*

*If you have other special needs, please enclose details so we can help you during the conference (e.g., signer or interpreter).*

*Please read the Student Responsibility section opposite. A photographer may take pictures of you or your child. These photos may appear on our web site or in publications. If you register yourself or your child, you have given us permission to use your/her photos.*

☐ **NO**
☐ **YES** *I grant permission for my child to receive emergency first aid, while attending the EYH Conference at SJSU.*

_____
*PARENT/GUARDIAN SIGNATURE (required)*

**STUDENT WORKSHOP CHOICES**

Write the numbers of your first 10 choices. You will be assigned 3 workshops.

| 1st | 2nd | 3rd | 4th | 5th |
|---|---|---|---|---|
| | | | | |

| 6th | 7th | 8th | 9th | 10th |
|---|---|---|---|---|
| | | | | |

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### ADULT REGISTRATION FORM

*PRINT CLEARLY,* ***INCLUDE A SELF-ADDRESSED STAMPED ENVELOPE***
*AND A CHECK TO COVER* ***$18*** *FOR EACH ADULT. THIS INCLUDES LUNCH.*

NAME _____
Last First

MAILING ADDRESS _____

CITY _____ ZIP _____

PHONE _____ ☐ *PARENT* ☐ *TEACHER*

You may silently observe student sessions your students/daughters are not currently attending. If you wish to attend any adult workshops, please circle and rank your choices below (up to three).

A1 A2 A3 A4 A5

# EXPANDING YOUR HORIZONS™

## WHY SHOULD YOU COME?

- *Discover how interesting and fun math and science can be*
- *Learn about career opportunities for women in mathematics, engineering, and science*
- *Form personal contacts with women working in traditionally male occupations*
- *Meet other young women interested in science, math, and engineering*

### Who is invited?

- Young women in grades 6-9
- Interested adults

### What will we do?

The conference begins with an opening welcome and presentation. The rest of the day is devoted to workshops. Each workshop is a small class involving hands-on activities led by women who have careers in math, science or engineering. All workshops provide an opportunity for you to experiment in a specific area such as computer science or medicine. You will attend three workshops. We will provide lunch.

### Student Responsibility

If you attend this conference you must be mature enough to follow instructions and directions provided by signs and guides on campus. **Also, you must attend all the events scheduled for you, including lunch, and remain on the SJSU campus from 9 a.m. until the conference ends at 3:30 p.m.**

### *REGISTER EARLY!*

Often the conference is full several weeks before the actual conference date. Also, popular workshops fill up quickly and early registration will help you get your top choices. If your choices are full, we will place you in other workshops. We think they are all terrific, and you may discover some great careers you had not considered before.

### Registration Fee

The fee of $18.00 (which applies to both students and adults) includes lunch. Mail your form, a check (made out to EYH-SJSU), and a self-addressed, stamped envelope to:

**EYH Coordinator**
**Department of Mathematics**
**San José State University**
**San Jose, CA 95192-0103**

### INFORMATION ABOUT GROUPS, FEE WAIVERS, CANCELLATIONS, ETC.

**Groups:** If you wish to bring a group of 10-40 students, call (408) 924-5190 between January 29 and Febuary 9, 2007. Send the registration forms and checks for your students all together and indicate you have a reservation. These must be postmarked by Friday, Febuary 16. Groups must provide chaperone(s) with one chaperone designated to oversee at most 10 girls, e.g. a group of 25 needs 3 chaperones. We reserve the right to limit the size and number of groups.

**To request fee waivers and cancellations:** (408) 924-5277
A student's application fee may be waived if the student is in a school lunch program. Please check the appropriate box on the student application form.

**Refunds:** Fees will be refunded if you call (408) 924-4917 before 5:00 p.m. on March 7, and cancel; or if your application arrives after the conference is full.

