



THE MAGAZINE OF THE A. JAMES CLARK SCHOOL *of* ENGINEERING

“Strive for Perfection in All that You Do.”

Celebrating the
Farvardin Era:
2000 to 2007

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Making Engineering Come Alive

Campaign Progress Exceeds
All Expectations

THE UNIVERSITY OF MARYLAND



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Cover photo by Bill Geiger
Photo above by Prakash Patel

Dear Alumni and Friends:

MANY OF YOU HAVE already heard the news: Nariman Farvardin, dean of the Clark School from 2000 to 2007, has been appointed senior vice president for academic affairs and provost of the University of Maryland. A committee has been formed to secure a new dean for the Clark School through a national search that may require a year or longer. I have been asked to serve as interim dean during this period, a role I played once before during the search that brought Nariman to the office seven years ago.

In this issue of *E@M*, we celebrate Nariman's many accomplishments. As dean he built and inspired an outstanding leadership team, leaving us with experienced department chairs, institute directors and staff administrators who guide their respective organizations with energy and skill and ensure that our research, education and entrepreneurship programs are first-rate. Our fundraising efforts are proceeding at a rapid pace, thanks to our strong development group and the generous contributions of alumni and friends. You can expect to see continued progress at the Clark School on all fronts, thanks to Nariman's foresight and hard work and the continuing commitment of everyone here.

The university has always done a wonderful job of selecting deans for the Clark School. We should anticipate that our new dean will bring his or her own set of powerful talents and insights to the job—talents that, with the help of our alumni, faculty, staff, students and friends, will take the school to the next level of its ascent.

You can expect to see continued progress at the Clark School on all fronts, thanks to Nariman's foresight and hard work and the continuing commitment of everyone here.

Herbert Rabin
Professor and Interim Dean



PHOTO BY AL SANTOS

Scott Roth, M.D., explains the surgical procedure telecast live from the School of Medicine.

Celebrating the Potential of Bioengineering

What is the future of bioengineering? How will engineers and healthcare providers work together to improve medical research and treatment capabilities? The Clark School's First Annual Fischell Festival brought together students, faculty, researchers and corporate partners for a full day of exploring the potential of bioengineering and its applications in medicine and industry. "The event was extraordinary because it brought to one location individuals from every part of campus who are associated with the Fischell Department of Bioengineering as well as members of the greater community from as far away as San Diego," relates William Bentley, Herbert Rabin Distinguished Professor and chair of the Fischell Department of Bioengineering.

Featured speakers included Shu Chien, president of the Biomedical Engineering Society, who cited several areas in which bioengineering is expected to have the largest impact: targeted drug delivery, image-guided surgery, aging, the evolution of the operating room and the integration of education and research. Larry Kessler, a senior executive with the U.S. Food and Drug Administration, identified a number of

new bioengineering technologies that his organization is following, including computer-aided diagnoses, gene therapy, personalized medicine, prosthetics and minimally invasive medical devices. Department benefactor, medical device inventor and entrepreneur Robert E. Fischell shared several of his current research projects. These included an implanted device to analyze a patient's heart function and, using a wireless network, inform the patient and medical personnel of an impending heart attack; a device implanted in the cranium that senses the onset of an epileptic seizure and provides stimulation to stop it; and a handheld device that uses transcranial magnetic stimulation for the treatment of migraine headaches.

A live "telesurgery" was transmitted to the Kim Engineering Building from the University of Maryland School of Medicine in Baltimore. Scott Roth, M.D., in College Park, described the video-guided

Nissen fundoplication procedure performed in Baltimore by colleague Steve Kravic, M.D., and the tools and technologies that made it possible. Kravic answered audience questions as he conducted the outpatient procedure, which controls acid reflux disease by replacing a defective valve between a patient's stomach and esophagus, using his or her own tissues. The physicians told the audience that bioengineers could help surgeons improve such procedures by addressing the lack of mobility, flexibility and tactile feedback in current instrumentation. They also suggested the need for innovative optical measurements that "see" beneath the tissue surface as well as visionary tissue engineering solutions.

"It is clear that we are on the cusp of some very significant research, with so many people interested in bridging the powers of engineering research and development with the needs of the medical community. Our approach continues to be to bring technology into the forefront to help improve lives," adds Bentley.



