

# Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 24 No. 6

## Chemistry Olympiad Finalist

– Catherine Chang –

Catherine is the Santa Clara Valley section's finalist in the U.S. National Chemistry Olympiad! She scored among the top 18 high school students in the country in the USNCO on April 20th and has been invited to participate in the study camp at the Air Force Academy from June 2 to 16. The international competition occurs July 5-15 in Groningen, the Netherlands.



awards in World and American History! Her extracurricular activities include playing the French horn for four years in the Wind Ensemble and Symphonic Band.

But her main extracurricular activity is tutoring.

She has been an active participant of the school's STAR Tutor program for two years. Chemistry students are her specialty and she readily admits what any good teacher knows, that she learns more than her students! She is also a teacher's assistant for the current AP class.

Jim Flores, her AP teacher, has many good things to say about Catherine. "Catherine is a highly  
*continued on next page*

As a senior at Lynbrook High School, Catherine is an enthusiastic, intelligent, outgoing young woman, who enjoys all subjects. She took Honors Chemistry her sophomore year and AP Chemistry her junior year, winning awards in both classes. Not to mention winning corresponding

## – Reminder – Beer Tasting, Family Picnic and Awards Ceremony

*Prepayment and mail-in registration is required. See the registration form on the next page.*

There is still time to register for the annual picnic. This year it will take place on Saturday, June 29 at the Keck chemistry building on the Stanford campus. Bring your family, taste some wonderful beer, and honor our fifty-year members and many section volunteers. Visit our Web site [www.scvacs.org](http://www.scvacs.org) or see the May newsletter for more information.

## Chair's Message

In 2003, our local section dues will increase 33% to \$12.00 per year. Among other things, the increase will help to defray the higher cost of postage. While local section dues are voluntary, 78% of our 3,374 Santa Clara Valley Section members pay them. There was some discussion during the last Executive Committee meeting as to whether this was a high, low, or average percentage. I'm not sure, but I think it's good when more than three-quarters of the members make this contribution to the section. The funding makes possible our programs, from those aimed at children, high school, college, or minority students, to speakers at our monthly dinner meetings.

With the substantive part of the message complete, I'll proceed to my musings for the month.

I have piles of things on my desk, things I want to get to, unfinished  
*continued on page 3*

## Chemistry Olympiad Ten of Our Bravest and Brightest!

<b>Calvin Chan</b>	Monte Vista
<b>Catherine Chang</b>	Lynbrook
<b>Emily Chen</b>	Monte Vista
<b>Alina Fu</b>	Lynbrook
<b>Jenny Jin</b>	Lynbrook
<b>Peter Lee</b>	York
<b>James Li</b>	Mountain View
<b>Heather Robinson</b>	Los Altos
<b>Chris Rochester</b>	Hillsdale
<b>George Schmurle</b>	Woodside Priory

These ten sophomores, juniors and seniors from the Santa Clara Valley joined 18 students from the California section to participate in the U. S. National Chemistry Olympiad (USNCO) on April 20th at Las Positas College in Livermore.

The USNCO is a multi-tiered competition designed to stimulate and promote achievement in high school chemistry. The students compete locally, regionally, nationally, and internationally. Since 1984 the U.S. has sent a team of its four brightest students to compete internationally. Our section sent a student internationally in 1995 and 1996.

This year in February, over 400 high schools in our section were contacted about the exam and its schedule. The teachers at 11 schools chose to have their Advanced Placement students take the first round of exams  
*continued on next page*

*Finalist, continued from front page*

intelligent individual whose natural talent allows her to quickly absorb the course material. She also supplements this ability with a strong work ethic. She refuses to coast through a class but instead exerts herself fully to master all of the concepts presented. Catherine is never satisfied with simply getting the "right" answer. She prefers to understand all of the reasoning used to arrive at that answer. In addition to her role as my TA, Catherine volunteers her time to tutor my Honors Chemistry students. She regularly meets with not one but several struggling students in order to boost their performance and their confidence. She teaches them proper problem solving strategies and coaches them on how to quickly complete the more involved calculations. Such generosity and strong desire to help her peers is impressive and refreshing to see in someone so young. During the time that I have known her, I have found Catherine to be a highly motivated, extremely capable, and very powerful student."

