

SEP Newsletter

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You're Invited to the SEP Fall Kick-Off!

TOP 10 REASONS TO ATTEND THE FALL KICK-OFF:

10. Find out what a spirometer is
9. Free petri dishes
8. The best chocolate chip cookies west of the Mississippi
7. Make new friends and gossip with old ones
6. Free test-tubes
5. Find out how to go back to elementary school
4. More pasta salad than you can eat
3. Validated parking
2. Refreshing beverages
1. The kids!!!

Are you a teacher who wants to bring the scientific resources of UCSF to your classroom? Are you a UCSF employee or student wanting to make a difference in science education in San Francisco public schools? Come find out what SEP has to offer for the coming year! Teachers, scientists, clinicians, students, and staff are all invited to the eleventh annual SEP Fall Kick-Off Conference. The Kick-Off will take place from 4:00 to 6:00 pm on September 23rd on the first floor of UCSF's Medical Sciences Building at 513 Parnassus. This is a prime opportunity to gather information on all of SEP's programs, meet other teachers and volunteers with similar interests, pick up laboratory equipment and supplies, eat, drink, and get to know the SEP staff (City Science and Triad both have new coordinators, see page 4).

The Kick-Off Conference will begin at 4:00 pm with a short introduction and orientation in Cole Hall, followed by two sets of workshops on the various SEP programs. Programs in the first session will include an overview of SEP for those who are unfamiliar with the program, a discussion of individual teacher-scientist partnerships, an introduction to the SEP Resource Center, and a Triad workshop on gender equity in the science classroom. Programs in the second session will cover the City Science

Initiative for elementary school science education reform, middle school programs such as MedTeach, high school programs such as SF Base and mentorships, and a second presentation on the Resource Center. The workshops will be informal with opportunities for teachers and volunteers to get to know particular programs, meet others interested in the same program, ask questions, and make suggestions on ways to improve the programs and to further meet the needs of participants.

The workshops will be followed by a reception with food, drink, mingling, and the equipment and supply give-away – always one of the most popular events on the SEP calendar. This year we expect to give away petri dishes, tissue culture flasks, test tubes, test tube racks, microscope slides, and a variety of other items guaranteed to spark teachers' imaginations. Each teacher will get to choose items from a wonderful mix of laboratory goodies donated by UCSF researchers. Raffle items will include computers, modems, and more. So grab a friend and come check it out! For more information, call anyone at SEP.

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The Science & Health Education Partnership (SEP) is a collaboration between the University of California, San Francisco (UCSF) and the San Francisco Unified School District (SFUSD). Its mission is to support high quality science and health education. SEP is the organizational umbrella for the UCSF-end of the partnership and is made up of both core programs and specially funded projects. Core programs include equipment and supply donations to schools, partnerships between UCSF volunteers and SFUSD teachers, the operation of a resource center, and the SEP Student Lesson Plan Contest. Specially funded projects include *City Science*, *The Women's Triad Project in Science Education* and summer research internships for teachers and high school students. SEP also supports SFUSD projects including *SF Base* and the newly adopted K-8 science and health curricula. SEP is made possible through funds from NSF, NIH, Howard Hughes Medical Institute, Genentech, Herbert W. Boyer, the UC Office of the President, the UCSF Chancellor, Merck Pharmaceutical, PG&E, and private donations.

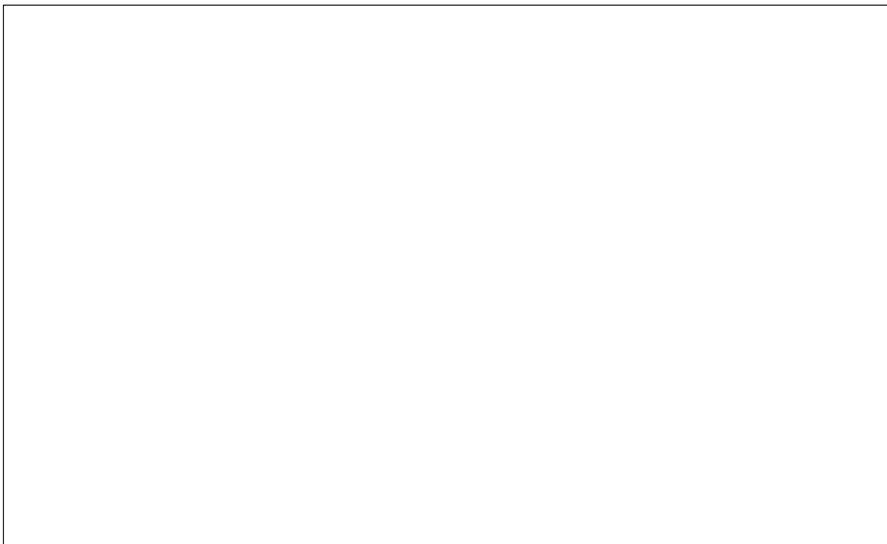
A Scientist Goes Back to Elementary School

by Karen Zachow

After years of brief activities with SEP, I decided to take the plunge and make a long-term commitment to SEP and SFUSD. A Scientist-in-Residence (SIR) position with the City Science Elementary Focus Schools seemed like a good opportunity to use my scientific training in a new and positive way. Being a SIR was an eye-opening, interesting, and valuable experience for me.

