Bill Hewlett: A Stanford Engineer’s Engineer
A Tribute by Professor James Gibbons

Many wonderful, touching tributes to Bill Hewlett have been written since his death last January. I am delighted to add to that list, knowing in advance that I will not come close to expressing the gratitude that we at Stanford have for the range and depth of his contributions to the University, its School of Engineering, the Department of Electrical Engineering, or any one of us who had the great pleasure of working with him in a Stanford-related capacity. I want to focus at the outset on his role in helping us launch the Center for Integrated Systems, but I would be terribly remiss if I did not at least try to put that contribution in a larger context.

GENESIS OF CIS
I will begin with a vignette from the earliest days of CIS. Over a period of several months in early 1979, four of us, led by John Linvill, had a number of meetings to discuss the idea that the intersection of computing and semiconductors offered a truly futuristic area for research and graduate training at Stanford. One of our major goals was to create a Center that would enable faculty and students to do research that would truly have a long range commercial impact. As we discussed this issue, we came to the conclusion that, in addition to faculty and graduate students, it would be critically important to thoroughly engage a group of highly respected researchers from industry to help us both choose appropriate research topics and conduct the research. We realized that these researchers would come from companies that competed with each other in the commercial marketplace, and that the companies themselves might not find our idea very appealing.

VALUABLE INSIGHTS
At the time, there was one firm in Silicon Valley in which corporate researchers worked with faculty and students in something like the manner we envisaged. That firm was Hewlett-Packard. So we went to Bill to talk about the concept. His response to our general idea was vintage Bill, so to speak. He was immediately supportive of our effort to think out of the box. And he added to our scheme the idea that CIS might be one of the very few legal ways for firms to participate jointly in research that could have a clear relevance to their long-term competitiveness outside of Stanford.
Nano-Electronics Challenges
Materials Design, Processing, and Characterization

From Bob Dutton
CIS Director of Research

Scalng of microelectronics has reached the nanometer domain and instead of talking about “sub-micron” critical dimensions we are now considering the progression in terms of 10’s of nanometers (1 nm = 10 angstroms). Clearly, on these scales we can literally count the number of atoms within the active region of the device. From a fabrication point of view this means that thickness of layers such as for the gate dielectric in MOSFETs and the doping in the channel and source/drain regions needs to be controlled with atomic-scale precision.

Advancing Technology

Fortunately, there continues to be progress in processing technology, metrology, and modeling at the atomic scale, not only in support of the ongoing evolution of silicon-based technology, evolved over more than 50 years, but also in an emerging constellation of nanotechnologies. The atomic-force microscope (AFM) and other atomic-scale tools—both for metrology and nano-manipulation—have given us awe-inspiring views of an exciting nano-world for exploration and invention. Similarly, nano-scale structures such as carbon nanotubes have opened new frontiers for experimentation and theoretical exploration. Moreover, nanotubes themselves can serve as AFM tips which therein extend the resolution of the measurement technology itself. Stanford is indeed fortunate to have pioneers like Professors Cal Quate and Hongjie Dai working at these frontiers.

Fundamental Challenges

Challenges to be faced in the nano-electronics regime are amazing, both in terms of the technological and fundamental scientific frontiers that must be mastered. The playing field for such research spans not only traditional science and engineering (i.e. Physics, Chemistry, ChemE, EE, ME, etc.) but embraces the biological science and engineering communities as well. This article seeks to: 1) preview topics scheduled for our CIS Fall Advisory Committee Meeting and 2) outline the broader (and evolving) context of materials and processing technology research within Stanford’s School of Engineering (SOE).

CIS Seed and Customization funding have helped to launch a number of projects related to nanotechnology; research of Professors Kyeong-Jae Cho (Mechanical Engineering), Hongjie Dai (Chemistry), Curtis Frank (Chemical Engineering), and Paul McIntyre (Material Science) are examples of the growing diversity of faculty and departments that are playing an ever-increasing role. Based on a very exciting set of discussions spearheaded by Professor Christopher Chidsey (Chemistry), a multi-disciplinary team that spans groups in Mechanical Engineering (Cho), Chemistry (Chidsey) and Material Science (Professor Michael McGehee) is now forming to tackle the challenge of creating three-terminal nano-devices. This working group will discuss their research agenda as part of the Fall CIS Advisory Committee.