Her college plans are not yet definite, but she will be attending school in California. Some of her options include UC Berkeley in the North to Caltech in the South. So you can see how intelligent this young woman is!

Catherine lives in San Jose with her parents and sister, Shirley. You will have the opportunity to meet Catherine in June at our annual Awards Ceremony and Family Picnic.

*Chemistry Olympiad, continued from front page*

in early April. (If your local high school did not compete, contact their science department and volunteer to help administer the test next year!) Tricia Takahara from Roche Bioscience graded 96 exams and contacted the 18 top scorers, a maximum of 3 from each high school.

Ten of those 18 students volunteered to give up Saturday, April 20th, to be in the next level of competition. That level consisted of the USNCO national exam, a three-part, four and one-half hour exam. It was administered locally to 900 students across the country. The California section hosted the exam for both sections at Las Positas College in Livermore. Part I was a 90-minute, 60 multiple-choice examination covering a broad range of topics. Part II, a 105-minute free response section, required written responses for a multi-step problem requiring in depth knowledge of chemical theories and models. Part III, the 75-minute, two-item laboratory practical, evaluated the students' ability to problem-solve in the laboratory. The volunteer proctors agreed with the students that Part I was hard and that Part II was harder yet! Everyone was ready for the pizza lunch that the California section provided. Part III allowed more flexibility as the students had to design and carry out two

separate experiments, using only the chemicals and equipment provided. After 90 minutes everyone, including the proctors, looked shell-shocked and appreciated the chocolate bars that Howard Peters provided!

The 28 students who participated came from as far away as Mendocino, Turlock, and Monterey. Our ten brave, brilliant, and weary students had a thorough mental workout!

A special thanks to Howard Peters, Jamil Talhouk, Bruce Raby, and Tricia Takahara for helping out. We were all amazed at the ability and composure that the students displayed. If you want to test your wits against the high school students, go to the 2002 exam as posted on the web page at [www.chemistry.org](http://www.chemistry.org). Since the url is long, search for "chemistry olympiad" and find your way to the exam questions. The answers are given at the end of each part of the exam.



## RESERVATION FORM

Annual Wine Tasting, Family Picnic and Awards Ceremony

Stanford University – Saturday, June 29, 2002    Deadline for Reservation – Monday, June 24, 2002

Name(s): \_\_\_\_\_ Telephone No.: ( \_\_\_\_\_ ) \_\_\_\_\_

No. of Reservations at \$15.00 ..... \_\_\_\_\_

No. of Children (age of 4-12) at \$5.00 ..... \_\_\_\_\_

**Total Amount Enclosed** .....\$ \_\_\_\_\_

Make check payable to: Santa Clara Valley Section – ACS

Mail check and reservation form to: Ms. Shirley Radding, 2994 Cottonwood Court, Santa Clara, CA 95051

Please check if you can volunteer:     I can help set-up     I can help clean-up

*Chair's Message, continued from front page*

business, and good intentions waiting to be fulfilled. (I hope I'm not alone in this.) Rarely do things escape a pile on their own. Recently, when I was sick, my wife filled in for me, interviewing a student for a tutor position (we live in Stanford's Freshman-Sophomore residential college). Afterward, she called me from my office and said, "There's a great cover story in Chemical & Engineering News; I'll bring it home." When I got off the phone, I racked my brain trying to think of a recent issue that would catch my wife's attention. I couldn't think of any. When she got home, she pulled from her bag the January 10, 2000 issue. It had surfed to the top of a pile, caught her eye, and been rescued. The cover story was about Oliver Sacks, the famous neurologist and author, and his youthful love affair with Chemistry, or more accurately, the periodic table. I had only glanced at the article two years ago, and set it aside with the intention of finishing it. Now I had my chance.

