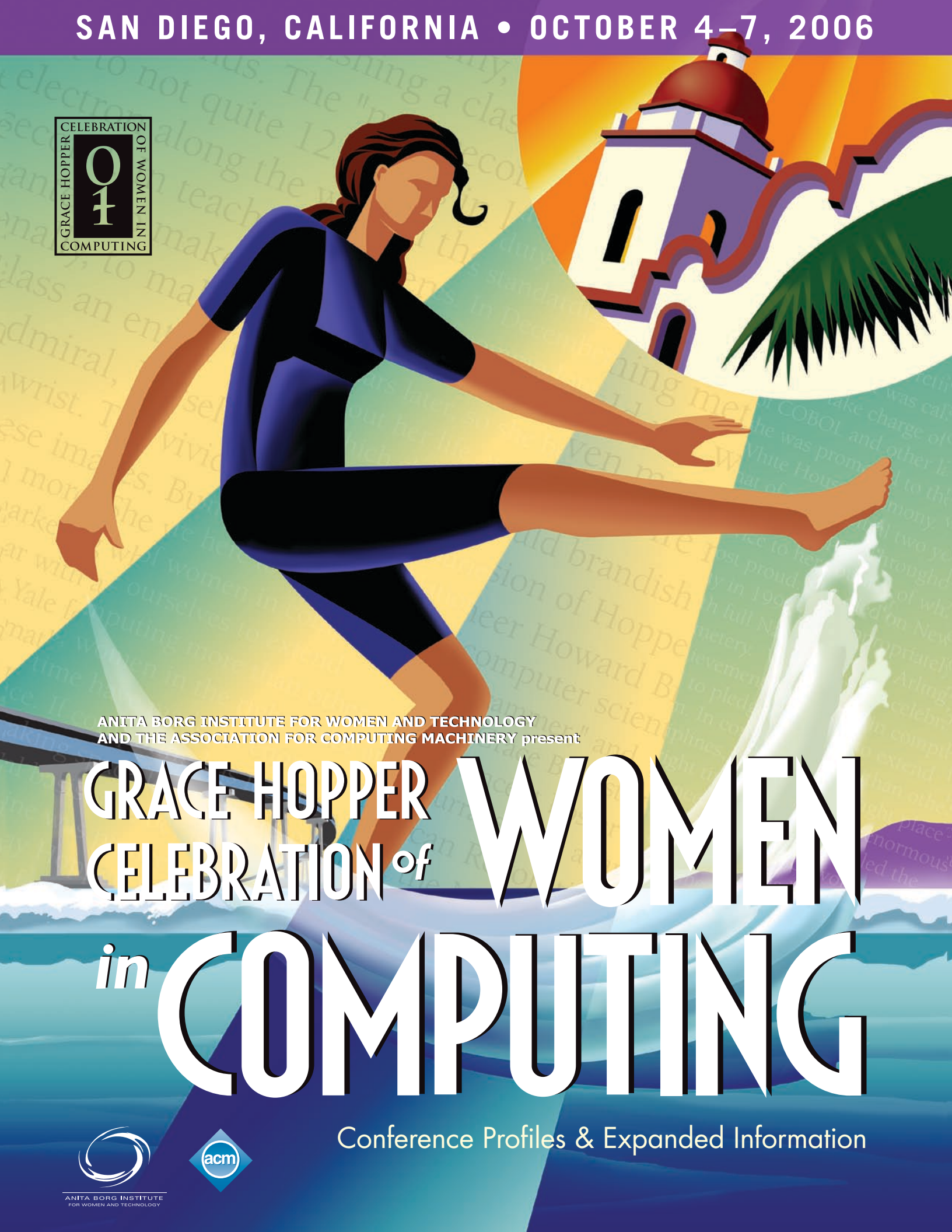
SAN DIEGO, CALIFORNIA • OCTOBER 4–7, 2006



ANITA BORG INSTITUTE FOR WOMEN AND TECHNOLOGY
AND THE ASSOCIATION FOR COMPUTING MACHINERY present

GRACE HOPPER CELEBRATION of WOMEN in COMPUTING

Conference Profiles & Expanded Information

ANITA BORG INSTITUTE
FOR WOMEN AND TECHNOLOGY

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Invited Technical Talks
Co-Chairs: Mary Lou Soffa, University of Virginia and Rebecca Norlander, Microsoft

New Investigators
Co-Chairs: Annie Anton, Georgia Institute of Technology and Joann Ordille, Avaya Labs

Birds of a Feather (BOFs)
Co-Chairs: Revi Sterling, University of Colorado at Boulder and Julie Mariga, Purdue University

Ph.D. Forum
Co-Chairs: Liz Jessup, University of Colorado at Boulder and Lori Pollock, University of Delaware. *Committee*: Carla Ellis, Duke University, Jeanne Ferrante, University of California, San Diego

Scholarships
Co-Chairs: Gloria Townsend, DePauw University and Kelly Van Busum, DePauw University. *Committee*: *Thank you to the forty one members of the Scholarship Committee: review team which made reviewing the record number of submissions possible.*

Technical Posters Co-Chairs
Co-Chairs: Rachel Pottinger, University of British Columbia and Cheryl Seals, Auburn

Saturday Session
Co-Chairs: Leah Jamieson, Purdue University and Illah Nourbakhsh, Carnegie Mellon University. *Committee*: Chris Bailey-Kellogg, Dartmouth College, Patrice Buzzanell, Purdue University, James Early, Purdue University, Jeanne Ferrante, University of California San Diego, Emily Hamner Carnegie Mellon

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Anita Borg Institute Social Impact Award
Chair: Ellen Lapham, Snowlands Network.
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WELCOME FROM THE ASSOCIATION OF COMPUTING MACHINERY (ACM) AND THE ANITA BORG INSTITUTE FOR WOMEN AND TECHNOLOGY

STU FELDMAN & TELLE WHITNEY

ACM continues to be delighted to partner with the Anita Borg Institute to present the Grace Hopper Celebration of Women in Computing. ACM has a long history of activities aimed at both understanding and improving the participation levels of women and other underrepresented groups in computing. In addition to the Hopper Celebration, these activities include the ACM Committee on the Status of Women in Computing (ACM-W), the Coalition to Diversify Computing, the Computer Science Teachers Association for high school and middle school teachers of computing (CSTA).

ACM is fully committed to helping resolve imbalances that exist in our field, as a matter both of equity and of necessity. A computing pipeline that is rich in diversity and balanced with respect to gender would be a wonderful foundation for the future of computing, and is essential to attracting and retaining the best people to our field in all areas

Stu Feldman
President, ACM

Together with our conference partner, ACM, we at the Anita Borg Institute for Women and Technology welcome you to the sixth Grace Hopper Celebration for Women in Computing. For newcomers, Welcome! You are in for an amazing time of learning, making new friends, motivation and rubbing elbows with some of the most incredible women, schools and corporations on the planet. And of course dancing too.

For those of you who are here for the second or third or even the sixth time, Welcome back! As you know the Grace Hopper Celebration is an opportunity for us, together as a community to celebrate and highlight the accomplishment and rewards of computing. It is critically important at this time in our history that we increase the visibility of women's impact on technology, and to increase the visibility of technology's positive impact on society. Your participation in this conference and our collective celebration of the work of all of the conference participants enables our mission and our passion for changing the world.

Telle Whitney
Co-Founder, Grace Hopper Celebration
President, Anita Borg Institute for Women and Technology

Welcome from The General Chair

JAN CUNY

About Jan Cuny

Jan Cuny has over 25 years of experience as a teacher and researcher in Computer Science, holding positions on the faculties of Purdue University, the University of Massachusetts, and now the University of Oregon. Her research centers on programming environments for computational scientists, and most recently on developing support for model coupling with applications to hydrology.

Jan is now on leave, heading the National Science Foundation's initiative to Broaden Participation in Computing (BPC). The goal of BPC is to have all of our diverse population fully participating in computing, but its initial focus is on those groups that have been historically under represented: women, African Americans, Hispanics, Native Americans/Indigenous People, and persons with disabilities.

Jan comes to the BPC program after working for many years on efforts to increase the participation of women in computing research. She was a member of the Computing Research Association's Committee on the Status of Women (CRA-W). She has been its co-chair, and a frequent mentor for its Distributed Mentoring Program. She has also led CRA-W's Academic Career Mentoring Workshops project, headed their funding efforts, coauthored their report on Best Practices in Retaining and Recruiting Women in CS&E Graduate Programs, and co-chaired their Grad Cohort and Cohort for Associated Professors (CAPP) projects. Jan was a member of the Leadership Team for the National Center for Women and Information Technology, of the Advisory Board for Anita Borg Institute for Woman and Technology, of the Executive Committee of the Coalition to Diversify Computing, and of the Computing Research Association's Board of Directors.

Jan is also a wife, mother, grandmother, court-appointed advocate for a number of children in the foster care system, and tutor for students in the D.C. school system.

Welcome to San Diego and the 2006 Grace Hopper Celebration of Women in Computing!

Our theme—Making Waves—is fitting for a conference named for Admiral Grace Hopper, a career Navy officer. A mathematician and a lifelong teacher, Grace Hopper was also one of the first software engineers. She invented the compiler and the COBOL programming language, foreshadowing such developments as subroutines and code optimization. Admiral Hopper was also feisty, once remarking that "A ship in port is safe, but that's not what ships are built for." She claimed a place for women at the very forefront of computing. Our theme conjures up her mix of talent, feistiness, and vision. It also implies the impact that is possible. "Making Waves" both celebrates the awesome accomplishments that women have and are making to the field of computing, and challenges us to continue to stir things up, to continue to impact the future.

We are delighted that you are here and we are certain that you will find the Celebration both exciting and energizing. From its modest beginnings as a one-time meeting in 1994, this event has grown to be the premier conference for technical women. It brings together students, researchers, and professionals from industry, and academia, and government. With an expected attendance here in San Diego of nearly 1,000 participants from all over the globe, it has almost doubled in size from that first conference. The program has also expanded from a single track with 20 presenters to two and half days of multiple tracks and formats with over 200 presenters!

This growth could not, of course, happen without the energy and dedication of an enormous number of people, many listed in this program. Special thanks go to Dr. Telle Whitney, one of the cofounders the Grace Hopper Celebration, who continues to be the very enthusiastic (and tireless) driving force behind it. She and the staff of the Anita Borg Institute do much of the heavy work. Special thanks also to Lucy Sanders, our 2006 Program Chair, who brought together a host of dedicated cochairs and subcommittee members to assemble this rich and exciting program.

For those of us who have attended before, the Grace Hopper Celebration provides a chance to see some of the latest technical results, renew valued acquaintances, and, most importantly, come to know and mentor our newest colleagues, the aspiring young women who will soon lead our technical world. For those who are attending for the first time it is an opportunity to see the breadth and depth of our field, and to get to know many of the inspiring women who make it happen. For all, it is a time to bask in the creativity and accomplishments of so many talented women.

Celebrate with us and enjoy the conference!

GHC Founder

TELLE WHITNEY, Ph.D.

President & CEO, Anita Borg Institute for Women and Technology

About Telle Whitney

Dr. Telle Whitney has served as President and CEO of ABI since 2003. Whitney has 20 years experience in semiconductor and telecommunications industries. She has held senior technical management positions with Malleable Technologies (now PMC-Sierra) and Actel Corporation, and is a co-founder of the Grace Hopper Celebration of Women in Computing Conference.

Dr. Whitney served as ACM Secretary/Treasurer in 2003-2004. She is a member of the National Science Foundation Committee for Equal Opportunity in Science and Engineering (CEOSE) until February 2006 and is a co-founder of the National Center for Women and Information Technology. She serves on the advisory boards of MentorNet and the Professional Business Women's Conference.

Dr. Whitney received her Ph.D. from Caltech, and her bachelor's degree at the University of Utah both in Computer Science. She is a member of ACM-W and CRA-W.

It is with real excitement that we at the Anita Borg Institute anticipate the sixth Grace Hopper Conference, and it is already clear that we are breaking all conference records… of attendance, of scholarship recipients, of corporate sponsorship, of academic underwriters, and of the increasing number of men who are attending the conference and participating on the conference program.

Anita and I co-founded the conference in 1994 held in Washington DC. I will never forget the impact of the first moment when I walked into the room and experienced the excitement as women met with women and shared their passion for Computing. The effect of 500 women gathering together was profound on all that attended. The conference size will double this year to more than 1000 participants; an amazing feat. In 1997, we held the conference in San Jose, the heart of Silicon Valley, and what would become the Anita Borg Institute's home. It was at that conference during her keynote that Anita first posited in public the idea of an "Institute for Women and Technology" .

In 2000, we visited Cape Cod, continuing to evolve the conference program. In 2002, for the first time we became truly international, as the conference was held in Vancouver, British Columbia, Canada. In 2004 we held the conference in the central part of the country in Chicago, and welcomed ACM as our conference partner. In Chicago, a record 899 people attended. But this year, 2006, the conference has grown even more.

It is with much excitement and anticipation that we announce that the Grace Hopper Celebration will officially become an annual event. The next conference will be held October 17-20, 2007 in Orlando, Florida. We are also pleased in Orlando to be co-located with the Richard Tapia Celebration of Diversity in Computing Conference, which will be held earlier that week. Mark you calendars now and we'll see you in Orlando!

For the next few days, experience what is possible if Computing was more inclusive and welcoming to women. I believe it is possible to change the face of Computing, after you have participated in the Grace Hopper Conference, you will too.

A Tribute to Grace Murray Hopper

Many of us remember seeing Admiral Grace Murray Hopper on television. We recall a charming, tiny, white-haired lady in a Navy uniform with a lot of braid, admonishing a class of young Naval officers to remember their nanoseconds. The "nanoseconds" she handed out were lengths of wire, cut to not quite 12 inches in length, equal to the distance traveled by an electron along the wire in the space of a nanosecond—one billionth of a second. In teaching efficient programming methods, Admiral Hopper wanted to make sure her students would not waste nanoseconds. Occasionally, to make the demonstration even more powerful, she would bring to class an entire "microsecond"—a coil of wire nearly 1,000 feet long that the admiral, herself tough and wiry, would brandish with a sweeping gesture.

Our vivid impression of Hopper as a great teacher derives from these images. But, as Howard Bromberg has written, Hopper was much more. She was a "mathematician, computer scientist, social scientist, corporate politician, marketing whiz, systems designer, and programmer," and, always, a "visionary."

After graduating from Vassar with a degree in mathematics in 1928, Grace Brewster Murray worked under algebraist Oystein Ore at Yale for her Ph.D.(1934). She married Vincent Foster Hopper, an educator, in 1930, and began teaching mathematics at Vassar in 1931.

The Murrays were a family with a long military tradition; Grace Hopper's ancestors had served in the American Revolutionary War. Thus it surprised no one when she resigned her Vassar post to join the Navy WAVES (Women Accepted for Voluntary Emergency Service) in 1943. Commissioned as a lieutenant, she reported in 1944 to the Bureau of Ordnance Computation Project at Harvard University. She was the third person to join the research team of Professor (and Naval Reserve lieutenant) Howard H. Aiken, who had requested her months earlier and greeted her with the words, "Where the hell have you been?" Then he pointed to the Mark I electromechanical computing machine: "There's the machine. Compute the coefficients of the arc tangent series by next Thursday."

Hopper plunged in and learned what the machine could do with a clever mathematician at the helm. By the end of World War II in 1945, she was working on the Mark II. Although her marriage was dissolved at this point, and though she had no children, she did not resume her maiden name. She was appointed to the Harvard faculty as a research fellow, and in 1949 she joined the newly formed Eckert-Mauchly Corporation, founded by the builders of ENIAC, one of the first electronic digital computers.

She never again held only one job at a time. She went back and forth among institutions in the military, private industry, business, and academe, and in all these places she was regarded as one of the most incisive strategic "futurists" in the world of computing. Hopper remained associated with Eckert-Mauchly and its successors (Remington-Rand, Sperry-Rand, and Univac) until her official "retirement" in 1971. Her best-known contribution to computing during this period was the invention, in 1953, of the compiler, the intermediate program that translates English language instructions into the language of the target computer. She did this, she said, because she was "lazy" and hoped that "the programmer may return to being a mathematician."

Her work on compilers and on making machines understand ordinary language instructions led ultimately to the development of the business language COBOL. Hopper's work also foreshadowed or embodied many developments that are still the very bones of digital computing: subroutines, formula translation, relative addressing, the linking loader, code optimization, and symbolic manipulation. At her death, she was an active consultant for Digital.

She was briefly retired from the Naval Reserve in 1966, but was called to active duty the next year to take charge of the Navy's standardization of COBOL and other languages. In December 1983, she was promoted to commodore in a White House ceremony. The rank was merged with that of rear admiral two years later, so she became Admiral Hopper. Throughout her life, it was her service to her country of which she was most proud. She died on New Year's Day in 1992 and, appropriately, was buried with full Naval honors at Arlington National Cemetery.

"Don't forget your nanoseconds!"

We are here to celebrate the achievements of women in computing and to pledge ourselves to extend them. In computing more than other disciplines, women in the right place at the right time have made an enormous difference. If computing has led the way in making space for women's participation on an equal basis, it is because the discipline was pioneered in large part by women like Grace Murray Hopper. What was true for Hopper is all the more true for women today because of her work.

THURSDAY, 8:45 A.M. – 9:45 A.M. • TOWN & COUNTRY / SAN DIEGO CONFERENCE ROOMS

KEYNOTE SPEAKER

Shirley M. Tilghman

President, Princeton University

Bridging the Gender Gap in Science and Technology

Scientists have always prided themselves on being part of a meritocracy, in which the rewards come to those with the most original ideas and the best executed experiments. Indeed, some have argued that scientists function in an intellectual free market, where those that prevail are the smartest, the hardest working, and the most willing to take calculated risks. If you believe that this is so, then you might conclude that no additional attention needs to be given to the chronic under-representation of women in science, engineering, and mathematics.

If you believe, however, that the playing field has been anything but even for women over the last half century, then it is time to consider how we can move to a true meritocracy in science, engineering, and mathematics. From my perspective, there are at least four compelling reasons to make the recruitment, retention, and promotion of female scientists an institutional and, indeed, societal priority.

First and foremost, the future security and prosperity of the United States is fundamentally dependent on the scientific and technological creativity that is nurtured within its research universities and then adapted and applied by industry and government. Colleges and universities are the research engines of our nation, a role that is based on a social contract between the federal government and academia that was forged just after World War II. New industries that were born in the United States and grew up in the second half of the 20th century – from biotechnology companies to microchip producers to telecommunications firms – all have their roots in the research of university faculty and the students and fellows who work with them. For this partnership between research universities and government to thrive, especially in the face of unprecedented global competition, we will have to attract to science and technology more than our fair share of the best and brightest young minds from around the world. To restrict our pool of talent, either intentionally or unintentionally, by discouraging women – or under-represented minorities for that matter – from pursuing careers in science and technology is to guarantee that the outcome, and thus the future vitality of the United States, will be significantly less than it could be.

The second argument for expanding the ranks of female scientists is that the scientific interests of women may not be completely coincident with those of their male colleagues. I am not suggesting that women conduct scientific inquiry differently from men – the scientific method is universal – but it has been my own experience that the problems that intrigue women about the natural world are not always exactly the same as those that attract men. By encouraging women to embrace a life in science and technology, we will likely increase the range of problems that are studied, and this will broaden and strengthen the entire research enterprise.

The third argument is unquestionably true. If women continue to be under-represented in disciplines such as physics, mathematics, engineering, and computer science, these fields will look increasingly anachronistic to both male and female students, and we will risk losing the most talented among them, who will, after all, have an infinite range of career options from which to choose. As law, medical, and business schools reach gender parity in their student bodies, science and technology will become increasingly unattractive vis-à-vis those fields.

Finally, it is simply unjust for a profession to exclude – whether by sins of commission or omission – a significant proportion of the population on the basis of gender. For every girl who dreams of becoming a scientist, there is a moral obligation on our part to do everything we can to even the playing field so her chances rest on her abilities and her determination, just as it does for her male counterparts. It is not sufficient for research universities to shrug their shoulders, invoke historical explanations, or bemoan the difficulty of changing entrenched cultures. As Pogo famously said, "I've seen the enemy, and he is us."

The under-representation of women in science, engineering, and mathematics has many causes, some of which are rooted in childhood, when boys and girls confront divergent parental, scholastic, and societal opportunities and expectations. Research universities cannot single-handedly transform the way science and technology are presented to prospective students in these formative years, but when we place a premium on creating an equitable and supportive environment for female students and scholars, when we empower women to fulfill their potential in science and technology, and when the human face of these fields is diversified, we send a very powerful message to parents, teachers, and policy makers. The message we communicate is this: women can and do excel in disciplines where men have long predominated, and nothing that suggests the contrary should be allowed to stand between them and their dreams.