**All other information** (such as whether conference is full): (408) 924-4917

## BIOLOGICAL/MEDICAL WORKSHOPS

### 1 FRUITFUL DNA

All living things contain DNA, the genetic instructions for how to make the plant or animal. We will extract the DNA from strawberries and learn how scientists handle and study it. If we have time, we may extract DNA from other fruits, too.

*Christina MacDougall, Graduate Student, Stanford University*

### 2 MICROBE HUNTERS — WHAT'S BUG IN YOU?

Come and learn how medical microbiologists help doctors to diagnose bacteria-related diseases. We will identify some medically important bacteria, fungi and parasites, and do some interesting hands on experiments, such as streaking/examining agar plates and reading microorganisms under the microscope.

*Cheryl Tau, Clinical Laboratory Scientist; Indre Budvytiene, CLS; Shannon Sockett CLS, Stanford Hospital and Clinic*

### 3 WHO DUNN'IT? USING PAPER CHROMATOGRAPHY TO FIND THE RANSOM NOTE WRITER

Crime scene investigators use chromatography to identify and separate many different substances. You will use paper chromatography to solve a make-believe mystery about a kidnapping. Learn how to separate the ink used in the ransom note into its original colors, then compare to pen inks found on several suspects to identify the kidnapper!

*Susanna Chau, Investor Relations Manager, Affymetrix*

### 4 MEDICAL DETECTIVES

Use epidemiology to solve medical mysteries like disease outbreaks and how they spread. We'll follow clues and solve the mysteries — prizes at the end!

*Candra Abraham, B.S., M.P.H., Biologist & Health Educator*

### 5 "REWIRING" THE BRAIN

Is your brain hard-wired or flexible? Can it adapt on its own to the world around you, or do you need to constantly give directions to your brain to learn? We rely on our brains to sense and interact with the world around us. With this workshop, you'll become more aware of just how much learning your brain does for you effortlessly. Put on special prism goggles and run experiments using hand-eye coordination to put your brain to the test!

*Jeannie David, Researcher, Roche Palo Alto*

### 6 DELIVERING DRUGS FOR A BETTER TOMORROW

You mean I don't have to take a tablet every three hours to get rid of my pain? Join in and learn how drugs are developed and delivered in the body to cure specific ailments. We will do some fun experiments related to chemistry.

*Aruna Datla, Manager- Analytical Development, ALZA Corporation; Elivra Raquinio, Associate Scientist; Salma Siraj, Associate Scientist*

### 7 EPHALUMPS AND WUZZLES

Dissect a bovine eyeball and learn about the correct descriptions of ocular diseases.

*Wani Wynne, O.D., Optometrist, Kaiser Permanente Medical Center*

### 8 VETERAMA — VETERINARY WORKSHOP

See the instruments used by veterinarians and find out about the many facts of veterinary medicine for women.

*Jamie Clevenger, Doctor of Veterinary Medicine, Santa Cruz Veterinary Hospital*

### 9 YIKES — IS YEAST ALIVE?

Yeast is commonly used in making bread. The yeast that you can purchase from the supermarket consists of little brown grains. Do you think these are alive? We will test whether yeast can use energy to produce a by-product and show if it's alive.

*Wendy Lee, Mouna Jarbi, Annie Hung, Graduate Students, San Jose State University*

## COMPUTER/MATHEMATICS WORKSHOPS

### 10 THE HUMAN INTERNET GAME

Have you ever wondered how the Internet works? When you type www.myspace.com, how does your computer connect to Myspace? The Human Internet Game (HIG) is a fun, interactive activity designed to teach you how the Internet operates. You will take on roles of computer devices and work together to route as many "human" packets through the network as fast as possible.

*Swati Punatar, Program Manager, and Shilpa Kolhatkar, Engineering Manager, Cisco Systems*

### 11 USING MATH IN REAL LIFE — TRADING IN THE STOCK MARKET

Have you ever wondered what the stock market is and how it works? Come and learn how to read stock charts, pick good stocks, and buy and sell stocks!

