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

Saturday, February 25, 2006
www.expandingyourhorizons.org
EXPANDING YOUR HORIZONS™
SATURDAY, FEBRUARY 25, 2006
SAN JOSÉ STATE UNIVERSITY

Conference Schedule

The conference begins **promptly** at 9:15 am Saturday, February 25. 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 STUDENT UNION, San José State University. **Groups should arrive before 8:30 am.**

- **8:15** Registration begins at the STUDENT UNION
- **9:15** Welcome: Julie Sliva, Associate Professor of Mathematics, will introduce **Belle Wei**
  Dean of the College of Engineering
  San José State University

- **9:20** The Brainiacs
  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**

Amgen
American Association for Artificial Intelligence
American Institute of Mathematics
Association for Computing Machinery
Bayer Pharmaceuticals
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HOME Campaign-Lawrence Livermore National Laboratory
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Puget Sound Center for Teaching, Learning and Technology
Seagate Technologies
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**San Jose Conference**

American Assoc. of University Women:
  Sunnyvale-Cupertino, San Jose, and Los Gatos Branches
Cisco Systems
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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
Society of Women Engineers, Santa Clara Valley Chapter
Women in Science and Engineering, SJSU Chapter
EXPANDING YOUR HORIZONS™
Saturday, February 25, 2006
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 $15 PER STUDENT (INCLUDES LUNCH).

NAME _____________________________________________________________
Last First

MAILING ADDRESS _________________________________________________

CITY _______________________________ ZIP___________________

PHONE _______________________________ GRADE __________________

SCHOOL & SCHOOL DISTRICT _________________________________________________

☐ Check if you want a VEGAN or vegetarian 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.

☐ I grant permission for my child to receive emergency medical care, 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

ADULT REGISTRATION FORM

PRINT CLEARLY. INCLUDE A SELF-ADDRESSED STAMPED ENVELOPE AND A CHECK TO COVER $15 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 your choices below (up to three).

A1 A2 A3 A4
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!

Only 500 students can be accepted, and 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 $15.00 (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) 924-4917 between January 16 and 27, 2006. Send the registration forms and checks for your students all together and indicate you have a reservation. These must be postmarked by Friday, January 27. 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) 924-4917
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 February 13, and cancel; or if your application arrives after the conference is full.

All other information (such as whether conference is full): (408) 924-4917
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 it and study it. If we have time, we may extract DNA from other fruits, too.

Mu-h-ching Yee, Ph.D.; Christina MacDougall and Renee Paulsen, graduate students, 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 streak/examine agar plates, make smears and read them under the microscope. See how we identify some medically important bacteria, fungi and parasites.

Cheryl Tau, clinical laboratory scientist; Antoinette Raval-Ruiz, clinical laboratory scientist and Indre Budvytiene, clinical laboratory scientist, Stanford Hospital and Clinic

3 MEDICAL DETECTIVES
Learn how scientists use epidemiology and solve medical mysteries like disease outbreaks and how they spread. We’ll follow clues and solve the mysteries - prizes at the end!

Canda Abraham, B.S., M.P.H., biologist & health educator; Kahala Drain, administrative coordinator with the Children and Families Commission also known as the First Five

4 “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 and Joyce Kwan, researchers, Roche Palo Alto

5 NURSING - PREPARING FOR 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.

Katherine Abriam-Yago, Ed.D., RN, Professor; Colleen O’Leary-Kelley, Ph.D., RN, CCRN, associate professor; Barbara Willard, DNP, RN, assistant professor, San Jose State University

6 EPHALUMPS AND WUZZLES
Learn about correct descriptions of ocular diseases and dissect a bovine eyeball.

Wani Wynne, O.D., optometrist, Kaiser Permanente Medical Center
7 THE SENSATION STATION
Join us for an exploration of your senses: sight, smell and taste. Examine the senses in small insects. Discover what neurons are and how they work to allow you to see, smell and taste.
Maria Spletter, Kerry Spilker and Lora Sweeney, Biological Sciences graduate students, Stanford University

8 NOVEL DRUG DELIVERY - 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. Learn about tablets vs. patches. We will do some simple experiments and learn how these drugs are identified.
Aruna Datla, senior chemist, ALZA Corporation

EARTH AND ENVIRONMENT WORKSHOPS

9 THE SAN ANDREAS FAULT - IT’S NOT OUR ONLY FAULT
Discover the what, why, where, when and so what of Bay Area earthquakes.
Heidi L. Stauffer, geologist, JCD Property Disclosure Reports; Heidi Stenner, geologist, US Geological Survey; Bridget Wyatt, lecturer, Dept. of Geosciences, San Francisco State University