Shirley M. Tilghman

About Shirley M. Tilghman

Shirley M. Tilghman was elected Princeton University's 19th president on May 5, 2001, and assumed office on June 15, 2001. An exceptional teacher and a world-renowned scholar and leader in the field of molecular biology, she served on the Princeton faculty for 15 years before being named president.

Tilghman, a native of Canada, received her Honors B.Sc. in chemistry from Queen's University in Kingston, Ontario, in 1968. After two years of secondary school teaching in Sierra Leone, West Africa, she obtained her Ph.D. in biochemistry from Temple University in Philadelphia.

During postdoctoral studies at the National Institutes of Health, she made a number of ground-breaking discoveries while participating in cloning the first mammalian gene, and then continued to make scientific breakthroughs as an independent investigator at the Institute for Cancer Research in Philadelphia.

Tilghman came to Princeton in 1986 as the Howard A. Prior Professor of the Life Sciences. Two years later, she also joined the Howard Hughes Medical Institute as an investigator. In 1998, she took on additional responsibilities as the founding director of Princeton's multi-disciplinary Lewis-Sigler Institute for Integrative Genomics.

A member of the National Research Council's committee that set the blueprint for the U.S. effort in the Human Genome Project, Tilghman also was one of the founding members of the National Advisory Council of the Human Genome Project Initiative for the National Institutes of Health.

She is renowned for her pioneering research in mammalian developmental genetics, for her national leadership on behalf of women in science and for promoting efforts to make the early careers of young scientists as meaningful and productive as possible.

From 1993 through 2000, Tilghman chaired Princeton's Council on Science and Technology, which encourages the teaching of science and technology to students outside the sciences, and in 1996 she received Princeton's President's Award for Distinguished Teaching. She initiated the Princeton Postdoctoral Teaching Fellowship, a program across all the science and engineering disciplines that brings postdoctoral students to Princeton each year to gain experience in both research and teaching.

In 2002, Tilghman was one of five winners of the L'Oréal-UNESCO international For Women in Science Award, and the following year received the Lifetime Achievement Award from the Society of Developmental Biology.

Tilghman is a member of the American Philosophical Society, the National Academy of Sciences, the Institute of Medicine and the Royal Society of London. She serves as a Trustee of The Jackson Laboratory, the Carnegie Endowment for International Peace and Google Inc.

FRIDAY, 8:45 A.M. – 9:45 A.M. • TOWN & COUNTRY / SAN DIEGO CONFERENCE ROOMS

KEYNOTE SPEAKER

Sally K. Ride

Former NASA Astronaut, President, Sally Ride Science

Engaging Girls in Math, Science and Technology

As we all know, the numbers of women receiving undergrad degrees in physical sciences and engineering are low. But the story is different in elementary school. In a 1996 survey, when 4th graders were asked "Do you like science". 68% of the boys said they like science; 66% of the girls said they like science.

This is very good news for the country. In 4th grade, fully 2/3rds of the kids still like science. The potential scientists and engineers are out there! And, furthermore, it's as many girls as boys.

But beginning in 5th or 6th grade we start to lose both boys and girls. That's one problem. But an additional problem, and the reason I started Sally Ride Science, is that we lose far more girls than boys. This trend starts in 5th or 6th grade and continues throughout the pipeline.

Could a concerted effort to get more girls into science and engineering will have an effect on the numbers? Should we reasonably expect to hang on to at least as many girls as boys? Absolutely.

Some historical perspective is helpful. In 1970 (not ancient history to many of us!), only 8% of med school students were female; 5% of law school students and 3.6% of business school students were female. And, my personal favorite, only 1 in 27 high school girls played sports.

So in 1970 some might have concluded, based on those numbers, that women weren't interested in becoming (or most didn't have the innate ability to become) doctors, lawyers or business people—and that girls didn't like sports.

But of course it's now clear that the numbers were just reflecting the expectations of the 1950s and '60s. Today, medical school and law school have equal numbers of women and men; last year 45% of MBA's went to women—and now about 45% of high school girls play sports.

Why hasn't the same happened in physical sciences and engineering? Because the stereotypes were much more engrained and the numbers started even lower. In 1970, less than 1% of engineers in this country were female. That means you could have rounded up 100 engineers and there might not have been a woman among them.

But the numbers in these areas have, overall, been steadily increasing (yes, with the exception of Computer Science…). Today 11% of engineers are female, and 20% of Bachelors degrees in engineering go to women. A huge increase. Why would we think that the percentage will suddenly level off at today's numbers instead of continuing to trend up—as percentages of women did in law, medicine, business and sports.

But now, back to middle school. Why are we still losing girls in numbers greater than boys? It's not a matter of aptitude (test scores tell us that); it's not innate interest (in 4th grade they said they were interested). The reasons are primarily societal. There are still lingering stereotypes that suggest scientists and especially engineers are male. By middle school, girls have started to internalize those messages – and it's important to many of them to do what they think their peers expect them to do. It may not be cool to be the smartest one in the math class. A 12 year old girl who says she wants to be an electrical engineer may still get a different reaction from friends and family than a 12 year old boy who says exactly the same thing.

At Sally Ride Science we're addressing this problem by organizing events and programs for girls that are entertaining & engaging; that present science as creative, collaborative, and relevant to the real world; and that (importantly) introduce girls to role models in a broad range of science and engineering careers. We want them to view scientists and engineers as normal people – with dogs, cats, parents, kids. Through our events and publications we try to bring role models to life and put female faces on these careers.

Our experience has shown that the girls are out there! In elementary school, they have the interest. We just need to capture that enthusiasm, and offer them support and opportunities that encourage them to pursue those interests.

Dr. Sally Ride
Sally Ride Science
www.SallyRideScience.com

About Sally K. Ride

Sally K. Ride, Ph.D., a former NASA Astronaut and the first American woman in space, is the President and CEO of Sally Ride Science, and a Professor of Physics at the University of California, San Diego (currently on leave). Sally Ride Science is a company dedicated to supporting girls' interests in math, science and technology. The company creates programs and publications for girls that engage them and encourage their interests.

Dr. Ride grew up in Los Angeles, California. She attended Stanford University where she earned her B.S. in Physics and B.A in English in 1973, and her M.S. and Ph.D. in Physics in 1975 and 1978, respectively. Shortly thereafter, she was selected for NASA's astronaut corps. Her first space flight was aboard the Space Shuttle Challenger in 1983; her second was also aboard Challenger, in 1984. During those flights, she deployed communications satellites, operated the robot arm, and conducted experiments in materials, pharmaceuticals, and Earth remote-sensing.

Training for her third spaceflight was interrupted by the Space Shuttle Challenger accident. Dr. Ride served as a member of the Presidential Commission investigating the accident, and chaired its subcommittee on Operations. She then served as NASA's first director of Strategic Planning, producing a report entitled "Leadership and America's Future in Space." She also created, and was the first Director of, NASA's Office of Exploration.

In 1989, Dr. Ride joined the faculty at UCSD as a Professor of Physics and Director of the University of California's California Space Institute. In 2001 she founded her own company, Sally Ride Science, to pursue her long-time passion: motivating girls and young women to pursue careers in science, math and technology.

Long an advocate for improved science education, Dr Ride has written five science books for children: To Space and Back; Voyager; The Third Planet; The Mystery of Mars and Exploring Our Solar System. She has also initiated and directed education projects designed to fuel middle school students' fascination with science.

Dr. Ride has been a member of the President's Committee of Advisors on Science and Technology and the National Research Council's Space Studies Board, and has served on the Boards of the Congressional Office of Technology Assessment, the Carnegie Institution of Washington, and the NCAA Foundation. She is a member of the Corporate Directors' Forum, and has served on the Boards of Apple, Veridian and the Mitre Corporation. Dr. Ride is a Fellow of the American Physical Society, a member of the Pacific Council on International Policy, and currently serves on the Boards of the Aerospace Corporation and the California Institute of Technology. She is the only person to have served on the Commissions investigating both the Space Shuttle Challenger and Columbia accidents.

Dr. Ride has received numerous honors and awards. She has been inducted into the National Women's Hall of Fame and the Astronaut Hall of Fame, and has received the Jefferson Award for Public Service, the von Braun Award, the Lindbergh Eagle, and the NCAA's Theodore Roosevelt Award. She has also twice been awarded the National Spaceflight Medal.

KEYNOTE SPEAKER

Helen Greiner

Co-founder & Chairman of the Board, iRobot

Bridging the Gender Gap in Science and Technology

When I think about what really matters to me—and what I try to bring to others—it's striving towards something you are passionate about and feeling empowered to take on the challenges involved.

My first recollection of this ideal goes back to 1977, when my dad brought home a TRS-80 from Radio Shack. My first impression of this alien being was probably not the same as others upon first encountering it. While others may have seen a machine that was functional, I saw a machine that was flexible. While others saw a tool for learning, I saw a tool for creating. I was empowered. What a revelation! I banged away on the computer for hours. I wore my fingers nearly to the bone. I named her "Tracy." I wondered what other possibilities there were for her and future adaptations of her.

Then, later that year, along came a little movie you might have heard of called Star Wars. Up there on the celluloid screen, for all the world to see, were actual robots—and closer to characters than machines. To me, it might have been Tracy up there. It was not such a stretch. Robots, specifically robots like R2D2, could actually change the way we view machines. Making the vision of R2D2 and other robots a reality was somehow not unrealistic at all.

I decided right then and there that I wanted to make real robots. I attended the Massachusetts Institute of Technology to learn to build robots. Although I secured a wealth of knowledge about engineering and technology at MIT, they didn't know how to build robots. Nobody did at that time. Once again, learning wouldn't cut it. I would need to create.

I am an entrepreneur in a field that I am passionate about. The sense of accomplishment and empowerment I have gained had its origin in the trenches—when I designed and built robot products for research labs and prototypes for space exploration. Next came the inescapable challenge of funding further projects. I began to land government funding for robot development, raised a total of $38 million from venture capitalists, and led the process to take iRobot public in November 2005.

At iRobot we have a passion for robots and "empowerment" is not just a catchphrase thrown around by our human resources group to woo desirable candidates. It's the concept that pervades every aspect of our business—empowering ourselves; empowering each other; empowering our customers; empowering our partners; empowering the world to recognize the possibilities and to dream with us.

The original Roomba was conceived of and created by just a handful of passionate iRobot employees. The concept was born out of a belief that people should not need to waste their valuable time pushing a vacuum around their homes. To that point, nobody had ever produced a mass-market, practical, extremely affordable solution to eliminate this chore forever. But iRobot, its people and its culture are about empowerment. To date, we have sold over 2 million iRobot® Roomba® Floor Vacuuming Robot units.

One time another group of passionate iRobot developers was contracted by the military to perform a study about the possibility of robots being used in urban operations. The iRobot engineers surprised and delighted our customer by delivering a prototype of the robot instead! This prototype robot convinced the sponsor to fund the development of portable military robots, which spawned what we know today as the PackBot® product line—robots that searched for terrorists in the mountainous regions of Afghanistan and that are disarming roadside bombs in Iraq. In short, PackBots are credited by the military with performing tens of thousands of missions and saving the lives of scores of soldiers.

Now iRobot is a world class organization with products that have more than proven themselves in the marketplace. This success has energized me to dream bigger. This success has energized our employees to dream bigger. We know that we can compete against major defense companies and Fortune 500 companies. We've proven it. More importantly, we have suc-

ceeded in designing solutions to problems that face our customers and bringing these robots to the market. Going forward, wherever robots can make a significant difference in peoples' lives, I want iRobot will be innovating at the forefront of the revolution.

I still feel a sense of adventure every day, just like the first time I saw Tracy come out of the box. I walk the halls of iRobot and I see the same curious reactions to things. I see employees passionate about what they can make a robot do—to bring it further away from a "machine" and closer to something else—whatever they envision that something else to be.

That's why I've made it another mission to do more than just teach others about robots. Teaching results in learning. I want others to dream their own dreams—not just learn ours. We've begun to accomplish this by starting an educational outreach program to encourage young, sharp minds to imagine the possibilities for robots. Whether it's R2D2 from Star Wars, Rosie from The Jetsons, or something only you can conjure up, what is your imagination telling you?

Robots are a great platform for this kind of thinking. Last year, we opened up the Roomba interface. Now there are several third-party products on the market which allow you to program your Roomba. There are two books coming out in this Fall that describe how to "hack" a Roomba. Now just about anyone can make the Roomba into the robot they have always dreamed of. So far we've seen everything from a security robot, to a webcam on wheels, to physical instantiations of video games like Frogger. The Internet makes it possible for all of these ideas and implementations to be easily shared, resulting in more ambitious projects that continue to build on existing ideas. We are on our way.

Robots are the next technology frontier—a frontier where your imagination is truly the only limit. A small group of passionate and empowered people can definitely change the world—no matter whom or where they are.

Helen Greiner

About Helen Greiner

Under Helen Greiner's leadership, iRobot Corp. is delivering robots into the industrial, consumer and military markets. Recently, she was named one of the Ernst and Young New England Entrepreneurs of the Year for 2003 (with iRobot co-founder Colin Angle). Selected from entrants across New England, she was cited for her experience, expertise and innovation. She has also been honored as a Technology Review Magazine "Innovator for the Next Century," invited to the World Economic Forums as a Global Leader of Tomorrow, and has been awarded the prestigious DEMO God Award at the DEMO Conference. Her 15 years of experience in robotic technology includes work at NASA's Jet Propulsion Laboratory and MIT's Artificial Intelligence Laboratory. She holds a bachelor's degree in mechanical engineering and a master's degree in computer science, both from MIT.

AWARDS BANQUET • THURSDAY, 7:00 P.M. – 9:00 P.M. • TOWN & COUNTRY / SAN DIEGO CONFERENCE ROOMS
SESSION 2 • FRIDAY, 11:10 A.M. – 12:10 P.M. • ROYAL PALM 1, 2 & 3 CONFERENCE ROOMS

Underwritten by Microsoft

Anita Borg Social Impact Award Winner Carol Muller

Founder and CEO of MentorNet, The E-Mentoring Network for Diversity in Engineering and Science

I am truly honored to be selected as the second recipient of the Anita Borg Social Impact Award. Anita and I met in early 1996—brought together through the independent introductions of at least three people who knew each of us and recognized our common cause. I was in the process of moving to California, and during the next few years, we regularly got together at coffee shops and lunch spots in Palo Alto to discuss our respective progress in developing nonprofit start-ups focused on women in technology. Anita was a friend and colleague… and a mentor.

It was mentoring I was seeking to amplify when I first met Anita in 1996. I had spent the previous nine years in administration at Dartmouth's Thayer School of Engineering, and in the process, learned more about, joined with, and began a variety of initiatives to address the appallingly low participation of women in engineering and science. From my own perspective as a feminist, not having women well represented in some of the fastest-growing and most financially rewarding sectors of the economy was a recipe for ensuring male hegemony.

As an educator, I understood how women are socialized into other fields, and I observed how even those intrepid, feisty souls willing to buck the stereotypes and go into engineering were discouraged by overt and subtle factors of their environment. It was also apparent how much a few words of encouragement, information, and advice could help counteract those influences, and we experimented not only with ways faculty, staff, and peers could help provide that advice, but also ways in which we could tap the enthusiasm, wisdom, and perspective of those working in industry. With the internet evolution in high gear, that meant "e-mentoring"… and eventually, a one-campus pilot project experimenting with using email to connect students with professionals working in industry morphed into MentorNet, founded in 1997.

MentorNet, initially a national and now a global network, deliberately sought to develop technology to support mentoring relationships on a very large scale. The term mentor was first coined nearly 3,000 years ago, but the practice is age-old. Mentoring is a natural learning process, one of the ways in which we transfer knowledge and know-how from one generation to another.

And mentoring has frequently been cited as the single strategy which helps retention of those underrepresented in science and engineering fields, , As such, it offers significant promise for changing the face of these fields from their historical exclusive domain of "pale males." Programs designed to provide mentoring have frequently been initiated on college campuses and elsewhere, but it can be both difficult and labor-intensive to construct deliberate interventions which capture the benefits of mentoring. Both experience and research show that mentoring programs are only minimally successful unless they engage the participants in proactive communications on an ongoing basis, including provision of interactive resources for problem-solving for those involved in the mentoring relationships. In conceiving of MentorNet, it seemed to me that we could solve a few problems with technology—1) with the Internet, we could build a broad, multi-institutional mentoring network which could connect individuals regardless of their location, and 2) we could build an underlying technical infrastructure to support the mentoring relationships which could significantly reduce the costs of operating mentoring programs. As it turned out, I hadn't quite consciously realized a third great benefit—those marginalized and isolated in their studies and pursuit of careers in science and engineering fields hunger for external mentors—those in whom all manner of questions, concerns, dreams, and ideas can be confided without penalty of judgment based on conflicting roles or expectations.

The work of MentorNet has been very much a team effort—technology development, program development, and development of needed resources—partnering organizations, human resources—staff, consultants, mentor volunteers, board members, and a variety of other experts and advocates, equipment, and financial resources. Having a great idea is easy—the hard part is implementation. If I am recognized as a catalyst, it's just as important to recognize the thousands of people who have contributed to and benefited from the development of this network.

Between February 1998 and August 2006, MentorNet matched more than 16,000 pairs of protégés and mentors in the One-on-One program—these protégés represent undergraduate and graduate students (including a number in two-year colleges), postdocs, and early career faculty. And the online MentorNet community currently engages more than 16,000 students and professionals—taking advantage of the One-on-One program, engaged in one or more of 21 different topic-based online discussion groups, reading the newsletter, posting to or searching the online student resume database, exploring our web-based resources or links to related high quality web content. Beyond participation, though, we have also looked as carefully as resources allow, at the outcomes—what is the impact of MentorNet's work? With all those volunteers and funding organizations, we have a large group of stakeholders, as well as the general public we're serving as a public benefit corporation.

At its outset, MentorNet was the E-Mentoring Network for Women in Engineering and Science—leveraging technology for positive impact on the lives of women and society, in order to encourage women who can then have a significant impact on the design and use of technology. Last year, MentorNet expanded its mission to encompass all those underrepresented in engineering and related sciences as the E-Mentoring Network for Diversity in Engineering and Science. Having built both programs and technology designed for large scale, we truly appreciate the opportunity of the Anita Borg Social Impact Award to help us in our third need to scale—that of building awareness among all those who might benefit from, and contribute to, building the community—online and in person—of excellence for technology. We can only have excellence if we are engaging all of the interested minds, talents, experiences, and creative energies of our populations across the world. Thanks to the Anita Borg Institute for Women and Technology for its help in spreading the word about MentorNet's community and resources.

Carol Muller

About Carol Muller

Carol Muller is the Founder and CEO of MentorNet, The E-Mentoring Network for Diversity in Engineering and Science. MentorNet (www.MentorNet.net) is a nonprofit organization headquartered in San Jose, CA. Founded in 1997, its mission is to further the progress of women and others underrepresented in scientific and technical fields through the use of a dynamic, technology-supported mentoring program; and to advance individuals and society, and enhance engineering and related sciences, by promoting a diversified, expanded and talented global workforce. In addition to serving as MentorNet's President and CEO, she is a consulting Associate Professor of Mechanical Engineering at Stanford University.

Prior to founding MentorNet in 1997, Dr. Muller spent 20 years in higher education administration, working at both Dartmouth College and Stanford University. Long-standing interests in gender equity in education and employment, coupled with professional work in engineering and science education beginning in 1987, prompted her to develop a number of new initiatives to tap the full range of human resources in scientific and technical pursuits. In 1990, she co-founded Dartmouth's campus-wide Women in Science Project. Both this project, developed when she served as associate dean for Thayer School of Engineering, and MentorNet have been recognized with the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

She earned a bachelor's degree in philosophy and English from Dartmouth College (1977), and masters (1981) and doctoral (1985) degrees in education administration and policy analysis from Stanford University; the focus of her Ph.D. dissertation research was career and family patterns of men and women doctoral recipients.

Carol and Al Henning married in 1977; Al's current work in MEMS focuses on micro-valves and micro-sensors. They currently live in Palo Alto, California; their two children are both in college at Dartmouth, daughter Kaethe graduating in 2006 and son Scott in 2009. Hiking, biking, kayaking, skiing, & winetasting outings break up their sometimes workaholic schedules.

Contact Dr. Muller by email at cbmuller@mentornet.net

Underwritten by Intel

Anita Borg Technical Leadership Award Winner

Wendy Hall

Wendy Hall, Professor of Computer Science, University of Southampton, UK and Head of the School of Electronics and Computer Science (ECS).

