Volume 15, Issue 4 **July/August 2007**

AWIS San Diego Chapter NEWSLETTER

Mission Statement: The Association for Women in Science, Inc. (AWIS) is a non-profit organization dedicated to the achievement of equity and full participation of women in all areas of science and technology.

WOMEN IN BIOSCIENCE CONFERENCE 2007 ORGANIZING COMMITTEE

Front row left to right: Lili Chen, Janet White, Debra O'Leary, Lynn Yieh, Aperna Mital, Huong Huynh, Karin Zeh, Kathryn Nguyen, Jenny Chaplin, Barbara Armstrong. **Middle row left to right:** Buran Haider, Valerie Delmar, Rosemay Remigio-Baker, Rachel Soloff, Shauna McGillivray, Anjali Kansagara, Aparna Aiyer, Mary Pacold. **Top row left to right**: Norma Velazquez, Erica Stone, Danielle Krebs, Cindy Atwell, Sandra Rickert, Paola Lanza, Jane Meyer, Peggy Wallace. **Not pictured:** Amber Dance, Betty Tam, Robin Rosenfeld, Fei Liu, Cindy Yang, Milka Kostic, Cynthia Yankovich, Varykina Thakray, Barbara Birch, Irene Pederson.

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Upcoming Events

Compiled by Janice Payne

July 16: **AWIS Focus Session**. Interviewing Skills. Gen-Probe HR reps discuss interviewing tips. Location: Gen-Probe. Time: 6pm

Aug 6: Strategy Session. Escape from your routine. Recharge and refocus. Members only event. Location: Salk Institute. Time: 6pm.

HIGHLIGHTS FROM THE WOMEN IN BIOSCIENCE CONFERENCE

Julia R. Brown Delivers WIB Keynote Address

By Janice Payne

Biotech has reached an inflection point and California is poised to take the lead. WIB keynote speaker Julia R. Brown believes there are lots of opportunities out there and her advice is to "find a role that fits with your passion."

Brown, who has over 30 years of experience in the pharmaceutical/biotech industry, described the first inflection point in biotech, which was the discovery of DNA by Watson and Crick in 1953. This was followed in 1973 by the founding of Genentech, the first biotech company. Brown described advances that have already been made in agricultural and industrial biotech with the development of genetically engineered crops and the emergence of biofuels. Biotech is working to change the future and improve the environment. "Global warming and climate change are now settled science," stated Brown.

Brown believes the biotech industry has now reached another inflection point with the advances in stem cell biology, the human genome project, and nanotechnology. She described the need for California to sustain and strengthen the commitment to biotech. Tech transfer and commercialization should be made a priority along with development of human capital.

The biotech industry has important work to do but must include collaboration between policy makers, regulators and researchers. Brown believes that if we "keep our eyes on the prize, we can do some good stuff."

AWIS-SD 2007 Scholarship Winners

Left to right: Buran Haidar (Scholarship Committee Chair), Cynthia Wood, Yavette Vaden, Khanichi N. Tapé, Nadia Cheng, Kayla Jane Tindall, Marisol Balistreri, Eva Gabriela Baylon, Elaine Chan, Christina Metzer, Sonia Alejandra Reveco, Karin Zeh (AWIS-SD President), Donna Dean (AWIS President).

Alternate Careers- Communication

By Sama Tamrakar

Evident from the packed roundtables, the alternate careers workshops were popular among the attendees at WIB 2007. After dedicating years to scientific research, most scientists or graduate students naturally feel nervous about venturing into a new career. The workshop on careers in communication brought into light a diverse range of choices. It also highlighted the fact that most graduate students and postdoctoral scholars have already acquired the transferable expertise needed in order to pursue alternative careers.

Brenda Clapper, Ph.D., a medical writer at Amylin Pharmaceuticals, successfully changed careers. She is responsible for handling various documents that aid in Amylin's clinical development program. Although not formally trained as a writer, she believes that writing her dissertation and journal publications gave her the necessary experience. Clapper learned about medical writing as a career at a graduate school workshop and started writing extracurricular pieces and exploring available positions. Clapper loves her job and says that medical writers are currently in high demand and can attain a six-figure salary after three to six years on the job. A flexible schedule and the possibility of being a remote writer make this career appealing for people who prefer a less rigid schedule of research typical of traditional scientist positions.