I was teamed with Andy Estrin, a K-5 Science Resource Teacher with City Science, and sent to Spring Valley Elementary School. Walking through the halls of Spring Valley, one sees examples of the role of science in daily life hanging from the walls and ceilings on every floor. In addition to the curriculum kits, the classrooms contained other science equipment and a variety of living organisms, and were decorated with current science projects. The overall interest in science and the strong support I received from Ms. Chin, the principal, made me feel very welcome at Spring Valley.

I spent nearly all of my time at Spring Valley in the classroom participating in science lessons. I worked with one grade level at a time for the duration of a science unit (5 or 6 weeks). The teachers of a given grade level coordinated their schedules such that they were on pace with each other throughout the lesson and, on the day I was at the school, they staggered their science lessons so that I could participate in one class after the other. The lessons were conducted by the teacher and I added to the classroom discussions in the area of science content and scientific process (with emphasis on how to turn an



A Spring Valley fifth grader's drawing of an experiment to see how bugs and beetles respond to environmental factors such as light and water.

exercise into an experiment with interpretable results). Besides classroom discussions, I worked with students in small groups and individually. The SEP Resource Center was a great source of additional equipment and materials to support and extend the lessons.

Before beginning to work with a grade level, I introduced myself to each classroom by leading a discussion about being a scientist and about an aspect of my own research, grasshopper development. The students were very excited to see the 'hoppers at different developmental stages – from egg to nymph to adult. Since the 'hoppers were dead, the students were able to

carefully observe and inspect the animals with magnifying lenses and dissecting microscopes. Students in the 4th and 5th grades dissected adult 'hoppers. The discovery of eggs inside some of them resulted in much excitement and curiosity regarding the egg laying process. This introduction

was well received by the students and nearly always resulted in many questions and a lively discussion.

The enthusiastic response of the students to their science lessons and to my participation in their classroom made me feel that my time and effort was well spent. The long term nature of the SIR program allowed me to spend time in many classrooms and interact with many students. My contributions were welcomed and appreciated by the teachers. I was able to support them when they were challenged by the underlying concepts of the lesson. With no formal training and limited teaching experience, this was a great opportunity for me to observe professionals and experience successful and not-so successful teaching and management techniques. It has also been a very good experience to explain science to a lay audience, something all scientists should be able to do. It was great to leave the laboratory and interact with people in a professional manner.

By the time the year was over, I was being greeted by name by half of the students of Spring Valley. Contributing to their enjoyment and appreciation of science was a great deal of fun.

Karen Zachow, a former Postdoctoral Fellow from UC Berkeley, is a Legal Analyst with Morrison & Foerster LLP.

*Dear Karen,
Thank you for coming to our class. We enjoyed hearing about what you do as a scientist. I learned about grasshoppers. I like the grasshoppers. I like scientists.*

*Your friend,
Kevin Ha
Room 23*

MedTeach Makes a Difference

By Curtis Chan

"How long are your intestines?" Rameen asked the class. His hands stretched an imaginary intestine to shoulder width, "Are they this long?" Some of the sixth graders in Ms. Hixon's class excitedly guessed, "Shorter!" Others yelled, "Longer!" With a snap of his fingers, a string appeared in Rameen's hand. "This is how long your intestines are..." Rameen asked a volunteer to pull the string. A boy kept pulling and pulling while walking toward the back of the classroom. The string, which had been wrapped around Rameen's arm underneath his sleeve, was now stretched to its full length of over 20 feet. The children marveled. Rameen Beroukhim had begun teaching them about the digestive system.

Beroukhim is one of 30 first-year UCSF medical students who teach science to sixth-grade classes through the MedTeach program. Teams of 3-5 volunteers teach one or two classes at their assigned San Francisco middle school every other week. They teach science, human biology, and health through interactive, hands-on lessons.

SEP Coordinator Helen Doyle appreciates the impact the medical students on the schools: "Many middle school teachers don't have an extensive science background, the schools are under-supplied, and the

kids want to learn. When the medical students come to teach, the kids become very engaged in the lesson." She stresses that UCSF volunteers can make a big difference: "These thirty medical students teach at seven schools, about 12 classes and 30 children per class. This year, over 350 sixth-grade students benefit from this volunteer effort."