This was an award I didn't expect to win. When Jennifer Chase left a message for me to call her, I assumed it was a follow-up to the seminar I gave at Microsoft earlier in the year. I was lost for words when she told me that I had won the award—and being lost for words is very unusual for me. I am truly thrilled to be the recipient of the Anita Borg award for Technical Leadership this year. It is a tremendous honour and one I shall always be proud of. It is a particular honour because it is an award from a US-based organisation which means that my work in the UK has been recognised internationally.

I was not always passionate about computing. I started my academic career as a mathematician and hated computing while I was doing my first degree. It was the 1970s and computing was all about using punched cards to write FORTRAN programmes. I gave it up as soon as I found out the course was non-examinable! However, my career took a new turn in the 1980s when I was a lecturer at a college of higher education training the next generation of mathematics teachers. The first personal computers were just hitting the market, and the college had bought a Commodore PET. Because I was a mathematician they asked me to set-up a new computing course. I took the Commodore PET home for the summer vacation and taught myself BASIC. Over the next year, I became fascinated by how these new machines could be used in education. I did a part-time masters degree in computer science and took a new job back at the University of Southampton but this time in the Department of Computer Science, and the rest as they say is history.

Within a year or so of my move back to Southampton two things had happened. Firstly, I became very aware of the lack of women interested in computing because we had so few female undergraduate students on our computer science degree. Secondly, I started to experiment with the development of multimedia information systems. I quickly moved on to be interest in hypermedia systems and spent a wonderful six months sabbatical at the University of Michigan in Ann Arbor developing new ideas in this area. On my return to Southampton, I established myself as one of the few multimedia experts in the UK and began work on the Microcosm hypermedia system that was to lead to so many exciting career opportunities for myself and my team. At the same time I was working with local schools to try to encourage more girls to study computing, and networking with women in computing at other universities to share ideas about how best to do this on a national scale.

In 1994, I was promoted to full professor—the first female professor of engineering at the University of Southampton—and I realised that the time I was spending on "women in computing" activities was putting me at a competitive disadvantage with my male colleagues. I decided to focus on my research and the launch of the new company that we had set-up to exploit the results of my group's work. In 1996 I was awarded a 5-year EPSRC Senior Research Fellowship. These are like gold-dust in the UK as only three are awarded each year across all the engineering and physical science disciplines. During my fellowship, I built up my team at Southampton and became established as one of the top computer scientists in the UK. Honours and awards followed. In 2002 I took up the position of Head of School at Southampton and was elected to become President of the British Computer Society in 2003-04. I had made it! So now it was time to give back.

The situation regarding women in computing in the UK was no better in the first decade of the 21st century than it had been in the 1980s when I started. Despite numerous initiatives, the number of women studying computer science at university, including Southampton, was still pitifully small, and the latest research indicated that the percentage of women working

in IT was falling rather than increasing. It was clear to me that the problem is deeply cultural and that a myriad of small initiatives is not the answer. There is no quick fix. Being a good role model and mentor is not enough. We need big initiatives that are sustainable over a long period of time. We need to excite young people today, particularly girls, by inspiring with visions of the wonderful careers they could have in the computing and IT industries when they graduate from university in 10 or 12 years from now. Our industry will be very different then—radically different from how it is today. We need to engineer a culture change in our industry to ensure that as it evolves it attracts a much broader range of people to work in it, including as many women as men. When you consider the increasingly amazing applications of IT in areas that traditionally attract women, such as medicine, education and the entertainment industry, and the role that the life sciences such as biology are beginning to play in the way we build complex IT systems, this should not be difficult to do. But it will take a sustained effort by everyone concerned.

While I was President of the BCS I was instrumental in establishing the BCS Women's Forum, which I hope will be a significant player in these developments. My senior role in the Royal Academy of Engineering gives me another strong base from which to seek influence at the highest levels. I have just been elected as Vice President of the ACM, which is an exciting new venture for me in an organisation that is based outside the UK. My term of office as Head of School is coming to an end and I am looking forward to starting several new projects including the establishment of a new Web Science research initiative and the launch of another new company as well as continuing in my national advisory role. I am still very motivated to explore new ideas and to translate them into practical solutions for the commercial world. Our industry is one of the most exciting it is possible to work in—if I can make a difference by encouraging more women to realise this then I will feel I have achieved something.

Wendy Hall

About Wendy Hall

Wendy Hall is a Professor of Computer Science at the University of Southampton, UK and is currently Head of the School of Electronics and Computer Science (ECS). She was the founding Head of the Intelligence, Agents, Multimedia (IAM) Research Group in ECS, which is now established as one of the leading research groups in computer science and is widely recognised as having made huge advances in intelligent information systems

She has published over 350 papers in areas such as hypermedia, multimedia, digital libraries, and distributed information systems. Her personal research achievements range from the pre-Web Microcosm hypermedia system, to the development of Web-based link services. She is currently working on a range of prototype Semantic Web applications, and with the inventor of the Web, Sir Tim Berners-Lee, and others at Southampton, she is developing a new research initiative in the emerging field of Web Science.

She is currently Senior Vice President of the Royal Academy of Engineering, a member of the UK Prime Minister's Council for Science and Technology and a founder member of the Scientific Council of the European Research Council. She is a Past President of the British Computer Society (BCS) and currently chairs the BCS Women's Forum. She was recently elected as Vice President of the ACM. She is also a member of IW3C2 and was executive chair of the 15th International WWW conference in Edinburgh in May 2006. She is a non-executive Director of several companies and charitable trusts.

She was awarded a CBE in the Queen's Birthday honours list in 2000, and became a Fellow of the Royal Academy of Engineering in the same year. She is also a Fellow of the BCS, the IEE, and the City and Guilds of London Institute and holds a number of honorary degrees.

The UK Fawcett campaign for equality between men and women, named her as an Inspiring Woman in 2005, and the UK Research Centre for Women in Science, Engineering and Technology selected her as one of six world-class Women of Outstanding Achievement in SET in March 2006.

She was born in London in 1952 and was the first of her family (originally from the "east end") to go to University.

Married to Peter Chandler, a plasma physicist and independent consultant, she now lives on the edge of the New Forest — an easy drive to the University of Southampton where she has been a member of academic staff since 1984. She met Peter while studying for her PhD in Pure Mathematics at Southampton. They both love travel and fit as many holidays as possible into their hectic schedules.

She lists her favourite hobby as shopping!

A longer biography is available at www.ecs.soton.ac.uk/~wh

Anita Borg Social Change Agent Scholarships

Underwritten by Fran Allen, Ph.D., IBM fellow and 2004 Recipient of the Anita Borg Award for Technical Leadership

Ijeoma Terese Ihenachor is a professional engineer with the Nigerian Airspace Management Agency in Ikeja, Lagos, Nigeria. An executive member of the Nigerian Society of Engineers and active in numerous engineering organizations, she has served as a member of the governing council of a technical school and has been a leader of that country's "Take a Daughter to Work" program, which annually offers cash awards to top math and physics students at the primary and secondary levels. Ihenachor earned a degree in electrical engineering and computer science from Anambra State University of Technology.

Claudia Bauzer Medeiros, Ph.D., is a full professor of computer science at the Universidade Estadual de Campinas in Sao Paulo, Brazil. With a focus on design and development of scientific databases, her work includes lead roles in over 30 multinational R&D projects, particularly those involving agro-environmental planning, biodiversity and educational systems. Dr. Medeiros has served in leadership positions for several Brazilian government initiatives on computer science research and education. As president of the Brazilian Computer Society she has established key goals and programs aimed at attracting and fostering women in IT professions.

Suriya Mayandi Thevar, Ph.D., is senior professor and head of the Department of Library and Information Science at Annamalai University in Chidambaram, Tamil Nadu, South India. She also serves as director of the University's Women's Training Center in Information and Computer Technology. The recipient of numerous awards for her work in library and information science, Dr. Suriya serves on the board of International Network of Women Engineers and Scientists-Canada and as India's ambassador to the Association of Computing Machinery. She is president of the Indian Association of Women in IT and secretary of the Women in Technology Research Forum.

SESSION 2 • THURSDAY, 11:10 A.M. – 12:10 P.M. • ROYAL PALM 4, 5 & 6

Invited Technical Speaker

YUANYUAN ZHOU

Assistant Professor, Department of Computer Science
University of Illinois at Urbana-Champaign

About Yuanyuan Zhou

Yuanyuan Zhou is an associate professor in the Department of Computer Science at University of Illinois at Urbana Champaign. Prior to UIUC, she worked at NEC Research Institute as a scientist and also co-founded a storage company called Emphora. Her research interests span the areas of operating systems, architecture, storage systems and software reliability. During the recent years, she has been focusing on inter-disciplinary solutions to improve the robustness, reliability and availability of software. She was the recipient for the NSF Career-2004 award, the CRA-W Anita Borg Early Career Award 2005, the DOE Early Career Principle Investigator Award 2005, the UIUC Gear Faculty Award, the IBM Faculty Award 2004 & 2005, the IBM SUR-2003 award. She has more than 50 publications and 3 patents. She was also selected into the "Incomplete List of Teachers Ranked as Excellent by Their Students" in 2003 at UIUC. She got her Ph.D and M.A from Princeton University and BS from Beijing University.

Applying Medical Practices on Large Software

Your Web browser quits and interrupts your blissful surfing; After you spend 30 minutes filling out your address and credit card information to purchase a dream vacation package, the computer suddenly crashes… Software bugs bite. Just as the practice of medicine is as much an art as a science, so is computer programming. A computer program with buggy code is like a sick patient and should be treated as such. Because software bugs account for as much as 40% of computer system failures and cost the U.S. economy an estimated $59.5 billion annually (about 0.6% of the gross domestic product), healthy programs are crucial. Unfortunately, identifying and fixing bugs in large program is extremely labor intensive, especially in commercial software, so it is important to automate as much of this process as possible.

One of our recent research focuses is to make software robust. Not only are our efforts directed toward detecting, diagnosing and fixing bugs, but we are also exploring techniques that allow software to survive in the presence of bugs. To efficiently detect bugs in large software, we draw upon simple psychological observations on how programmers write code to illuminate common sources or reasons for how and why bugs are introduced. Based on these observations, we derive methods to automatically infer programmers' intent and scan for mismatches in programmers' implementations. To handle bugs that inevitably escape from software health exams into production runs, we perform an avoidance therapy to survive online software failures by treating bugs as allergies. To automatically diagnose an occurring software error, we follow a doctor-like top-down protocol to triage the defect, providing useful information for programmers to find root causes and derive cures.

SESSION 4 • THURSDAY, 3:05 P.M. – 4:05 P.M. • SUNSET CONFERENCE ROOM

Invited Technical Speaker

TRISH MILLINES DZIKO

Co-Founder, Executive Director Technology Access Foundation

About Trish Millines Dziko

Trish spent 15 years working in the high tech industry as a software tester, a software developer, a manager, a consultant, and a database designer in such industries as military weapons, business systems, communications, and medical equipment.

It was during her 8.5 years at Microsoft that she became active in diversity. In 1995 Trish worked as a Senior Diversity Administrator. She traveled the country to recruit college level technically trained people of color and found that the pool of people she had to choose from was very small.

Trish realized that in order to increase the number of qualified people coming out of college, she would need to find a way to increase the number of people of color enrolling in university to pursue technical degrees. Capturing the interest of children of color early in their lives, and providing them with the opportunity to become users and creators of technology is the foundation on which the Technology Access Foundation is based.

In 1996, Trish left the technology industry and with support and help of friends and family, created the Technology Access Foundation (TAF).

TAF's vision is to make education a priority in underserved communities of color. Serving one child at a time, TAF enhances their educational and professional prospects through the delivery of tools for learning in the 21st century. We will use our demonstrable success to establish our leadership in educational reform and expand the reach of our model.

TAF programs are rooted in project based learning, and are designed to increase problem solving, critical thinking, information synthesis, and communication skills.

A native of New Jersey, Trish attended Monmouth University (then known as Monmouth College) and received a B.S. in Computer Science in 1979. In June 2001, she received an Honorary Doctorate of Humane Letters from Seattle University.

Closing the Achievement Gap: Tools for 21st Century Learning

The education crisis in America is deep concern of businesses, higher education professionals. Businesses complain about the dearth of talent, educators complain about students not being ready for college, and researchers spend ridiculous amounts of time and resources trying to isolate the problems. And that's just concerning the middle class and wealthy students.

As we start to delve into the issues concerning economically challenged students of color—often termed the achievement gap—you get various responses ranging from denial of the issues, to the defeatist attitude. Or more commonly the deer in headlights look.

There are plenty examples of excellence and best practices in education—the fact is they're found in places where there are a lot of resources—which leads us to believe that the "achievement gap" is really an "opportunity gap". So what happens when you get all the best practices under one roof in a school traditionally populated by low income, minority students?

The Technology Access Foundation (TAF) has 10 years of experience successfully teaching low income children of color about math, technology, and science. These are the same kids everyone says can't learn. There is an untapped wealth of bright children of color just thirsting for knowledge and a chance to be somebody.

Trish Millines Dziko, TAF's cofounder and Executive Director will walk you through a unique education model called TAF Academy. The TAF Academy is a 6th-12th grade school model with a mission to prepare every student for college and for life through a rigorous and relevant STEM focused curriculum that enlists students as active participants in their education and cultivates a keen awareness of their important role within the world.

The TAF Academy model is specifically designed to be implemented in public schools and is the center of a learning environment where students can continuously learn to transfer academic skills and information learned in school to real-world situations that affect their communities and lives.

SESSION 1• THURSDAY, 10:00 A.M. – 11:00 A.M. • ROYAL PALM 4, 5 & 6

Invited Technical Speaker

RADIA PERLMAN

Senior Distinguished Engineer, Sun Microsystems

About Radia Perlman

Radia Perlman is a Distinguished Engineer at Sun Microsystems Laboratories. This year she was awarded a lifetime achievement award by USENIX, the Advanced Computing Systems Association.

Many of the algorithms and protocols she has invented are fundamental to today's networks, including bridging (spanning tree algorithm) and routing (robust and scalable link state routing). She has also made significant contributions to network security, including credentials download, key management, authentication and authorization models, and assured delete.

She is the author of "Interconnections: Bridges, Routers, Switches, and Internetworking Protocols", and coauthor of "Network Security: Private Communication in a Public World", both of which are popular as textbooks and as reference books for engineers. Holding about 80 patents, she was named SVIPLA (Silicon Valley Intellectual Property Law Association) 2004

Inventor of the Year. She has a PhD from MIT in computer science, and an honorary doctorate from KTH, Sweden's Royal Institute of Technology.

What's a PKI, why would I want one, and how should it be designed?

Secure communication over the Internet requires cryptography. Often academics get too focused on the mathematics and abstruse provable properties of the various cryptographic algorithms, and ignore the deceptively easy but politically difficult system issues. This talk explains what a PKI-based system is, and how it compares in functionality with other approaches. Then it describes various pitfalls involved in actually deploying it. How do you avoid cementing in monopolies? How do you make it manageable, and easy to use?

This talk is intended to serve both as an introduction to the world of cryptographic-based network authentication systems for those who are not in the field, and discussion of some provocative deployment issues for those who are familiar with the basic approach.

This talk will also serve to illustrate a more general problem with engineers; that they often focus on small details rather than the big picture.

SESSION 5 • FRIDAY, 4:20 P.M. – 5:20 P.M. • SAN DIEGO CONFERENCE ROOM

Invited Technical Speaker

MARISSA MAYER

Vice President of Search Products and User Experience, Google

About Marissa Mayer

Marissa leads the product management efforts on Google's search products – web search, images, groups, news, Froogle, the Google Toolbar, Google Desktop, Google Labs, and more. She joined Google in 1999 as Google's first female engineer and led the user interface and webserver teams at that time.

Her efforts have included designing and developing Google's search interface, internationalizing the site to more than 100 languages, defining Google News, Gmail, and Orkut, and launching more than 100 features and products on Google.com. In her spare time, Marissa also organizes Google Movies – outings a few times a year to see the latest blockbusters – for 6,000+ people (employees plus family members and friends).

Concurrently with her full-time work at Google, Marissa has taught introductory computer programming classes at Stanford to over 3,000 students. Stanford has recognized her with the Centennial Teaching Award and the Forsythe Award for her outstanding contribution to undergraduate education.

Prior to joining Google, Marissa worked at the UBS research lab (Ubilab) in Switzerland and at SRI International.

Graduating with honors, Marissa received her BS in Symbolic Systems and her MS in Computer Science from Stanford University. For both degrees, she specialized in artificial intelligence.

Women and Innovation: Driving Change in Consumer Technology

Google is known as one of the most innovative companies in the world. My talk will offer a glimpse inside—how we manage innovation and creativity and how we build products, particularly products for end-users. Methods that we use to stay nimble and keep innovating include "20% Time", small teams, very open communication structures, editable web pages, and an emphasis on hiring excellent engineers often through unconventional means. A gender-balanced workplace has always been a key part of Google's success and culture, and I'll analyze the role that women play particularly in product development while describing the company's evolution from me being the first woman engineer in 1998 to today where Google employs one of the industry's largest thriving communities of women computer scientists.

SESSION 3 • FRIDAY, 1:40 P.M. – 2:40 P.M. • SUNSET CONFERENCE ROOM

Invited Technical Speaker

JUSTINE CASSELL

Professor, Media Arts, & Sciences,
Northwestern University

About Justine Cassell

Justine Cassell is the director of the Center for Technology and Social Behavior at Northwestern University, and a full professor in the departments of Communication Studies and Computer Science. Before coming to Northwestern, Cassell was a tenured associate professor at the MIT Media Lab where she directed the Gesture and Narrative Language Research Group. In 2001, Cassell was awarded the Edgerton Faculty Achievement Award at MIT.

Cassell holds undergraduate degrees in Comparative Literature from Dartmouth and in Lettres Modernes from the Universite de Besançon (France). She holds a M.Phil in Linguistics from the University of Edinburgh (Scotland) and a dual Ph.D. from the University of Chicago in Linguistics and Psychology. After having spent ten years studying verbal and non-verbal aspects of human communication through microanalysis of videotaped data she began to bring her knowledge of human conversation to the design of computational systems.

Cassell's research concentrates on better understanding everyday kinds of conversation and storytelling, and on building computational systems that simulate, mediate, and facilitate those everyday kinds of talk. These technologies, such as Embodied Conversational Agents, Story Listening Systems, and Online Communities, in turn allow her to study the nature of human interaction with and through technology.

Making (Virtual) Friends and Influencing (Virtual) People: Building Rapport in Humans and Virtual Humans

Abstract: Harmony or rapport between people is essential for relationships as diverse as seller-buyer and teacher-learner. In this talk I describe the kinds of verbal behaviors—such as small talk and using the same accent—and non-verbal behaviors—such as attention, positivity, and coordination—that function together to establish a sense of rapport between two people in conversation. These studies are used as the basis for the implementation of embodied conversational agents (virtual humans) who/that are capable of acting as friends and collaborators. Applications of this work have ranged from direction-giving systems that can be trusted, to virtual peers that help children acquire literacy skills, and systems to help children with autism learn about reciprocal social interaction.

SESSION 3 • THURSDAY, 1:55 P.M. – 2:55 P.M. • SUNSET CONFERENCE ROOM

Invited Technical Speaker

DEBORAH G. JOHNSON

University of Virginia

About Deborah G. Hohnson

Deborah G. Johnson is the Anne Shirley Carter Olsson Professor of Applied Ethics and Chair of the Department of Science, Technology, and Society in the School of Engineering and Applied Sciences of the University of Virginia. She received the John Barwise prize from the American Philosophical Association in 2004; the Sterling Olmsted Award from the Liberal Education Division of the American Society for Engineering Education in 2001; and the ACM SIGCAS Making a Difference Award in 2000.

Professor Johnson is the author/editor of four books: Computer Ethics (Prentice Hall, third edition, 2001); Computers, Ethics, and Social Values (co-edited with H. Nissenbaum, Prentice Hall, 1995); Ethical Issues in Engineering (Prentice Hall, 1991); and Ethical Issues in the Use of Computers (co-edited with J. Snapper, Wadsworth Publishing Co., 1985). She is currently working on two new books, Technology and Society: Engineering our Socio-technical Future (with J. Wetmore) and Women, Gender, and Technology (with M.F. Fox and S. Rosser). Johnson has published over 50 papers in a variety of journals and edited volumes. She co-edits Ethics and Information Technology published by Springer and co-edits a book series on Women, Gender, and Technology with M.F. Fox and S. Rosser for University of Illinois Press.