Jessica Yingling, Ph.D., account executive at Porter Novelli Life Sciences, manages public relations for biotechnology companies. After receiving her doctorate in biomedical science, she was not interested in an academic postdoc position and lacked experience in industry to enter the biotech field. She realized that she had a knack for explaining complex subjects in simple terms, just the kind of qualities useful in her current career. Yingling assists client companies in communicating to the public, media, investors, physicians, and other companies. She learned of the position through networking. "You get thrown into the job without any training," says Yingling, "but everyone there helps and you get through it very quickly." She enjoys the fact that she is still in touch with the science and also is in synch with industry.

Terri Somers, who has been in the media business for 22 years, provided insights into science journalism. She ventured into covering science after becoming burnt out by criminal and legal topics. Somers does not have a scientific degree but has been in the forefront of biotechnology reporting at the *San Diego Union-Tribune* for the past four years. "If you are seeking to be science journalists, write for ordinary people," advises Somers, "something that people relate to." She suggests starting out with op-ed pieces if you feel strongly about certain issues or see an article in other journals. She adds, "Find out who does the freelancing, call and do not be afraid of rejection. Knowing when there is more in the story is an instinct one will develop," assures Somers.

After 12 years in research at UCSD, Dawne Page, Ph.D., became interested in teaching. She started teaching at a community college and later acquired a full time faculty position at Point Loma Nazarene University. She teaches undergraduates and conducts research in T-cell development during the summers. While research may not be as cutting-edge and has limitations due to student turnover, she does publish and enjoys teaching the next generation of scientists. Laura Murphy, Ph.D., also transitioned into teaching and offered insightful advice. She was actively involved in teaching from her days in graduate school at UCSD, and was also an instructor for a biology lab at University of San Diego. As a postdoctoral fellow at Scripps, she taught lab and lecture courses at UCSD and Mira Costa College before becoming a full time faculty member at Miramar College. She suggests first teaching as an adjunct instructor at a community college. That will give you a feel for what teaching is like and will also establish a network with other instructors and colleges.

Shedding Light on Gender Discrimination

By Jennifer Sterling

I went to the Women in bioScience Conference with the intention of coming away with valuable information and ideas about possible careers in science. Unexpectedly, the highlight for me wasn't finding an interest in science journalism, which spurred the writing of this, my first article, but it was hearing the speakers on the panel of women from the National AWIS board. The discussion spanned various topics from being a mother in science, to being a woman in science who is just starting a career. It was an eye-opening discussion for me, especially as a member of a younger generation who has lived in the world that these women have helped create. National board member Fran Solomon, who has been a member of AWIS since it was founded in the 70s, said that she was once accused of getting a job simply based on affirmative action. Her employment history has since proved otherwise.

While these women were telling us about their various struggles dealing with discrimination, Solomon's story took the spotlight. She replaced the "babe of the month"-like office calendar with a "hunk of the month"-like calendar, in order to get a point across to her male coworkers. So I got to thinking, what kind of gender discrimination have I experienced? I thought long and hard about this topic and, after assuming I had burst a blood vessel due to extreme thought, I managed to think of a specific instance. Time and again, I was pushed aside, made fun of, and even belittled during those games of four squares in the fifth grade, which of course were dominated by the boys. Their goal was always get the

boys in, and get the girls out. These games usually resulted in the little square impressions of a red rubber ball on the legs of every girl who attempted to nudge her way to the top square. Another instance was when…….and that's where I drew a blank.

I have been lucky enough throughout my life to have been spared discrimination or prejudice based on my gender, except of course during games that involved four squares. Then there is the well known phrase, "what's out of sight is out of mind," which in this situation rang true for me. I've honestly never sat myself down to think about the history of women in science, and it's not something you can read from every history book, even those encompassing topics from the Ancient Egyptians to the Super Bowl's famous "wardrobe malfunction." What these three members of AWIS shared with the packed auditorium were specific moments of women's history that should be remembered by those present, and passed on as food for thought, especially to the younger generations who have not, for the most part, experienced it first hand.