Sacks was a budding chemist as a

boy. His uncles, who used chemistry in their work in industry, nurtured young Oliver's interest. He eventually had his own home lab complete with running water, fume hood, and, we assume, "real chemicals." The article, by Madeline Jacobs (the current Editor-in-chief of Chemical & Engineering News), notes that Sacks has "bemoaned the demise of real chemicals in chemistry sets." He was an experimenter who loved the excitement of working in the lab. For him, the thrill of chemistry was sensory: it was full of tactile, olfactory, and visual experiences. (No wonder he went into neurology where he could study the basic nature of how our brains experience the senses.) In his love of descriptive chemistry, he focused on the periodic table. He was a regular visitor to the London Science Museum's exhibit of the periodic table, which displayed samples of many of the elements. Sacks was dissuaded from a career in chemistry by his parents, who he later followed into medicine.

While reading the article, I was most interested in Sacks' view of chemical education. He is most decidedly an experimentalist. Not only did he decry the diminution of chemistry sets, he did not like chemistry confined to the classroom and chalkboard. For the next generation of chemists, Sacks recommends "vivid experiments - there is nothing like chemistry demonstrations, they're colorful and dramatic...and make kids feel they are contemporaries of Lavoisier, Davy, [and] Dalton." He goes on to express views that may rankle some chemists: "chemists need to have enjoyable and accessible books about chemistry...We need to get rid of jargon and esoterica...We need to get rid of the elitism of chemistry. Chemists or outsiders such as myself might draw people in by sharing a love and enthusiasm of chemistry connected with its explanation and insights." Overall, I think he has a winning formula. I just wish we had more outside spokespeople with his passion and enthusiasm for chemistry.

## Councilor's Report – ACS National Meeting

April 7-11, 2002 Orlando, Florida

The Spring 2002 ACS National Meeting was attended by Santa Clara Valley Section Councilors Linda Brunauer, Bonnie Charpentier, Sally Peters, Jack Riley, Maureen Scharberg, Herb Silber, and Ean Warren. As well as attending technical sessions, the Councilors served on a variety of governance committees and task forces, and participated in the Western District Councilors' Caucus and the Council Meeting. Overall meeting attendance was over 14,300. Some highlights from the meeting are provided here.

### Younger Chemists Committee

Ean Warren reports that the YCC continues to act on the local, regional and national levels on behalf of younger chemists to make the ACS relevant, increase the involvement of younger chemists, and to develop mechanisms to integrate younger chemists into the profession. Among

numerous other activities at the meeting, the First Annual Fun Run/Walk was held Monday morning; 145 people registered for the event.

The YCC will continue to present Chemluminary Awards to those local sections that show excellence in local section YCC activities. A new activity this year is YCC Leadership Development Workshops to be held at the Boston National Meeting and 2003 regional meetings ([http://membership.acs.org/y/ycc/updates\\_02/ycc\\_ad.htm](http://membership.acs.org/y/ycc/updates_02/ycc_ad.htm)). The YCC is continuing a successful program, the Younger Chemists Network (<http://membership.acs.org/scripts/y/ycc/ycn/ycnintro.asp>) to coordinate volunteers with volunteer opportunities. Finally, the YCC is planning programming for national meetings out to 2003. The Boston meeting will feature programming including "Keys to Financial Success";

"Non-Traditional Careers for Chemists"; "Graduation, What's Next"; "Building Your 60 Second Sketch" – how to pitch yourself to VCs; and a blood drive with a theme of "Chemistry is in Our Blood".

### National Chemistry Week

National Chemistry Week will be held October 20-26, 2002. The theme is "Chemistry Keeps Us Clean" focusing on the chemistry of soaps, detergents, and other cleaning products. Watch this newsletter for plans and volunteer opportunities for the Santa Clara Valley Section celebration.