Inventor and entrepreneur Robert Fischell talks with students following his Fischell Festival presentation.

The day was capped off by the semester's final Whiting-Turner Business and Entrepreneurial Lecture by Art Collins, chairman and CEO of Medtronic, Inc., the world's leading biomedical device company. "We learned

about the rapidly changing face of the biomedical device industry—what it takes to bring products to market and how dynamic and demanding it is to stay at the top of the field," says Bentley.

To learn more about the day's activities, see www.bioe.umd.edu/fischellfestival/fest.html

The second annual Fischell Festival is planned for spring 2008.

2007 Fischell Fellow Named



Daniel Janiak has been selected to receive the 2007 Fischell Fellowship in Biomedical Engineering. He was chosen based on his research on molecularly imprinted polymers. Janiak, a graduate student in the Department of Materials Science and Engineering, works in the Functional Macromolecular Laboratory with Peter Kofinas, associate chair of the Fischell

Department of Bioengineering and director of the graduate program in bioengineering.

Fisher Gains Support from Maryland Stem Cell Research Fund

Fischell Department of Bioengineering Assistant Professor John Fisher has garnered the only Maryland Stem Cell Research Fund grant on the College Park campus for his work on regenerating human facial bone. Twenty-four grants were distributed this spring by the Maryland Stem Cell Commission, a division of the Maryland Technology Development Corporation, under the Stem Cell Research Act of 2006.



Maryland NanoCenter Forges Partnerships



Participants review poster presentations at NanoDay.

PHOTO BY FAYE LEVINE

The Maryland NanoCenter is proving itself to be a leader in cross-disciplinary research as it continues to forge new partnerships on campus and throughout the region. The center celebrated its second annual NanoDay this spring, attracting some 300 industry experts and researchers to hear internationally recognized speakers, view more than 150 poster presentations and tour the center's six state-of-the-art research labs.

Details of the center's partnership with the new Center for Nanoscale Science and Technology (CNST), an initiative of the National Institute of Standards and Technology (NIST), were shared by CNST Director Robert Celotta, NIST fellow and leader of its electron physics group. With a \$1.5 million NIST grant, renewable annually, the Maryland NanoCenter will assist with national outreach and education efforts directed at young faculty and post-doctoral researchers to accelerate the scale-up of the NIST center.

The new partnership was cited this spring

by *Small Times* magazine in its annual survey of trends in nanotechnology and microtechnology. The magazine ranked the Maryland NanoCenter fifth in education and seventh in research nationwide. The survey highlights the center's strengths in scanning probe microscopy, the major growth in microelectromechanical systems (MEMS) on campus and research involving combinatorial nanomaterials engineering, nanoparticle synthesis and biotechnology. Further strengths include faculty hiring, new facilities, undergraduate work in MEMS and nano, and proximity to federal labs, according to *Small Times*.

The center's rankings in the last three years send a number of messages, says Minta Martin Professor of Engineering in the Department of Materials Science and Engineering and Maryland NanoCenter Director Gary Rubloff. "We are a major player in the nano field in both education and research. Our strengths in microtechnology add important new dimensions to our nano work, and our partnerships

provide a superb basis for growth and leadership in the future."

Rubloff noted that the strong rankings also reflect the level of investment the university, the state and the federal government are making in the center. He cites numerous faculty research awards and \$3.65 million in funding from the state of Maryland to help equip the FabLab (Fabrication Laboratory), a basketball court-sized clean room in the Jeong H. Kim Engineering Building. The state funding "provides a quantum jump in capabilities," according to Rubloff. The new equipment, slated for installation this fall, "will make us competitive with any nanotechnology program in a university setting," he adds.

Looking ahead, Rubloff anticipates increased research activity in two key areas: energy and food. On the energy front, Rubloff advises, "Many of the current energy issues require nanotechnology for advancement, particularly in the formation of nanostructures to capture and retain energy. We expect the center to have a big impact on the energy thrust undertaken through the new University of Maryland Energy Research Center."

In food technology, center researchers are collaborating with faculty in the College of Agriculture and Natural Resources on a number of projects to detect, remedy, and prevent pathogens in food. "The scientific and technical challenges here are highly synergistic with our ongoing work in nano-bio-technology, where our partnerships with the Center for Biosystems Research at the University of Maryland Biotechnology Institute and with University of Maryland at Baltimore's Center for Nanomedicine and Cellular Delivery are already strong," says Rubloff.