Changes to Come

The broader context of changes in the materials research community at Stanford was recently described by Dean Jim Plummer in his State of the School address to the faculty, May 22, 2001. He talked about the problems facing faculty and students engaged in advanced materials research today. One
of the most pressing problems is that experimental facilities for advanced materials are now well beyond the capability of individual faculty investigators. Single instruments cost in excess of $1M and complete laboratories cost many times this amount to set up, and require annual operating budgets beyond the capability of individual faculty. One solution to this problem is shared facilities, like the successful nano-fabrication facility in CIS (SNF). The School of Engineering is currently evaluating the possibility of establishing several other shared labs like this. These labs would be focused on materials characterization, soft and hybrid materials, computational materials science, and perhaps x-ray analysis of materials at the Stanford Synchrotron Radiation Laboratory (SSRL). Laboratories like these would be funded through SoE fundraising efforts and would be sustained through a privately funded quasi-endowment, which would support staff to run the facilities for a period of perhaps fifteen years.

CIS to Benefit

Not surprisingly, virtually all of these areas are major value-added to, and strongly supportive of, the CIS research agenda. The Stanford Nanofabrication Facility (SNF) has certainly served as a model of a shared facility that provides critical support to a diverse set of innovations in nanotechnology. The broader venue for shared facilities that encompass new materials and metrology capabilities is invaluable in addressing future challenges in nano-electronics. The rapidly growing activities in Computational Materials resonates strongly with strong interests from and support by CIS partners in areas such as alternate gate dielectric materials.

In summary, there is both a compelling need and exciting research venue for nano-electronics. Addressing the new fabrication challenges involved in nanotechnology requires disciplinary diversity and an expanded technology base for experimentation. From both perspectives—people and facilities—the Center for Integrated Systems is proactive in supporting this new area of growth.

In April, a Student Partner Information Exchange (SPIE) contingent consisting of Professor Simon Wong and Ph.D. candidates Richard Chang, Theresa Kramer, Ali Mokhberi, and Yayoi Takamura visited Taiwan Semiconductor Manufacturing Company (TSMC) at the invitation of Dr. Genda Hu, then VP of Advanced Technology Development at TSMC. TSMC’s impressive facilities were a highlight of the trip, as were the small group discussions with TSMC researchers.

“I enjoyed the trip to TSMC. We started the first day with an overview of the work that was being done at TSMC. I was impressed with the breadth and depth of the characterization and services that they provide to their customers. Professor Wong then gave a brief overview of the work going on at Stanford.

In the afternoon, each of the students gave presentations, and the engineers were very interested and asked lots of good questions. The following day, the students split up and were able to meet informally with TSMC managers and engineers. During those meetings, we were able to answer questions regarding our research, and get an idea of what types of problems they were working on. It was a good opportunity to get some genuine feedback as to the relevance of our work and get some fresh new perspectives. Later on, we toured their enormous fabrication facilities, which was extraordinary. All in all, it was a very worthwhile trip.” -Richard Chang

“The SPIE trip to TSMC was excellent. All of our hosts were extremely generous with their time and I left with a clear picture of the extent of the company. The most useful part of the trip for me was the one-on-one and small group interaction with TSMC engineers. Those interactions showed me both the technological excellence and the Continued on page 9
CIS Events: Spring Advisory Committee Meetings and CIS Block Party

Above: The faculty panel answered questions as a group following their presentations on day one of the Advisory Committee Meetings (left to right: EE Chairman Professor Bruce Wooley, Prof. Stephen Boyd, Prof. Mark Horowitz, Prof. Charles Sodini of MIT, Prof. Olaf Solgaard, and Prof. Theresa Meng).