Science and Politics: Can Your Voice Be Heard?

By Wendy Hancock

Cathryn Campbell is an intellectual property attorney hoping to encourage us to speak up regarding science issues that affect our country, state and city. She illustrated her point with the president's ban on stem cell research. Every practicing scientist on the Bioethics Council supported stem cell research and advised the president to do the same. The president's embarrassment was eased, when the Council was asked to revote and adjust its opinion to match his.

The likelihood of scientists having input at the executive level of government is small, but legislators care about constituents and being re-elected. Campbell asked the audience to find out where our legislators stand on science issues and pending science-related legislation. By communicating with legislators, we can educate them and inform them of our views.

Campbell pointed out the tremendous impact the media has in informing politicians and the public. The media includes talk show hosts and authors of popular fiction who have very large audiences. She mentioned how Michael Crichton's novel about nanotechnology has created fear of this emerging technology. Campbell hoped that scientists would write to public figures and inform them of statements not supported by science before they influence policy.

Even in our everyday lives we have opportunities to communicate science. Whether we answer a cashier's question about biotechnology or speak to a scout troop, as scientists we are helping the public understand issues that affect the future.

Cures, Right Under Our Noses (Wet Noses That Is)

By Wendy Hancock

William Fenical, Ph.D., is the director of the Center for Marine Biotechnology at Scripps Institution of Oceanography and a co-founder of Nereus Pharmaceuticals. Nereus has licensed technology from Scripps to develop novel antibiotics and cancer treatments derived from marine microbes. With the emergence of drug-resistant infections and a dwindling stream of natural products from terrestrial microbes and fungi, the ocean has become the focus of new research efforts. After all, the ocean covers 70 percent of the planet and many marine species have yet to be described.

These microbes can be found at depths of 4000 to 6000 meters, where the ocean floor appears barren but contains up to 10^9 microbes per cubic centimeter. To sample these depths, Fenical and his colleagues built a device that brought small cores of mud to the ocean surface. Experimenting first with krill paste and seaweed meal, they finally found a mixture of agar and seawater that supports the growth of 64 percent of the marine microbes they encounter.

One of the early finds was *Salinispora tropica*. It secretes a compound called salinosporamide A that inhibited the growth of tumor cell lines. Its structure was similar to that of a known proteosome inhibitor, but was more potent. With *S. tropica's* genome sequenced, 17 new metabolites with homology to known proteins have been found. Using this culture-bioassay-homology scheme, several previously unknown marine microbes have been discovered. Their novel proteins with anti-tumor or antibiotic properties are being developed at Nereus.

FEATURES/OPINIONS

Symposium on Pain Management in Women

By Karen S. Josephson

The 2nd annual conference convened in late April at the Catamaran Hotel in Mission Beach, under the joint auspices of the UCSD School of Medicine and the Diana Padelford Binkley Foundation. In this tropical environment, health professionals met to contemplate the challenges women face in managing pain, mainly inadequate or ineffective treatment, and how to alleviate the problems.

Nicholas Binkley, husband of the late Diana Padelford Binkley, is a driving force for the conference. He came to the decision to make these symposia a reality after the unexpected death of his wife following an adverse event from a high dose of steroids to treat low back pain. He wanted to open the discussion on the use of drugs that have not traditionally been tested on women. After struggling to understand his wife's death, he decided that more had to be done to educate both patients and health professionals on effective means of pain control.

Esther Sternberg, M.D., opened the conference with a keynote address, "Brain-Immune Connections in Health and Disease." She reported that illnesses, like scleroderma and rheumatoid arthritis, showed an abnormal hormonal stress response over time. On further inspection of the immune response to stress, a triad of factors (genetic inheritance, developmental input, and environmental exposure) played upon the host's response. In addition, the responses are mediated by the autonomic nervous system, the neuro-endocrine relays, and sex hormones. These complex interactions determine whether the immune response returns to a state of recovery or remains in a state of persistent stress. Study results show that a menu of treatment options,

complemented by cognitive interventions, showed the most benefit for the patient.

