



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.

NEWS

Letter from AWIS-SD President Karin Zeh



Dear Reader,
As the new president of AWIS-San Diego, I would like to wish all of you

A Happy, Healthy and Successful 2006.

And

May All Your New Year's Resolutions Come True the Way You Envision Them.

Not surprisingly, this has been very much on my mind lately. Being selected as president of AWIS-SD is both a great honor and a great responsibility.

Since joining AWIS in 2001, I have witnessed the growth of the organization in both membership and activities. I have worked with many women on various committees, and I have seen what we can accomplish. I am very excited to be president of such a dynamic organization, and I know that with more than 80 active volunteers, we will be able to achieve any "New Year's Resolution." While I cannot name each of our volunteers individually, I would like to take the opportunity to thank all of you for your work and commitment during 2005.

A very special "Thank You" from all of us goes to Janet White. During the past two years, Janet has led AWIS-SD with great commitment to and passion for the goals of the entire AWIS organization. Highlights of Janet's tenure as president of AWIS-SD include the launch of the new website, a very successful Gala in 2004, and a well attended, much praised, Women in bioScience Conference in 2005. To top it all off, in 2005, AWIS-SD was honored with the prestigious Pinnacle Award from Athena. While Janet has stepped down as president, I am very glad to say she will remain on the Board as the Past President.

The end of the year, for me, is also a time of reflection on past years, especially because it marks my birthday. When I think about my career, I notice that I have followed a common path with a few twists.

I received my Master of Science in microbiology from the University of Goettingen and my Ph.D. in molecular biology/pharmacology from the University of Heidelberg. After completing my postdoctoral work at the Burnham Institute, I moved to Salt Lake City to work at a start-up biotech company but returned to San Diego 18 months later. After working for various biotech companies in research, I decided it was time to redirect my career. I credit AWIS-SD for providing me with ideas for a

successful transition into a new field. I am now employed as a project manager in drug development. I believe that many of you share my experiences, and I plan to let this diverse background guide me during my presidency.

At the beginning of every year, AWIS-SD Board members and committee chairs meet to create a "New Year's Resolution" for AWIS-SD and to develop a strategic plan for how to reach these goals. We will do so again this January, and we will communicate the plan for 2006 in the next Newsletter.

Now I invite you to make AWIS-SD part of your "New Year's Resolution." What better way to start 2006 than by continuing to be or becoming active in an organization of your peers? Whether you plan to jump in with both feet by becoming an active volunteer or you plan to attend events as your time permits, there are many ways that you can benefit from being an AWIS-SD member.

I am looking forward to meeting you at one of our many events.

With Warmest Regards,

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Upcoming AWIS Events

January 2006: Tour a local brewery, and get a close look at the science of beer making. Details TBA

Saturday, February 4: **Regional Science Olympiad Competition at Rancho Bernardo High School.** Join other AWIS members in helping to organize or run events at this annual team science competition for middle and high school students. E-mail outreach_awissd@yahoo.com for details or sign up online.

February 6: **Strategy Session.** Meet the AWIS Board. Location: The Salk Institute. Time: 6-8 p.m. Members-only event.

Sunday, February 12: **Sally Ride Festival at UCSD.** AWIS members will be doing hands-on science activities with middle school girls at this science festival hosted by Sally Ride. E-mail outreach_awissd@yahoo.com for details or sign up online.

March: **Stem Cell Panel Discussion.** Education is the key to resolving this controversial issue. Come learn about the latest therapies and debates behind the use of stem cells. Details TBA.

November AWIS Chapter Event: Forensic Science Helps to Outsmart the Criminal Mind

By Joanne M. Mullen

Do you find yourself circling dates on your calendar so you don't miss an episode of Crime Scene Investigation (CSI)? Do the keen sense of observation and logical thought process of Gil Grissom and his forensic staff amaze you as they piece together physical evidence from both obvious and subtle sources, linking mechanism of injury with potential crime suspects and motive...all within 60 minutes?