Rethinking Computer Ethics

The field of computer ethics is now roughly twenty years old and seems to be thriving in terms of scholarship and pedagogy. Scholarship in the field can be characterized as focusing on the ethical issues arising 'around' and 'from' the development of computing, that is from the new capacities and endeavors made possible by computers. The topics that are typically addressed in textbooks, journals, and monographs include issues of professional ethics, privacy and surveillance, intellectual property, liability-accountability-responsibility, as well as particular types of computing such as data mining, search engines, modeling and simulation, virtual reality, online media, etc.

This approach has been successful in drawing attention to issues and providing analysis that helps to better understand the issues and inform policy. Nevertheless, the approach has certain limitations that need to be addressed. When computer ethical issues are conceived as issues arising 'around' and 'from' computing, computers and computer systems themselves are hidden from the sights of computer ethics. Computer ethicists are left to address computer systems after they have been designed and appear at their doorsteps. This puts computer ethics in a reactive role and blocks the opportunity to be proactive and to address ethical issues at earlier stages in the development of computer systems. A focus on ethics 'in' computer technology is needed. Here computer systems would be understood to be value-laden, moral entities.

In order to make this shift to ethics 'in' computer systems, two steps are necessary. First, computer technology must be understood to be not just machines and physical objects, but rather, to be socio-technical systems; computer systems are combinations of social practices, social relationships, social institutions, and artifacts. Second, computer ethics must be understood to include a focus on the design of computer systems. The implications of these two shifts call for a retooling of the field of computer ethics including a better understanding of socio-technical systems.

2006 Google Anita Borg Memorial Scholars

Honoring the Legacy of Anita Borg (1949–2003)

Michele Banko

Michele Banko is a Ph.D. student at the University of Washington, working in the area of Web-scale text mining and natural language processing. She holds a M.S. in Computer Science from the University of Washington and a B.S. in Logic and Computation from Carnegie Mellon University. Before returning to academic life, Michele was a research engineer at Microsoft Research in Redmond, WA.

Gillian R. Hayes

Gillian R. Hayes is a PhD candidate in Computer Science at the Georgia Institute of Technology. She is a student in the Ubiquitous Computing Research Group, working with Gregory Abowd and is a member of the GVU Center. Her research interests center on the areas of Ubiquitous Computing and HCI, particularly ubiquitous capture and sharing of information. Her dissertation work focuses on capturing information about informal and unstructured live experiences for later access. Her other research interests include technologies for healthcare, education, and eldercare and understanding how traditional HCI theories and techniques can be adapted to ubiquitous computing technologies. She participates actively in the CHI, CSCW and UbiComp research communities and is currently serving as a Student Volunteer Co-Chair for UbiComp 2006 and Workshops Co-Chair for Pervasive 2007. She has been an active member in the ACM and IEEE societies since 2000 and an active member of SIGCHI since 2003.

Shana Watters

Shana Watters is currently a graduate student at the University of Minnesota pursuing a Ph.D. in Computer Science and a M.A. in Linguistics. She received her M.S. in Computer Science from the University of Minnesota. Her research interests include reference resolution, anaphora, cognitive aspects of language, and semantics.

Vinithra Varadharajan

Vinithra Varadharajan, a Masters student at the Robotics Institute of Carnegie Mellon University in Pittsburgh, is a 2006 Google Anita Borg scholar. She got her Bachelors degree in Computer Systems Engineering from Cardiff University, U.K. Her research topic is the psychophysics of haptic interaction of deformable objects. She is also working on a project to design and develop an American Sign Language tutor for deaf students in Pittsburgh. Vinithra is an active member of Women@SCS, School of Computer Science at CMU. She is the recipient of the South Wales Institute of Engineers prize for Best Final Year Undergraduate in School of Engineering 2005 and Cardiff University's prize for Best Performance in Computer Systems Engineering 2002 - 2005. She has volunteered as an English teacher for under-privileged blind students in Chennai, India. She is fluent in German and is a student of Latin dancing, Ballroom dancing and South African Gumboots dancing.

Soumi Sinha

I am doing my bachelors in computer science at University of Illinois, Urbana Champaign. I am about to graduate next year and looking forward to a career in technology industry. I had an amazing time in college. I have taken a wide range of classes from machine learning and distributed systems to history of languages and game theory. I am involved in organizing a technology outreach program for high school girls called ChicTech. I found out I love to teach and explain problems and concepts to others while being a section leader for a discrete math course. I am also doing undergrad research in the area of searching and integrating databases on the web. It was a valuable experience to learn how hard research problems are broken up and tackled in

stages. In my spare time I like to go shopping, cook new stuff or take dance lessons

Megan Olsen

In 2005 I received my B.S. in Computer Science from Virginia Tech, and am now a MS/PhD student in CS at University of Massachusetts Amherst. As an undergraduate I experienced internships at Meridium, NSWC-DD, and Microsoft, as well as doing research in distributed systems. I was also able to participate in many activities through leadership roles, including the VT Fencing Club, AWC, Golden Key, and the Marching Virginians. As a graduate student my research is in Artificial Intelligence, currently focusing on biologically inspired systems. I am also interested in machine learning and neural networks. Although I spend much of my time on research, I still find time to enjoy web design, hiking, fencing, tennis, and planning events for the UMass CS Women's group. I appreciate the many opportunities from the Anita Borg Scholarship, and would like to also thank the Department of Homeland Security for funding me through a fellowship.

Karen K. Fullam

Karen K. Fullam is a doctoral student and graduate research assistant in The Laboratory for Intelligent Processes and Systems at The University of Texas at Austin. She received her M.S. degree from The University of Texas at Austin in 2003 and her B.S. degree from The Colorado School of Mines in 1999. Her research concerns trustworthiness evaluation of information, as well as techniques for making trust-related decisions in complex systems. As organizer, programmer, and author, Ms. Fullam has been a driving force between the Agent Reputation and Trust (ART) Testbed, an international forum for trust-related experimentation and competition. Ms. Fullam is the recipient of The University of Texas Micro-Electronics and Computer Development Fellowship, The College of Engineering Doctoral Fellowship, The University of Texas Continuing Fellowship, and The David Bruton, Jr. Fellowship. Ms. Fullam is a member of Phi Kappa Phi and Tau Beta Pi.

Sharmishtaa Seshamani

Sharmishtaa Seshamani completed her high school studies in Lusaka, Zambia. She came to the US to pursue a Bachelors degree in Computer Engineering and a Masters degree in Computer Science at Stevens Institute of Technology and then worked in the IT industry for a year. She went on to pursue a Masters degree in Applied Mathematics with a concentration in Computer Vision also at Stevens Institute of Technology. In 2004, she joined the Phd program in Computer Science at Johns Hopkins University where she is currently a third year student. Her research interests are registration methods for medical imaging applications such as uterine endoscopy and pelvic ultrasound. During her undergraduate studies, Sharmishtaa held the position of President of the Stevens SWE chapter. She is currently an active member of Women of Whiting at Johns Hopkins University. Sharmishtaa is also a recipient of the 2006 Google Anita Borg scholarship.

Marta Luczynska

Marta received her Bachelors in CSE from MIT in June 2006 and is a candidate for MIT's Masters of Engineering in June 2007. Her research focuses on a hybrid metrical topological approach to simultaneous localization and mapping in robotics. Marta's passions lie in teaching, community service, and international development. In the summer of 2005, Marta traveled to Kenya to team-teach a 6-week course in Java and entrepreneurship to high school and university students as a step towards bridging the digital divide. Marta was one of the recipients of the 2006 $30,000 iCampus grant, which her team used for projects to improve the quality of education received by students at the University of Zambia. This past summer, Marta traveled to Israel to team-teach a five-week Java and entrepreneurship course to Palestinian and Israeli high school students to help create a common language and understanding between future leaders in the Middle East.

Himabindu Pucha

Himabindu Pucha is currently a PhD candidate in the School of Electrical and Computer Engineering at Purdue University, USA. Previously, she received a MSECE degree from Purdue University and a B.Engg. degree from the University of Bombay, India. Her broad research interests are in systems and networking. Specifically, she is interested in novel applications of peer to peer computing, overlay and mobile networks. She has co-authored over 15 refereed journal and conference papers in this field. In 2005, she received the Violet Haas Award from Purdue University recognizing her potential as an engineering educator and her commitment to women students. In 2006, she received the Google Anita Borg Memorial Scholarship. During her undergraduate degree, she was actively involved in organizing symposia, authoring project proposals and inducting new student branches in her capacity as a council member of the IEEE student branch in her undergraduate institute.

Tracy Westeyn

Tracy Westeyn is a Ph.D. student at the Georgia Institute of Technology. Her primary research areas are on-body sensing, wearable computing, and machine learning. Currently,

she is researching the use of on-body sensors to support the diagnosis and treatment of children with autism. Her previous research involved eye-based gesture recognition as an interface for persons with severe disabilities. She is a primary author of the Georgia Tech Gesture Toolkit (GT2K), which supports gesture-based research applications. Westeyn is also an instructor for Kennesaw State University's CyberTech II program, an introductory computer science course aimed at involving underrepresented students in computer oriented fields. Outside of the lab, Westeyn is an active member of the Women@CC organization which helps support women in computer science at Georgia Tech. She has her black belt in Shaolin Kung Fu and has served as both president and goalie for the Georgia Tech Women's Lacrosse club.

Kristina Chodorow

Kristina Chodorow grew up in Amherst, Massachusetts and is currently an undergraduate at New York University. She is entering her senior year and pursuing a double major in mathematics and computer science (honors). She has conducted research in optimization specializing in direct search under the mentorship of Professor Margaret Wright. Last year she founded "Women in Computing" at NYU, the first club of its kind at the school, to encourage women in computer science, build a community, and provide networking opportunities. She has just completed a summer internship where she worked in commodities technology for Goldman Sachs. In her free time, she enjoys cartooning, reading comic books, and using Linux.

Nevine AbouGhazaleh

Nevine AbouGhazaleh (aka Neven Abou Gazala) received a BS and MS in Computer Engineering from Arab Academy for Science and Technology in 1996 and 1999, respectively. She received her MS degree in Computer Science from the University of Pittsburgh in 2003. Currently she is a Ph.D. student at University of Pittsburgh. Her research interests include computer architecture, operating systems and embedded systems. She is researching power management in real-time systems.

Brianna Bethel

Brianna Bethel is currently finishing her last year at the University of Colorado in Boulder, Colorado. She will graduate with both her Bachelor's and Master's degrees in Electrical and Computer Engineering with an emphasis in Embedded Systems. Outside of school, Brianna enjoys her volunteer work as Outreach Coordinator for the Society of Women Engineers – Brianna feels blessed to have been introduced to engineering at a young age and wants to help encourage younger girls to consider the exciting field of engineering. In her free time, Brianna is busy planning her wedding for next year and spending time with her fiancé, family, and friends. After graduation Brianna plans on getting a job which allows her to continue learning and inventing.

Rebecca Nesson

Rebecca Nesson is a 4th year Ph.D. candidate in Computer Science at Harvard University. She studies computational linguistics with a particular focus on the use of synchronous grammars. She graduated from Harvard Law School in 2001 and Harvard College in 1998 with a degree in Folklore. She values and uses her varied background but is very happy to have found her home in computer science. Outside of her research, Becca's interests include computer science and technology education, and organic farming and the local food movement.

Parisa Tabriz

Parisa Tabriz is currently finishing her Masters degree in Computer Science at the University of Illinois, Urbana-Champaign. Her research focuses on computer and network security and privacy enhancing technologies, with an ultimate goal of keeping users and their personal information safe from evil haxx0rs on the Internet. Outside of her day job (re: school), Parisa is active within her local chapter of ACM, dabbles in the creative arts, and enjoys climbing very large, high elevation rocks.

Kristen R. Walcott

Kristen R. Walcott is beginning her second year as a computer science PhD graduate student at the University of Virginia. At UVA, she is working with Dr. Mary Lou Soffa in the area of time-aware regression testing. In the past year, Kristen published two papers entitled Time-Aware Test Suite Prioritization and Towards the Measurement of Tuple Space Performance. She was also awarded an NSF Graduate Research Fellowship and received honorable mention for the Ford Foundation Predoctoral Fellowship. Kristen completed her undergraduate work at Allegheny College with a double major in applied computer science and mathematics.

THURSDAY, 10:00 A.M. – 12:00 P.M. • SAN DIEGO CONFERENCE ROOM

PANEL DISCUSSION

So You Want to Be a CEO?

Please note that this is a 2-hour session.

Moderator: A. Richard Newton UC Berkeley *Panel:* Marie Alexander, Quova, Inc, Linda Bernardi, StraTerra Partners, Eva Chen, Trend Micro, Penny Herscher, firstRain, Jan Willis, Cadence

The objective of this panel is to provide young women in industry and academia insight into what it takes to be a successful CEO. Setting your expectations and guidance on what you need to consider as you contemplate this career choice.

This panel provides a relatively informal conversation with several people who have been successful CEO's , and includes one panelist that is still deciding whether or not to take on the challenge.

Topics that we will be discussed include:

- When did you first decide that you wanted to be a CEO?
- What advice do you have for women who are considering the choice and what does it take to become a CEO?
- What should I be considering as part of my career planning?
- As you reflect back from today's perspective, what were the biggest surprises along the way?

A. Richard Newton
Dean, College of Engineering
University of California, Berkeley

Richard Newton also is UC Berkeley's Roy W. Carlson Professor of Engineering. A dedicated educator, researcher, and businessman, Dean Newton is internationally recognized for his pioneering research in circuit design methodologies and electronic systems architecture. As dean, he is passionate about employing technology to tackle tough societal problems and about educating the next generation of engineers. Recipient of numerous awards for his research, he was named to the National Academy of Engineering in 2004, the American Academy of Arts and Sciences in 2006, and won the Phil Kaufman Award, the highest recognition of the EDA Consortium, in 2003. Dean Newton earned his Ph.D. at UC Berkeley in 1978 in the Electrical Engineering & Computer Sciences department and joined the faculty the following year. He is cofounder of a number of successful companies, including Cadence Design Systems and Synopsys, and is a Trustee of the Anita Borg Institute for Women and Technology.

Marie Alexander
President & CEO Quova, Inc.

Marie Alexander is a well respected female business leader in Silicon Valley, not only as president and CEO of Quova, Inc., but as visionary and evangelist for an entirely new industry – Internet geolocation. The New York Times, the Wall Street Journal, USA TODAY and the Financial Times have quoted her views on business and technology. Marie is also an authority on the role of women as technology business leaders – she is a Trustee for the National Center for Women and Information Technology – and she has testified before a U.S. Senate committee in support of the Family and Medical Leave Act.

Marie has served highly successful executive stints at Telocity, Vantive and Harbinger, and she holds an MA in Business Information Systems from Georgia State University. And, on a personal note, she is half of what may well be the only two-CEO marriage in Silicon Valley as well as the mother of two.

Linda Bernardi
StraTerra Partners, Principal
Former CEO, ConnecTerra, Inc.

For 20 years Linda has held senior executive positions in advanced technology, the software industry, biotechnology, genomics and the enterprise computing arena. Her technical passion is in large scale information systems. She has managed global operations and orchestrated business development and services around the world. She founded her company ConnecTerra, which was acquired by BEA Systems in 2005. ConnecTerra's software platform and products provide the ability for organizations to deploy and remain connected with billions of autonomous devices and result in massive changes in enterprise computing. Linda has a strong passion around women and leadership, and works closely with women executives and entrepreneurs to further women in positions of leadership. Linda holds a graduate degree in applied statistics from UCLA. She is an active board member of the following boards: The Anita Borg Institute for Women and Technology, the Women's Technology Cluster and the SETI Institute.

Eva Chen
CEO & Co-founder Trend Micro

Ever since its inception in 1988, Eva has helped spearhead Trend Micro's emergence as one of the world's most innovative secure content management companies. Before becoming CEO, Eva served as executive vice president from 1988-1996 and CTO from 1996-2004. Under her direction, Trend Micro has produced a chronology of industry firsts, from unique products to security management approaches. As a result of her innovation and leadership, she was appointed CEO in late 2004.

Throughout her career, Eva has received industry recognition for her achievements in information security including being named "one of the 50 most powerful people in network" by Network World and one of the top five "Women of Vision" by Information Security.

Eva holds a master's degree in business administration as well as a master's degree in information science from the University of Texas, Dallas. She earned a degree in philosophy from Chen Chi University in Taipei, Taiwan.

Penny Herscher
President and CEO
firstRain

Penny is President and CEO of firstRain Inc. a venture-backed, vertical search company serving hedge fund and mutual fund managers. Prior to joining firstRain Penny was Chairman and CEO of Simplex Solutions, an electronic design automation company. As CEO, she grew Simplex from a few engineers in 1996 to a profitable software company, an IPO in 2001 and the sale of the company to Cadence Design Systems in 2002. Penny then worked with Cadence as Chief Marketing Officer and General Manager of a software division. Before Simplex, she was an executive at Synopsys for 8 years and started her career as an R&D engineer with Texas Instruments and then Daisy Systems. Penny serves on the boards of firstRain, Rambus, the Anita Borg Institute, and California Community Partners for Youth. She holds a B.A. with honors in mathematics from Cambridge University in England.

Jan Willis
Senior Vice President, Industry Alliances
Cadence Design Systems, Inc.

Jan Willis, Cadence senior vice president of Industry Alliances, is responsible for building alliances with leading foundries, semiconductor equipment manufacturers and IP providers that shape the industry. Her open approach leadership enables Cadence to develop industry-wide initiatives and standards that help customers succeed. Before Cadence she served as vice president of Business Development for Simplex Solutions. She was director of product marketing and semiconductor partnerships at Synopsys, Inc. Willis also spent over five years at Hewlett-Packard Company in a variety of technical and management positions. Willis serves on the board of Si2 and is a founder and steering group member for the X Initiative. She is on the Board of Directors of The Tech Museum of Innovation. In 2006, Willis received the prestigious TWIN Award from the Silicon Valley YWCA as one of the outstanding women in industry in the Bay Area. Willis has a B.S. in Electrical and Computer Engineering from the University of Missouri at Columbia, and an M.B.A. from Stanford University.

ACADEMIC LEADERSHIP PANEL

Dedicated to Denice Dee Denton

(1959 – 2006)

Denice Dee Denton

Moderator: Bobby Schnabel, University of Colorado at Boulder, Panel: Kristina Johnson, Duke University, Linda Katehi, University of Illinois at Urbana-Champaign, Maria Klawe, Harvey Mudd College, Richard Murray, California Institute of Technology, Debra Richardson UC Irvine

This panel is dedicated to the memory of Dr. Denice Denton, who was originally scheduled to be on this panel. Denice was a pioneering academic leader, superb champion for women in engineering and science, and an inspirational role model for many members of this panel and conference organizers.

There are still relatively few women in academic leadership positions though the number of female deans, provosts and presidents has been steadily increasing. The members of this panel are women and men who have taken on senior leadership roles in academia including deans, provosts and presidents. This panel is a chance to hear their stories.

We expect a lively and candid discussion that will provide faculty members who might be considering a senior academic administrative position in the future, a chance to learn about the roles, their requirements, and the trade-offs.

We expect to discuss ideas such as

- When did you first decide that you wanted to be an administrator?
- How did you balance the needs and desires of research, teaching and leadership as you became a senior academic administrator
- What advice do you have for faculty members who are considering whether or not to consider becoming a dean, provost or president?
- From your perspective, what questions should a faculty member be considering as part of their career planning?
- Do you need to be a department chair before becoming a dean, provost or president?

Bobby Schnabel
Vice Provost for Academic
and Campus Technology
University of Colorado at Boulder

Bobby Schnabel is Vice Provost for Academic and Campus Technology at the University of Colorado at Boulder. In this position he serves as founding director of the Alliance for Technology, Learning and Society (ATLAS), a campus-wide institute that serves as a catalyst for multidisciplinary curricular, research and outreach activities involving the content and tools of information technology. He also serves as chief information officer for the campus.

Dr. Schnabel has been a faculty member in the Department of Computer Science at the University of Colorado at Boulder since 1977, serving as department chair from 1990 to 1995 and as Associate Dean for Academic Affairs in the College of Engineering and Applied Science from 1995 to 1997. He is a co-founder of the National Center for Women and Information Technology, and currently serves as editor-in-chief of SIAM Review and on the Board of Directors of the Computing Research Association.

Kristina M. Johnson
Dean of the Pratt School of Engineering
Duke University

Kristina M. Johnson received her B.S., M.S. (with distinction) and Ph.D. in electrical engineering from Stanford University. After a NATO post-doctoral fellowship at Trinity College, Dublin, Ireland, she joined the University of Colorado-Boulder's faculty in 1985 as an Assistant Professor, promoted to full Professor in 1994. From 1994 -1999 Johnson directed the NSF/ERC for Optoelectronics Computing Systems Center at University of Colorado and Colorado State University. Dr. Johnson received the Dennis Gabor Prize for "creativity and innovation in modern optics" in 1993. She has published over 140 refereed papers and proceedings, and holds 43 patents. A fellow of the Optical Society of America, IEEE and a Fulbright Scholar, she is a director of SPIE, the International Society for Optical Engineer-

ing. She sits on the Boards of Directors of Mineral Technologies Inc., Boston Scientific Corporation, and AES Corporation. She is currently Dean of the Pratt School of Engineering at Duke University.