10 CLINGING FOR DEAR LIFE: EXPLORING SEAWEEDS FROM WAVE-SWEEPED 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; Kathy Ann Miller, Ph.D., University Herbarium, UC Berkeley

11 MAGIC OF 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!
Kathy Machado, education outreach coordinator, Santa Clara Valley Water District

12 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
13 MAKING SENSE OF YOUR 5 SENSES
Come explore the science behind sight, sound, taste, touch and smell. We’ll show you some fun tricks and experiments that show you how your senses work!
Karen Menuz, graduate student, Ritu Kapur, graduate student, Brigette Bogert, graduate student, Jessica O’Brien, laboratory technician; UC San Francisco

14 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.
Senzi Li, technologist; Wenhong Yan, process engineer, Novellus Systems, Inc.; Thuy Pham, application development engineer, KLA-Tencor

15 HOW BIG? HOW FAR? EXPLORING SIZE AND DISTANCE IN THE UNIVERSE
The Sun and its family of planets is one of billions of stars that make up the Milky Way Galaxy, which is one of billions of galaxies within the universe. That’s easily summarized in one sentence, but maybe not so easy to picture. Just how big are those other planets, stars and galaxies and how far away? How do astronomers find out this information? Get a better idea by creating scale models and trying out some other fun hands-on activities all about size and distance in the universe.
Anna Hurst, astronomy educator, Astronomical Society of the Pacific

16 DETECTING THE INVISIBLE
What odd everyday objects like pencils and kitty litter have in common with the sun and stars? They send out tiny particles in the form of radiation. Explore ways to see these otherwise invisible phenomena inside the classroom.
Naoko Kurahashi and Stephanie Majewski, Stanford University graduate students in Applied Physics

17 FASCINATING FUNGI
Explore the interesting world of fungi. Observe the beautiful forms under the microscope and learn about good and bad fungi.
Ziva Abraham, Microbiololgy consultant, Microrite, Inc.
18 CAN A CARDBOARD BOAT FLOAT? YOU DECIDE!
In teams, student participants design and construct a cardboard boat. The boats are tested (how much weight is carried) and awards are given.

*Ceal Craig, University of Phoenix Mathematics area chair & lead faculty*

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**COMPUTER/MATHEMATICS WORKSHOPS**

19 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*

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

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

21 THE HUMAN INTERNET GAME
Join in an interactive game in which the contestants play the roles of the routers, switches and packets that form the Internet. You will work together to direct human packets (e-mails) through the Web/Internet.

*Wendy Gustafson, software engineer; Bay Thongtheppairot, hardware engineer; Nimisha Mahuvakar, program manager, hardware quality; Cisco Systems*

22 YOUR NAME HERE
Create your own web page or blog using HTML tags, graphics, and twiki markup. Workshop instructions are posted at http://elstad.com/workshop/.

*Alta Elstad, technical writer, Sun Microsystems, Inc.*

23 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.

MATERIALS SCIENCE/ENGINEERING WORKSHOPS

24 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; Wendy B. Levine, Ph.D., quality assurance consultant

25 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

26 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

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.

Susan Bernhard, Ph.D., development scientist, Elan Pharmaceuticals; Lachelle Arnt, Ph.D., product developer, Clorox Company

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!

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, engineer; Jennifer Fino, engineer; Maria Santa Ana, engineer, Nitinol Devices & Components

WORKSHOPS FOR ADULTS

A1 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

A2 CAN A CARDBOARD BOAT FLOAT? LEARN HOW TO RUN THIS WORKSHOP IN YOUR SCHOOL!
Learn how to run your own “cardboard boat activity day.” Get handouts on teamwork, fluid mechanics to review (depth will vary by grade level taught), worksheets, opportunity to do the workshop and understand how to run it back at home or school.
Ceal Craig, University of Phoenix Mathematics area chair & lead faculty

A3 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. Will you? Attend the College Funding seminar and learn about: sources of college funding, tax advantaged college saving, and practical ideas from realistic case studies.
Carol Hack, financial associate, Thrivent Financial for Lutherans

A4 ONLINE LEARNING IS HERE. ARE YOU READY?
Get ready for online learning with this workshop that will provide an overview of online learning, what to look for in an online course, and how to get the most from this learning option that is becoming more popular with educators and students.
Jacqueline Tam, program manager, University of California College Prep Online
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 680 South: Take 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.