Rabin Named Clark School Interim Dean

For the second time in his career, Herbert Rabin, associate dean of the Clark School, director of the Maryland Technology Enterprise Institute (MTECH) and professor of electrical and computer engineering, has assumed the post of Clark School interim dean. Rabin took the position vacated July 1 by Nariman Farvardin when Farvardin became provost at the university.

Rabin previously was interim dean at the Clark School in 1999 and 2000, just after William Destler stepped down as dean of the school to become vice president for research and dean of the Graduate School and later provost. "Herb served with great skill and resourcefulness in that period," says Destler. "It is reassuring today that this critical transitional role will be filled by someone so respected and well liked within the school, the university and the engineering and business communities. Certainly, there can be no one better prepared for the job." A national search for a new dean is underway.



Board of Visitors Taps Region's Leaders

The Clark School Board of Visitors continues to attract the region's business and technology leaders. Three new members recently joined the 45-member board, which provides counsel to the dean on the mission, goals and strategic plan of the school. Members also help promote the interests of the school locally, nationally and internationally. The following members joined the board in May.

Ali Hirsu is head of analytical trading strategy at Caspian Capital Management, a New York hedge fund affiliated with IXIS AM Group. The group includes 14 affiliated investment management firms and distribution and service units with \$247.1 billion in assets. Hirsu, who received his M.S. in civil engineering and his M.A. and Ph.D. in applied mathematics from Maryland, also serves as an adjunct professor at Columbia University and at New York University's Courant Institute of Mathematical Sciences.

As vice president of asset management for Pepco Holdings, Inc. (PHI), William M. Gausman is responsible for the engineering and design of all assets that support transmission and distribution of electric services across the entire PHI territory, including the services of Pepco, Delmarva Power and Atlantic City Electric. During his more than 30 years in the energy field, he has served as an advisor to various industry organizations. He is a current member of the Leadership Greater Washington class of 2007.

Senior Vice President and Chief Technology Officer of Lockheed Martin Corporation Ray Johnson leads his firm's Advanced Concepts Organization and the Center for Innovation, a world-class laboratory for collaborative experimentation and analysis. He has held management positions at Modern Technology Solutions, Inc. and Science Applications International Corporation. A former member of the Air Force Scientific Advisory Board and the Sandia Corporation Board of Directors, Johnson received his M.S. and Ph.D. degrees in electrical engineering from the Air Force Institute of Technology.

Save The Date



Join alumni and friends of the Clark School as they welcome the latest inductee to the school's Innovation Hall of Fame on October 4. The Hall of Fame honors technological accomplishment and recognizes innovation at the concept, design or working level of engineering. Following the induction ceremony, attend the Charles and Helen White Symposium, which focuses on the work of the most recent inductee and explores the relationship between engineering innovation and modern society. This significant academic event is made possible through a generous gift by Distinguished Alumnus Charles M. White, B.S. '13, mechanical engineering, and his wife Helen White.

NSF CAREER Awards Honor Junior Faculty

Four junior faculty members have been honored for their research with the prestigious National Science Foundation Faculty Early Career Development (CAREER) Award, which recognizes and supports the activities of those teacher-scholars who are most likely to become the academic leaders of the future.

Fischell Department of Bioengineering Assistant Professor **J. HELIM ARANDA-ESPINOZA** was selected for his work on "Mechanotaxis of Axons and Neurons." The knowledge acquired in this research could be used for axon regeneration after trauma in the peripheral and central nervous systems.

Assistant Professor **MIAO YU**, mechanical engineering and Institute for Systems Research (ISR), was chosen for her project on "Biology-Inspired Miniature Optical Directional Microphones: Bridging Biological Systems and Sensor Technology."

Assistant Professor **NUNO MARTINS**, electrical and computer engineering and ISR, was recognized for his work on "Distributed Control of Dynamic Systems Using a Wireless Communication Medium: Two New Paradigms."

Assistant Professor **ANDRÉ MARSHALL**, fire protection engineering, received the award for his research on "Exploring Jet Fragmentation and Atomization for Combustion and Fire Suppression Systems." Marshall's work characterizes the details of the atomization process to advance modeling capabilities for fire suppression and gas turbine combustion systems.