If you're nodding your head, then the November 8 AWIS Event, Forensics: Deducing the Hidden Truth was a "must attend" for you, as well as the 50 or more like-minded AWIS-SD chapter members who made up the captive audience that evening.

A four-member panel of notable San Diego criminalists explained the compelling, real-life San Diego 2002 homicide case of seven-year-old Danielle van Dam. The panelists were Captain Eric Stalnaker of the San Diego Metro Arson Strike Team (MAST), Annette Peer from the San Diego Police Department (SDPD) Crime Lab, David Faulkner, head of the San Diego Forensic Entomology Services, and Dr. Norman "Skip" Sperber, a nationally-recognized forensic dentist from the SDPD Crime Lab.

Stalnaker is a 25-year San Diego firefighter and San Diego County Bomb Squad commander. He is a 20-year veteran of MAST. This team, under the direction of the County Sheriff's Department, investigates cases of suspicious fire or explosive devices and provides educational outreach to the community. Its additional mission is to promote awareness of the dangers associated with fireworks and accessibility of firearms by minors.

Peer, a 22-year SDPD DNA analyst, is recognized as one of the two criminalists who initiated the first forensic DNA laboratory in San Diego County. She was "on the scene" as the lead investigator in the van Dam murder investigation and was an expert witness in the subsequent trial and conviction of David Westerfield.

Faulkner heads the San Diego Natural History Museum's Entomology Department. He has been a research associate for 25 years and claims a life-long interest in entomology. He also testified as an expert witness in the van Dam case.

Sperber has had a distinguished forensic career that includes the development of the first state dental identification system in the U.S. (in California) which then led to the first National Identification System (NCIC) in cooperation with the Federal Bureau of Investigation (FBI). Sperber, an otologist and chief forensic dentist, is known nationally as an expert in wound recognition and has extensive experience as a forensic authority.

He has examined evidence in other sensational cases, such as the Ted Bundy and Jeffrey Dahmer trials, as well as at Ground Zero in connection with the September 11, 2001 terrorist attacks in New York.

These super-sleuths provided a step-by-step account of the chain of events and sources of DNA evidence that led to the conviction of van Dam's assailant, David Westerfield, one month after van Dam's abduction on February 2, 2002. Also, they pointed out how scientific inspection, flawless physical evidence collection, and a chain of custody must be strictly executed to avoid cross contamination of evidence.

"Scientific inspection, proper evidence documentation, and collection are the basis of good forensics," said Stalnaker. At a crime investigation scene, the lab technicians determine the type of evidence collected and needed for a specific type of case. Over and above the physical evidence, which can take the form of solid, liquid or gas, it is critical to provide photos, diagrams, sketches and notes that will be included as a valid part of the court case. Stalnaker pointed out that even crime victims can render useful evidence through x-rays, clothing, and autopsy results.

Faulkner described how insect infestations, specifically egg laying during the stages of body decomposition, can reveal evidence as well as determine the crime victim's mechanism of injury. Also, it can determine whether or not the body was moved from the actual crime scene. When asked to testify from a forensic entomology standpoint, decomposition timelines become very important in estimating the minimal or maximum time of death. "Air temperature is key in evaluating infestations and provides the window to determine the minimal time of death," explained Faulkner.

The Danielle van Dam case was one of the first child abduction cases that occurred in 2002. Details of this high-profile investigation were followed closely not only by San Diego residents but also nationally. "This is an example of how forensics, specifically DNA evidence, can assist in fact finding within a criminal case," said Peer.

Key elements included: the polygraph test of David Westerfield, the evaluation of his home and motor home, and the latent print examination. Fingerprint analyst Pat Westheim from the Arizona Department of Safety was able to utilize computer generated lines of a palm print which was color coded. Latent print examiner Jeff Graham re-hydrated the child's hands to obtain her prints for comparison of the bloody handprint found in Westerfield's motor home.