*Melanie Swan, Hedge Fund Manager, Registered Investment Advisor and Futurist, Cygnet Capital*

### 12 GOOGLE GUIDE: MAKING SEARCHING EVEN EASIER

Google is so easy to use, why attend this workshop? If you're like many people, you use only a small number of Google's services and features. Learn how to go beyond Google's deceptively plain interface and take advantage of many shortcuts and underutilized capabilities.

*Nancy Blachman, author and developer of Google Guide, www.googleguide.com*

### 13 COMPUTERS: LOVE AT FIRST BYTE

Write a computer program in BASIC! Debug (fix) an adventure game program. Play with other games on the computer.

*Adrienne Jardetzky, Senior Director, Network Appliance*

### 14 KALEIDOCYCLES AND SYMMETRY

Participants will construct an individually designed 3-dimensional kaleidocycle of both geometric and artistic interest.

*Betty Weiss, Math Instructor, West Valley College; Nedra Shunk, Math Instructor, Santa Clara University; Phuong Lam, Math Instructor, Foothill College*

## PHYSICAL SCIENCE WORKSHOPS

### 15 FOOD ON FIRE: MEASURING CALORIES

My favorite food has how many calories?!? Build a calorimeter and use it to determine the number of calories stored in common foods.

*Clare Lawson, Sr. Director of Systems Engineering, Zing Systems, Inc. and Hannah Lewbel, Product Design Engineer, Element Labs*

### 16 LIFE IN A VACUUM

Vacuums are not just for cleaning! Learn about silicon wafers and how a vacuum is used to make integrated circuits. Coat surfaces with metal films in our plasma chamber and learn how these are used to make such things as mirrors. Find out how water, steam and ice can exist at the same time when we perform experiments in a vacuum.

*Kathy Arnold*

### 17 FUEL CELLS: ENERGY FOR THE FUTURE

We will discover why fuel cells are important, how they work, and identify different kinds of fuels that they can use. Using actual fuel cells, we will make our own power, and learn how to measure it.

*Laurie Mittelstadt, Materials Scientist, Hewlett-Packard Laboratories*

### 18 FASCINATING FUNGI

Explore the interesting world of fungi. Observe the beautiful forms under the microscope and learn about good and bad fungi.

*Ziva Abraham, Microbiology Consultant, Microrite, Inc.*

## EARTH AND ENVIRONMENT WORKSHOPS

### 19 FINDING FAULTS: INVESTIGATING EARTHQUAKES IN THE BAY AREA

Discover how faults move, learn how scientists measure earthquake shaking, and explore direct effects of earthquakes.

*Heidi L. Stauffer, Education Developer, The Tech Museum of Innovation; Heidi Stenner, Geologist; Bridget Wyatt, Lecturer, San Francisco State University*

### 20 WONDERFUL WATER

This inquiry based session will include information on the characteristics of water, our water sources in Santa Clara County and an introduction to water pollution. Come learn about water conservation and a lot more!

*Terri Fagundes, Education Outreach Specialist, Santa Clara Valley Water District*

### 21 STORIES ONLY ROCKS CAN TELL

Learn to read the rocks of the ocean floor and discover how important plankton are. Activities include floating coke, mapping and more!

*Women in Geology, Stanford University*

### 22 CLINGING FOR DEAR LIFE: EXPLORING SEAWEEDS FROM WAVE-SWEPT ROCKY SHORES

Students will examine seaweeds, exploring how they survive—with ease—one of the most intense habitats on Earth. We will think about life amidst crashing waves where temperatures are extreme and there is no way to hide.

*Katie Mach, Ph.D., Student in Marine Biology, Stanford University; Jen Skene, Ph.D Student in Marine Biology, UC Berkeley*

## ENGINEERING WORKSHOPS

### 23 MAKE IT GLOW!

Build and electrical circuit to make an LED light glow and take it home to show off friends and family. In the process, learn about voltage, current, resistance, and anything else you want to ask about electricity!