Professional Recognition



Glenn L. Martin
Professor of
Engineering
**KATEPALLI R.
SREENIVASAN**,
mechanical engi-
neering (ME) and
Institute for
Physical Science

and Technology, was elected a member of the National Academy of Sciences for his outstanding and long-time research contributions to the fields of fluid turbulence, complex fluids, combustion, cryogenic helium and nonlinear dynamics.

REZA GHODSSI, associate professor of electrical and computer engineering (ECE) and the Institute for Systems Research (ISR), has been invited by the National Academy of Engineering (NAE) to attend the 2007 NAE U.S. Frontiers of Engineering Symposium this fall.

ECE Assistant Professor **THOMAS E. MURPHY** received a Young Faculty Award from the Defense Advanced Research Projects Agency for his work on "Linearized Electro-optic Phase Modulation." His research focuses on a new type of optical modulator that can be used to transmit analog signals over optical fibers that are lighter, smaller and less susceptible to electromagnetic interference than conventional coaxial cables.

Fischell Department of Bioengineering Chair and Herbert Rabin Distinguished Professor **WILLIAM BENTLEY** was elected a fellow of the American Academy of Microbiology.

MARK LEWIS, professor of aerospace engineering (AE) and chief scientist for the U.S. Air Force, has received the 2007 American Institute of Aeronautics and Astronautics Energy Systems Award for significant contributions in the field of energy systems. Lewis also received the prestigious *Aviation Week & Space Technology* Laureate Award in Aeronautics/Propulsion for his contributions to aviation and aerospace. He was recently named the Willis Young, Jr. Faculty Fellow in Aerospace Engineering.



Lockheed Martin Chair in Systems Engineering **JOHN BARAS**, ECE/ISR, and his graduate student George Theodorakopoulos were selected to receive the 2007

Institute of Electrical and Electronics Engineers (IEEE) Communications Society Leonard G. Abraham Prize in communications systems.

Assistant Professor **TENG LI**, ME, was recently granted the Ralph E. Powe Junior Faculty Enhancement Award. Li is one of only two Maryland faculty nominated in 2007 by the university to compete for this award, which provides seed money for research by junior faculty at Oak Ridge Associated Universities member institutions.

Professor **ARIS CHRISTOU**, ME, won the 2006-2007 American Society for Metals International George Kimball Burgess Memorial Award, which recognizes original contributions to the fields of metallurgy, materials or mechanics.

Fire Protection Engineering Associate Professor and Associate Chair **JAMES MILKE** was selected as the 2007 TIAA-CREF "Top Terp" Grand Prize Winner. The award recognizes a faculty member who demonstrates excellence in education. Milke was also given the Outstanding Gemstone Mentor award by the Gemstone program for his work with the 2007 BurniNATION team to improve fire safety on campus.

Minta Martin Professor **J. GORDON LEISHMAN**, AE, was named a 2007 technical fellow of the American Helicopter Society.

Professor **VIRGIL GLIGOR** (ECE) has been appointed editor-in-chief of *IEEE Transactions on Dependable and Secure Computing*.

“Strive for Perfection”

Celebrating the Farvardin Era: 2000 to 2007



PHOTO BY FAYE LEVINE

It was his central theme in annual reviews, in the classroom, and in addresses to faculty and staff: “Strive for perfection in everything, for the highest level of quality possible.” For Nariman Farvardin, dean of the A. James Clark School of Engineering from 2000 to 2007 and now senior vice president for academic affairs and provost of the University of Maryland, these words were a guiding principle to be applied daily and are now a well-established legacy that ensures the school’s continued rapid advancement.

Research

- 6 In the Farvardin Era, the Clark School’s faculty was highly successful in securing research funding, with nearly 200 tenured/tenure track faculty members on average generating more than \$500,000 annually, to achieve a total of more than \$111 million in 2007. Among significant achievements were the establishment of major units for nanotechnology, energy and bioengineering, and the expansion of undergraduate research opportunities. Recent faculty hires from around the nation and the world ensure continuing research excellence.