Peer went on describe the DNA test kits, which contain 13 genetic markers and amelogenin. The chances that the blood found on Westerfield's jacket was not that of Danielle van Dam were an overwhelming one in 670 quadrillion. Additional DNA analysis showed that carpet fibers found in Westerfield's motor home were similar to those from van Dam's bedroom. DNA analysis also allowed investigators to find matching hairs from the van Dam's dog, Layla. The exactness of the DNA evidence pointed to David Westerfield as the murderer.

"Dental records may be the only reliable source of DNA in cases of explosions or burns," said Sperber, chief forensic dentist and expert in wound recognition. "When there is no confession or eye-witness such as in the van Dam investigation, it becomes a circumstantial case, and the goal is to identify motive, utilizing evidence-based proof."

He pointed out that investigations of this type involve many disciplines. Sperber was brought into the case to provide the definitive identification of Danielle van Dam's badly decomposed body. In addition, he reviewed all aspects of the mechanism of injury and blood evidence.

During the question-and-answer session that followed the presentation, DNA Analyst Peer told the audience that she became a criminalist long before it was a "cool" profession. "CSI and other investigative-type programs have given notoriety to the profession," said Peer. "These programs are somewhat realistic in that many of the forensic techniques are accurate, but the timelines for processing a case and arresting the culprit are definitely made for television."

She went on to explain that in real life, the suspects are never interviewed or arrested by forensic lab specialists. Information is obtained from police investigators only.

In summary, this murder case was the first priority for over 20 people in the SDPD Crime Lab who labored over evidence for more than 4,200 hours within a 60-day period. "Of all the evidence collected", said Peer, "only 50% was used in court. Westerfield's attorney pushed for a speedy trial to prevent more evidence from being presented."

Sally Ride Festival: Girls Step Into the Science Arena

By Milka Kostic

In 1983, more than 20 years after NASA's first manned space flight, Dr. Sally Ride became the first American woman to fly in space when she joined the Challenger (STS-7) crew. Today, Ride is involved in Sally Ride Science, a company she founded in 2001 with the primary goals of encouraging middle school girls to pursue an education in science and technology and shifting the public perception of women with active careers in related fields. The well-established activities sponsored by Sally Ride Science are the Sally Ride Science Festivals, which are geared toward fifth- through eighth-grade girls.

On November 13, 2005, the University of California, Irvine hosted this year's Festival, and members of the AWIS Outreach Committee took part in its activities. These activities included a street fair and a keynote address by Sally Ride. The street fair, with many hands-on activities, booths and exhibits, provided an opportunity for girls to learn about topics ranging from space exploration to molecular biology. It also allowed them to meet and interact with scientists and engineers.

The AWIS Outreach Committee booth, with its hands-on "Swedish Fish" activities, received a lot of attention, and girls enjoyed learning about DNA replication, genes, and trait inheritance. The street fair was followed by a featured talk by Sally Ride. She talked about her personal and professional journey of becoming an astronaut and went on to describe her space missions. Her talk was accompanied by a number of breathtaking photographs of the Earth taken from space. The presentation was followed by a question-and-answer session. The number and variety of questions confirmed what Sally Ride Science firmly believes: girls possess natural curiosity and an eagerness to learn and explore. The University of California, San Diego will host a Sally Ride Festival on Sunday, February 12. More details about this event can

be found on www.sallyridefestivals.com and on the AWIS-SD website calendar.

Let Biotoasters Help You Improve Your Communication Skills

By Christina Niemeyer

Do you want to improve your speaking and leadership skills in 2006? Now is the time to join Biotoasters, a Toastmasters International Club. As a member of Toastmasters, you can improve your communication skills, lose your fear of public speaking, and learn skills that will help you be more successful. Participation in the Toastmasters Communication and Leadership program will help you speak effectively, conduct meetings, and manage a department or business. Besides improving your skills, Toastmasters provides a fun opportunity to network. Around the world, more than three million women and men of all ages and occupations have benefited from Toastmasters training. Biotoasters accepts everyone, but most members have a connection to the biotech/pharmaceutical industry.