Linda Katehi
Provost and Vice Chancellor for Academic Affairs, University of Illinois at Urbana-Champaign

Linda Katehi was hired as Provost and Vice Chancellor for Academic Affairs at the University of Illinois at Urbana-Champaign, April 2006, former John A. Edwardson Dean of Engineering and Professor of Electrical and Computer Engineering at Purdue University. She is a member of the National Academy of Engineering, Nominations Committee for the National Medal of Technology, Kauffman National Panel for Entrepreneurship, NSF Advisory Committee to the Engineering Directorate, Engineering Advisory Committee for Iowa State University, NRC Telecommunications Board, NRC Army Research Lab Advisory Committee on Sensors and Electronics Division (SED), NSF Advisory Committee to CISE, NASA Aeronautics Technical Advisory Committee (ARAC), and the DoD Advisory Group on Electron Devices. She is also a member of the NAE committee on the Future of Engineering Research and the Administrative Committee of IEEE Society on Microwave Theory and Techniques.

Maria M. Klawe
President, Harvey Mudd College

Maria Klawe recently became the fifth President of Harvey Mudd College. Prior to HMC, Maria served as Dean of Engineering, and professor of Computer Science at Princeton University, held the Dean of Science, Vice-President of Student and Academic Services, and Head of Computer Science at the University of British Columbia. Maria has worked at IBM Research in California, at the University of Toronto and Oakland University. She received her Ph.D. and B.Sc. in Mathematics from the University of Alberta. Maria has made significant research contributions and currently focuses on assistive technology for people with aphasia and other cognitive impairments. Maria is a Past President of ACM, Chair of the Board of the Anita Borg Institute for Women and Technology, a Trustee of two mathematics institutes, IPAM and MSRI and a Fellow of ACM and CIPS. She is the recipient of awards including the Nico Habermann Award and several honorary doctorates.

Richard M. Murray
Professor, Department of Control and Dynamical Systems
California Institute of Technology

Richard M. Murray received his B.S. degree from Caltech in 1985 and his M.S. and Ph.D. degrees from UC Berkeley in 1988 and 1991, all in Electrical Engineering. Murray returned to Caltech in 1991 as a member of the Mechanical Engineering faculty and was a co-founder of the Control and Dynamical Systems program. In 1998-99, Murray took a sabbatical in industry and was the Director of Mechatronic Systems at the United Technologies Research Center. From 2000 to 2005, Murray served as the Division Chair (dean) of Engineering and Applied Science at Caltech. The Division of Engineering and Applied Science is one of the six academic divisions at Caltech, with approximately 85 faculty, 350 undergraduates, and 450 graduate students. He is currently the Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and the Director for Information Science and Technology at Caltech.

Debra J. Richardson
Ted and Janice Smith Dean
Donald Bren School of Information and Computer Sciences
University of California, Irvine

Debra J. Richardson, Dean of the Donald Bren School of Information and Computer Sciences, is committed to increasing the participation of women and other underrepresented populations in computing and IT. Richardson serves on the leadership team of the National Center for Women and Information Technology. Richardson has been on the Faculty at UC Irvine since 1987, and was appointed department chair in 2000. Under her leadership, the department was promoted to the first and only computer science school in the University of California in 2002. She was named founding dean and was instrumental in securing a $20 million endowment, leading to the naming of the Bren School. Richardson has conducted pioneering research in "specification-based testing," whereby formal methods are employed to guide software testing throughout the software lifecycle. Richardson received her B.A. from UC San Diego and M.S. and Ph.D. from the University of Massachusetts Amherst.

Panels, Workshops & Presentations

Thursday, October 5th

SESSION 1 • 10:00 A.M. – 11:00 A.M.

Making Waves: Navigating the Transition from Graduate Student to Faculty Member

Sunrise Conference Room

Panel: Cynthia Y. Lester, Tuskegee University, Raquel Hill, Indiana University, Melanie Eddins, Elgin Community College

In this era of globalization, the world economy has created a strong and constant demand for new and innovative scientific and technological knowledge that can only be gained from a talented, skilled and diverse workforce. Despite the many strides made by women in STEM disciplines, women only account for approximately 21% of science and engineering faculty at four-year colleges and universities. The objective of this panel session is to share information and personal insights on how a graduate student can navigate the transition into academia. The panel consists of three first year junior faculty members at institutions which include a community college, a small research institution and a large research institution. Topics of discussion include the interview/application process, responsibilities/expectations as a first year faculty member and the "T" word... tenure.

Women Leading Change: a Research-Based Framework for Transforming Organizations

Sunset Conference Room

Presenter: Carol Tisson, Senior Consultant, Being First Inc

Based on 30 years of action research, this session introduces core models, critical change leadership skills and a roadmap for enabling successful transformational change. We will explore the unique capacities and skills which women naturally bring to change leadership, and will discuss strategies for positioning ourselves as key resources for sponsoring, leading and implementing the changes to which we are committed. The session includes take-away materials, articles and pragmatic tools for immediate application to your own change initiatives.

Whether we are students, faculty members, technologists or executives, we can each be change leaders, working individually and collectively to cause transformation in our schools, organizations, professions and world. Here's to the journey!

Next Generation Internet with end to end connectivity

Golden West Conference Room

Presenter: Sinead O'Donovan, Microsoft

The Internet has a profound impact on how we live our lives. The protocol used to allow connectivity is IPv4. It is a testimony to the inventors on how it has scaled to billions of people and devices. The Internet is still growing at an incredible rate with more adoption of devices and richer applications. There is a huge convergence happening between traditional networks such as voice, cable to IP based networks. Today the Internet touches almost every facet of our lives, how we communicate with people, how we create & share our experiences. However this growth is not without pain, application hosting costs are high.

The Internet needs an upgrade. It needs IPv6 and end to end connectivity

AND

Wireless Sensor Networks and Real-World Applications

Presenter: Nirupama Bulusu, Portland State University

Wireless sensor networks are being touted as disruptive, Come learn about the opportunities and computing challenges in wireless sensor networks, how they are being applied such as digitized health care, energy management, condition-based maintenance and habitat monitoring.

Mentoring by the Numbers

Royal Palm 1, 2 & 3

Research and results drive mentoring programs that last.

Panel: Katy Dickinson, Sun Microsystems, Carol Muller, MentorNet, Mary Jean Harrold, Georgia Tech

Mentoring is a powerful learning and professional develoP.M.ent strategy, resulting in organizational and individual growth and develoP.M.ent. This session will present best practices in structured mentoring, featuring experts from successful programs in the corporate, academic, and nonprofit sectors.

Panel members include: Katy Dickinson, who runs Sun Microsystems' SEED Engineering mentoring and leadership grooming program; Carol Muller, who founded and guides MentorNet, a nonprofit e-mentoring network for engineering, science and mathematics; and Mary Jean Harrold, who created a technical infrastructure for women faculty at Georgia Tech. One panelist may be added.

This panel will be of particular interest to those in industry and academic institutions who want to start a technical mentoring program or who want to learn about best practices to improve their existing program. If you are a prospective or current protégé or mentor, you may also find this session useful.

Thursday, October 5th

SESSION 2 • 11:10 A.M. – 12:10 P.M.

ADVANCING Women in Computer Science

Royal Palm 1, 2, & 3

Panel: Lisa M. Frehill, Commission on Professionals in Science and Technology, Dr. Joan Peckham, University of Rhode Island, Dr. Debra Richardson, UC Irvine, Dr. John L. King, University of Michigan, Alice Hogan, National Science Foundation, Dr. Desh Ranjan, New Mexico State University

In 2001 the National Science Foundation initiated a new program to address gender disparities in women's representation and advancement in academic science, technology, engineering, and mathematics (STEM). Nine institutions were awarded funds in the 2001-2002 academic year, another ten institutions won awards in 2003, and 8-10 more are expected to join the ADVANCE community in 2006. These awards are revolutionary approaches that focus attention not on "fitting women in" to existing structures, but, instead, determining how we might be able to change the structure and culture of institutions of higher education to better accommodate women's needs. In this panel, computer science scholars from several ADVANCE-funded institutions will discuss issues related to increasing women's participation in computer science and the ADVANCE efforts at their institutions.

Challenges Faced by Female Technical Leaders

Sunrise Conference Room

Panel: Kristina Soderberg Browder, Silicon Laboratories, Romelia H. Flores, IBM, Diana Gomez, Society of Hispanic Professional Engineers, Michele Lezama, GEM

Companies implement diversity initiatives intended to bridge the workplace and marketplace to ensure success with multiple customer demographic groups. This discussion is intended to examine the experiences & challenges faced by female technical leaders. The panel consists of technical leaders from multiple enterprise and small businesses and examines career challenges that technical leaders from diverse backgrounds have experienced and the impact diversity initiatives have had on them. Panelists will share information and advice regarding their experiences as technical leaders in the IT industry and how their cultural biases have impacted their work behavior and approaches as technical leaders.

The intended audience for this discussion is employers and managers wanting to understand challenges faced by diverse technical leaders. This session provides sample experiences and advice.

Panelists will provide a 10 minute summary of their background and experiences, as well as insight on advice for the diversity group they represent. A question and answer session will follow.

Feedback and Dynamics in Nature

Towne Conference Room

Panel: Jean Carlson, UC Santa Barbara, Naomi Leonard, Princeton, Richard Murray, CalTech, Linda Petzold, UC Santa Barbara, John Doyle, CalTech

The opportunities to apply modeling and analysis tools from dynamical and feedback system theory are exploding, particularly in scientific fields. New technology is allowing us to explore complex biological systems—from cells to insects to ecosystem at levels that were unimagined just a few years ago. The role of feedback as a mechanism for managing uncertainty is a central feature. In the physical sciences, applications include geophysical systems where multiscale dynamic analysis is required to understand complex phenomena such as forest fires and earthquakes.

The objective of this panel is to highlight some of the advances in fields related to dynamics and feedback in nature while providing a view of some of the exciting challenges that are at the forefront of this exciting area. We are targeting researchers in the sciences at all levels who have an interest in

learning more about analyzing complex, networked, multi-scale systems that occur in ecological, biological and geophysical systems.

The panel will consist of 3-6 speakers who will present their views of the successes and challenges in this area and take questions from participants in the session regarding what is needed to make progress on a broad variety of fronts.

On Program Security

Golden West Conference Room

Presenter: Hongxia Jin, IBM Almaden Research Center

Hackers can reverse engineer programs to understand or even modify existing programs. Consequently, competitors may learn trade secrets or copy algorithms to reuse in competing products. They can also remove protections and redistribute the pirated program for a profit. The general problem of program protection is widely thought to be impossible. Program protection is an important, wide-open problem. This session will give an overview on current practices in this field. Advantages and disadvantages of various competing protection techniques will be discussed.

AND

Shifting the Tide of Network Security: Being Safe, Being Aware, and Being Active

Presenter: Nicole A Pauls, TriGeo Network Security

Many of us think of network security tools as necessary evils of prevention. The truth is that we just can't protect ourselves from everything. Software holes can be exploited before patches can be deployed, "trusted" users can become dangerous by opening the wrong email at the wrong time, and everything happens so quickly that we might not even know until it's too late.

This presentation will explore defense-in-depth network security strategies, including architecture, monitoring, and active defenses.

Priming the Pipeline: Girls Speak Out About Pre-College Computer Science

Sunset Conference Room

Panel: Robb Cutler, Moderator, CSTA, Michelle Hutton, CSTA, Amy Wu, Stanford University, Sarah Fingerhood, The Harker School, Hann-Shuin Yew, The Harker School, Alexis Chuck, Mountain View High School, Sophie Keller, The Girls Middle School

Waves start as small ripples far from the shore, building over time to become impressive natural displays. In the same way, early exposure to computer science, along with mentoring and positive reinforcement can help girls stay interested and help solve the pipeline problem. By observing the effects of early exposure to computer science and by listening as girls articulate their needs, we can help them be successful over the long term.

This panel will offer insight into the current experience of pre-college girls with respect to computer science. The girls on the panel all have taken computer science at the pre-college level in either middle or high school. They will discuss their experiences and address strategies that supported them as well as those they feel would be successful in recruiting other girls — such as mentoring, early exposure to computer science concepts, and reducing barriers to entry in computer science.

Thursday, October 5th

SESSION 3 • 1:55 P.M. – 2:55 P.M.

Riding the Technology Wave: Computer Scientists Building a Better Tomorrow

Royal Palm 4, 5 & 6

Panel: Reetal Pai, Texas A&M, Valerie Hajdik, Texas A&M, Nancy Amato, Texas A&M, Valerie Taylor, Texas A&M, Leah Jamieson, Purdue

In their 2002 study of computer science students at CMU, Jane Margolis and Allan Fisher (Unlocking the Clubhouse: Women in Computing) found that women who gravitated towards computer science seemed to have a desire to connect technology to a larger social context. Identifying ways to make connections between professional activities and the community around us might have greater implications with regards to retaining women in computer science and also help encourage high school girls choose computer science as a "socially responsible career".

With this panel, we seek to increase an understanding of the different ways computer scientists use their professional qualifications to positively impact the world around them. We will look at some successful projects that have combined computer science/ technological learning with socially beneficial projects (Grid Computing, EPICS). We will look at how women organizations and individuals can use their professional learning to have a social impact.

Technical Women in Industry, Trends, and Promising Practices

San Diego Conference Room

Panel: Kara Helander, Vice President, Catalyst Western Region, Betty Shanahan, Executive Director & CEO, Society of Women Engineers, Telle Whitney, President, Anita Borg Institute for Women and Technology

This workshop brings together the work and expertise of three different and complementary organizations and presents their work in the area of retaining and advancing technical women in Industry.

First half sets the landscape, with research and information from Catalyst, SWE, ABI and data from other sources to describe what the numbers are in the pipeline and industry, and what issues women face working in technical jobs.

Includes:

- Catalyst's research on the barriers and success factors for women in business. Includes insights from their projects, "Women in the High-Tech Industry: Understanding the Drivers of Retention and Advancement", "Women and Men in US Corporate Leadership,

Same workplace, Different Realities", and "Women "Take Care", Men "Take Charge", Stereotypes of US Business Leaders Revealed."

- SWE's research from chairing Engineers Week 2006
- Anita Borg Institute's early results from their study of technical careers in Industry

The second portion of the workshop focuses on solutions, and includes both models of change, and promising practices drawn from the work of the three organizations. Company examples include both technology companies, but also examples from other industries.

Opportunities for Women in International Companies

Sunrise Conference Room

Moderator: Pramila Mullan, Director, Middleware Group, France Telecom R&D San Francisco Division Panel: Qian Diao Intel Research Center, Santa Clara, CA, Meichun Hsu, Director of HP Labs, China, Kristin Lauter Microsoft Research Center, Redmond, WA

This panel addresses the opportunities and issues for women interested in working in an international laboratory environment. In a flat world, organizations and individuals need to collaborate with their peers in all different regions of the world. Leveraging R&D strengths across the globe has become a key priority for those organizations that are fueled by innovation. Yet, cultural differences play a factor in the professional roles that women are able to play in these international labs. This panel discussion explores the cross section of opportunities for women internationally as well as potential glass ceiling and other issues they will face as they leverage these opportunities.

What's So Cool About Working on Hot Technology?

Golden West Conference Room

Panelists: Una O'Neill, CA, Jennifer Walker, Cisco, Debra Richardson, UCI, Laura Takacs, Goldman Sachs, Panel Moderator is Lucy Sanders, NCWIT

One of the most exhilarating things about creating technology is the "aha!" moment when you solve the problem. Technology trends are always exciting, and ever changing. What is changing our lives today, often becomes obsolete as new trends emerge tomorrow. Come and hear from a number of technologists who are leading the technology trends in companies that affect your lives. Our panelists will describe technologies that are exciting in their diverse businesses, and tell you what they think will be hot in your lives tomorrow.

EPIC Panel: "Hot, Hip, and from the Heart – Women Engaging Cyberinfrastructurespeak"

Royal Palm 1, 2 & 3

Panel: Stephenie McLean, Renaissance Computing Institute, Valerie Taylor, Texas A&M, Jennifer Teig Von Hoffman, Boston University, Maria Williams, University of New Mexico

Young people are coming of age in a world that is being transformed by information technology. What will this new world be like and how might it transform our lives?

Cyberinfrastructure (CI) is a term recently coined by NSF to describe all the resources --software, hardware and other technologies, as well as human resources that support current and future develoP.M.ents in science and engineering. The panelists are leaders in the creation, develoP.M.ent, and utilization of cyberinfrastructure with considerable experience and vision in bringing CI to new communities.

The panelists believe CI is hot and hip and they will speak from the heart about why they are engaged and how their activities have impacted their lives professionally and personally.

AND

Discovering the Nature of Life: an Overview of Bioinformatics

Presenter: Graciela Gonzalez, Arizona State University

Bioinformatics is the field of science in which biology, computer science, and information technology merge into a single discipline. This workshop is a journey through all these different areas and how they are being applied to advancing one of the last remaining quests for humanity: understanding the nature of life. The workshop will discuss tools and techniques available today.

Thursday, October 5th

SESSION 4 • 3:05 P.M. – 4:05 P.M.

Building and Managing a Strong Research Group

Golden West Conference Room

Panel: Nancy Amato, Texas A&M, Elizabeth Belding-Royer, UC Santa Barbara, Tracy Camp, Colorado School of Mines, Violet Syrotiuk, Arizona State University

This panel is aimed at assistant professors who are one or more years into a tenure track position. The main goal of the panel is to provide assistant professors with strategies for building a strong research group. We focus on strategies for building and managing a research group, which provides an essential foundation for success in a research career, and increases impact and visibility of a research program. Two pressing tasks for junior faculty in building their research group are getting and managing research funding, and advising students. The panelists will share their strategies for building a strong research program and a cohesive, productive research group.

Succeeding In Industry Jobs: Straight Talk about the First Five Years

San Diego Conference Room

Panel: Hilary Pike, Microsoft, Alexis Battle, Google, Diane Curtis, Microsoft, Michelle Lunn, Dolby Digital Cinema

Transitioning from an academic environment to a position in industry can be a daunting life experience. As women who have recently experienced this transition, the members of our panel are well-positioned to discuss our experiences

transitioning from academic programs to leading technical institutions. Women working at IBM, Google, Microsoft and Dolby will discuss the challenges they faced and the set of tools they used to address them to expose the audience to the current industry environment. Their status as recent graduates allows them to communicate their experiences from the viewpoint of ambitious young women.

Topics covered will include: mentoring, networking, balancing home and work, career advancement. Panelists will also discuss how they have dealt with challenges differently such as flexible work arrangements, building credibility at work, negotiating a two career household, and finding the right fit at work.

Dasher: Information-Efficient Text Entry

Royal Palm 4, 5 & 6

Presenter: Hanna Wallach, University of Cambridge

Dasher is an information-efficient text entry system, driven by continuous pointing gestures. Keyboards, despite their ubiquity, are inefficient for two reasons: they do not exploit the predictability of normal language and they waste the fine analogue capabilities of the user's muscles. Dasher is intended to rectify both these inefficiencies. An adaptive language model of the sort also used in speech recognition, handwriting recognition, and text compression plays an integral role in Dasher, offering helpful predictions to the user without constraining the range of words.

AND

Information Access for Diverse User Populations

Presenter: Vicki Hanson, IBM T.J. Watson Research Center

How can designers make applications that are flexible enough to accommodate individual differences, and differences that may change from session to session and even within a session? This presentation will focus on the issue of design flexibility. Guidelines for the develoP.M.ent of accessible Web pages exist, both from international standards committees as well as by governments around the world. While important, these guidelines do not fully address the variability of user needs. Flexibility of design and Web application will be discussed.

Leadership: A Diverse Perspective

Sunrise Conference Room

Moderator: Stephenie McLean, Renaissance Computing Institute Panel: Valerie Thomas, DoD High Performance Computing Modernization Program Office, Debra M. Cooper, 2006 President IEEE, Carmen Citron, Director Centro de Recursos Informaticos

This panel will focus on senior women in industry, academia, and government labs. The panel will consist of three women, one from each area, to allow ample time for each woman to initially describe her career path to leadership. The goal of this panel is to address the following issues:

- The art of execution or getting the job done.
- Budget management, which is a major issue for leaders.
- Understanding and navigating the political environments

Thursday, October 5th

SESSION 5 • 4:20 P.M. – 5:20 P.M.