Philanthropy

Under Dean Farvardin’s leadership, the Clark School’s fundraising activities reached new levels. The \$30 million Clark Scholarship Endowment, the \$31 million Fischell Department of Bioengineering, and the new cross-disciplinary Jeong H. Kim Engineering Building are now being followed by generous large and small donations from alumni, friends, companies and foundations. The school has in three years garnered more than \$110 million of its \$185 million, seven-year *Great Expectations* campaign goal.



PHOTO BY ANDREW D. CULHANE

in All that You Do.”

Education

From his “Dialogue with the Dean” course to his mentoring of individual students, Dean Farvardin served as an active educator while leading the Clark School. His impact will be most powerful in the new programs he created and existing ones he furthered—broad programs such as the Keystone Academy of Distinguished Professors, which ensures that our best professors teach our most fundamental courses, and more specialized programs such as the Inventis Academy of Engineering Leadership, Women in Engineering, and the Masters in Engineering and Public Policy. Through such programs and the support of the Clark Scholarship Endowment, the Clark School is recruiting and retaining more of the best students.

Entrepreneurship

A technology entrepreneur in his own right, Dean Farvardin oversaw the dramatic expansion of the school’s entrepreneurship education and support. Through its nationally recognized Maryland Technology Enterprise Institute, the school offered its renowned Hinman CEOs living-learning entrepreneurship program for undergraduates, new VentureAccelerator program to assist graduate students and faculty in venture creation, University of Maryland \$50K Business Plan Competition and Technology Start-Up Bootcamp.

Rising Through the Ranks

Farvardin, who fled Iran in 1979 amid the overthrow of the shah, earned his bachelor’s, master’s and doctoral degrees in electrical engineering from Rensselaer Polytechnic Institute. In 1984, he came to the Clark School as an assistant professor in the Department of Electrical and Computer Engineering; he served as chair from 1994 to 2000, when he became dean of the school. A fellow of the Institute of Electrical and Electronics Engineers, Farvardin is widely known for his contributions to communications and information theory. Additional honors include: National Science Foundation Presidential Young Investigator Award; the George Corcoran Award for Outstanding Contributions to Electrical Engineering Education; and Invention of the Year Award (Information Sciences) from the university. In January 2003, he was selected by *The Washington Post* as one of the “Five To Watch in 2003.”

Connectivity

A firm believer in the importance of connecting the school with the world around it, Dean Farvardin involved key members of private industry and federal agencies in the school’s activities by expanding and strengthening its Board of Visitors and its Corporate Partners program. He secured outstanding speakers for the Whiting-Turner Business and Entrepreneurial Lecture Series, gave new prominence to the Clark School’s Innovation Hall of Fame and White Symposium, forged closer ties with alumni through this magazine, monthly electronic newsletters, and regional events, and worked tirelessly to increase awareness of the school and its capabilities among academic, corporate and government leaders. The school’s rankings have risen dramatically in a variety of

surveys, with standings in the top ten or 20, nationally and internationally.

Farvardin Endowed Fund

In honor of Dean Farvardin’s exceptional successes as Clark School dean, a fund has been established in his name. To learn about contributing to the fund, please contact Steve Beeland, assistant dean for external relations, at sbeeland@umd.edu.

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PHOTO BY AL SANTOS



Left, the dedication of the Jeong H. Kim Engineering Building; above, Art Collins, President and CEO of Medtronic, Inc. delivers a Whiting-Turning lecture; and right, graduate students design a micro hovering air vehicle.