In chronic functional pain syndromes, Emeran A. Mayer, M.D., of UCLA noted that there is a higher prevalence in women of overlapping pain syndromes including IBS, Interstitial Cystitis, fibromyalgia, and migraine along with disorders of anxiety and depression. Physicians, at one time, blamed this situation on women's behavioral patterns and psychological profiles. Studies are now beginning to show the neurobiological mechanisms might define a greater vulnerability in women to pain disorders. In a separate talk, Karen Berkley, Ph.D., a professor of Psychology from Florida State University revealed that, "while measurements of sex differences in pain perception can be surprisingly small…the mechanisms of response can differ greatly." Presently, not enough is known to define specific treatment strategies.

Two speakers addressed complementary and alternative medicine (CAM). Margaret Chesney, Ph.D., from the National Institute of Health, talked about the government's funding of studies for the use of CAM. In an AARP/NCCAM study of 1,559 participants over the age of 50, a greater percentage of women over men used CAM to treat specific conditions and to prevent illness. Robert Bonakdar, M.D., spoke on the topic of evidence-based use of natural supplements for pain management. In 2005, $21.2 billion was spent on items such as vitamins, botanicals, minerals and supplements. Yet, very little has been done to inspect and standardize the products, let alone provide scientific substantiation for their usage.

This year the symposium also provided an expanded list of breakout workshops to explore in more depth a variety of CAM methods from Ayurvedic practices to mindfulness meditation for pain management.

Diana Binkley was an optimistic woman who embraced life and engaged in wellness practices of both Eastern and Western origin as means to achieve a more balanced life and state of well being. In her memory, Nicholas Binkley established the foundation to provide information and to promote scientific inquiry within the field of pain management that would reflect the practices of Eastern and Western Medicine.

Step Forward: Using Pedometers to Lower Risk of Cardiovascular Disease

By Siobhan Malany

Latinos march to music. Pedometers attached to their hips count their steps. These women meet once per week for 12 weeks as part of a research program called *Pasos Adelante* (step forward). The main goal of the program, directed by Simon Marshall, professor in the Department of Exercise and Nutritional Sciences at SDSU, in conjunction with the San Diego Prevention Research Center (SDPRC), is to determine how many steps they must take each day to reduce the risk of cardiovascular disease (CVD). (See more about the program below)

This week's meeting held at a local school begins with the enlightening march. Afterwards, the women sit in a circle and open their workbooks. They calculate and log their average number of steps taken during the week. A health provider leads the group to discuss problems they have encountered using the step counter, to establish goals for the next week and to set up support groups during each week.

The participants have been randomized into three pedometer groups. The first group is asked to walk 10,000 steps per day, the second group is asked to walk 3,000 steps in 30 minutes and the control group self-selects the number of steps. The Center for Disease Control (CDC) recommends 30 minutes of moderate intensity exercise each day. In pedometer terms this translates into 3,000 steps per 30 minutes for the average adult.

Continuing with the program, participants share ideas on how to incorporate pedometers into their daily routine. One woman has encouraged her family to walk weekly to church together. Others meet at soccer practices and walk the field. "Group cohesiveness is the most important part of the program," states Marshall. "If we want people to come back then they must be made to feel a part of the group." If this group joined a typical exercise program, statistics show at least 50 % would drop out. At every meeting, the group performs an exercise to strengthen bonds with each other. This week, the exercise is "Admiration." Each person shares who she or he admires and what qualities they find admirable. They also discuss how role models influence them and how they are models to others such as their families. At the close of the session, everyone relaxes to music. They close their eyes and share a thought of the day.

After groups have completed the 12-week program, the researchers measure waist-hip ratio and body mass index, two main correlative factors of CVD risk. Over the three-year study, the team will determine how step counters can be used to motivate the public to be more physically active, what is the best method of promoting moderate intensity physical activity when using a step counter and how many 'steps' are needed each day to reduce the risk of CVD.

For these women today, they are stepping forward to becoming physical activity role models for themselves and their families.