### Chemical Abstracts Service

Sally Peters is now serving on the Committee for CAS. A focus of this meeting was the successful placement of SciFinder Scholar in hundreds of small to medium size colleges and universities by having groups of schools form consortia and share the expenses. CAS was adding one school per business day in 2001.

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## Council Policy Committee and Council Votes

As a member of the Council Policy Committee, Bonnie Charpentier served on the subcommittee to evaluate and make recommendations regarding a petition for change in the funding of local sections and divisions. There was a great deal of discussion on this petition in several different venues, and it was ultimately recommended that the petition be withdrawn, reworked to resolve perceived deficiencies, and presented at the Boston meeting. The petitioners agreed to do so.

Bonnie also has been serving on a task force to assist the Committee on Committees in an evaluation of governance committee structure and responsibilities. The task force spon-

sored a well-attended "town meeting" on Monday afternoon to hear ideas, concerns, and suggestions from members. A petition to increase the size of Society Committees was postponed until Boston to allow the task force to complete its recommendations.

Council approved petitions to (1) change the status of the Women Chemists Committee from an "Other" Committee of the Council to a Joint Board-Council Committee; (2) change the section territory of the Minnesota Local Section to annex two unassigned counties; and (3) authorize the previously-approved dues escalator. ACS dues for 2003 will be \$116.00.

Council voted to select the following nominees as candidates for ACS President-Elect: Charles P. Casey of the University of Wisconsin, and

Alvin L. Kwiram of the University of Washington. The results of the selection of candidates for District III and VI Directors (done by mail ballot to Councilors of those districts) were announced. The candidates for District VI are Howard W. Peters, Stanley C. Pine, and Stephen A. Rodemeyer. Please read the statements of these candidates and remember to vote in the fall election.

## Future Meetings

The next ACS National Meeting will be held in Boston August 18-22, 2002. If you have questions or suggestions regarding ACS locally or nationally, please contact one of your Councilors or Officers listed in this newsletter.

*Bonnie Charpentier*



## Patent Truths

1. I have heard the story that Dr. Herman Mark, the famous polymer chemist, was Jewish and needed to leave Germany just before WWII. He is reported to have converted most of his families' possessions into platinum metal, had it drawn into wire, made coat hangers of the wire, and left Germany on a trip with his family and with their clothes on the hangers. Upon arrival to the US, the platinum metal was his \$100,000+ nest egg to start over. Can anyone find a written reference to this story for me?? Did he ever win the Nobel Prize in chemistry for his work?
2. Roy Plunkett was a coinventor of polytetrafluoroethylene (TEFLON). The U.S. Patent 2,230,654 issued in 1938 and was inducted into the National Inventors Hall of Fame in 1985 (See [www.invent.org](http://www.invent.org)). Plunkett earned a Masters degree in chemistry from Ohio State in the 1930s. His roommate at OSU was Paul Flory, the late Nobel Prize winning polymer chemist at Stanford.
3. Over thirty five years ago when I finished at Stanford, I interviewed with Roy Plunkett at DuPont for a

research position in organic fluorine chemistry. Plunkett had long sought at DuPont the catalyst that would polymerize tetrafluoroethylene (TFE) - to no avail, five new tanks of TFE were delivered to his lab. One tank showed the correct weight, but zero pressure. Plunkett related to me how he had literally sawed the tank in half and found the first polymerized TFE having great physical and chemical properties. His further investigation identified the history of the TFE tank and the possible trace contaminants from previous fillings that had caused the spontaneous catalysis. His investigation narrowed and the rest is history.