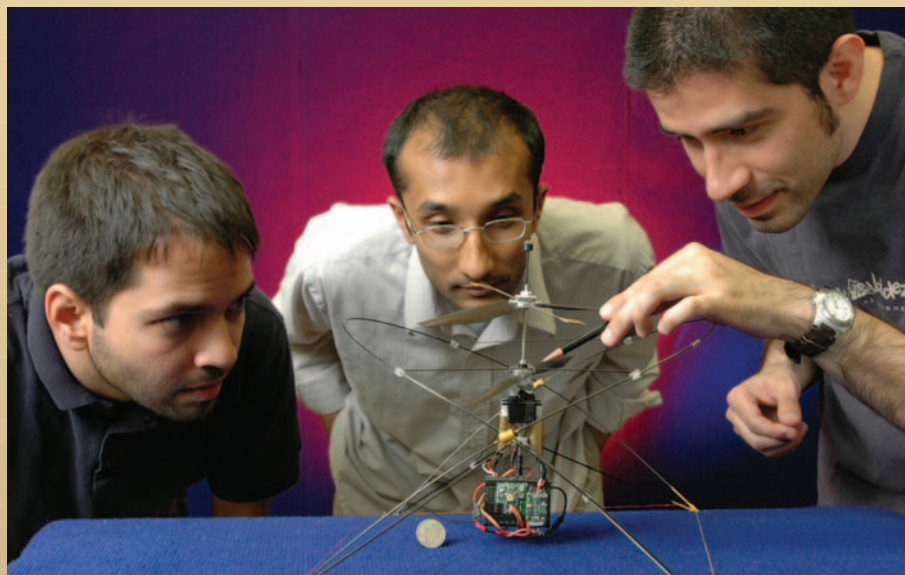


PHOTO BY ADRIAN HOOD

Friends, Colleagues and Alumni Honor Nariman Farvardin

UNIVERSITY PRESIDENT C.D. MOTE, JR.



"His extraordinary leadership, entrepreneurial spirit, support of students, and devotion to the university are widely respected across the campus. His innate ability to build consensus and foster collaboration at every level was instrumental in moving the Clark School forward."



CLARK SCHOOL INTERIM DEAN HERBERT RABIN

"Nariman has been the school's chief quality officer, emphasizing quality at every turn. Through his personal example, he has inspired many others to follow suit."

A. JAMES CLARK, B.S. '50, CIVIL ENGINEERING, CHAIRMAN AND CHIEF EXECUTIVE OFFICER OF CLARK ENTERPRISES, INC.



"Nariman Farvardin and I share a great love and commitment to this school. Nariman advised me of the need for scholarship funding and the immediate and long-term implications, not only for the scholarship recipients but also for the diversity and quality of the school. He strongly encouraged me to set up the Clark Scholarship Program, which has been a great success in attracting high-quality students to the school."



ROBERT E. FISCHELL, M.S. '53, PHYSICS, MEDICAL DEVICE INVENTOR AND BENEFactor OF THE FISCHELL DEPARTMENT OF BIOENGINEERING

"Nariman has consistently been a great leader and has achieved worldwide recognition for the school. I felt it was worthwhile to start the bioengineering department because I knew under his guidance it would be a success."



**BOARD OF VISITORS
CHAIR THOMAS
SCHOLL, NOVAK,
BIDDLE VENTURE
PARTNERS**

"If I were in a trench waiting to cross the battlefield, Nariman is the

one I would want beside me. He is a man of his word. He does not shy from putting himself at risk for what he believes in and he is extraordinarily capable and energetic."

**RAJIV LAROIA, M.S. '89 AND PH.D. '92,
ELECTRICAL ENGINEERING, FOUNDER AND
CTO OF FLARION TECHNOLOGIES**

"Nariman spent hours reviewing my papers. They were completely red and blue when he was done, but I later recognized the value in his attention to detail. He significantly improved my ability to express my ideas."



**BRIAN HINMAN, B.S. '82,
ELECTRICAL ENGINEERING,
BENEFACTOR, HINMAN CEOs**

"Every day Nariman was focused on raising the stature of the Clark School. Its national rankings today are a testament to his success over the last seven years. His dedication to excellence has paid off for the school and the university."



**JEONG H. KIM, PH.D. '91,
RELIABILITY ENGINEERING,
PRESIDENT OF BELL LABS AT
ALCATEL-LUCENT, AND
CLARK SCHOOL PROFESSOR
OF PRACTICE**

"Every organization reflects the traits of its leader and the Clark School bears Nariman's imprint. He is a visionary leader who has inspired others with his passion, his relentless energy and his growth mindset."



**PRAMOD P.
KHARGONEKAR,
DEAN, THE
UNIVERSITY OF
FLORIDA
COLLEGE OF
ENGINEERING**

"It is hard to think of someone who

has had a greater impact on his or her school than Nariman. He has made substantial improvements—not incremental but significant improvements—in all aspects of engineering education and research at the Clark School."



**JAMES H. AYLOR, DEAN,
SCHOOL OF ENGINEERING
AND APPLIED SCIENCE,
UNIVERSITY OF VIRGINIA**

"Nariman has great leadership skills and has put the Clark School on the map. He has tackled tough problems such as energy, not just to improve the school and the university, but to keep this country great and solve the world's problems."