Above: Posterboarder Michael Wittbrodt talks with HP’s Patty Beck as fellow SNF Seed Grant recipient Lian Zhang explains a point on the other side of the posterboard.

Above: Agilent’s Bob Weissman and Ph.D. candidate Rohit Shenoy discuss details of Shenoy’s research at the Posterboard session on the second day of AdCom.

Right: Professor Rick Myers, Director of the Stanford Human Genome Project, gave an animated and informative talk at the AdCom dinner on May 15th.
Above: Several hundred CIS students, faculty, partner company members, and neighbors enjoyed the sun, food, and partner company presentations at the CIS Block Party.

Above: Jim Hollenhorst and the Agilent crew hold court at their Block Party table.

Left: Dave Kyser led the AMD contingent in talking about recent research and mingling with the crowd.

Above: Hitachi Visiting Scientist Dr. Kiyoo Itoh’s eight week lecture series “VLSI Memory Chip Design” ended on the day of the Block Party. From left to right: AMAT’s Sam Broydo, CIS Executive Director Richard Dasher, and Dr. Itoh.

Above: Applied Materials’ Sam Broydo shares a joke with TI’s Yoshio Nishi and CIS Director of Research Bob Dutton at the CIS Block Party.
The Center for Integrated Systems welcomed Panasonic to membership in September 2000. Thanks to Panasonic’s robust approach to getting involved at Stanford, this new partnership has already enriched the Stanford community through introductions to key executives and researchers, and through the substantive collaboration in research that is at the heart of CIS. Pictured at right is Norio “Nick” Kanzaki, general manager of the Overseas Development Department, Semiconductor Company, Matsushita Electric Industrial Co., Ltd. – which is best known for its Panasonic brand — during a recent visit with Stanford faculty and senior university administration to exchange views on technology directions and Matsushita Electric’s interests in supporting Stanford research.

Primary support for Panasonic’s membership commitment is shared by Matsushita Electric and its Silicon Valley unit, Panasonic Semiconductor Development Company (PSDC). John Howard, president of PSDC and a long-term acquaintance of many people in the CIS community, is Panasonic’s representative to the CIS Advisory Committee.

**Global Leader**

Established in 1918 in Osaka, Japan, Matsushita Electric is a world leader in electronics and other technologies for consumer, entertainment, business, and industrial markets. With sales of approximately $61.45 billion for the fiscal year ending March 2001, Matsushita Electric markets products under the Panasonic, Technics, Quasar, and National brand names in 170 countries and regions. The company recently received a Technical Emmy Award for its pioneering of the DVD format. Maintaining this leadership position requires constant technological innovation and exploration, which makes the company an excellent partner in CIS.

Like most large Japanese industrial organizations, Matsushita Electric is actually a network of hundreds of affiliated companies, some with as few as a dozen employees. The companies are united by cross shareholdings of stock, and they work together under an umbrella of common product brands and shared corporate values. In the case of the Matsushita group, these values go back to the philosophies of founder Konosuke Matsushita, one of the preeminent entrepreneurs and management strategists of Twentieth Century Japan. At present, Matsushita Electric is a true multinational, with more than 282,000 employees worldwide. Overseas operations span 229 companies in 44 countries, including 21 manufacturing sites in the United States, Mexico, and Puerto Rico. Throughout the Americas, Matsushita Electric and its affiliated companies employ more than 28,000 people in research and development, marketing, production, and service operations.

**Research and Business Development**

Panasonic Semiconductor Development Company was established in Silicon Valley in December 1995 with primary focus on development activities related to computer, communications, and multimedia applications. Panasonic activities include semiconductor research and development, new business development, and the continued strengthening of university relationships to benefit Matsushita Electric’s worldwide R&D efforts. The Business Development Group at PSDC has the specific mission of building alliances with Silicon Valley and other U.S.-based advanced technology organizations in order to improve Panasonic semiconductor products.