Biotoasters meets every Monday at noon at Celgene Signal Research, located at 4550 Towne Centre Court in San Diego. We pride ourselves in having one-hour meetings, so you can get in and out quickly. You are more than welcome to come as a guest to any meeting. Learn more about Toastmasters at www.toastmasters.org or contact Biotoasters President Christina Niemeyer at cniemeyer@cox.net.

Christina Niemeyer is an AWIS-SD member and a consultant.

FEATURES / OPINIONS

Board Member Profile: Kathy Ogilvie

By Hima Joshi



"I was probably 33 years old before I got what my parents considered a real job," says Kathy Ogilvie, Associate Director of Diabetes Biology at Pfizer La Jolla. When she began her undergraduate studies at the Indiana University of Pennsylvania, she chose a major that gave the top half of the graduating class a guaranteed spot at Jefferson Medical School if they agreed to work for a short period of time in an area of the country that needed more doctors. As Ogilvie progressed through her studies, "the reality of what it was to be a doctor set in." It is a demanding profession that requires a lot of time, energy and, in private practice, the ability to run a business. "In some cases, it would be extremely lonely," she says.

Much to the disappointment and confusion of some of her family members, Ogilvie decided to "wiggle out of being a doctor" and pursue a career in science. She received her Ph.D. in biological sciences from the University of Delaware in 1994, and she did a post-doctoral fellowship in neuroendocrinology at the Salk Institute

with Dr. Catherine Rivier. She moved into the areas of pharmacology and diabetes biology when she began working for Ligand Pharmaceuticals. For some, this would have been an intimidating change in fields, but Ogilvie enjoyed the challenge. She spent weeks reading about diabetes biology, so she would have a proper background for her new job.

Three years ago, when Ogilvie began working at Pfizer La Jolla, there were only two associates in the diabetes biology group. Under Ogilvie's leadership, the group grew to include approximately 15 people. According to Ogilvie, Pfizer La Jolla decided to develop its diabetes research because of a "huge unmet medical need" and "what's becoming an epidemic in obesity."

"I feel very at home in what I do," says Ogilvie. She directly manages eight people, and she helps them "create their own careers." Each of her employees periodically writes a developmental plan with specific professional goals. Ogilvie creates opportunities for them to fulfill these goals.

"A lot of my work is done through other people," she says. Ogilvie is in charge of making sure that Pfizer La Jolla has everything they need for their *in vivo* diabetes research. She works with the facilities manager, negotiates with colleagues about lab space, procures funding, and obtains research materials. To do her job, one needs to "care about people [and] be technically adept, knowledgeable about the field, extremely well organized, and dedicated."

Ogilvie has been the treasurer for AWIS-San Diego since she joined the Executive Board in 2001. She reimburses AWIS-SD volunteers for money they have spent on various events and programs. "I feel an obligation to the volunteers," she says. "It's important to me to get the money back very quickly." In the last few years, she has spent a lot of time making sure AWIS-San Diego's tax returns have been up-to-date. She recently set up liability insurance for AWIS-SD Board members and Committee chairs.

"We really don't have big things that we want to do that we haven't done in the past," Ogilvie says. "The organization is doing a lot with the money it has." She believes the Chapter is in good financial standing. One of her goals is to "put a more professional face on our financials." She would like to use new software that streamlines financial management and allows her to print checks and create professional documents.

Ogilvie has been a member of AWIS since she was in graduate school over 11 years ago. She observed that at the University of Delaware, "gender disparity was really evident." She met "women who were ending up stuck [and] women who were not being considered for tenure." Ogilvie felt compelled to do something. She and her husband had what they called the "charity of the month." Each month, they brought a list of charities to the table and chose one to donate money to. One month, AWIS National made the top of the list, and she became a member. "I joined because I completely bought into the mission of the National organization," she says. She believes that Delaware did not have a local AWIS chapter at the time.

