College of Science Recruiting Judges for “Olympics of Science Fair”

SJSU and the College of Science is busy recruiting 1,000 judges from the university, companies, and organizations such as IBM, NASA and other renowned research facilities. Judges must meet high standards and commit to one and one-half days of participation in the high-energy event. “This is a chance to interact with the brightest future scientists in the world,” says Okuda.

In addition to participating in judging, the College of Science is providing two scholarships and will have a staffed information booth in the exhibit hall. The general public is invited to view the projects on May 10 and 11. About 5,000 local students are expected to visit the exhibits with their classes. Teachers may schedule a time to bring their classes by calling 408-924-6953.

ISEF represents an excellent recruiting opportunity, says Associate Dean Vida Kenk. “This is an extremely important outreach effort for us,” she says. She also points out that ISEF may have a positive influence on younger students’ future career decisions. Meeting ISEF participants gives younger students positive role models. “It gives kids a positive image of a scientist as opposed to negative stereotypes often presented in popular media,” she says.

SJSU overall is very involved in ISEF, giving both talent and funds. Many faculty members volunteer as judging co-chairs and the university is offering several full four-year scholarships. Okuda hopes many more faculty members and other scientists will join the judging team. Besides being inspirational, he says, it’s also a lot of fun.

Interested in joining the judging?

Here’s what we’re looking for:

• A PhD or MD or at least six years of professional experience in the research field in which you will evaluate projects.
• A strong understanding of the scientific method and ability to understand and discuss the student’s project.
• Ability to make an objective evaluation.
• Judges are needed at the fair on Tuesday, May 8, afternoon or evening, and Wednesday, May 9 from 9 A.M. to 8 P.M. (Meals and parking will be provided.)

For more information and an online application form, visit www.intelisef2001.org/judges/index.html.
In June, Youth in Science will host fifth, sixth, and seventh grade children and their mentors at Sequoia Lake. Students will use the outdoor classroom to learn about the tight-knit connections of plants and animals—and the crucial role we play as caretakers of all the Earth’s habitats. Over the course of nine days, 56 students and their mentors will engage in inquiry-based science with professors and scientists, rotating through 18 different two-hour sessions in physical and earth sciences, biological sciences, and physical geography. Kids will also be learning about different aspects of the Sierra Mountains ecosystem. Rather than passively listening to lectures or watching demonstrations, children will learn by “doing,” i.e., asking the questions, making the observations, and figuring out how it all fits together—not by being told, but through self-discovery.

Enhancements to the program and staff have been added this summer. Julio Soto, a developmental biologist and science educator, will be joining Youth in Science as an instructor and outreach volunteer. The brochure and application materials are now available in Spanish, thanks to Nieves Carter, a biology undergraduate, who helped with the translation. This has proven to be a invaluable since nearly half the children come from homes in which Spanish is the only language spoken.

Youth in Science is a non-profit science education program for low-income families in the San Francisco Bay Area. Youth in Science bridges the resource and opportunity gap that gifted but underprivileged children encounter in high poverty schools. For more information, visit www.science.sjsu.edu/yis or call (408) 924-4917.

Dr. Matthes developed this new course to bring existing Internet-based resources to students, which will help them use the bioinformatics tools to answer important questions that couldn’t be answered without those tools. This course also gives students training that will help them become competent users and potential developers of the technology.

Dr. Brooke Lustig, lecturer in the Chemistry Department has developed a second course that focuses on the algorithms and statistical analyses that are at work within the programs. He also has the students write grant proposals for the development of bioinformatics applications. This Fall his students wrote computer code, designed a web site, and generated methods of sequence data analysis.

For more information on all course offerings in the Biotech Short Course Certificate Program, including class schedules and descriptions, call (408) 924-4831 or visit www.science.sjsu.edu/biotech/shortcourse.
Outreach Task Force Expands Recruitment Efforts

Even though Santa Clara Valley is an area rich with science and engineering jobs, the number of students attracted to the sciences (other than computers) has decreased over the past few years. The decline may be partly attributed to the prevailing “nerd” image, which repels high-school students.

Whatever the reasons, the College of Science recently took on the enrollment challenge by establishing a science outreach task force.

Taking a comprehensive approach, the group has mapped out its strategy and designed a multi-pronged recruitment program to publicize the opportunities for interesting careers available through studying science at SJSU. Its top priorities include updating College of Science websites and developing a display booth.