Twelve year-old Michael Ace from A.P. Giannini MS would agree, "I like MedTeach a great deal. I learn very much. From books, it's harder to learn. But when you show and explain, it makes understanding much easier. More fun, too." The MedTeach volunteers aim to make their lessons personal and highly interactive. Seeing a chemical experiment or an actual specimen can inspire scientific interest. Mintu Turakhia used a home-made spirometer to teach his students at Herbert Hoover MS. "The students were fascinated to see how a bucket and milk jug could be used just like a medical instrument. And, they had a lot of fun making their classroom

wet."

Edward Conner, who volunteered at Benjamin Franklin MS, treasures "the moments." He explains, "...the moment when we've captured the attention of the student who's never paid attention before, who's maybe never cared. Maybe repeatedly capturing his attention will light his interest in this subject, then science,

"The students were fascinated to see how a bucket and milk jug could be used just like a medical instrument."

then school and learning." Being a teacher and a friend gives the volunteers an opportunity to influence their students' ways of thinking. Leslie Gillum, a MedTeach volunteer at Luther Burbank MS, noted also "the importance of having a female medical student teaching the class."

The MedTeach volunteers at A.P. Giannini performed skits that emphasized self-esteem and making one's own choices. In these skits, the students witnessed the peer pressure of choosing friends, smoking, and sexuality. "I've never seen the students so attentive and interested," said their teacher. "Having young adults teach about youth issues is very effective. The students really responded well to the message."

MedTeach represents much more than a science education project. For Gillum, "MedTeach reminds me of my larger purpose in becoming a doctor – to educate people in staying healthy. And while I'm learning and taking tests to be a health provider, MedTeach reminds me that I'm still a real person who can make a difference."

The sixth-graders seem to ask the MedTeachers the same question after each class: "When are you coming back?" Doyle hopes to start a similar volunteer program with the other UCSF professional schools. She encourages interested volunteers and teachers to contact the SEP office.

Curtis Chan is a UCSF Medical Student and a Staff Writer for Synapse. Reprinted in part with permission from Synapse, April 3, 1997.

Students at Visitacion Valley MS investigate the circulatory system using human heart specimens with their medteach team.

BrainLink Celebrates With a Symposium

Humans are unique among living things in that we can, and do, use our brains to wonder about how our brains work. In fact, the study of our brains and nervous systems, (also known as neuroscience) is fascinating and important to everyone from elementary school students to brain surgeons. The goal of the BrainLink project is to provide teachers and scientists with the scientific background, training, and materials they need to teach neuroscience effectively to elementary and middle school students. Funded by the National Institutes of Health, the dissemination component of the BrainLink Project will wind down this fall with a BrainLink alumni symposium, a final training workshop, and October presentations at the California Science Teachers Association meeting in Palm Springs and the Society for

Neuroscience meeting in New Orleans.

Over two years ago, SEP collaborated with the Baylor College of Medicine to launch the BrainLink Project in the Bay Area by providing workshops and materials for teachers to learn activities to teach their students about the brain and the nervous system. SEP's Helen Doyle and UCSF neuroscience graduate students Erin Peckol and Kimberly Tanner developed workshops that gave teachers the hottest neuroscience research news, modeled effective teaching methods, and provided hands-on experience with great classroom activities. In addition to workshops in the Bay Area, the BrainLink team traveled to Stockton, Los Angeles, Orange County, and Seattle.

Each workshop brought together a unique group of teachers who shared a

thirst for knowledge about neuroscience research, including questions about learning, diseases, and psychoactive drugs. To satisfy this thirst, the BrainLink team is putting together a Saturday Neuroscience Symposium for alumni of BrainLink workshops on September 20, from 8:30 am-2:30 pm, at UCSF. For most of the day, attendees will become neuroscientists and participate in a hands-on research project.

For those teachers or scientists who missed BrainLink for the past two years, a workshop covering Unit 3, Sensory Signals, and Unit 4, Memory and Learning, will be offered on Saturday, November 15, at UCSF. Please call Helen at 502-6324 (hdoyle@itsa.ucsf.edu) to express your interest in this workshop or the Neuroscience Symposium.



Events Calendar

BrainLink Reunion Symposium	September 20
SEP 11th Annual Fall Kick-Off	September 23
SFUSD Professional Development Days (no school)	October 2 & 3
Scientist Orientations	October 7, 15, & 23
BrainLink Workshop	November 15
SFUSD Professional Development Day (no school)	November 17
UCSF Holiday, SEP Closed	November 27-28
SFUSD Winter Break	December 22-January 2