4. Did you know that the US Postal facility in Washington DC - Brentwood is the one that ALL the US mail passes through for the U.S. Patent and Trademark Office (and many of the other federal agencies)? Because of the anthrax emergency, all U.S. Patent Office mail was quarantined and then irradiated before it was delivered. These mail delays were devastating. If you saw your local patent attorney tearing hair out from October through

December, it was because no one in the public was informed of this problem for an incredible five weeks!! The present irradiation often melts the ink on the submitted pages gluing them permanently together and usually requires a completely new submission of the documents.

5. Robert Sarnoff, the long time president of the Radio Corporation of America (RCA) was a strong promoter of commercial radio and then television. He came to public attention in April 1912 as a young wireless operator on the top floor of the Woolworth Building in New York City. He was the first person in the US to receive the faint message that the Titanic had struck an iceberg and sunk with great loss of life. He stayed on the job for three solid days relaying the wireless messages and stayed in the public eye after that. When RCA was acquired by GE over ten years ago, SRI International in Menlo Park received the RCA Sarnoff Labs in Princeton, NJ as a donation and significant funds to maintain it for a five year transition period.

Do you have any patents truths to share? contact Howard Peters at [peters4pa@aol.com](mailto:peters4pa@aol.com)

# The Division of Environmental Chemistry

The Division of Environmental Chemistry was organized in 1913 as a waste water treatment division, much favored by water chemists and engineers. In 1973, the division acquired its current name. The division now has about 6000 members. Since 1990, they have organized about 140 symposia across a broad range of topics, including analysis, monitoring, fate and effects of synthetic chemicals, air pollution, regulatory and toxicity issues, and new remediation science and technologies.

At the next National ACS meeting in Boston in August the Division of Environmental Chemistry will sponsor or cosponsor 11 symposia covering such diverse topics as synchrotron radiation as an analytical tool, the biogeochemistry of marine organic matter and electrochemical methods for wastewater.

Ted Mill, the program chair of the Division of Environmental Chemistry, has been a member of the division since about 1975:

I joined the division at that time as a direct result of my new research interests in the fate of chemicals in the air and water environments and in characterizing details of photochemical and hydrolysis reactions in natural waters. One of the early studies, supported by NSF, was to characterize the flux of free radicals in natural waters exposed to sunlight. Coincidentally, the division was also shifting its emphasis away from waste water treatment to the study of environmental chemical processes, so it was good match of interests.

An important issue for the Division of Environmental Chemistry is increasing proliferation of environmental programming in other divisions which competes for the attention of our members. A practical consequence is diminished attendance at division symposia with a consequent reduction in reimbursements from ACS to the division. I am working more closely with other program chairs to develop shared programming with shared revenue and sched-

uling that avoids time conflicts.

Another problem for the division is the lack of younger members in division governance. As a result, the executive committee is beginning to look like a geriatric ward; I'm probably the oldest member of the committee, but not by much. We are making a concerted effort to attract the under-40 crowd to participate more fully in running the division by becoming activities chairs, assistant chairs as well as organizing symposia.

I would urge all SCVACS members with environmental interests to join the Division of Environmental Chemistry. For a nominal \$15 a year, members receive periodic newsletters together with a CD for each national meeting of the division (two a year) containing all of the division programming in the form of extended abstracts. I would also urge these chemists to consider organizing symposia in areas of importance in the environmental sciences for national meetings. Next year ACS (and the Division of Environmental Chemistry) meets in New Orleans in March and New York in September; in 2004, meetings are held in Anaheim and Philadelphia in spring and fall, respectively. Anyone interested in organizing a symposium, especially for New York or beyond, should contact me at ted.mill@sri.com to discuss any ideas.

## Hike in Big Basin Park

### Younger Chemist Committee Event

**Date:** Saturday, July 13th

**Time:** All day

**Feature:** Dr. Chris Brinegar

San Jose State University  
Redwoods Expert

This event involves an 11 mile hike through the redwoods, with some science and lots of fun.