Active participation in science fairs and workshops throughout the community, including a high-profile presence at ISEF in May (see article, front page), is part of the task force’s ongoing activities. Approximately 5,000 local students are expected to visit ISEF’s exhibits, so the College of Science will have broad exposure among that group of would-be SJSU students. “We want the College of Science to be known to local families and students,” says Associate Dean Vida Kenk, who leads the task force.

Continuing outreach efforts include Math/CS faculty members Marilyn Blockus and Tatiana Shubin conducting local activities for gifted math students. Activities such as math circles and the Bay Area Math Olympiad bring together talented students with others who share their interests.

Let us know if you are willing to share with prospective students the benefits you have received from your education at the College of Science. To volunteer, contact Vida Kenk at 408-924-4894 or vkenk@jupiter.sjsu.edu.

SJSU and Centaur Pharmaceuticals Collaborate to Expand Educational Opportunities

The Biology Department has entered into an innovative partnership that will expand its graduate degree program to serve more students and enable it to share resources with other organizations. Through an innovative Collaborative Master of Science Program with San José-based Centaur Pharmaceuticals (who initiated the collaboration), the company will provide research space, supplies and a mentor for its employees who wish to pursue a research-based master’s degree in Biology. The Biology Department will provide coursework, thesis advisors and quality assurance.

Though they will conduct their thesis research at their company’s labs, Centaur employees will take their master’s program courses on campus at SJSU. A major thesis advisor on campus will oversee the entire program, ensuring that the course work meets the university’s standards and assuring that Centaur staff receive quality advising about their courses. A Centaur research mentor will serve on the Thesis Committee with the major thesis advisor and another Biology Department advisor.

“This program benefits the university and Centaur,” says Biology Department Chair Sally Veregge. “The collaboration is an excellent way for us to provide Centaur’s employees with advanced education, and to learn more about the company and its research direction.” She adds that the department benefits in another way: Centaur contributed funds to help support graduate biology courses.

Centaur CEO Paul Wood agrees that the program is mutually beneficial. “One of the hallmark strengths of the innovation and productivity in Silicon Valley has been the incredible interactions between the local universities and R&D organizations,” he says. “It is our hope that this collaborative program proves to be very valuable for our employees and the participating staff of SJSU. Inevitably, the two institutions will benefit from such interactions.”

Middle School Students Score Big with MATHCOUNTS

Eighth-grade student Ruozhou “Joe” Jia proved to be the champ at thinking mathematically under pressure at the 2000 MATHCOUNTS National Competition. He clinched the champion title in the Countdown Round, a fast-paced, one-on-one contest, by answering the following question:

A lecture hall has 40 rows of seats. There are 10 seats in the first row, 12 seats in the second row, and so on, with two more seats in each row than in the previous row. How many seats are in the lecture hall?

With the correct answer, 1960, Jia won a gold medal, an $8,000 scholarship, a week at U.S. Space Camp in Huntsville, Ala., and a notebook computer. Jia, a student at Washington Middle School in Aurora, Ill., and the other 227 seventh- and eight-grade mathletes trained throughout the school year to be ready for the final competition, held in Washington, D.C., in early May.

Tiankai Liu of San José, and Ho Seung “Paul” Ryu of Lawrence, Kans., won second and third places, respectively. The team from California won the state title.

Members of the science outreach task force include (left–right): Tatiana Shubin, Roy Okuda, Marie Highby, Pablo Ortega, Vida Kenk, Mimi Bini. Not pictured: Debra Harden, George Castro, Herb Silber, Sally Veregge, and Dan Walker.

MATHCOUNTS Coach Mary Fay-Zank
Science 2 Aims to Prepare and Retain Students

Two years ago, the College of Science and Academic Services teamed up to tackle declining retention rates in science and engineering courses and poor student preparation in general. It’s a collaboration that may become a model to be applied to other colleges in the future.

College of Science Dean Gerry Selter made resources available to address the retention and preparation problems and Associate Dean Vida Kenk enlisted Student Development Specialist Michael Randle to help. He drafted a matrix of a program, which was then presented to faculty in each science department to ensure that the program addressed their specific needs. “We posed a simple question: ‘What do you wish would be accomplished before these students even walk into your classroom?’” says Randle. “The resounding response was, ‘Get them psychologically ready for university life.’”