PSDC engineers create software and chip designs that are used in Panasonic consumer products sold worldwide, and they develop sophisticated development tools to improve the process of creation itself. PSDC provides very large scale
integration (VLSI) cores that enable the building of systems on single chips. The company is currently developing next-generation components for home networks, focusing on IEEE-1394 compliant peer-to-peer multimedia networks and high-speed, low-cost, plug-and-play USB client server networks. In the IEEE-1394 standard, PSDC efforts include set-top boxes (STB), DVDs, and digital video cameras; its work on USB core technology development has led to new PC plug-and-play interfaces for the 3.3Mpel iPalm Camera, DVD-RW drives, cell phones, etc.

COLLABORATIVE RELATIONSHIPS

Committed to working collaboratively with other companies, Panasonic has already made use of its CIS connections to establish relationships with several start-up companies that have spun out of Stanford research. PSDC is currently working with Barcelona Design, founded by CIS alumna Dr. Mar Hershenson, to make use of Barcelona’s revolutionary methodology for fast, flexible analog and mixed-signal circuit design. Utilizing optimization-based design via a numerical algorithm that Hershenson developed while at Stanford, Barcelona’s novel approach allows for greater design innovation, versatility, and speed.

“It was great to have the opportunity to review this highly promising technology at such an early stage of the company,” comments Dr. Akira Matsuzawa, general manager of the Advanced LSI Technology Development Center in Matsushita Electric’s Corporate Development Division. “We’re very excited about this partnership.”

PSDC has also established a relationship with Clear Blue Laser, a start-up company from the research group of Professor James Harris (EE). The shorter wavelength of blue laser light enables data storage at a density four times greater than that which is possible with the infrared lasers used in current generation CDs and DVDs. Blue lasers are expected to become an industry standard, as high-definition television and higher quality audio systems enter the market over the next several years. In addition, blue lasers have applications in medical diagnostics and scientific fields. PSDC assigned a full-time researcher to work at Clear Blue Laser to make the most of this exciting new technology, demonstrating Panasonic’s commitment to mutually beneficial joint technology development as well as ensuring that Panasonic will continue to be at the cutting edge of this new technology.

INFORMATION EXCHANGE

From Japan, Matsushita Electric has likewise been actively creating new relationships through CIS. The company’s Semiconductor Device Development Center has sent Dr. Shinichi Osako of their SiGe Microwave Device Research Department to the research group of Professor Simon Wong as the Panasonic CIS Visiting Scientist. A regular participant in the research group meetings, Dr. Osako is working on low-voltage CMOS circuit design. In addition, Dr. Toshi Takizawa (Semiconductor Device Research Center, Matsushita Electric), who is already resident in the research group of Professor James Harris, is expected to join the team of CIS-sponsored Matsushita visiting scientists.

CIS has also provided the venue for discussions between Matsushita Electric travelers and Stanford personnel. Soon after Panasonic joined CIS, Akira Matsuzawa gave a presentation to CIS management on the recent reorganization of R&D activities at Matsushita Electric. At the same time, a team of Matsushita Electric experts briefed Stanford faculty and students about the company’s efforts in silicon-on-insulator (SOI) technologies, RF CMOS, and system-on-chip (SOC) solutions. Other recent Matsushita Electric visitors to CIS have discussed topics ranging from high-level technology management to bio-chips.

BIOTECH INTERESTS

Although the Panasonic brand may be best known for household and entertainment products, the company also

Continued on back cover
Building things may be the heart of engineering, but the rapid pace of technology development in electronics and related fields has made it a challenge to include much hands-on experience in undergraduate engineering education. Math and other academic prerequisites become more advanced each year, taking up larger and larger blocks of a typical student’s course load and delaying the gratification of “building” something. Moreover, regular coursework gives an undergraduate little, if any, opportunity to experience the thrill (even in defeat) of doing real research, as opposed to completing a problem set or experiment that has been done many times before.