**NICK JONES, DEAN, THE
JOHNS HOPKINS
UNIVERSITY WHITING
SCHOOL OF ENGINEERING**

"There's no question from where I sit that the Clark School has made tremendous advances under his leadership. I found in Nariman a

colleague who shared my perspectives and vision when it came to opportunities for and beyond our respective schools."



**STUDENT DAVID
CRAWFORD, B.S. '09,
COMPUTER ENGINEERING**

"It is amazing to me that he is able to take two hours out of his day to sit down with a couple of students and talk about their experiences.

He makes it clear that he is not rushed and has time for you."



PHOTO BY JOHN T. CONSOLI

Making Engineering Come Alive

**Innovations in Undergraduate Education
Inspire, Retain Students**

by Beth Panitz

Freshmen and sophomores can easily lose sight of the reasons that led them to study engineering. Their fundamental courses may seem abstract, remote from the excitement of building new technologies and improving life. And if their teachers are not especially committed to keeping their interest levels high, it may be a struggle for students to continue—a struggle many lose.

At the Clark School, a new initiative called Keystone ensures that the very best professors teach the most fundamental courses. And a broad array of special programs and activities gives students a variety of opportunities to find inspiration and satisfaction outside the classroom. These innovations increase the odds that students will complete their degrees, launch successful careers and contribute to society.

Keystone: Giving Students the Right Start

Introduction to Engineering Design (ENES 100), one of the first courses Clark School students take, has two crucial functions: to let students experience what it means to be an engineer, and to set their expectations for the rest of their studies.

Since 2006, ENES 100 has been the special focus of a new program called Keystone: The Clark School Academy of Distinguished Professors. Led by Associate Dean William Fourney, professor and former chair of aerospace engineering, Keystone is a small group of professors selected for their exemplary teaching skills and commitment to excellence in fundamental courses. They receive renewable three-year appointments with a base salary increase and discretionary funds to support their activities, and are assisted by a dedicated team of Keystone instructors and technicians. Keystone is supported by gifts from Lockheed Martin, William Korab, B.S. '64, chemical engineering, and his wife Gabrielle Korab, and Angel Bezos, B.S. '69, electrical engineering. (To learn more about supporting Keystone, please contact Steve Beeland at sbeeland@umd.edu.)

For ENES 100, the Keystone team has designed and begun to teach a powerful new curriculum. In the first half of the semester, students sample essential engineering topics, like fluid mechanics, circuits, and sensors and controls. In the second half, they form teams and put their knowledge to use—designing, budgeting, building and flying a hovercraft. Throughout, guest speakers from industry and government offer real-life examples of engineers at work in the world.

"The idea is to challenge students with an interesting project at the beginning of their education," says Fourney. "We do everything to ensure that students have a good initial experience and stay in the school."

Their efforts are paying off. "ENES 100 provides a great perspective of what engineers do," says bioengineering student Synthia Mariadhas, who served as a course team leader this spring. "Being a team leader is like being the CEO of an engineering company. I didn't know engineering



Left, Keystone Professor Ken Kiger and students work on the ENES 100 hovercraft project. Above, student teams test their newly designed vehicles.

would be this challenging." The Clark School plans to increase the number of Keystone professors from nine to 25 over the next five years so it can enhance additional fundamental courses.

Keeping Interest High

Improving introductory classes is a vital step in retaining engineering students. It is likewise important to provide opportunities outside the classroom for students to learn leadership skills and new problem-solving methods, perform engineering research, and become more involved in the world around them. Such experiences keep students excited about their studies and motivate them to master increasingly more challenging material.

Inventis, the Clark School's distinguished scholars program, develops students' leadership skills. "We're hearing from employers that students are terrific in technical areas, but they need more work in areas like leadership," says Rachel Rose, Inventis program coordinator. The two-year program features seminars and courses that focus on leadership, networking and mentoring. Further, the school has proposed a minor in Engineering and Leadership that it may launch in spring 2008.

The College Park Scholars Program, in particular its Science, Technology and Society component, encourages students to

become broad problem solvers. Working on multidisciplinary teams from across campus, students conduct research projects exploring the interdependence of science and technology with society. About 25 percent of the 600 program participants are engineering majors.