The Journey to a Teaching-Oriented Faculty Position

Royal Palm 4, 5 & 6

Panel: Janet Davis, Grinell College, Ruth Anderson, University of Washington, Cheryl D. Seals Auburn University, Megan Thomas, California State University, Stanislaus, Tammy VanDeGrift, University of Portland

The objective of this career mentoring panel is to advise and inform graduate students in Computer Science and related fields who are interested in pursuing teaching-oriented faculty careers. Graduate students generally complete an advanced degree at research institutions. There are few opportunities for graduate students to learn about teaching positions at teaching-oriented colleges and universities. In this panel, we will present advice on topics such as acquiring teaching experience in graduate school, finding announcements of open positions, preparing application materials, and what to expect when interviewing at teaching-oriented colleges and universities. The advice and expectations for a teaching-oriented career path were harvested from the panelists' recent experiences in conducting teaching-oriented job searches in computer science and from one panelist's experience serving on search committees.

Managing Career Change for Researchers

Sunrise Conference Room

Panel: Kathleen Fisher AT&T Labs Research, Pei Cao, Stanford University, Tal Malkin, Columbia University, Lalita Jagadeesan, Bell Laboratories, Lucent Technologies

Life as a researcher can be a little like being at sea: calm for a time, and then sudden change. The past 10 years have seemed especially turbulent for people pursuing research careers. The so-called ``dot com boom" of the late 1990's drew many industrial researchers and academicians into startup companies, only to be left to reconsider their career paths once again when the bubble burst a few years later. At the same time, several major industrial research labs underwent significant changes, with some labs closing, and others changing direction in response to market pressures. Change can be scary and inconvenient, but it also opens the doors to new opportunities. The objective of this panel is to bring together a small group of women who have recently made or contemplated career transitions and have them share their strategies for managing change successfully.

Anatomy of a Nationwide, Three-year, Multidisciplinary Study of Diversity on the Computing Disciplines

Sunset Conference Room

Panel: Antonio M. Lopez, Jr., Xavier University of Louisiana, J McGrath Cohoon, University of Virginia, Madonna Constantine, Teachers College Columbia University, Tracy Camp, Colorado School of Mines

The objectives of this panel are twofold: (1) Provide information regarding a scientific research study on gender-based differences and ethnic and cultural models in the computing disciplines that is presently underway in the United States, and (2) Encourage others to undertake such studies so that results might be replicated and generalized across studies. The target audiences are those doing "women in computing research" as well as those interested in such research. The challenge is to move researchers from small samples at single institutions of higher education to large samples from multiple institutions of higher education across the United States. The four panelists are part of a nationwide, three-year study on gender-based differences and ethnic and cultural models in the computing disciplines. They each have different roles in this important research work and will provide the audience with their different perspectives.

The Role of User Research in the Product DeveloP.M.ent Process

Golden West Conference Room

Panel: Jennifer Gove, Google, Sheryl Ehrlich, Adobe Systems, Kaaren Hanson, Intuit, Robin Jeffries, Google, Brenda Laurel, Sun Microsystems, Anna M. Wichansky, Oracle

User-centered design involves conducting user research to inform product design. While many organizations claim to practice user-centered design, in reality it can be difficult to change traditional design and develoP.M.ent processes. User research can be perceived as being costly in time and money, or, as imperative to ensuring that products meet users' needs. The panel members, User Experience Design (UxD) managers and leads who work at large technology companies, will discuss the strategies they are developing to meet these challenges. The representation of women in the field of UxD will also be discussed. This panel will be of interest to stakeholders of user research: anyone who is (or should be) asking questions about user experience, such as: what do we expect people to do with our products? How are people going to use our products? This includes engineers, architects, program and marketing managers, documentation specialists, managers and executives.

Maintaining Personal Power: A Diverse Perspective

Royal Palm 1, 2 & 3

Moderator: Stephenie McLean, Renaissance Computing Institute, Panel: Shelly Valdez, PhD- President Native Pathways, Inc., Elva Jones, PhD, Chair of Computer Science-Winston-Salem State University, Nayda G. Santiago, Assistant Professor Electrical and Computer Science-University of Puerto Rico-Mayaguez

This panel will focus on women at various stages of the career ladder and how they maintain personal power and high self esteem. The panel will consist of four women, one from industry, one from academia, one from a government lab, and one from a research lab. The goal of this panel is to address the following issues:

- Personal leadership that results in one motivating one's self to be the best in a position despite the rewards or lack of rewards.
- Maintaining ethical leadership in a highly technical field.
- Providing a life balance to avoid burnout.

Friday, October 6th

SESSION 1 • 10:00 A.M. – 11:00 A.M.

Non-Traditional Ways to Advance Your Career

Royal Palm 1, 2 & 3

Panel: Kathy Baxter Google, Robin Jeffries, Google, Catherine Courage, Salesforce.com, Susan Landau, Sun Microsystems, Jill Strawbridge, Shopzilla

Some professionals are limited in their ability to advance their career. Perhaps they work at a job where their work is confidential so no one outside of the company can see the type or quality of work they do. Perhaps they work at a company that has little hierarchy so promotions are few and far between. Promotions or recognition at work are not the only means of advancing one's career. There are a variety of ways an individual can grow beyond their job. This can have a positive effect personally, professionally, and at work! The objective of this panel is to share a variety of ways professionals can grow beyond work. We will demonstrate that you do not have to be a superwoman or sacrifice a family in order to advance your career. Attendees will walk away from the session with tips for what they can do to move ahead.

Coaching Geeks: Observations about Ways That We Hold Ourselves Back

Sunset Conference Room

Presenter: Susan E. Dorward, Sudo Coaching LLC

As a tech management coach, I have had the opportunity to work closely with many technical women on issues that they face at work and how to address them. Even though I spent years as a tech manager, I found that the issues raised in coaching were quite different from those that I had seen previously. To my surprise, I began to see a pattern: women's innermost thoughts, worries, and fears contributing to hesitation, inaction, and ultimately dissatisfaction and frustration at work. Come and find out more about what we tech women may be doing that holds us back, and what we can do to turn this around.

Research in Industrial Labs: How Collaboration Aids Innovation

Royal Palm 4, 5 & 6

Presenters: Tarik Ono, Sun Microsystems, Gilda Garreton, Sun Microsystems

Using the example of Sun Microsystems Laboratories, this presentation shows how research in industrial labs often spans

multiple research areas and encourages close collaboration between groups. We will focus on one particular innovation that was made possible by a joint effort of hardware and software engineers, namely Proximity Communication, a novel low-power chip-to-chip communication method developed at Sun Microsystems Laboratories. Furthermore, the presentation will explain the research and circuit design flow process that lead to the develoP.M.ent of functional test chips. It will also emphasize the relevance of an in-house open-source CAD tool as well as interactions with external partners.

AND

The Low Power Processor Challenge for the World's Fastest Supercomputer

Presenter: Laura M Zumbrunnen, IBM Technology Collaborative Solutions

Power and performance share a mutually beneficial relationship, how is the world's fastest, highest performing supercomputer able to tout a low power design? This presentation provides an overview of the challenges BlueGene, the world's fastest supercomputer, faces designing a low power cost effective processor for a high end system. It will also focus on the processor hardware strategy to optimize for a low power cost effective solution. The solution requires ongoing collaboration and innovation among the system architects, processor design team, technologists, packaging engineers, physical design team, and test engineers.

SpelBots: Women Making Waves in Robotics Research and Education

Sunrise Conference Room

Panel: Andrew B. Williams, Spelman College, Ebony O'Neal, Spelman College, Karina Liles, Spelman College, Ashley M. Johnson, Spelman College

Women represent a vast amount of untapped human resource potential needed to fuel both industry and academic research needs. This talk will describe a cohesive, integrated approach to increase the participation and education of women using innovative robotics and computer curriculum and competitions. We describe how the Spelman College's SpelBots RoboCup Four- Legged robot soccer team is seeking to inspire young girls to pursue education and research in robotics and artificial intelligence (AI). We also discuss the joint Spelman and Carnegie Mellon University NSF-sponsored project, C.A.R.E. that is seeking to broaden the participation of young girls, women and students at historically black colleges and universities (HBCUs) in the field of robotics and AI. C.A.R.E.'s middle school camps, HBCU computer and robotics Olympiads, and Tekkotsu robotics curriculum will be highlighted.

AND

Women Shape Technology. The German Center of Excellence Technology – Diversity – Equal Opportunities (TeDic)

Panel: Veronika Oechtering, University of Bremen, Ursula Köhler, Fachhochschule Bielefeld, Barbara Schwarze, Fachhochschule Bielefeld

This presentation aims at outlining the work of the German national Centre of Excellence Technology – Diversity – Equal Opportunities. Started in the year 2000, the centre serves as national contact point on the issue of women in the information society, science and technology with current data & facts. It aims to continually raise the percentage of women in engineering sciences through group oriented project work, effective publicity, and the realization of strategic guidelines and structural measures. The work is carried out in co-operation with internationally active women expert groups, public partners and industry. Overviews on running projects in the field of IT and computer science will be given.

Friday, October 6th

SESSION 2 • 11:10 A.M. – 12:10 P.M.

The Real Apprentice: Being a Technical "Chief of Staff" to an Executive, and Why It Just May Be the Perfect Job for You!

Golden West Conference Room

Panel: Lila Ibrahim, Intel Corporation, Monique Hayward, Intel Corporation, Debby Brown, Hewlett-Packard Co., Rhae-Christie Shaw, Microsoft Corporation

What is being an apprentice to an executive? A technical advisor, technical assistant, technology operations director… it is basically the Chief of Staff, an invaluable assistant to the executive. The role can vary from assisting the executive in the technical and public aspects of his/her role to managing the day-to-day staff operations, developing speeches and presentations and leading special projects. This panel will share the experience of women in these roles and provide insights into the impact it had on their careers. Wonder if you could be a real Apprentice? The interactive Q&A will provide you the opportunity to ask those still in office and those who have "survived" being an apprentice to an executive.

The STARS Alliance: Experiences in Broadening Participation in Computing

Sunset Conference Room

Panel: Tiffany Barnes, University of North Carolina at Charlotte, Teresa Dahlberg, University of North Carolina at Charlotte, Cheryl Seals, Auburn University, Laurie Williams, North Carolina State University

Ten academic partners have established a system of regional partnerships, called the STARS Alliance to recruit and retain underrepresented minorities in computing. The STARS Alliance is structured as five local alliances or "stars," each including research, minority-serving and women's institutions, K-12 schools, industry, and community groups. Our central activity, the Students and Technology in Academia, Research, and Service (STARS) Student Leadership Corps, integrates for peer mentoring, research experiences, civic engagement, and professional develoP.M.ent into a community building experience. The Alliance will also address systemic curriculum change through replicating best practices, including pair programming, teaching math to visually impaired students and working with students with learning disabilities and AD/

HD. In this presentation, we will discuss our progress to date, including early insights into the alliance-building process, kick-off workshop, and project replications.

Riding the Crest: High-End Cyberinfrastructure Experiences and Opportunities on the NSF TeraGrid

Sunrise Conference Room

Panel: Laura F. McGinnis, Pittsburgh Supercomputing Center, Katherine Vargo, Pittsburgh Supercomputing Center, Radha Nandkumar, National Center for Supercomputing Applications, Nancy Wilkins-Diehr, San Diego Supercomputer Center

The NSF's TeraGrid project presents an integrated cyberinfrastructure for high-performance computing resources which advance scientific research across disciplines. TeraGrid is an example of the state-of-the-art in cyberinfrastructure that is touching lives in many ways through the application of grid computing capabilities to science and education. Panelists will share their experiences with TeraGrid infrastructure, scientific applications, and user services and communities. Follow-up discussions aim to encourage women in computer science and computational sciences to consider the cross-disciplinary efforts required to provide leading-edge technologies to the scientific community. The target audience will include computer scientists, system specialists, and applications developers, as well as computational scientists interested in learning about one of the NSF's major research resources.

Ripple Effects: Increasing the Diversity of Creators and Consumers of Computing Technology

Royal Palm 4, 5 & 6

Panel: M. Bernadine Dias, Carnegie Mellon University, Carol Frieze, Carnegie Mellon University, Joseph S. Mertz, Jr., Carnegie Mellon University, G. Ayorkor Mills-Tettey, Carnegie Mellon University, Linh Xu, Carnegie Mellon University, Sarah M. Belousov, Carnegie Mellon University, Ariadna Font-Llitjos, Carnegie Mellon University, Vinithra Varadharajan, Carnegie Mellon University

Despite major advances in computing technology and initial adoptions of this technology around the world, many developing communities have not benefited from computing technology to date. This panel will focus on our newest "wave" of efforts to increase diversity, beyond gender, in the creators and consumers of computing technology so that computing technology becomes relevant and accessible to developing communities. Many of our panelists champion the cause for gender diversity in computing. In this panel we will describe our newest initiative, TechBridgeWorld, which innovates and implements technology solutions to meet sustainable develoP.M.ent needs around the world, through strong partnerships with developing communities. Specifically, this panel will focus on our educational initiatives that provide our students and faculty with non-traditional opportunities to learn about and work with developing communities towards relevant and sustainable technology solutions, and to also develop technology tools catered specifically to education in a developing community context.

Friday, October 6th

SESSION 3 • 1:40 P.M. – 2:40 P.M.

Making Waves in K-12 Perceptions of Computing. The Evolution of Outreach Programs

Royal Palm 4, 5 & 6

Panel: Ariadna Font Llitjós, Carnegie Mellon, Anissa Agah St.Pierre, University of Victoria, Emily Treat, Carnegie Mellon, Vinithra Varadharajan, Carnegie Mellon, Ulrike Stege, University of Victoria, Ruizhen Feng, University of Victoria

Outreach programs are an excellent way for women in computing to affect future generations of computer scientists. Several universities across North America are making waves to attract the next generation of potential students. By showing young students the diversity and excitement of computer science, we can change their perceptions of computing, erase harmful stereotypes, and make it an appealing career path for young women and minorities. We offer specific pointers, tips, and tricks on how to sustain a successful outreach program from two universities that have ongoing outreach programs: University of Victoria and Carnegie Mellon University. Further, the panel will address how to find continual funding, recruit new student presenters, build a supportive community, use audience feedback to improve presentations, evaluate the impact and benefits, and find new places and opportunities to present. We will also provide pointers on starting an outreach program and creating a good presentation.

Balancing Your Career and Family

San Diego Conference Room

Panel: Kathy Baxter, Google, Sharon Perl, Google, Kathleen Fisher, AT&T Labs Research, Nuria Oliver, Microsoft Research, Terry Roberts, Intuit

This panel is targeted towards women at all stages in their lives. Women in college may be wondering if they should have children immediately rather than stopping mid-career to have a family. Women a few years into their career frequently wonder when the best time is to start a family. Women that have just had children and are getting back into their careers may wonder how to balance it all. Women that have had children may be finding it difficult to advance their careers with the same speed as before they started their family. Concerns of being a "good" mom and superstar at work plague many women.

This panel will address the concerns of each of the audiences mentioned above. We hope to create a more open dialog among women at all stages, learn from each other's wisdom, and break down the myth that only superwomen can have it all.

A Framework for Changing Undergraduate Computer Sciences Curriculum and Teaching

Golden West Conference Room

Panel: Debra Richardson, UC Irvine, Lecia Barker, University of Colorado, Boulder, Mark Guzdial, Georgia Tech, Suzanne Schaefer, UC Irvine, Laurie Williams, North Carolina State University

Changing undergraduate computer science curriculum is a powerful means of challenging stereotypical images—lone-geek-in-a-cubicle-programming-day-and-night—while making the computer sciences more appealing to women students. However, there is no universal recipe for changing undergraduate curriculum. This panel of computer and social scientists will discuss continuing research and evaluation in undergraduate computer science programs and provide an overview of three critical elements involved in changing curriculum. These elements are: (a) find out what's going on; (b) based on what's going on, determine an implementation or two that makes sense; and (c) keep an eye on what's going on and track progress towards change. The panel will address these elements and present examples of: (1) a field-tested context survey and results; (2) two effective practices that have been adopted by more than one institution (pair programming and media computation) and (3) how, when and why effective evaluation matters.

Multimedia Search

Royal Palm 1, 2 & 3

Presenter: Janine Crumb, Microsoft Corporation

This talk will cover the current state of multimedia web search. What technologies are used, challenges faced, and problems to be solved. For example: defining and measuring what makes a relevant image, video, audio clip and web pages that contain them; integrating relevant multimedia research into a massively scaled system; and analyzing vast user data to develop the right interface.

AND

Systematic Research of Young Women's Stereotypes and Attitudes Toward Engineering Through Computer-Based Avatars: The Impact of Appearance and Message

Panel: Amy L. Baylor, Florida State University and E. Ashby Plant, Florida State University

This interactive presentation will discuss results from several NSF-funded experimental studies investigating young women's (middle school and college sophomores) stereotypes and attitudes toward engineering. In these studies, anthropomorphic 3D animated avatars were employed as controlled research vehicles to represent computer-based "social models:" their *appearance* and *message* were manipulated in several large, controlled studies. The session will also discuss the potential of such computer-based social models to serve as "virtual mentors" to young women, to enhance their motivation and stereotypes toward engineering.

Part of the Problem/Part of the Solution

Sunrise Conference Room

Panel: Claudia Morrell, Center for Women and Information Technology, University of Maryland, Baltimore County, Revi Sterling, ATLAS Institute – University of Colorado, Boulder, Sophia Huyer, Women and Global Science and Technology – WIGSAT

Companies are increasingly interested in creating strategic opportunities in the "Three-Quarters World" - the ¾ of the population that live in developing and traditionally underserved regions. Technical and gender-equity non-governmental organizations are increasingly employing Information and Communication Technologies (ICTs) tools as part of their strategy. While ICTs show great promise in alleviating entrenched economic, health and gender disparities, ICTs may be exacerbating gender gaps. Despite the best intentions, many aid-focused initiatives intended to assist women's unique develoP.M.ent goals are challenged with long-term sustainability and the ability to have wide-ranging impact upon the culture.

This panel will discuss challenges, pitfalls and opportunities for ICTs as mechanisms of positive change for women in developing regions. We will outline the multifaceted dimensions of "ICT for Women," exploring the role ICTs play in assisting other develoP.M.ent efforts, as well as looking at ICT as a sector itself, a form of capacity building for women.

AND

Social and Cultural Impact on ICT Women

Panel: Naseem A. Bhatti, Computer Training Centre, Pakistan, Dilma Da Silva (T.J. Watson Research Laboratories

The information and communication technologies are considered non hierarchical, personal and liberating. This presentation will focus on social and cultural impact of ICT on women in Pakistan and Brazil. This presentation will highlight that if technology becomes available and affordable its use sends waves of change in society. The effects of use of ICT enabled devices and services on socio-cultural norms and traditions and the changes in society due to the affordability and availability of information and communication technologies will be presented.

Friday, October 6th

SESSION 5 • 4:20 P.M. – 5:20 P.M.

Finding 'Common Ground': An Uncommon Approach to Correcting the Under-representation of Women in Computing

Royal Palm 4, 5 & 6

Panel: Gloria Childress Townsend, DePauw University, Nancy Amato, Texas A&M, Joann Ordille, Avaya Laboratories, Lori Pollock, University of Delaware, Elaine Weyuker, AT&T Labs

During GHC2004, Computing Research Association's "Committee on the Status of

Women in Computing Research" (CRA-W) invited the Association for Computing Machinery's "Committee on Women in Computing" (ACM-W) to a presentation and discussion event in order to "find common ground" that would advance our organizations' common goals. We will identify (as we did in 2004) several projects that each organization sponsors. It is important in itself for all members of the targeted audience to learn about the two committees' projects and their benefits and to use the information in recruitment and retention efforts, after the conference ends. However, after motivating the audience to participate in the two committees' projects, we will outline how we have interleaved our projects, during the last two years, so that we can illustrate the benefits of cooperation and formation of alliances.

AND

Family-Friendly Campuses and Strategies for Work/Life Balance

Panel: Pamela C. Cosman, UC San Diego, Susan M. Lord, University of San Diego, Tajana Simunic Rosing, UC San Diego, Kate Quinn, University of Washington, Eve A. Riskin, University of Washington

The American Council on Education and the Sloan Foundation will award grants to five U.S. universities that they determine to be most family-friendly. We will summarize the aspects of what makes the five winning universities family-friendly with a goal of informing prospective faculty members about what they might look for when interviewing for academic jobs. We will also discuss the differences in childbirth leave at campuses with 9-month versus 12-month appointments, and discuss data on how babies affect faculty careers for men and women. We will offer perspectives on the differences in work-life balance between industry and academia, and will summarize recent research on graduate student perception of work/life balance.