About the program: Pasos Adelante is aimed toward alleviating the serious health disparity facing the Latino community through a self-motivating exercise wellness program. More than 200 participants, predominantly women, have been recruited to take part in the study. Participants reside in low-income areas in South Bay San Diego, are free of CVD, have a low level of activity and an interest in stepping forward to a healthier lifestyle. Groups meet once a week for 12 weeks at community centers and schools. On-site childcare is provided. For more information on the program contact Ms.Pilar Santos, Program Director, (619) 864 3607 santosp06@yahoo.com

San Diego Science Writing Association (SANDSWA) Workshop

By Sharon Dana

As a recent casualty of a 76% 'force reduction,' I decided to use this unexpected career break to consider some non-laboratory options. I had long thought about careers in science communication. In the March/April issue of the AWIS-SD Newsletter, an upcoming Science Writing Workshop caught my

eye. This SANDSWA-sponsored event was held at the Beckman Center of the San Diego Wild Animal Park on May 12.

Many of the presenters work in the realm of corporate communications, public relations, non-profit organizations, and special interest groups. Many do not have formal training in science. Instead they hold degrees in the humanities, journalism, or law.

Suzanne Clancy, Ph.D., Senior Manager of Corporate Communications at Nanogen, has served as a scientific editor, grantwriter, and liaison for various organizations. While scientific liaison at the Salk Institute, she coached scientists into the spotlight, including onto television spots on shows such as Good Morning America. Her responsibilities in all these roles have gone well beyond writing, and include multimedia projects, technical presentations, and press briefings.

Cathy Yarbrough, who has 30 years of experience in communications at universities, the NIH, and the American Heart Association, left her position at the Salk Institute to pursue a career as a freelance consultant. She thought she would never leave her comfort zone of full-time employment and benefits but decided to be guided by the question, "Whom do I want to work for?" Her respect for Sydney Brenner led her to Philip Yeo, then chairman of A*Star Singapore (the Agency for Science, Technology, and Research) and its Biopolis campus. As Science Communications Consultant to A*STAR Singapore, she spends most of her time in the States, representing A*STAR at national scientific meetings and leading informal focus groups to interest young scientists in A*STAR.

Scott LaFee, science reporter for the *San Diego Union-Tribune (U-T)*, and Rob Monroe, editor and public affairs officer at the Scripps Institution of Oceanography (SIO), shared their fascination and respect for scientific discovery. Scott LaFee writes feature articles in Quest, the U-T's weekly science section, and has been a staff science writer for 15 years. He pointed out that changes in the industry have made it more challenging for new writers to obtain staff positions. Newspapers are tending to accept feature articles from freelance writers.

Rob Monroe left a career in newspaper reporting to accept the position at SIO seven years ago. He and a staff of three have had to develop some new skills recently in order to adapt the magazine, *Explorations* to online publication after several years as a print publication. He has also expanded the sphere of influence of SIO scientists through such opportunities as a *Vanity Fair* 'green issue' on-the-beach photo shoot, a feature article in the *Washington Post*, and a spot on NBC's Today Show.

Other speakers shared interviewing and writing approaches. Christina Johnson, following completion of an M.S. in Physical Oceanography at SIO, joined California Sea Grant as a science writer. She stressed the importance of targeting one's writing to the 'stakeholder.' Her audience includes sports fishermen, aquaculturists, and the commercial fishing industry. She writes magazine features and educational brochures, making the science accessible and relevant to their interests. She explains that the rules and regulations imposed by government agencies are protecting their sports, industries, and livelihood.

Ruth Marvin Webster of the *North County Times* and Rex Dalton, US west coast correspondent to *Nature*, presented interviewing strategies. Tips included, do not be intimidated, start by asking for just ten minutes, pace the interview, especially when it comes to the tough questions, and build trust. Finally, if you need to go back to your sources, just ask for a fact check. Resist sharing the article before publication.

Jon Cohen, correspondent for *Science Magazine*, was a pre-med undergraduate at UCSD when he began submitting articles to the *San Diego Reader*. In the mid-80s he began to follow the emerging AIDS story and conceived the idea for a book following one year in the quest for an AIDS vaccine. It soon became evident that one year would not do the story justice, and, lacking funding, he continued to follow the story and write features. He finally obtained a Sloan Foundation Grant in 1998 to complete his book "Shots in the Dark: The Wayward Search for an AIDS Vaccine," 14 years after plans for an AIDS vaccine began.