Stanford at Forefront

Stanford is at the forefront of bringing the stimulus of research to undergraduate engineering education through summer programs called “research experience for undergraduates” (REU). While REU fellowships have been an add-on option to National Science Foundation (NSF) grants for a number of years, Stanford has taken pioneering steps in turning REUs into educational programs with formalized frameworks for peer networking, reporting, and feedback. The success of these programs has yielded several different, robust REU programs on campus each summer in overlapping technical fields. This potentially confusing situation has nonetheless brought refreshing energy and vitality to the Stanford research community, and it has started a number of undergraduates along the path to graduate study and research-focused careers.

The Stanford Nanofabrication Facility (SNF), under the umbrella of the NSF-sponsored National Nanofabrication User Network (NNUN), administers one REU program. In this program, begun in 1996, about 45 students are chosen yearly in a nationwide competition that attracted 170 applicants in 2001. Stanford (the SNF) consistently hosts twelve of these REUs each summer; the others go to one of the other four university labs in the NNUN. Each SNF REU spends ten weeks doing a real research project in the lab as a member of a Stanford professor’s research group. SNF REUs come from universities all over the United States (other than Stanford); focus is on gifted students from universities that may lack the research resources found here. They live in one “row house” on campus, and at the end of the summer they travel to a nationwide convocation to present their research results. CIS provides a small supplemental research grant to SNF as matching support for the lab costs of the SNF REUs.

EE Embraces REUs

A few years ago, Stanford’s Department of Electrical Engineering began a similar program specifically for Stanford undergraduate EE students. Like the SNF REUs, EE REUs join a professor’s research group and have specific research objectives for the summer. However, although some EE REUs do research in the lab, the EE REU program also embraces many groups whose research is done outside of the SNF. In addition to research, EE REUs participate in special group activities, such as company tours and special seminars given by Stanford faculty and senior administration. Seminar topics range from careers in research and university-
This June, Ph.D. candidates Lian Zhang, Beth Pruitt, Nick Mourlas, Yiching Liang, and Valerie Barker combined a Student Partner Information Exchange (SPIE) visit to Bosch in Germany with participation in the 11th International Conference on Solid-State Sensors and Actuators.

Accompanied by Professors Tom Kenny and Greg Kovacs, the students started their journey in Munich, where they presented their work at the Transducers Conference. Bosch researchers attended the students’ presentations, and were able to hear more about their research when the SPIE delegation moved on to Stuttgart for the Bosch leg of the trip. Hosted by Markus Lutz and Wilhelm Frey, the SPIE team toured the Bosch facilities, heard about current projects, and met with researchers in MEMS-related areas. The trip provided a unique opportunity for the students to present their work publicly in both formal and informal settings, learn more about developments at Bosch, and exchange information with Bosch researchers.

“The Bosch tour included two facilities: R&D and production. The automation and scale of the production was impressive. At the R&D facility, we got a preview of the technologies being developed for the smart cars of the future to make them safer and easier to operate. Of great interest to all the MEMS participants though, we also saw the work on process improvements in the R&D fab, such as the fantastic gains in deep reactive ion etching to achieve 15 micron/minute etch rates!” -Beth Pruitt

“The Bosch trip was wonderful. The most interesting part was the visit to their production lines. It was my first time to see how commercial sensors are manufactured and assembled, and I learned some on-line test and inspection techniques that are really used in industry. I appreciate this opportunity provided by SPIE and Bosch for us to see the real industrial world, which is absolutely valuable for our future careers.” -Lian Zhang

industry relations to graduate education and internship opportunities. Recognizing that summer housing is a serious challenge at Stanford, last year the University established a subsidized “Summer Research College” residential program for Stanford undergraduates in EE and other departmental REU programs.

Impressive Benefits

The results have been impressive. Many in our partner companies will remember posterboard presentations by REU veterans in recent autumn Roundtable/AdCom meetings. The greatest benefit of REU programs, however, is probably in giving students the satisfaction and confidence to persist in research-related activities, regardless of the success or failure of their first real-world project.