The Technical Career Path

Royal Palm 1, 2 & 3

Panel: Carole Dulong, Google, Debra Bernstein, Intel Corporation, Kathleen Nichols, Pollere LLC, Sharon Perl, Google, Linda Rankin, Intel Corporation, Wendy Rannenberg, Hewlett-Packard

Panelists will describe their jobs, the type of innovation they do, the sort of problems they are confronted with, and how they approach these problems. The panelist will also describe their careers, and will discuss their experiences in the technical career path.

What is the technical career path? (What it is not, contrast it with the management career path). What should be examples of responsibilities assumed expected from the technical career path? In these positions: sources of satisfaction, and sources of frustration, why we love it, and when do we have to be patient! How to get in this path? How to get out? Examples of path taken by the panelists in their careers and how to get back in the management track

The Challenges and Rewards of Mentoring Undergraduate Women: The CREU Projects

Towne Conference Room

Panel: Rose Shumba, ndiana University of PA, Bags Bhagyavati, TSYS Department of Computer Science, Melissa Karolewski, Indiana University of PA, Ometere Tuté Ehinlaiye Indiana University of PA

Successful research projects completed by undergraduate students in Computer Science can improve retention and graduation rates. These students are more motivated than others to pursue graduate school and research-related careers. Although undergraduate research can vary widely, some characteristics appear commonly across successful projects. The panelists will share their experiences involving women in successful undergraduate research projects. We anticipate audience discussion and resource sharing for at least half the time allocated to the presentation. One of the panelists will share her success with the CREU program while another panelist will share a challenging CREU experience. Two other panelists are students currently in the CREU program and will share their experiences from a student perspective. We will provide handouts of the following materials: statement of expectations provided by the students, CREU proposal, progress and status reports provided by the students, and other materials used by faculty and students in project management.

An Intelligent System for Medical Treatment

Dover Conference Room

Panel: Anja Remshagen, University of West Georgia, Katrina Riehl, University of Texas at Dallas, Katherine Moreland, University of Texas at Dallas

Advances in molecular biology have complicated medical treatment. An intelligent system that aids in the selection of treatment plans must tackle decision problems at the second level of the polynomial hierarchy. A common approach has been to simplify these problems to an NP-complete problem. However, the reduction process may produce inaccurate results which are not acceptable in case of medical treatment. We describe an intelligent system for cancer treatment that applies an exact solution algorithm. The system is composed of two components: (1) the selection of medical tests and treatment plans. The problem requires solving a quantified logic formula. Our approach is based on backtracking search and a learning scheme. (2) Derivation of mathematical models linking the interaction of medication, diseases, symptoms, molecular structures, and possible treatments. This information is extracted as logic explanations from patient data. In addition, normative logic models are used to represent basic relationships.

Another Ride on the Crazy Train: Work/Life "Balance"

Golden West Conference Room

Panel: Suzanne K. Schaefer, UC Irvine, Erin Bradner, Autodesk, Michael Goodrich, UC Irvine, Melanie Martin, California State University, Stanislaus, Andre van der Hoek, UC Irvine, Wendy Carmody, Hewlett-Packard Company

This panel will involve a discussion of

how computer scientists balance the often competing demands of work and "life." Each panelist will be asked to use the following questions to guide her/his remarks: How do you balance the demands of a career with the need for a fulfilling life? How do your employer's policies enable or hinder you in striving for this balance? What creative solutions have you developed to handle these needs and desires? What are some tangible messages that you have received from colleagues about the relative role of your "outside work" life?

Some of the Grace Hopper attendees may be in less-than-ideal environments. Rather than accept the status quo, the panelists may inspire them to take action to improve employers' accommodations of employee's; diverse life needs.

Saturday, October 7th

SESSION 1 • 10:00 A.M. – 11:00 A.M.

Careers in Robotics

Golden West Conference Room

Panel: Carl DiSalvo, Carnegie Mellon University, Julia Loftis, NASA Goddard Space Flight Center, Elena Messina, Knowledge Systems National Institute of Standards & TechnologySpeakers from industry, NASA, and the robotic arts community will speak about how they use robotics in their field.

Computing and Community: Stories from the Field – San Diego Conference Room

Panelists from universities and the non-profit community, including social service workers, educators, and museum directors, will share their experiences in developing and deploying projects that computer science and engineering students have designed to meet community needs.

Panel: To Be Announced

SESSION 2 • 11:10 A.M. – 12:10 P.M.

Getting Started in Robotics

Golden West Conference Room

Panel: Illah Nourbakhsh, Carnegie Mellon University, Steve Richards, Acroname, Inc., Andrew Williams, Spelman College

Session participants will get some hands on experience with robots such as Roomba and Qwerkbot and learn about ways they can start making and controlling robots of their own. This session will be an introduction to the world of hobby robotics with pointers to hobbyist sites and starter kits.

Computing and Community: Developing Computing Solutions to Meet Community Needs – Part 1

San Diego Conference Room

Panel: Chris Bailey-Kellog, Dartmouth College, Patrice Buzzanell, Purdue University, James Early, Purdue University, Jeanne Ferrante, UC San Diego, Leah Jamieson, Purdue University

In these hands-on sessions, student teams will brainstorm solutions for community problems. Via recorded interviews with the directors of community service organizations, each breakout team will receive a Community Challenge describing an unmet community need. Teams will create Mission Plans to bring computing to bear in addressing the challenge. In the second half of the session, teams will develop and present their multimedia Mission Plans.

SESSION 3 • 12:20 P.M. – 1:20 P.M.

Teaching Computing with Robots

Golden West Conference Room

Panel: Natalie Jeremijenko, UC San Diego, Maja Mataric, USC, Cathryne Stein, KISS Institute for Practical Robotics

Robots are an exciting tool for teaching about computing. Learn how robots are being used to teach at the middle school, high school, and college level.

Computing and Community: Developing Computing Solutions to Meet Community Needs – Part 2

San Diego Conference Room

Panel: Chris Bailey-Kellogg, Dartmouth College, Patrice Buzzanell, Purdue University, James Early Purdue University, Jeanne Ferrante, UC San Diego, Leah Jamieson, Purdue University

In these hands-on sessions, student teams will brainstorm solutions for community problems. Via recorded interviews with the directors of community service organizations, each breakout team will receive a Community Challenge describing an unmet community need. Teams will create Mission Plans to bring computing to bear in addressing the challenge. In the second half of the session, teams will develop and present their multimedia Mission Plans.

Talks: Ph.D. Forum & New Investigators

Friday, October 6th

SESSION 4 • 2:50 P.M. – 4:05 P.M.

Ph.D. Forum One: HCI and Social Issues

Royal Palm 1, 2 & 3

A Framework to Identify Female High School Students' Barriers to IT Careers

Donna Grant
DePaul University

Designing a Remote Communication Device with Young Adults with Cognitive Disabilities and Their Families

Melissa Dawe
University of Colorado, Boulder

Gender HCI Issues in Problem-Solving Software

Laura A Beckwith
Oregon State University

Software Visualization: Using Perceptual and Cognitive Concepts to Quantify Quality, Support Instruction and Improve Interactions

Philippa Rhodes, University of Georgia

Using Storytelling to Motivate Middle School Girls to Learn Computer Programming

Caitlin L Kelleher
Carnegie Mellon University

Ph.D. Forum Two: HCI and NLP

Sunrise Conference Room

Actively and Implicitly Learning Individual Reward Models

Bowen Hui
University of Toronto

Documenting and Understanding Everyday Activities through the Selective Archiving of Live Experiences

Gillian R. Hayes
Georgia Institute of Technology

Improving User Interaction with Spoken Dialog Systems via Shaping

Stefanie L. Tomko
Carnegie Mellon University

Natural Language Watermarking

Mercan Topkara
Purdue University

Strategies for Automatically Exposing Faults in Web Applications

Sara E Sprenkle
University of Delaware

Ph.D. Forum Three: Mobile Computing and Networking

Royal Palm 4, 5 & 6

A Remote Server-based Network Emulation System

Yan Gu
College of Computing, Georgia Institute of Technology

High Performance Query Planner for Distributed Data Streams on the Grid

Ying Liu
Indiana University

Hybrid Structure/P2P Approach to Optimize the Performance of Video Streaming over Heterogeneous

Networks Based on Lower Layer Feedback

Danjue Li
University of California at Davis

Middleware for On-Demand Access to Sensor Networks

Sanem Kabadayi
University of Texas, Austin

Multi-Angle View of a Moving Target Using Mobile Robots

Esra Kadioglu
University of Minnesota

Ph.D. Forum Four: Architecture and Grid Computing

Sunset Conference Room

A Framework for the Dynamic Reconfiguration of Scientific Applications in Grid Environments

Kaoutar El Maghraoui
Rensselaer Polytechnic Institute

Dataflow Mini-Graphs: Amplifying Superscalar Capacity and Bandwidth

Anne Bracy
University of Pennsylvania / Intel Corp.

Toward Global Processor and Memory Power Management

Nevine AbouGhazaleh
University of Pittsburgh

Ph.D. Forum Five: Theory

Dover Conference Room

Evaluating Algorithmic Design Paradigms

Sashka Davis
University of California, San Diego

Scheduling LambdaGrids Using Advance Reservations with Co-Allocations

Neena R Kaushik
Santa Clara University

Techniques for Generating Optimal, Robust Plans when Temporal Uncertainty is Present

Janae N. Foss
Michigan Technological University

Scalable Complex Pattern Search in Sequential Data

Leila Kaghazian
USC

Ph.D. Forum Six: Topics in Computer Science

Towne Conference Room

Efficient Support Vector Learning for Large Datasets

Seyda Ertekin
The Pennsylvania State University

Generating Surface Crack Patterns

Hayley N. Iben
University of California, Berkeley

VOGUE: A Novel Variable Order-Gap State Machine for Modeling Sequences

Bouchra Bouqata
Rensselaer Polytechnic Institute

New Investigators 1: Computing Changes Our Lives

San Diego Conference Room

Designing Ubiquitous Computing Technologies to Motivate Fitness and Health

Louise Barkhuus
University of Glasgow

AIR: Advancement through Interactive Radio

S. Revi Sterling
University of Colorado

Coordination, Poverty, and Disasters: Discovering and Reinventing Computing Technology

M. Bernadine Dias
Carnegie Mellon University

Optimizing Computer Imagery for More Effective Visual Communication

Vidya Setlur
Nokia Research Center

New Investigators 2: Computing Brings Speed and Safety

Golden West Conference Room

Defining and enforcing correct network behavior at application granularity

Marianne L. Shaw
Univ. of Washington

Efficient similarity search and data mining in multimedia databases

Ira Assent
RWTH Aachen University

Fast Probabilistic Pursuit of Mobile Entities in Road Networks

Sahar A. Idwan
Sahar

Making and Propagating Elastic Waves: An Overview of the New Wave Propagation Program

Kathleen Patricia McCandless
Lawrence Livermore National Laboratory

Birds of a Feather

Thursday, October 5th

SESSION 6 • 5:30 P.M. – 6:30 P.M.

Embrace Your Duality as an Asian Woman to Lead

Royal Palm 1, 2, & 3

Panel: Leng Leng Tan, Oracle Corporation, Karen Hahn, Goldman Sachs, Roz Ho, Microsoft Corporation

As Asian women in computing, we often find ourselves struggling with gender difference in this male-dominated field, but we also face the culture difference of a largely western environment. Do we have to change our identities in order to excel and lead in the computing field?

In this session, we will discuss the unique issues that Asian women face and explore various skills and resources we can use to address them. We will brainstorm how to leverage our gender strength to excel, and to embrace our cultural advantage to lead!

Female-Friendly Education: Increasing Participation or Watering Down?

Royal Palm 4, 5 & 6

Panel: Allan Fisher, iCarnegie, Inc., Sue Rosser, Georgia Tech, Jane Margolis, UCLA, Mark Guzdial Georgia Tech

The idea of "female-friendly science" has been regarded—perhaps misconstrued—by some as panacea and by others as dumbing down. Participants in this session will review some of the research, history and implementation of the idea, and discuss it in the context of the general issue of broadening participation in computing. Advocates, practitioners, skeptics and the curious are invited.

How Can Commuter Schools Schedule Fun?

Dover Conference Room

Panel: Donna Heistand-Tupper, CCBC – Essex, Grazina Metter, CCBC – Cantonsville

The Community College of Baltimore County is a commuter school. In 2003, we were awarded an NSF grant to assist in creating a prograA.M. designed to increase the number of women in computer-related fields.

Our scholars are a diverse group of women. To recruit students, we rely heavily on faculty referrals. All scholars are assigned mentors. Working with student services, we have added several courses to the Cyber-Tutoring prograA.M.. We have recruited faculty tutors for courses required in computer-related fields.

We have designed a summer bridge prograA.M. to reinforce math skills and give students workshops on study skill, math anxiety, learning styles, job

interviewing and resume writing. Our winter bridge focuses on web design and computer-related skills. It is held exclusively online.

We offer many social activities and fA.M.ily nights for our scholars.

With an average attendance rate of 15%, "How Can Commuter Schools Schedule Fun?

Latinas in Engineering

Sunset Conference Room

Moderator: Gilda Garreton, Sun Microsystems Panel:, Dilma da Silva, IBM TJ Watson Research Center, Cecilia Aragon, Lawrence Berkeley National Laboratory

This Birds of Feather Session for the 2006 Grace Hopper conference is intended to facilitate informal discussion A.M.ong Latina women in the computer science and engineering fields. Both women and Latinos are in the minority in technical fields in the United States, and it is rarer still to encounter a Latina in computer science or engineering. We would like to open up discussion A.M.ong Latinas in engineering to share insights, support, ideas, and suggestions.

The expected audience is anyone interested in hearing about the experiences of Latinas working in the US, or people who want to share their stories with women with less work experience. It could also be a networking opportunity for women with similar backgrounds and interests.

Developing the CS All-Girls "DreA.M. TeA.M."

Sunrise Conference Room

Panel: Carrie E. Gates, CA Labs, Connie L. Hanlon, CA Labs

CA will present a new prograA.M. that we believe will increase the likelihood that women will pursue a technology degree in higher education, and that they will stay with an IT career after they graduate. The concept was inspired by a TV documentary, "Dare to DreA.M.," about the U.S. women's soccer teA.M. (www.hbo.com/sports/daretodreA.M./index.html). In it, the coaches describe how they recruited players from various high schools and colleges, and built them into a teA.M. despite geographic distances. Our idea is similar: develop a teA.M. of girls who are still in high school and have them work together on a technical project (that has some social relevance), where they are mentored by undergraduate women and female technologists and leaders. By making this a multi-year prograA.M., we believe that women will both be inspired to pursue technology and develop the social network required to help them remain in technology.

Typing Lavender: LGBT Women in Computer Science

Stratford Conference Room

Presenter: Melanie J. Martin (California State University, Stanislaus)

The goal of this session is to bring together LGBT computer scientists and allies. We hope to provide an opportunity to meet and discuss issues of particular relevance to the LGBT community. Some topics we expect to discuss are: domestic partner benefits and tax implications, discrimination in the workplace, coming out in a job interview, solving sA.M.e-sex two body problems, and coping with isolation. In addition to networking, participants will be invited to share issues and solutions.

Friday, October 6th

SESSION 6 • 5:30 P.M. – 6:30 P.M.

Everything You Always Wanted to Know About Graduate School but Were Afraid to Ask

Dover Conference Room

Panel: Audrey Girouard, Tufts University, Leanne Miller, Tufts University, Rachel Lomasky, Tufts University

For students considering grad school, it is not always easy getting answers. In this informal session, current graduate students are available to answer questions for prospective graduate students. Some of the topics discussed are:

- Road to Graduate School: Should I work before going to graduate school?
- Applying and Choosing the University: Do I need a research project and an advisor before applying? MS or PhD? Should I contact anyone? Should I go visit?
- Funding: What are fellowships, scholarships, and assistantships?
- International Students: What do I need to do differently as an international student?

The session leaders are an international second year student and two fourth year students. Together, they can discuss their experiences as a TA, a RA, students with internships, coming straight from undergrad, having worked before attending grad school, or having changed schools between the MS and PhD.

Practical Solutions for Addressing K-12 Computer Science Equity Issues

Royal Palm 4, 5 & 6

Panel: Chris Stephenson, CSTA, Michelle Hutton,Girls' Middle School/CSTA, Joanna Goode, University of Oregon, Caitlin Kelleher, Carnegie Mellon University

For too many years we have been discussing equity issues in K–12 computer science education rather than focusing on developing workable strategies and disseminating best practices that really work. This session will explore three different kinds of interventions intended to increase the participation of young women and underrepresented populations in computer science education and address the current pipeline crisis.

The presenters will provide information on:

- common misconceptions about computer science as a discipline and a career choice
- disparities in representation in high school computer science
- reaching out to students through informal education opportunities.

Increasing Women in Technology

Towne Conference Room

Panel: Julie R Mariga, Purdue University, A.M.anda M Bennett, Purdue University, Stacy Price, Purdue University

The ratio of men to women in the field of technology has become devastatingly low within education. It is necessary that technology progrA.M.s discover ways to bring women into the field, as well as retain them.

The objective of this presentation is to discuss methods of attracting and retaining women in technology which have proven successful over the years. The targeted audience is composed of graduate and undergraduate students as well as industry and academia attendees. The format of the presentation will be an informal discussion; questions are welcomed.

How to Survive a Technical Interview

San Diego Conference Room

Presenter: Raquel Garcia, Microsoft

Have you ever asked yourself how a technical interview differs from a regular interview? If so, this is the workshop for you! We will discuss technical interviews, what you should expect and how to prepare for them. There will be exA.M.ples given and time will be set aside for an interactive discussion of experiences. Everyone that attends this workshop should leave feeling more prepared for their next technical interview!

We'll cover: • Preparation and research • How to apply what you've learned • Helpful interviewing tips • SA.M.ple questions The audience for this session includes anyone who ever has or will engage in a technical interview.

Anonymous Advice Session for Junior Faculty

Golden West Conference Room

Panel: Vibha Sazawal, University of Maryland, College Park, Rachel Pottinger, University of British Columbia

Pre-tenure female faculty faces unique challenges. Like all new professors, they must adjust to new job responsibilities that involve massive time investments, interpretation of vague directives, and a fearful tenure process. Being a woman presents additional challenges: junior faculty women have far fewer peers and senior female role models, and female faculty are so rare that they fear their questions and problems will easily be remembered by senior faculty when their tenure cases are evaluated. Pre-tenure female faculty is left feeling isolated and afraid to speak up.

The goal of this session is to combat these problems by creating a space where junior women can talk A.M.ong themselves, swear not to repeat anything that is revealed, and discuss the specific problems that they are having. Participants will share specific resources and advice, and build collegial ties. Anonymous questions may also be submitted to the session leaders prior to the session.

Why Female Networks Succeed – or Fail

Royal Palm 1, 2 & 3

Panel: Maria Oelinger, University of Duisburg-Essen, Friederike Jolk, University of Bremen, Annika Hinze, University of Waikato, Birgit Koch, University of HA.M.burg) Andrea Schweer, University of Dortmund

The need for female networking in a professional context as well as in education has long been identified – and has recently started to be addressed: be it as a series of discrete events like summer universities [1], as a global organization [2], or as rather small but highly effective projects [3]. A specific need can be detected where members of a minority have difficulties to find birds of a feather in their everyday environment. In this BOF we introduce some existing networks, their origin, how they were set up, their reception, their life, and the impact they made. We invite the participants to join a discussion about positive networking exA.M.ples as well as an analysis of failed attempts. The goal of the discussion is twofold: we hope to identify and promote existing networks as well as to inspire and support the startup pf new female networks.

Helping Young Females See the Magic of Computing

Esquire Conference Room

Panel: Julia Stefani, Truman State University, Mariya S Davidkova, Truman State University, Renee K Hellebusch Truman State University, A.M.y E McNabb, Truman State University, Olga H Nikolova Truman State University, Beth K Woods, Truman State University

Our student-led mentor progrA.M., Tru Women in Computer Science (TWiCS), wants to eliminate doubts and pre-existing misconceptions that computer science is a male-only fascination. This discussion will focus on the techniques that other computer science departments are utilizing in order to recruit females, maintain their interest, and aid their success in the progrA.M. TWiCS would also like to present our newest project. We are convinced that one way to positively influence young women is to inform them of the opportunities that our discipline offers. Thus, we have decided to create a multimedia CD to distribute to the high schools from which we recruit our freshmen in order to promote computer science to female students. The experiences shared will provide valuable information that the audience and TWiCS will take back to their respective institutions in order to build support for women in computer science.