Soon after she came to San Diego, Ogilvie became a member of the San Diego Chapter of AWIS. She attended the Women in bioScience Conference in 1997, and a few years later, she joined the Events Committee largely because a lot of the events were being held in the conference room at Ligand, where she worked. In

2001, she made the transition from the Events Committee to her post as Board member and AWIS-SD treasurer.

Ogilvie believes that people join AWIS-SD because they "get some really frank advice...particularly since most of it comes from women." Our local chapter "fulfills the national mission in a different way," she says. "We help fulfill their mission by giving women the skills they need. They fulfill it by gathering data and changing policy."

AWIS-San Diego would like to thank Kathy Ogilvie for her hard work and dedication.

The Natural Body

By Alicia Bradbury

Would you try to run your car on organic materials, like orange juice? I think not. You understand that a car is built to run on gasoline or octane. You know that your car would quickly break down even if you mixed octane with another liquid that didn't belong, and no one wants to deal with a failing car.

Why then, would you try to run your body on chemicals? The body is natural and organic, but our society is intent on developing chemicals and cheaper and easier ways to feed ourselves. So much of what we put into our bodies is unnatural or processed beyond recognition, and yet the human body, much more efficient than a car, built to be a powerful, amazingly innovative and resilient "machine," manages to work tremendously well despite its own deterioration in some cases. We treat our bodies like crap, and yet, though disease is rampant, they continue to support us. Somehow we don't understand well enough, though it seems to me common sense, the damage we do to ourselves with every unnatural thing we eat or put on or in our bodies. Even in the cases in which the chemicals themselves are not necessarily harmful, they take the place of ingredients that would strengthen and truly nourish our bodies. We aren't giving our bodies what they need. Our bodies evolved on and in the natural world, and they are built to function on natural fuels.

I think the greatest ignorance of the general American public (and I say this, not from my high horse, rather just a soap box) is the idea that the world generally operates for the good of man. It's not true; generally money, and not good will, rules, and companies, the producers of all this crap, are working for themselves. Foods that bear a healthy label are often just riding a fad. I imagine companies are aware that what they're selling will only work to appease the mind, not the body. I give you the example of the no-carb, no-fat, no-sugar products. Health is about balance, first of all, and secondly, the replacement is generally a chemical that is known or believed to cause some disease in the laboratory. People imagine that if a label says "healthy," it is, but do they notice that "Smart Start" has very little fiber and high sugar or that even "Whole Wheat Wheat Thins" have no fiber?

As my mother says, "you have to be your own advocate." Watch out for yourself, don't assume, educate yourself, and figure out what makes sense. If you ask me, the unnatural food kick this country's on just doesn't make sense. And if we care about healthy lives, we need to know what to do about it.

The unfortunate part of this diatribe is that I realize a lot of chemicals have been created to make foods more convenient, and a lot of people need convenience. How convenient is it, however, to

have kidney failure or cancer because our bodies are either working too hard to filter out the chemicals or our immune systems are undernourished and unsupported? How convenient is it to have a less efficiently running body?

Taking care of your health really does take a lot of planning, time, and effort, but there are definitely ways to make it doable and easier than one might imagine. To start, opt for butter over margarine, but olive oil over butter. Opt for 100% juice. Use a splash of olive oil and vinegar instead of buying a salad dressing. And, if you really can't make the time to prepare fresh foods, shop at a place like Trader Joe's, where most things are made with natural ingredients and health in mind, and the prices are affordable. Buy "Near East" instead of "Rice a Roni"; instead of heaps of sodium and chemicals, you get just what you expect – rice, or wheat and spices. To these healthy convenient dishes it is relatively easy to add a chicken breast or frozen vegetables or beans. It's very simple, tasty, and easy but still healthy and natural. It will be worth the effort.