Stanford’s School of Engineering (SoE) is taking steps to make such experiences more broadly accessible; SoE has begun to raise an endowment on the order of $20 million for REU programs. According to Dean James Plummer, SoE intends to “make it possible for every SoE undergraduate who wishes to participate in an REU program during their time at Stanford, to do so.” This is early stage seed funding that will yield results over many years.

TSMC SPIE, cont. from pg. 3

culture of the company. I was especially impressed to learn that TSMC is poised to surpass the ITRS roadmap and that it has much of the feel of a Silicon Valley company. The one-on-one and small group sessions were also a good forum to discuss my research, and I received useful feedback from a number of people. I really appreciate all the time that Genda Hu and Pamela Chang spent to organize our two days at TSMC, and I would like to especially thank T.C. Ong and T.E. Chang for being my hosts for the second day. I particularly enjoyed our discussions during my tours of the facility. Overall, I was extremely impressed with both the technology and the people of TSMC.” -Theresa Kramer
This proved to be a very valuable insight as we discussed the idea with the twenty firms that formed the initial industrial partnership.

But Bill’s contribution did not end there, because senior resources at HP were brought to the task of helping us get started right. John Young, HP’s CEO at the time, was on our industrial steering committee, along with George Pake, Bob Noyce and Dick de Lauer. And when it came time to get support from firms such as IBM and TI, it was John who opened the doors for us and then helped us close the deal, company by company. And HP’s CTO, John Doyle, chaired an often fractious committee that was charged with generating a policy on intellectual property for CIS that would be mutually acceptable to Stanford, the Federal government, and the highly competitive firms that we wanted to engage as members.

**Crucial Support**

Bill’s support of many other significant efforts at Stanford often followed the model of his engagement with CIS. It was total, and it often came at a very early stage in a critically important effort. His was the first major gift to the Science and Engineering Quad, for example, and it came at a time when we urgently needed major funding to get the project properly planned and successfully launched. I remember the special excitement with which he articulated the idea that, properly used, an early gift could provide a lot of leverage. And he was right; in addition to getting us well launched, his gift also made it possible for other major donors, such as Bill Gates and Paul Allen and Gordon and Betty Moore, to see how their contributions would fit into an overall plan that would help Stanford stay at the leading edge of research and teaching in science and engineering.

Most of Bill’s gifts were of course made with his friend and colleague Dave Packard, with an impact that has had and will continue to have major implications across the entire University. Those gifts were always focused on the essential things that could make Stanford ever better: scholarships for students, chairs and fellowships for faculty at various stages of their academic careers, and buildings that would allow us to stay at the forefront of teaching and research in many fields.

**Founders of the Future**

Toward the end of their history of personal giving to Stanford, I happened to do a rough calculation from which I concluded that together the two of them had given to Stanford a sum that was essentially equal to the inflation-adjusted contribution that the Stanfords themselves had made. When Dave Glen, one of my colleagues in the administration, learned of the relative size of their contribution, he had the delightful idea that we should throw a big dinner party for a wide swath of the Stanford family, at which we would honor Bill and Dave as the Founders of Stanford’s Future. We knew in advance that they would resist the idea. They were both, commendably and properly, chary of praise. But they also knew that we needed to express our gratitude to them openly and publicly, so they let us call them what they were: the Founders of the Future. No wonder then that, at Bill’s passing, a picture of the two of them graced the cover of the Stanford Magazine, below which was the line “A Death in the Family,” capturing well the emotions we all felt, and still feel, at Bill’s passing, and Dave’s before him. It was truly the end of an era for Stanford.

**Creative, Innovative, and Enthusiastic**

Bill had a storybook career as an engineer. He cofounded a firm that is widely regarded as the father of successful firms in Silicon Valley. He developed the
technology for his firm’s first successful product as part of the research he did for his Engineer’s degree at Stanford, working in Fred Terman’s lab at a time when the lab itself was little more than a garage. Later he led the company into computing, trusting his sense of what products would be important and desirable for the engineering and business community over the advice the company received from marketing professionals. He said he was proudest of the management style that he and Dave established that is broadly described as “the HP Way,” policies that respect every employee, create working conditions in which they can do their very best work, and provide broad support for every community in which HP facilities are located. But those who had the pleasure of knowing him as an engineer saw in him a model for what many of us would like to be: instinctively and refreshingly creative, enthusiastic about and delighted by new ideas, and always encouraging of innovation and entrepreneurship.