For more information, please check the YCC website:

[www.scvacs.org/ycc/index.html](http://www.scvacs.org/ycc/index.html)

To participate in the hike, please RSVP to Claire Komives before July 8 ([ycc@scvacs.org](mailto:ycc@scvacs.org))

## SCV-ACS Nominations for 2002

Petition candidates can be nominated by the membership. Offices are: Chair-Elect, Secretary, Treasurer, Councilor, and Alternate Councilor

The requirements are:

- Member (grade) of SCV Section.
- Agreement to run for the office
- Agreement to attend Executive Committee meetings
- Signatures of 15 members (member grade) of the SCV Section
- Petitions along with a brief biography and statement must be received by August 1, 2002.

Mail nominations to: Dr. Karl Marhenke  
1710 Wilshire Drive, Aptos, CA 95003-2836.



## Editor's Corner: Corrections

Mistakes seem to slip through the editing system from time to time and I appreciate the readers who actually point them out (who actually read the newsletter). In the April issue, Darwin's "Origin of Species" was misprinted. In the May issue, the 37th National Organic Symposium was listed in the event calendar; yet, it was held last year in Bozeman, Montana at Montana State. Also in the May issue, I believe I miscounted the number of technical divisions - put it this way: I'll try my best to get as many, if not all, of the technical divisions to submit an introduction to the newsletter. This month, I interviewed a fellow SRI chemist: Ted Mill, Chair of the Environmental Chemistry Division.

Again, your comments or questions are always appreciated and encouraged ([editor@scvacs.org](mailto:editor@scvacs.org)).

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#### JUNE 2002 NEWSLETTER TOPICS:

Chemistry Olympiad Finalist: Catherine Chang  
Chemistry Olympiad: Ten of our Bravest and Brightest!  
Reminder: Beer Tasting, Family Picnic and Awards Ceremony  
Chair's Message  
Councilor's Report—ACS National Meeting  
Patent Truths  
Illustrating Nature  
The Division of Environmental Chemistry  
Hike in Big Basin Park  
SCV-ACS Nominations for 2002  
Editor's Corner

#### CHEMPLOYMENT ABSTRACTS

The production staff apologizes for the delay of getting this month's issue to our subscribers on time. We had computer problems resulting in some major repairs involving the logic board.

## SANTA CLARA VALLEY SECTION

### 2002 Section Officers

Chair: <b>Jon Touster</b>	650-723-4340	touster@leland.stanford.edu
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Treasurer: <b>Hong Gao</b>	650-564-5197	hong.gao@alza.com
Past-Chair: <b>Sally Peters</b>	650-812-4994	speters@parc.xerox.com

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2000-02: <b>Ean Warren</b>	650-329-4554	ewarren@scvacs.org
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2001-03: <b>Sally Peters</b>	650-812-4994	speters@parc.xerox.com
2002-04: <b>Bonnie Charpentier</b>	650-948-3931	charpentierbon@yahoo.com
2002-04: <b>Herb Silber</b>	408-924-4954	hbsilber@sjsuvm1.sjsu.edu

### Alternate Councilors

2000-02: <b>Roy Okuda</b>	408-924-2525	okuda@sjsu.edu
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### ChemEmployment Abstracts

Director: **Shirley B. Radding** 408-246-2564 sradding@att.net

## FUTURE MEETINGS

<b>Jun 29</b>	Annual Family Picnic and Awards Ceremony Stanford Chemistry Department
<b>Jul 6-15</b>	International Chemistry Olympiad Groningen, the Netherlands
<b>Aug 18-22</b>	ACS National Meeting Boston, MA
<b>Sep 26</b>	SVC Dinner Meeting <i>Dr. Hongjie Dao</i> Stanford University
<b>Sep 22-25</b>	Combinatorial Chemistry Leesburg, VA
<b>Oct 19</b>	Outstanding Western Regional High School Award San Jose State University

For the latest information, please visit  
SCV/ACS web site: [www.scvacs.org](http://www.scvacs.org)



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