Try an unprocessed, natural lifestyle, and you'll notice that your digestive health is better, your energy is increased, you may even find that you can go without deodorant and not offend anyone. (I know from personal experience!)

We are all very intelligent and able people, so let's not cut our lives short or destroy these amazing vehicles we've been given to drive through life, not even for the sake of convenience. What is the point of saving minutes every day if it means 10 fewer, or "ill" spent, years at the end?

The opinions presented in this piece do not necessarily represent the opinions of AWIS-San Diego or the Newsletter Committee.

The Times They Are A' changing...

By Marsha Jean MacDonald

"Olly-olly Oxen free!" The cheerful, teasing voices of my two children, Gemma and Ryan, rang through the empty rooms of our spacious, brand new house with timorous echoes. Their scampering footsteps receded down halls and around corners as my husband George and I took a final triumphant tour of the brand new house that I had just purchased for our family of four, and Charlie, our dog. Actually, it was my hard-earned B.S. in biochemistry, plus my twenty-one year career in basic biomedical research that bought the house.

George, a stay-at-home father, agrees that it is at least a full-time job to keep up our new house, attend to family chores, and care for the children; it is essential that he is able to stay home and take care of the house and children while I work. With George at home to watch over the children and attend to the home front, there is ample opportunity for valued family time, relaxing evenings, and weekend recreation. Life is seldom rushed.

By age 44, with just my salary alone, I was able to provide amply for my family by purchasing this brand new, solidly middle-class, four-bedroom, two-bathroom house that boasts a family room *and* a living room, a spacious kitchen with a separate dining area, plus an enormous, fenced backyard on a quiet, charming cul-de-sac. In a semi-rural community, our new house is just 10 short miles from the exhilarating, crashing waves of the Pacific Ocean. Behind our new neighborhood stretch acres of citrus groves as far as the eye can see. Plus, we have excellent schools nearby; Gemma is starting

first grade in town, and I am able to send Ryan to his first year at a private day school.

Yes, it is my career alone that has provided financial stability for my family and an easily afforded, solid home. And yet why not? After all, I spent several years in college tackling daunting coursework, more intensive than that requisite for pre-med students. Since graduation, I have diligently worked my steady forty hours per week, only taking three to four weeks of vacation per year.

Now, if you are really from this planet, you will know that what I just described above is *not* my real life! Goodness, no! What I described above is, rather, the very real life that my *father* knew as the sole breadwinner for my mother, my brother, me, and, our cat. I presented it as a preface to demonstrating, starkly, how severely the standard of living has changed in this country within a single generation. Compare my father's standard of living with mine; it is an *alarming* contrast.

My father and I were similarly educated. He was just short of an M.S. degree in mathematics when he began work at a new job in civil service as a reliability engineer for missile weapon systems at a military installation. The fact is that my father and I had an equal level of combined education and work experience by age 44. We both spent the bulk of our careers on government-funded jobs that required degreed educational backgrounds in mathematics and the sciences. Yet, he alone is the one who was able, by age forty-four, to buy the spacious, brand new house I described, *and* support a family of four plus a pet – not me.

By contrast, I could barely afford to buy a 30-year-old house, half the size of my father's, in a blighted neighborhood, far inland from the coast, zoned and developed for light industry, with a freeway slated to run through it (indeed, right next-door to my house!) and a drug-dealing gang member down the street.

I think back on the long, hard years of study in mathematics and the sciences while constantly working throughout my college years. I think back on working sixty hours per week on average for half my career in biomedical research and the many weekends and late nights. I remember the years spent working with sharps, carcinogens, biohazards, caustic organic chemicals, mutagens, acids and bases, disease-tainted blood samples, and huge amounts of radioactivity. (My father's work by comparison risked at most a paper cut.) I think of the investment of arduous work for so many years, anticipating a comparable, equally secure standard of living as my father's - standard of living that never materialized.