The best tribute we can pay to Bill at Stanford is to do everything we can to help students develop these same qualities. He and his friend Dave gave us much of the resource base that we need to accomplish that goal. It is clear that generations of students will be the beneficiaries of his generosity, though most of them will almost certainly be unaware of it. That is the way Bill would want it.

P.S. Notice of the Hewlett Foundation’s spectacular gift of $400 million to Stanford, most of which is to be used for the benefit of the School of Humanities and Sciences, came after this article was written. Clearly the generations of students and faculty who will benefit from his generosity, expressed now through the William and Flora Hewlett Foundation, will extend across the length and breadth of the University. Rather than rewrite the article, however, I chose to leave it the way it was, thinking that it would be best not to try to stay current with Bill’s extended generosity, but simply let it continue to surprise everyone.

ABOUT THE AUTHOR...

Professor James F. Gibbons has been a member of the Stanford faculty since 1957, and is the Reid Weaver Dennis Professor of Electrical Engineering. A pioneer in the use of ion implantation and rapid thermal processing techniques for solid-state physics and technology, and mentor to numerous students, he was the Dean of the School of Engineering from September 1984 to June 1996.

CIS Kudos

Professor Andrea Goldsmith (EE) has been honored as an Alfred P. Sloan Research Fellow for her breakthrough research in wireless system design.

Professor Hongjie Dai (Chemistry) has also been named an Alfred P. Sloan Research Fellow for his work on the chemical synthesis of nano-structured materials.

Professor John Cioffi (EE) has been elected to the National Academy of Engineering for his pioneering work on high-speed digital communications.

Professor Alice P. Gast (ChemE) was also elected to the Academy for her work on the structure of complex fluids.

Professor Bernie Widrow (EE) was awarded the 2001 Benjamin Franklin Medal in Engineering for his pioneering work in adaptive signal processing.

Professor Nanni De Micheli (EE, CS) has been elected Fellow of the Association for Computing Machinery for his contributions to design technologies of integrated circuits and systems.

Professor Fabian Pease (EE) is the 2001 recipient of the IEEE Cledo Brunetti Award for his pioneering contributions to micro-electronics technology.

CONGRATULATIONS TO ALL!
has a strong interest in biotechnology and health care. Panasonic is already one of the world’s leading producers of home blood glucose monitors for diabetics, and it recently introduced a comprehensive Web-enabled tele-homecare device. This interest in healthcare follows the credo of founder Konosuke Matsushita: “Recognizing our responsibilities as industrialists, we will devote ourselves to the progress and development of society and the well-being of people through our business activities, thereby enhancing the quality of life throughout the world.”

Investing in long-range research through CIS is one way that Panasonic has chosen in order to achieve this goal, and so it is exploring biotech as well as other technologies at Stanford. They have committed their FMA fellowship during 2000-2001 to the Integrated Spectrometer project of Gaylin Yee, an advanced Ph.D. student in the research group of Professor Greg Kovacs. Gaylin is mentored directly by John Howard, who is also working on biotech projects with Professor P.J. Utz of the Stanford Medical School and with Dr. Mary Tang, Biotech Liaison for the Stanford Nanofabrication Facility, to name but a few.

By actively participating in CIS programs and forging strong relationships with Stanford faculty, students, and staff, Panasonic has quickly established itself as a dynamic presence at CIS. “As our industry moves forward, companies and universities that excel in efficient technology transfer are likely to be the ones that prosper,” notes John Howard. “The CIS relationship between Panasonic and Stanford will position both organizations for a stronger future.”

We look forward to continued discoveries with this exciting partner company. WELCOME PANASONIC!

CIS Newsletter  Editor: Kate Gibson

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