*Ania Mitros, Electronic Engineer at Maxim; Seth LaForge, Software Engineer at Google*

### 24 BENDING, BOUNCING AND COLOR MIXING: PLAY WITH LIGHT

Find out for yourself how light bends, reflects without mirrors, and travels along curves and loops. Learn how light can be used to transmit your phone calls and make up color displays.

*Shalini Venkatesh, Optical Physicist, SmallTech Consulting LLC of Menlo Park; Annette Grot, Avago Technologies of San Jose; Lisa Seeman, Graduate Student of Electrical Engineering, Stanford University*

### 25 DESIGN A ROLLER COASTER

How many loops can you put in your track and still have your marble make it to the end? Come learn how to build a great roller coaster!

*Brittany Sabol, Community Learning Specialist, The Tech Museum of Innovation*

## MATERIALS SCIENCE WORKSHOPS

### 26 STRANGE LIQUIDS

The way liquids flow can be really strange. Some are thin, some are thick and some are springy. Come learn about the difference between a polymer liquid and other liquids and what makes liquids flow the way they do. You will make your own polymer liquid (gak) that you can take home with you.

*Shirley J. Johnson, Ph.D., Program Manager, Applied Biosystems and Wendy B. Levine, Ph.D., Manager Quality Assurance, Genemed Biotechnologies*

### 27 POLYMER PLAYGROUND

Make a polymer using ordinary household chemicals and discover that polymers are us. Discover how polymers are used in every day products and in over the counter medicines.

*Lachelle Arnt, Ph.D. Scientist at The Clorox Company and Susan Bernhard, Ph.D., Scientist, Elan Pharmaceuticals*

### 28 MATERIALS MADNESS

How do you make a flower shatter like glass? Ever met a metal with a memory? Why does aluminum foil bend while china plates break? Do we really eat the same stuff cars are made out of? Come discover how materials shape the world around you!

*Whitney Gaynor and Cynthia Ginestra, Materials Science and Engineering Graduate Students, Stanford University*

### 29 M&M&M'S (MAGICAL MEDICAL MATERIALS)

A hands-on experience with the shape memory and superelastic material, Nitinol. Activities will include aspects of medical device design and manufacture, phase transformation in metals and a special surprise.

*Michelle Bartning, Development Engineer, Nitinol Devices & Components*

### 30 MAGIC OF CHEMISTRY

Have you ever wanted to change the world? Come and change a liquid into a solid, change a solid into a gas, and make a liquid that is a solid. Come change the world.

*Michealle Havehill, Director Quality Control, HemoSense, Inc.; Carla Ratliff, Senior Engineer, Technical Operations, Beckman Coulter, Inc.; Laura L. Mapes, Fire Marshal/Division Chief, Union City Fire Department*

### 31 POLYMER PANACEA

Enter the bouncing, oozing, rubbery world of polymers. From your pajamas, chewing gum, toothbrush to bike tires, polymers are everywhere! How are they the same? How are they different? Get your fingers dirty making, testing and comparing polymers. Why do some bounce and some splat? Learn what gives polymers their amazing range of properties.

*Linda De Young, Ph.D., president, IND Enabling Consulting*

## CAREER WORKSHOPS

### 32 STARTING POINT: DISCOVERING THE RIGHT CAREER

Biology, Chemistry, and Engineering — oh my! We will travel down the path of finding a career that is right for you. We will explore career opportunities in the field of science and present a starting point for the process of finding a career that is meaningful and exciting.

*Sarah Shields, Scientific Recruiter, Kelly Scientific*

### 33 FINDING YOUR VOICE

Come join us for a hands-on workshop filled with fun, creative activities designed to help you speak your mind in a group of girls. We'll use art, poetry, dance, and physical activity to explore your feelings about yourself and our culture. We promise you'll have a great time!

*Lacy Asbill and Elana Metz, Co-Founders, Girls Moving Forward*

### 34 NURSING: YOUR HEALTH CARE OF THE FUTURE

Find out about the importance of nursing in the health care system we all use. Discover nursing as a rewarding lifelong profession.