Of course, in today's economy, I am glad I could afford a house at all. Yet, importantly, note that my buying a home of *any* sort was possible *not* owing to my long years of grueling study and sacrificial career work. It was, instead, due to the financial settlement of an amicable divorce after a lengthy marriage. I could not have purchased a house on my own *whatsoever*, even though I have no dependents. It is puzzling; I seldom splurge on anything. Unlike my father's easily afforded work wardrobe of suits and ties, I wear old jeans and T-shirts.

The times, they are a' changing. My father was able to retire at age 57; I believe I shall be financially compelled to work until the day I drop. In his era, long-term job security along with pensions and benefits were a given. I, on the other hand, seldom know when research grant funding will run out in academia, or when financial instability, down sizing, or mergers will put me out of a hard-earned job in the biotech industry. Periods of unemployment ever

threaten. Paying for health benefits when unemployed is impoverishing. Pensions are hit-or-miss at best.

Overall, at age 44 my father had at *least* four times greater wealth and quality of life than I probably will ever have. To achieve this, he had to work *half* as hard on the combined home and career fronts as I have had to work.

When commentators say on the radio, on T.V., and in print media that times have changed economically in this country, when talking heads discuss in academic terms about how jobs do not pay what they used to a generation ago, they are right. When they speak of the disappearing middle class – the backbone of this nation – they are right. And, ominously, when they speak of a nation without a middle class no longer being a democracy – they are right.

Think of me as a pointedly specific example of how America's standard of living for a once vital middle class is steadily declining as compared to a mere generation ago, how it is teetering on the very brink of extinction. Ask why that is the case. Ask why the country's standard of living is falling *precipitously* for so many, particularly so for the highly educated, professional, extremely hardworking middle class. Ask what the future ramifications for our country are should this trend continue. Perhaps it spells the eventual evaporation of true democracy.

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DEPARTMENTS

AWIS Book and Movie Club Review: "Oryx & Crake"

By Robin Rosenfeld

In "Oryx & Crake," Margaret Atwood describes a future when scientists and biotech conglomerates rule the world. The novel is a dark satire about what can happen when society ignores the ethics of progress. It suggests that disregarding the effect of scientific advancements and their impact on the environment will lead to society's downfall. The novel presents some hope, despite the dire situation on earth. Atwood warns and reminds us to consider the impact of our work as scientists on society as a whole. The story is well told, and most of those present at the Book and Movie Club discussion thought it was entertaining and worthwhile to read.

In the novel, Jimmy (a.k.a. Snowman) recounts his life while he struggles to survive in a harsh post-apocalyptic world. He tells about times of scientific progress unchecked by ethical debate. Snowman's friend Crake is a world-class scientist. Crake has created a new human-like species, the "Crakers," that have been cloned and genetically engineered to near-perfection. The Crakers are innocent and trusting. They do not know shame, prejudice, violence or jealousy.

The Book and Movie club participants enjoyed the ambiguity in the book. Atwood brings the reader right up to the possible end of society and leaves us to speculate about what will happen. We wondered what Atwood thought would happen if these events occurred. We discussed the tenacity of human beings. Will humans survive? Or will a cloned, human-like species create a new utopia? Can Crake create Steve Pinker's "Blank Slate" (June book club selection)? Or are there things that make us inherently human that

cannot be altered? Although the novel appears bleak at times, Atwood's description is captivating.

AWIS Book and Movie Club Review: "My Sister's Keeper"

By Jay Aiyar

"My Sister's Keeper" by Jodi Picoult is a story woven around the ethical dilemma of conceiving a child with the intention of having that child serve as a tissue and organ donor for a sibling. Since her birth, 13-year-old Anna has been donating her blood cells and more to her dying older sister Kate. Their mother is consumed with saving Kate's life from the pangs of leukemia and assumes that it is Anna's moral obligation to donate her cells and organs. But Anna yearns for identity and is emotionally distraught over being taken for granted. She decides to sue her parents and demand medical emancipation. Her father supports her in this appeal.