WEDNESDAY, 7:00 P.M. – 9:00 P.M. • GOLDEN BALLROOM

Technical Poster Session

"My Mom is a Cell-Phone Illiterate" – The Influence of Students' Perceptions of Parents on Pre-Adolescent Attitudes Towards ICT (SRC Competition)

Manpreet Kaur, Dept of Information Systems, UMBC

A Bit Error Rate Tester for Variable Encoding of High-speed Local Networks

Rosemary M. Francis, Cambridge University, Michael W. Dales, Intel Research, Madeleine Glick (Intel Research)

A Non-intrusive Data-driven Approach to Debugging Schema Mappings for Data Exchange (SRC Competition)

Laura Chiticariu, UC Santa Cruz

A Remote Server-Based Network Simulation System

Yan Gu, College of Computing, Georgia Institute of Technology

A Simple Parallel Approximation Algorithm for the Weighted Matching Problem (SRC Competition)

Alicia A Permell, Michigan Technological University, Fredrik Manne, University of Bergen, Phillip Merkey, Michigan Technological University

A Universal Approach for Error Characterization for Monte Carlo and Quasi Monte Carlo Sampling (SRC Competition)

Shiwani P Sambarey, Department of Computer Science, University of Illinois at Chicago, Urmila M Diwekar Vishwamitra Research Institute, Center for Uncertain Systems - Tools for Optimization and Management

An Approach to Providing Remote Debugging Feedback without Revealing Sensitive Information

Emily Gibson, University of Delaware, Lori Pollock, University of Delaware

Auction-based Dynamic Task Allocation to Robots

Maitreyi Nanjanath, Dept. of CSE, University of Minnesota, Maria Gini, Department of CSE, Univ. of Minnesota

Building a Reference Resolution System Using Human Language Processing for Inspiration

Shana K. Watters, University of Minnesota

Cheating Shared Nothing: Using Adaptive Queries and an Object Oriented Approach to Improve the Performance of Shared-nothing Clusters

Marlena Compton, Equifax, Inc.

Computer Security Awareness

Melissa Karolewski, Indiana University of PA, Alicia Coon, Indiana University of PA, Ometere Tute Ehinlaiye, Indiana University of PA, Sarah Raffensperger, Indiana University of PA, Rose Shumba, Indiana University of PA

ConversationLens: A System to Bridge Conversation and Item-Oriented Web Sites

Sara Drenner, University of Minnesota

Coverage Metrics for Requirements-Based Testing (SRC Competition)

Ajitha Rajan, University of Minnesota

Decision-Theoretic Intelligent Assistance (SRC Competition)

Bowen Hui, University of Toronto, Craig Boutilier, University of Toronto

Detecting Emulated Environments

Tauhida Parveen, Florida Institute of Technology

Distributed Application Management Using Plush (SRC Competition)

Jeannie R Albrecht, UC San Diego, Christopher Tuttle, Google, Alex Snoeren, UC San Diego, Amin Vahdat, UC San Diego

Distribution of Stream Queries to Utilize Location in a Cluster of Virtual Machines (SRC Competition)

Gauri S. Mawalankar, Indiana University Bloomington

Driving Focused Innovation via Six Sigma

Rodi Tountcheva, Ohio State University

Dynamic Particle Systems for Efficient and Accurate Finite Element Visualization

Miriah Meyer, Scientific Computing and Imaging Institute

Electronic Encapsulating Notebook: Separating Control and Data Planes for a Secure, Usable System

Marianne L. Shaw, Univ. of Washington

Encouraging Girls in Technology: Effective K-12 Outreach by Corporations and Role Models

Linda Kekelis, Techbridge, Jeri Countryman Techbridge, Jennifer Wei, Techbridge, Shannon Madison, Google, Inc.

Extensible and Dynamic Data Structure Viewers in Java (SRC Competition)

Jhilmil Jain, Auburn University, James Cross II, Auburn University, Dean Hendrix, Auburn University

Fast Classification with Online Support Vector Machines (SRC Competition)

Seyda Ertekin, Dept. of CSE, Penn State, Leon Bottou, NEC Labs America, C. Lee Giles, College of Information Sciences & Technology, Penn State

Fault Seeding vs. Mutation Operators: An Empirical Comparison of Techniques for Web Applications (SRC Competition)

Stacey Ecott, Tufts University, Sara Sprenkle, University of Delaware, Lori Pollock, University of Delaware

Filecules: A New Granularity for Data Management in Science Grids (SRC Competition)

Shyamala Doraimani, University of South Florida, Adriana Iamnitchi, University of South Florida

Finding Grace Hopper on the Web

Rosie Jones, Yahoo! Research, Moira Regelson, Yahoo! Research, Wei Vivian Zhang, Yahoo! Research

Framework for a Tutorial Response Generator in an Intelligent Tutoring System

Rashida Z. Davis, University of Delaware

Gender in Free/Libre/Open Source Software: A Social Science Perspective

Dawn Nafus, Intel Corp.

Holistic Usability Measure: Evaluating Speech Systems (SRC Competition)

Priyanka Gupta, Auburn University

ID-Based Clustering in Mobile Ad-hoc Networks (SRC Competition)

Foroohar Foroozan, Computer Science & Eng. ,York University, Uyen Trang Nguyen, Computer Science & Eng. ,York University

Identifying Non Crystallographic Symmetry in Electron Density Maps: Artificial Intelligence Techniques in X-ray Crystallography (SRC Competition)

Reetal Pai, Texas A&M University, Reetal Pai, Texas A&M University, Thomas Loerger, Texas A&M University, James Sacchettini, Texas A&M University

Improving the User Interface: Eye-Tracking in the Microsoft Office Usability Lab

Maria Fernandez Trevino, Microsoft, Amy Alberts, Microsoft

Innovation and R&D in IT Services

Martha Lyons, Hewlett Packard

Integrating Biological Data: Dealing with Incompleteness (SRC Competition)

Amanda Zeigler, Arizona State University

Interference-aware Concurrent Video Streaming Over Wireless Mesh Networks Using Multi-Source Multi-Path Diversity (SRC Competition)

Danjue Li, University of California at Davis, Chen-Nee Chuah, University of California at Davis, S. J. Ben Yoo, University of California at Davis

It Takes a Village (and Vision): The Role of Communities and Interoperability in Next Generation Networks

Ingrid Van den Hoogen, Sun Microsystems

Iterative Design in Practice

Erin Dean, Microsoft, Marina Dukhon, Microsoft

Making Snapshots Perform Better (SRC Competition)

Bhavana Shah, University of British Columbia, Norman C. Hutchinson, University of British Columbia

Making the Invisible Visible: Creating Interactive Visualizations of Home Networking (SRC Competition)

Erika Shehan, Georgia Institute of Technology, W. Keith Edwards, Georgia Institute of Technology

Making Waves—Computing Educators Oral History Project

Barbara Boucher Owens, Southwestern University, Vicki L. Almstrum, The University of Texas at Austin, Lecia J. Barker, University of Colorado

Meshing Genus-1 Point Clouds using Discrete One-Forms

Geetika Tewari, Harvard University

Mobile Phone Keypad Design for Fast Chinese Text Entry by Phonetic Spelling (SRC Competition)

Yuan-Ting E. Huang, Department of Computer Science, University of British Columbia

Model-based Safety Analysis (SRC Competition)

Anjali Joshi, University of Minnesota

Multiple Views of a Mobile Target

Esra Kadioglu, University of Minnesota

Pathview – An Information Visualization Tool

Pooja Gupta, Advanced Visualization Laboratory, Indiana University, Michael J. Boyles, Advanced Visualization Laboratory, Indiana University, J. Scott Long, Department of Sociology, Indiana University, Shelley L. Nelson, Department of Sociology, Indiana University, James Robert Nelson, Indiana University

Power Management in External Memory using PA-CDRAM (SRC Competition)

Nevine AbouGhazaleh, University of Pittsburgh

QoS Scheduling Algorithms for Grids

Claris Castillo, NC State University

Retaining Women in First Year CS Courses

Aurelia T. Williams, Norfolk State University, Sandra J. DeLoatch, Norfolk State University

Route Planner and Scheduler for Wheelchair Users (SRC Competition)

Suling Yang, University of British Columbia, Alan K. Mackworth, University of British Columbia

Scalable Key Predistribution Scheme for Wireless Sensor Networks with Enhanced Resilience (SRC Competition)

Katerina Simonova, the University of Vermont, Alan Ling, the University of Vermont, Sean Wang, University of Vermont

Strategy and Research to Inform the Design of Interactive Whiteboard Interfaces for Teachers

Jacqueline Bauer, Indiana University, Dennis Groth, Indiana University

Sundials in the Shade: A Study of Women's persistence in the First Year of a Computer Science Program at a Selective University

Rita Powell, University of Pennsylvania

The Impact of Pair Programming on Women Students

Linda Werner, UCSC

Tracing Internet Packet Sources

Vijaya Gudimetla, Indiana University

TWiCE Undergraduate Experience in Research and Community Service

Bettina Bair, Ohio State University

Ubiquitous Presenter: Student Access and Control in a Digital Lecturing Environment

Tamara Denning, UCSD, Erik Buchanan, UCSD, Michael Kelly, UCSD, David Lindquist, UCSD

Using Perceptual Grouping for Object Selection

Hoda Dehmeshki, York University, Wolfgang Stuerzlinger, York University

Supporting Organizations

National Science Foundation (NSF)

Created in 1950, the National Science Foundation (NSF) promotes progress in all fields of science, math, and engineering research and education in the United States, and coordinates all U.S. scientific research done in Antarctica. NSF funds the people, the ideas, and the tools to boost U.S. leadership through grants, contracts, and cooperative agreements to 2000 colleges, universities, and other institutions. With a budget of nearly $5 billion, NSF makes nearly all funding decisions through a competitive process of merit review. Examples of results of past NSF support include: Doppler radar, the Internet, magnetic resonance imaging (MRI), ink jet printers, buckeyballs, nanotubes, camcorders, and biotechnology advances. By directly supporting nearly 200,000 teachers, students, researchers, post-docs, and trainees each year, and funding worthy initiatives like the Grace Hopper conference, NSF is behind the people who are the next generation of leaders in U.S. science and technology.

www.nsf.gov

Computing Research Association (CRA)

Sponsorship of the first Grace Hopper Celebration is one of the ways in which the Computing Research Association (CRA) supports women in the field of computer science. CRA is an association of more than 180 North American academic departments of computer science and computer engineering (CS&CE); laboratories and centers in industry, government, and academia engaging in basic computing research; and affiliated professional societies. CRA's mission is to strengthen research and education in the computing fields, expand opportunities for women and minorities, and improve public and policymaker understanding of the importance of computing and computing research in our society. The CRA Board of Directors is a distinguished group of leaders in computing research from academia and industry. The board is elected by CRA's member organizations. Representatives from each of our affiliated professional societies are also appointed to serve on the board.

www.cra.org and www.cra.org/Activities/craw/

The Association for Computing Machinery (ACM)

Founded in 1947, the Association for Computing Machinery (ACM) is the world's oldest and largest organization in educational and scientific computing. Since its inception, ACM has provided a vital forum for the exchange of information, ideas, and discoveries. Today, it serves a membership of more than 80,000 computing professionals in more than 100 countries in all areas of industry, academia, and government. ACM's members, students, and the public turn to ACM for authoritative publications, pioneering conferences, and visionary leadership for the new millennium. As a Grace Hopper Celebration attendee, you may know about ACM's Committee on Women in Computing (ACM-W). ACM-W engages in activities and projects aimed improving the working and learning environments for women in computing. These include mentoring and role modeling, monitoring the status of women in industrial and academic computing through the gathering of statistics, providing historical information about women's accomplishments and roles in CS, and serving as a repository of information about programs, documents and policies of concern to women in computer science.

www.acm.org and www.acm.org/women/

Anita Borg Institute for Women and Technology

Founded in 1997, the Anita Borg Institute for Women and Technology (ABI) is a national, non-profit organization committed to advancing technical women into the mainstream of technology innovation and leadership. ABI provides valued advocacy—information, voice and support—to help women achieve and sustain leadership roles in the fields of computer science and engineering including information technology, software, networking and electronics. The Anita Borg Institute's mission is two-fold:

- to increase the impact of women on all aspects of technology
- to Increase the positive impact of technology on the world's women

www.anitaborg.org

Resources for Women

Online

The ADA Project (TAP)
tap.mills.edu

Advancing Women
www.advancingwomen.com

Advocates for Women in Science, Engineering, and Mathematics (AWSEM)
www.awsem.org

The Alliance of Technology and Women (ATW)
www.atwinternational.org

The American Association for the Advancement of Science (AAAS)
www.aaas.org

The American Association of University Women (AAUW)
www.aauw.org

The American Astronomical Society (AAS)
www.aas.org

American Business Women's Association (ABWA)
www.abwahq.org

Anita Borg Institute for Women and Technology (ABI)
www.anitaborg.org

Association for Computing Machinery (ACM)
www.acm.org

ACM Committee on Women in Computing (ACM-W)
www.acm.org/women

Association for Women in Computing (AWC)
www.awc-hq.org

Association for Women Geoscientists (AWG)
www.awg.org

Association for Women in Mathematics (AWM)
www.awm-math.org

Association for Women in Science (AWIS)
www.awis.org

Association for Women in Technology (AWT)
www.awtsocal.org

Business and Professional Women's Foundation (BPWF)
www.bpwusa.org

Canadian Federation of University Women (CFUW)
www.cfuw.ca

The Center for the Education of Women (CEW)
www.umich.edu/~cew

Center for Women and Information Technology (CWIT)
www.umbc.edu/cwit/

Committee on the Status of Women in Astronomy (CSWA)
www.aas.org/~cswa

ComputerGirl
www.computergirl.us

Computer Professionals for Social Responsibility (CPSR)
www.cpsr.org

The Computing Research Association (CRA)
www.cra.org

CRA Committee on the Status of Women in Computing Research (CRA-W)
www.cra.org/Activities/craw

Cybergrrl
home.cybergrrl.com

European Association for Women in Science and Technology – WiTEC
www.witec-eu.net

FEMtech – Women in Research and Technology
www.femtech.at

Forum for Women Entrepreneurs and Executives
www.fwe.org

Gender And Science And Technology Association (GASAT)
www.gasat-international.org

Girls Incorporated
www.girlsinc.org

Girl Geeks
www.girlgeeks.org

Institute for Certification of Computing Professionals (ICCP)
www.iccp.org

Institute of Electrical and Electronics Engineers (IEEE)
www.ieee.org

International Museum of Women (IMOW)
www.imow.org

Math/Science Network
www.expandingyourhorizons.org

MentorNet
www.mentornet.net

NASA K-12 Internet Initiative Project: Women of NASA
quest.arc.nasa.gov/women/WON.html

National Action Council for Minorities in Engineering (NACME)
www.nacme.org

National Association for Female Executives (NAFE)
www.nafe.com

The National Center for Women and IT (NCWIT)
www.ncwit.org

The National Coalition of Girls' Schools
www.ncgs.org

National Consortium for Graduate Degrees for Minorities in Engineering and Science
was.nd.edu/gem/gemwebapp/gem_00_000.htm

National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP)
www.noglstp.org

National Organization for Women (NOW)
www.now.org

National Society of Black Engineers (NSBE)
www.nsbe.org

Professional Business Women of California (PBWC)
www.pbwc.org

The Role Model Project
www.womenswork.org/girls

Society of Canadian Women in Science and Technology (SCWIST)
www.harbour.sfu.ca/scwist

Society of Hispanic Professional Engineers (SHPE)
www.shpe.org

Society of Women Engineers (SWE)
www.swe.org

Wired Woman Society
www.wiredwoman.com

Women's Funding Network
www.wfnet.org

Women in Engineering Program Advocates Network (WEPAN)
www.wepan.org

Women in Engineering Programs at UC Davis
wie.ucdavis.edu

Women and Mathematics (W&M)
www.mystery.com/WAM

Women in Math Project
darkwing.uoregon.edu/~wmnmath

Women in Science and Engineering Program (WISE)
www.wise.umich.edu

Women In Technology (WIT)
www.womenintechnology.org

Women in Technology International (WITI)
www.witi.org

WorldWIT
www.worldwit.org

Mailing Lists

DC Webgrrls: a forum for women in new media to network. Send message to listserv@listserv.aol.com. Leave subject field blank and in body of message type: subscribe dc-webgrrls yourfirstname yourlastname. barton@wizard.net

Feminism in Science and Technology (FIST): List to discuss feminists in science and technology, feminist science, feminist critiques of science and technology. To subscribe, "subscribe" in subject line to firstrequest@niestu.com. Listowner: donna.s@niestu.com. fist@niestu.com

Systers: Private, moderated list to allow professional women in field of computing (including technical positions, industry, academia, or government) to discuss issues. Intended membership is technical female computer professionals and students. www.systers.org

(Hosted by the Anita Borg Institute for Women and Technology.)

ResearcHers: Open to women active in computer science research in industry, government labs, and academia. www.systers.org/researchers/.

WorldWIT local chapters: Email discussion lists for many parts of the world. http://worldwit.org/Chapters.aspx

More lists can be found at research.umbc.edu/~korenman/wmst/f_sci.html

CHANGING THE WORLD F

The Anita Borg Institute is the only major organization for technical women focused entirely on development and retention of technical women leaders; whether as innovative technical thinkers, practitioners or teachers, project leaders, technical managers or executives. ABI concentrates in the areas of computer engineering and related disciplines based on the belief that these are the roots of technological breakthroughs that will most benefit society as a whole.

Designed to help technical women navigate their careers from the collegiate level through senior management, an ever-expanding roster of ABI programs reaches thousands of technical women annually. Through ABI, technical women:

- Gain exposure to positive role models
- Share technical vision and expertise
- Celebrate the successes of women having profound impact on technology and its application
- Hone communication and problem-solving skills
- Discover innovative teaching and learning techniques
- Establish powerful formal and informal networks
- Participate in mentoring

Programs That Make A Difference

Systers™ Online Community

Founded in 1987, Systers is the world's largest online community of women in computing. Since its inception, has served over 10,000 women in 58 countries. Systers recently initiated "Pass-It-On" grants program to help technical women pursue their goals. For many technical women who often feel isolated in their male-dominated work environment, Systers has become an important collaborative resource. www.systers.org

Grace Hopper Celebration of Women in Computing (GHC)

The Grace Hopper Celebration is the world's premier gathering of technical women in computing. For more than a decade through six GHC Conferences more than 4000 women have attended and more than 800 scholarships have been awarded to students. The conferences offer opportunities for mentoring, motivation, networking, technical and career development. For ABI sponsors it has become a premier event to recruit new talent, promote their organizations and inspire their workforce. www.gracehopper.org

TechLeaders

Workshops bring together networks of women from industry, academia and government—both powerful technology leaders and aspiring women in technology. Annual conclaves and regional leadership workshops explore the future of technologies and develop the leadership skills, networks and resources women need to navigate all stages of their careers. www.anitaborg.org/programs/techleaders

Affiliates

The Anita Borg Institute for Women and Technology collaborates with a variety of affiliate organizations with shared values. We invite you to become part of the Affiliate's program designed to mutually extend our reach and our shared vision. www.anitaborg.org/about/affiliates.php

FOR WOMEN AND FOR TECHNOLOGY

Ambassadors

The ABI Ambassador Program is designed to encourage technical women to increase the outreach and impact of ABI programs. It is also our hope that by allowing us to gain access to and listen to your expertise we will significantly improve our outreach and impact the professional lives of the women in our communities through increased participation in ABI programs. www.anitaborg.org/about/ambassadors.php

Awards and Scholarships

Women Of Vision

This Anita Borg Institute event honors women from industry, academia or government who are making significant contributions in innovation, leadership and social impact. Nominees are submitted by companies, universities and private industry and the public, with one winner selected in each category. The event celebrates role models and facilitates networking among more than 500 men and women, from college students to senior business executives and academic leaders. www.anitaborg.org/programs/wov Nominations open November 1st, 2006 and are due by January 3rd, 2007.

Anita Borg Awards

The Annual Anita Borg Awards for Social Impact and Technical Leadership recognize outstanding leaders who embrace Anita Borg's lasting vision to change the world for women and for technology.
www.anitaborg.org/programs/awards.
Call for nominations open soon.

Scholarships

The Anita Borg Institute offers or facilitates a variety of scholarship programs such as the Systers Pass-it-On grants, Grace Hopper Scholarships, the FDN Scholarships, and the Change Agent Scholarships.

…designed to help technical women navigate their careers from the collegiate level through senior management, an ever-expanding roster of ABI programs reaches thousands of technical women annually…

www.anitaborg.org

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