Kenk and Randle then developed an expanded, modified Science 2 curriculum. The new two-unit class, which has been offered for two semesters, is divided into three major components: lecture on Monday, where all students meet together; two-hour activity sections later in the week, limited to 20 students; and individual peer advisement sessions.

The lecture segment literally brings students face-to-face with science faculty members, university staff and potential employers. Thus, students are introduced to the various disciplines and potential career paths within science. “Computer science and medical school are the only two options most students have heard of,” says Kenk. “Most don’t know about the wide range of career possibilities.” Students also hear first-hand from industry leaders the importance of developing certain skill sets. As a guest lecturer, Ed Oates, SJSU graduate (Math 1968) and co-founder of Oracle, urged students to become well-rounded individuals by experiencing a wide range of courses and to develop excellent team-work and communication skills, as well as technical knowledge. Oates has endowed a President’s Scholarship in honor of his father, Robert Paul Oates, a strong advocate of lifelong learning.

The transition from high school — where students’ schedules are set for them and teachers check their attendance and homework daily — to a university, where students are responsible for their own performance, is a difficult one for most freshmen. Therefore, the activity component was designed to teach them fundamental time management, and note-taking, test-taking and study skills using their own class schedules and the courses they are taking. As part of this process, each student learns to identify his or her own particular learning style and how to cope if an instructor’s teaching style does not coincide with it. Randle likens the average freshman approach to a high school brain. Practical exercises, such as building study time into their schedules and meeting with their instructors, are part of what he calls transforming the high school brain into a university mind.

Meeting regularly with a student peer advisor helps ensure that students stay on track. Having peer advisors reinforce the same messages that faculty give students may help the program achieve a higher degree of effectiveness. “Peer advisors will tell students many of the same things we (faculty members) tell them, but the students listen to their peers rather than to us gray-hairs,” says Kenk.

The Science 2 grading system is designed to teach students the necessity of pursuing their studies seriously. Students receive an A (scores of 90 percent to 100 percent), a B (80 percent to 90 percent) or an F (any score below 80 percent). “We try to model the behavior we want to see,” explains Kenk. “It’s not, ‘What’s the least amount of work can I get away with?’ Instead, it’s ‘Strive to get an A, a B is a default grade, and don’t even think about a C.’ Because if you’re going on to graduate or professional school, a bunch of Cs isn’t going to cut it.”

A common remark from Science 2 students is that they have never worked so hard, but that the class taught them how to work effectively in all their classes. While data are still being compiled and analyzed, a preliminary GPA comparison between students who completed the Science 2 class and those who did not take the class indicates that Science 2 students outperformed their peers with an average .5 higher total GPA. Long-term data are being collected to ascertain whether the class actually does make a difference in how well students perform in science major gateway courses, in retention and graduation rates, and whether it reduces the amount of time it takes a student to graduate.

In the meantime, the pilot program sets a good precedent for future collaborations with other colleges, says Randle. “This process, where faculty issues drive the curriculum, could be replicated for other colleges. This was a good marriage between Academic Services and the College of Science.”
On the morning of February 23, Dean Gerry Selter welcomed Erin Brockovich as his guest speaker at the Spring “Breakfast with the Dean.” Simpkins Center Gold Room was filled to capacity with SJSU faculty, staff and students, some of whom also attended her standing-room only presentation in Morris Dailey Auditorium the night before. She shared her personal experience of how one person can make a difference in our society when faced with adversity and how class action suits are utilized in the name of environmental justice. She was frank, open and very direct in the assessment of how big business is capable of lying to the public to further their capital gains. Because of her upbringing and family values, she was compelled to do something about the injustices she witnessed during her investigation of the chemical poisoning of the water supply to a small California town. She left a lasting impression as someone who cares deeply about people suffering injustice and the value of honesty in our society. Brockovich’s experiences with this lawsuit have been portrayed in an award winning film. ♦

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CoS Alumni: We Want to Hear From You!

Please update your address, request information, or tell us about yourself and your latest achievements.

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I would like to support the following:
- Dean’s Fund of Excellence
- College of Science Scholarship Fund
- Donation to ____________ Department
- Youth in Science Program
- Commencement reception for CoS graduates
- Donation for purchasing equipment
- I enclose a tax deductible donation payable to SJSU, College of Science: $______

I would like information on the following:
- Dean’s Fund of Excellence
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- Other scholarship funds in the College of Science
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Editor
Mimi Bini, Development Assistant

Contributing Writer
Beth Volz

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