Richard Halsey is another self-made science writer and activist who founded the California Chaparral Institute and authored, "Fire, Chaparral and Survival in Southern California." He took a sabbatical from a 30-year career as a high school science teacher to research the ecology of the chaparral and dispel misconceptions about the cycles of chaparral renewal and wild fires.

Another innovator, Roger Bingham, has created and directs the Science Network that sponsors and records symposia entitled "The intersection of science and social policy," covering topics as controversial as "Beyond Belief: Science, Religion, Reason, and Survival." Since, science is largely funded by the public, he argues, scientists have an obligation to communicate directly to the public, unedited. These video recordings are freely accessible at www.tsn.org.

For someone who was wondering what it means to call oneself a 'science writer,' it seems the possibilities are nearly limitless. If you can't find your dream job, invent it. Be conscience of the power of your words.

"In the end we will conserve only what we love. We will love only what we know. We will know only what we learn" - Baba Dioum, Senegalese conservationist. (Quoted by Rick Halsey).

The French Strategy to Foster Biotech Development

By Carole Brendel

The structure and distinctive features of the French biotech industry were presented at the French-American Biotech Connection networking event, held at the Salk Institute on April 4, 2007. Two hundred participants attended the event, which was organized by French Bio Beach, the French Embassy - Economic Department in San Francisco, the Paris Region Economic Development Agency and the San Diego French-American Chamber of Commerce.

France is well known for its strong academic research and world-class pharmaceutical industry (Sanofi-Aventis is the world's third largest pharmaceutical company; its blockbuster drugs are intended for the prevention of thrombosis, cardiovascular disease, and treatment of cancer). It is less known that France had about 400 biotech companies in 2005. Of these, 228 companies had 195 therapeutic product candidates under development, 41 of which

were compounds in phase I trials, 39 in phase II and 7 in phase III. The size and rate of success of the biotech companies in France is comparable to the biotech industry in San Diego but there is still a lot to learn from San Diego's dynamism.

One of the keys to the success of the San Diego biotech industry is undeniably the close proximity of its universities, academic research centers and biotech/pharmaceutical companies. This high density creates a collegial atmosphere that favors interaction and collaboration among scientists. Companies benefit from a broad choice of highly skilled personnel trained in the local universities, and can easily set up partnerships with academic research groups. Following the San Diego example, the French government decided to foster a new scientific environment by creating world-class "clusters" in major French cities. The choice of topics developed in these clusters was based on long-established fields of expertise for each geographic location. The clusters combine research centers, enterprises (French or foreign, based in France) and training organizations, working in partnership (Fig. 1).

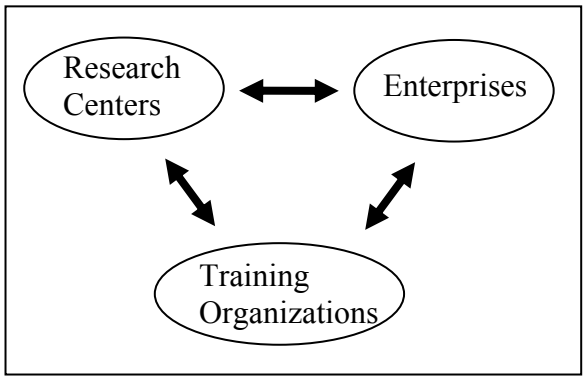

Fig 1. Structure of the clusters

Each cluster benefits from specific funding and tax incentives. The three main clusters to date are:

- High technology for health: cancer, CNS, infectious diseases, imaging, molecular and cellular therapies, drug development, located in Paris
- Infectious diseases, vaccines and diagnostic in Lyon
- From genomics to drug, non-invasive surgery, medical devices in Strasbourg (Fig. 2).

During their developmental phases, biotech companies usually do not have any revenue from product sales. To begin their activities and survive until products are marketable, they must attract capital from investors such as business angels and venture capital companies, and build up corporate partnerships. The strong concentration of biotech companies in San Diego offers a critical mass of business prospects attractive to these investors, which is another key to success. In addition to its "clustering" strategy, France has set up a financial incentive strategy to promote innovative start-ups. The French government has created a competitive grant program with an annual budget of €30 million. They have also created financial vehicles, such as interest free advances, refundable if the projects succeed, and insurance of share subscription warrants to raise equity funds. France is also enforcing the most attractive tax incentive system for innovation in Europe, offering tax credits as well as exemptions from employer payroll taxes. Finally, over €200 million in venture capital funds have been set aside by the French government, the European Investment Bank and private French companies to support early-stage biotech company development.