*Colleen O'Leary-Kelley, Ph.D., RN, CCRN, Associate Professor; Barbara Willard, DNP, RN, Assistant Professor, San Jose State University*

## WORKSHOPS FOR ADULTS

### A1 STARTING POINT: DISCOVERING THE RIGHT CAREER

Biology, Chemistry, and Engineering — oh my! We will travel down the path of finding a science career that is right for your child. We will explore career opportunities in the field of science and present a starting point for the process of helping your child find a career that is meaningful and exciting.

*Sarah Shields, Scientific Recruiter, Kelly Scientific*

### A2 FOCUS ON COLLEGE FUNDING — INVESTING IN YOUR CHILDREN'S FUTURE

It may be hard to imagine but before you know it, your children will be ready for college. Attend the College Funding seminar and learn about: sources of college funding, tax advantaged college saving, and practical ideas from realistic case studies.

*Carol A. Hack, FIC, Financial Associate, Thrivenet*

### A3 FINANCIAL AID: MEETING COLLEGE COSTS

Information on the types of financial aid available.

*Coleetta E. McElroy, Assistant Director of Financial Aid and Scholarship Office, San Jose State University*

### A4 GENDER AND CONFIDENCE

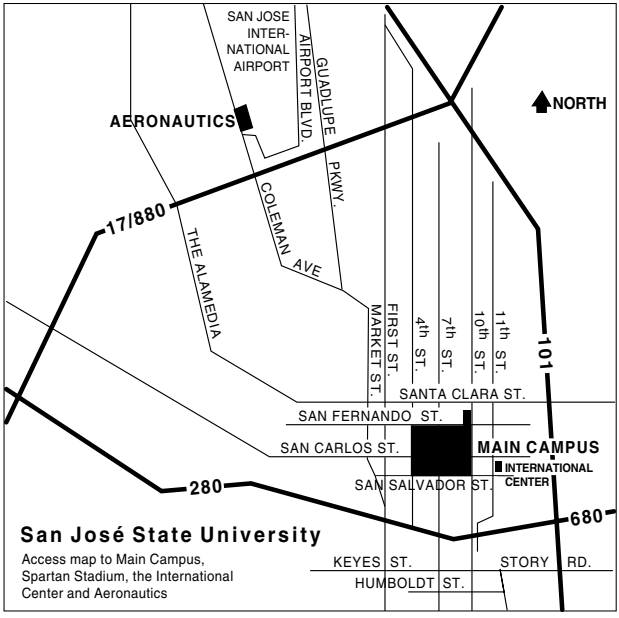
The gap between girls' and boys' self-esteem widens as they reach adolescence; come learn about what is going on with girls today, and what you can do to help them feel competent and confident at every age.

*Lacy Asbill and Elana Metz, Co-Founders, Girls Moving Forward*

### A5 POLYMER PANACEA

Enter the bouncing, oozing, rubbery world of polymers. From your pajamas, chewing gum, toothbrush to bike tires, polymers are everywhere! How are they the same? How are they different? Get your fingers dirty making, testing and comparing polymers. Why do some bounce and some splat? Learn what gives polymers their amazing range of properties.

*Linda De Young, Ph.D., president, IND Enabling Consulting*




**San José State University is bordered by San Fernando, 10th, San Salvador, and 4th Streets. *Parking is free at the city garage on 4th Street at San Fernando.***

**From U.S. 101:** Take Interstate 280, exit at Seventh St., proceed north to the main campus.

**From Interstate 880 South:** Take 101 to Interstate 280, exit at Seventh St., proceed north to the main campus.

**From Interstate 680 South:** Interstate 680 becomes Interstate 280 (at U.S. 101), exit at Seventh St., proceed north to the main campus.

**From Interstate 280:** Exit at Seventh St., proceed north to the main campus.