High drama ensues between the family members and a legal team that includes a judge, an attorney, and a moderator. The reader is held in gripping suspense as the plot thickens and the drama unfolds in court. The story culminates with a sudden twist of events, presumably intended as poetic justice, leaving the reader befuddled and less than satisfied.

The book sparked a lot of discussion over how far one can go with donating organs. No parent wishes to give up on his/her dying child and hopes for a miracle. Sarah, the mother in this story, however, draws very little sympathy from the reader due to her seemingly selfish pursuit of rescuing Kate at the expense of neglecting her other two children. The book encourages the reader to think about related controversial topics, such as stem cell research and assisted suicide.

AWIS Book and Movie Club rating: three out of five stars

Member Book Review: "Rapture: How Biotech Became the New Religion"

By Alicia Bradbury

Is biotechnology the new religion? Are scientists a more practical God? Brian Alexander's "Rapture: How Biotech Became the New Religion" follows the development of biotechnology from its conception to present day, chronicling the transfer of faith from the god in the heavens to the men in the labs.

The "how" in the title is answered within the context of a true story. The characters are scientists, businessmen, politicians, conservatives and radicals, the general public, and biotechnology itself. Everything from the first evidence of inheritable traits to the cloning of farm animals and mapping of the human genome is described as it relates to science, economics, politics, and popular opinion. The information presented, and thereby the book, is widely accessible. Those unversed in biology will not find themselves lost in unexplained jargon or excessive data, nor will scientists find themselves bored with elementary explanations. Yet Alexander manages to teach us about science, as well as industry and politics.

The questions of religion and versus science in this book will amaze, frustrate, encourage, and inspire reflection about the placement of faith and the definition of humanity. "Rapture" does

not seek to answer all questions but offers information for the formulation of individual understanding. It also displays the feelings of a great portion of society regarding the progress and the presence of biotechnology in increasingly more areas of our lives.

Karl Marx once defined religion as the opiate of the masses. If scientific advancement brings peace to the people and hope of salvation to calm their despair, in addition to actually providing drugs to energize the lethargic, soothe the anxious, cheer the depressed and heal the sick, it does appear to be a (relatively new) religion. Understanding humanity, by scientific means, and gaining the ability to manipulate creation and the essence of humanity, as we have come to understand it, calls into question the basis of the largest religions. Rapture can then mean either the enrapt state of people by science, or science "coming back" to save us in place of Christ, an expectation sustained by the diehard "biotechians," as Alexander has named them.

Alexander shows that the masses are looking for salvation, but they are no longer looking to save their souls. They are concerned with their bodies and carnal, versus spiritual, life. Some of the more radical believers and scientists are even saying that the soul has a physiological base. The transfer of faith becomes obvious as the book progresses, as scientists take over the role of creator, and science itself becomes an object of worship.

A common assumption among the general public is that scientists are dry, left-brained, and lacking the creativity and beauty of the artist. However, they can be both scientific and artistic. There is, arguably, art in science itself. Alexander knows the poetics of prose, sees the beauty in science and deftly maneuvers through complicated issues. Especially as biotechnology is becoming a force and an influence over private and public life and as it will be an exciting and fascinating journey, "Rapture" is a must read.

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.

January/February Newsletter Staff:

Alicia Bradbury	Hima Joshi	Ying Liu
Siobhan Malany	Joanne Mullen	Janice Payne
Sama Tamrakar		

If you are an AWIS-SD member, we encourage you to contribute articles to the Newsletter. Please send articles as MS Word attachments to Hima Joshi (hjoshi@sandiego.edu) or Janice Payne (janice_payne@hotmail.com). News articles should not exceed 250 words. Event summaries may be 500 to 1000 words. Feature articles (special-interest stories, opinion pieces and profiles) should not exceed 1000 words. The submission deadline for the next issue is February 3, 2006.

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