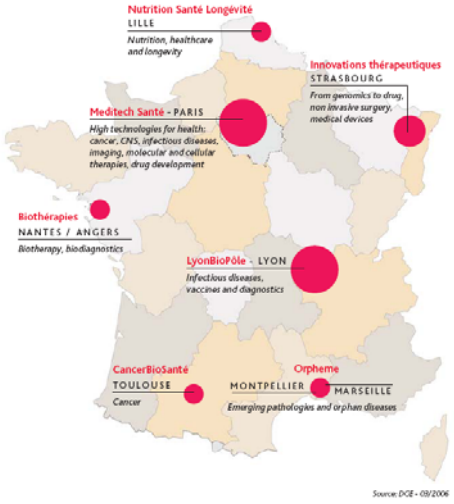

Fig 2. Geographic locations of the clusters

With these new political and financial incentives, France hopes to become a hot bed for biotechnology entrepreneurship and attract a substantial share of productive investments planned for the next five years, estimated to exceed $2 billion a year… Noblesse oblige!

Special thanks to Didier Janci and Marc Oman from the French Embassy in the United States - Economic Department for their kind assistance.

COMMITTEE NEWS AND EVENTS

AWIS Awards Young Scientists and Engineers: An Inspiration to All

By Paula C. Soto

I had not thought about what possible careers my two-year old daughter will be interested in when she grows up. That changed however, after I volunteered as a judge for the Greater San Diego Science and Engineering Fair AWIS Awards. After seeing so many brilliant and inspiring young girls and their inventive projects, I started to wonder, "What can I do to make sure my daughter, and other young girls like her, become interested and achieve success in science?"

AWIS Outreach committee co-chairs Diane Retallack and Jeannine Stuzka did an amazing job organizing the Science Fair and recruiting volunteer judges. In addition, they also organized the Awards Dinner, where recipients celebrated their accomplishment with families, friends, and teachers. I had a chance to ask some of the parents how they managed to raise such bright and engaging young girls. There was no simple answer. All the girls were extremely proud of their awards, and so were their parents, who were obviously very involved and encouraging of their daughters. The young girls were also excited to be able to talk to 'real women scientists.' They seemed eager to find out what kind of research AWIS members conducted and how they started their careers.

I was rewarded and inspired at being a part of both the judging process and the awards dinner. It is clear to me that encouraging young women to participate in science is crucial for fostering their interest to stay in science and to become future scientists. I hope someday to see the excitement and sense of accomplishment in my daughter's face that I saw in this year's recipients of the AWIS Awards.

Top Row: Katherine Maloney (AWIS Outreach Committee member), Diane Retallack (AWIS Outreach Committee co-chair), Marci Rosenberg, Emma Ransom, Jeannine Stuzka (AWIS Outreach Committee co-chair) Bottom Row: Sarah Silverstein, Shantal Reich, Laura Van Voorhis, Amanda Liew

Greater San Diego Science and Engineering Fair AWIS Award Winners - 2007

Senior Division
Amanda Liew
Project Title: Room to Improve?
School: La Jolla High, Grade: 10, Advised by: M. Teachworth

Sarah Silverstein
Project Title: Attitudes, Exercise & Stress: A Longitudinal Study of Dental Students – III
School: Henry High, Grade: 12, Advised by: J. Davis

Junior Division
Emma Ransom
Project Title: Effects of Commonly Used Medications on Cell Viability
School: Rhoades, Grade: 8, Advised by: R. Hunker

Shantal Reich
Project Title: Can Graphology Be Used as a Form of Bio-Feedback
School: Soille S.D.Hebrew Day, Grade: 8, Advised by: J. Reynolds

Marci Rosenberg
Project Title: The Effects of Compression on Granular Media
School: Carmel Valley, Grade: 8, Advised by: J. Brennan

Laura Van Voorhis
Project Title: Proof of Waterproof: Quantifying UVA Penetration of Water-Exposed Sunscreen
School: Rhoades, Grade: 8, Advised by: R. Hunker

AWIS Members Cogitate Career Management

By Valerie Uzzell

On June 4, about 40 AWIS members attended the Strategy Session on "Proactive Career Management," held at the Salk Institute. Many attendees were new members who had joined AWIS for this year's Women in bioScience conference. In this workshop, participants were asked to consider what they could do, tomorrow, next week or next year to expand their skills, enjoy their work more, and improve their career prospects. Strategy Session chair Fran Putkey shared a story about being contacted by a recruiter, who described a job opening requiring several skills that she did not currently have. Putkey realized that she should see this as a challenge and an opportunity. Seeking to learn these specialized skills would be an excellent way to progress her career. The main theme of the session was that participants should always be considering new ways to learn and grow within their current jobs.

At the beginning of the workshop, groups discussed the concept of 'proactive career management.' Why should you proactively manage your career? The answer is because nobody will do it for you. It is up to you to expand your skills, avoid complacency, take on new and interesting responsibilities and prepare yourself for the next job. Six key principles of proactive career management include:

- Challenge yourself
- Find mentors and create a network
- Seek training
- Memorialize your plans
- Exploit your strengths
- Step up!

Participants then discussed how to apply these principles to a single short-term career goal (to be completed within six months). After each participant defined a concrete goal and considered how best to achieve it, pairs of participants discussed goals and shared advice. Goals ranged from learning technical skills (*e.g.* learning bioinformatics or small molecule drug discovery skills) to career changes (*e.g.* finding an internship or writing up the last two papers for a Ph.D.).

Participants then discussed how to apply these principles to a longer-term goal, to be completed over the course of several years. Groups characterized goals into one of four categories: Retraining, New Career, Moving up the Ladder, or Work/ Life Balance. Groups then reorganized into clusters at tables according to a category and discussed how best to implement specific long-term goals. The 'New Career' category was by far the most popular.

By the end of the workshop, most had been encouraged to think hard about the direction they wanted their careers to go and how to make concrete progress in that direction. If you do not figure out where you want to go, it's very unlikely you will ever get there.

IMPORTANT INFORMATION ABOUT

San Diego Chapter
Website: http://www.AWISsd.org
E-mail: awissd@awissd.org
Mail: AWIS, San Diego Chapter
PO Box 178096
San Diego, CA 92177-8096

National Chapter
Telephone: (202) 326-8940
Website: http://awis.org
E-mail: awis@awis.org
Mail:
AWIS National
1200 New York Avenue, NW, Suite 650
Washington, DC 20005

About the AWIS Newsletter

The AWIS Newsletter is published six times per year and provides AWIS members and supporters with information on Chapter activities, career development, and issues related to women in science.

July/August Newsletter staff:

Siobhan Malany	Janice Payne	Sama Tamrakar
Paula C. Soto	Wendy Hancock	Sharon Dana
Jennifer Sterling	Jennifer Samore	Norma Velazquez

If you are an AWIS-SD member, we encourage you to contribute articles to the Newsletter. Please send articles as MS Word attachments to newsletter@awissd.org. News articles should not exceed 250 words, and event summaries should not exceed 500 words. Feature articles (special-interest stories and profiles) should not exceed 1000 words. The submission deadline for the next issue is August 3, 2007.

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Go to the member services page using the following link: https://www.sgmeet.com/awis/memberlogin.asp

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IMPORTANT CONTACTS

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Events	Cindy Atwell Jane Meyer	Events@awissd.org
Focus Sessions	Amy Anzelon Mills	
Newsletter	Janice Payne Siobhan Malany	Newsletter@awissd.org
Outreach	Milka Kostic Diane Retallack Jeannine Stutzka	Outreach@awissd.org
Public Relations	Kathryn Nguyen Paola Lanza	PublicRelations@awissd.org
Scholarship	Buran Haidar	Scholarship@awissd.org
Strategy Sessions	Frances Putkey	StrategySessions@awissd.org
Website	Barbara Armstrong	Website@awissd.org