Multidisciplinary research, such as the work carried out by the Maryland NanoCenter and the University of Maryland Energy Research Center, is a major emphasis in the Clark School's next five-year strategic plan, now under development. For undergraduate education, the plan proposes a new junior/senior-year multidisciplinary design course that will expose students to methods and ideas outside their majors and even outside engineering. Also proposed are a new required course, Biology for Engineers, to prepare all engineering students to deal with the field's potentially greatest area of growth; and the creation of a new Engineering Writing and Presentation Center to prepare students to communicate more successfully in business and public situations.

The Clark School has also incorporated more ethics education in the curriculum. "The compliance and ethics areas are very important, especially in the energy industry with the Enron debacle," says Constellation NewEnergy Chief Operating Officer Mark Huston. "When engineering



students come here with an understanding of the complexity of these issues, it gives us a great head start.”

Breaking the Gender Barrier

Recognizing the importance of attracting and retaining more female students, the Clark School has developed the highly regarded Women in Engineering (WIE) program and secured crucial support from people committed to this goal. For example, a recent \$200,000 gift from former Clark School Dean George E. Dieter and his wife Nancy Dieter will create merit-based scholarships for female mechanical engineering students. To further strengthen its recruitment and retention of female students, the Clark School, led by Marilyn Berman Pollans, former Clark School associate dean, has formed an advisory board for Women in Engineering and launched a new living/learning component for that program.

“We can and should do more to attract women to engineering,” says Pollans. “At present women comprise only 17 percent of undergraduates—about the national average. We want to make that 25 percent by 2012.” Pollans recently pledged \$100,000 to help seed the new WIE Living and Learning Community. Launched this fall, the community brings together female engineers to live on the same floor of a selected residence hall, attend leadership seminars together,



Clark School students participate in Engineers Without Borders, volunteering their expertise in developing countries. Pictured, students install solar panels at a community center in Burkina Faso, Africa.

and cluster in math, chemistry and engineering courses. “It should help tremendously to place women in a warm, accepting environment where they can work and socialize together,” says Pollans. The new WIE advisory board will help recruit students and provide networking opportunities and role models.

Going Global

Less than 10 percent of Clark School graduates currently participate in an international study or work experience, despite industry’s demand for engineers with an awareness of international business practices and cross-cultural communication skills. The school expects to raise participation in international experiences to 25 percent over the next five years.

“Engineering students travel in disproportionately lower numbers than other university students,” says Jane Fines, Clark School director of undergraduate recruitment and special programs, who oversees the school’s study-abroad programs. “Many engineering students have the misconception that they’re not able to fit an international experience into their curriculum. In fact, study-abroad credits often transfer back to the university, allowing students to stay on track for graduation.”

New international offerings include the school’s first winter-term course abroad (slated for Australia in January 2008), a minor in international education launched two years ago, and the Engineers Without Borders program, instituted in 2004 to provide volunteer opportunities in developing countries. The school also offers study abroad programs with universities in South Korea, Norway and the United Kingdom, and it participates in the Global Engineering Education Exchange Program, which allows students to study in one of 17 countries.

Priming the Pipeline

Ultimately, to increase the number of students completing their degrees and working as engineers, educators and industry need to make engineering an aspirational goal for high school and middle school students. “The K-12 pipeline is not what it needs to be,” notes Bob Raybits, manager of university relations and recruiting for Northrop Grumman Electronic Systems. “We are working to get the message out that studying science and engineering can be fun.”

The Clark School recently increased its pre-college outreach efforts. “We are trying to hit students early and get them excited about engineering,” says Fines. “We’re showing them what engineering is and how it benefits society.”

The school recently expanded its pre-college summer offerings. In the week-long Stepping Stones to Your Future program, middle school students design a mini-catapult, build robots out of Legos and engage in an ‘eggs-periment’ to design a container that allows an egg to survive a 25-foot drop into an inch of water. The school also offers several high school camps, including one geared toward women.

Through the school’s Ambassadors Program, launched in 2005, Clark School undergraduates help market the profession and recruit students. The “ambassadors” convey engineering’s importance to prospective students on campus and make the rounds to local high schools and middle schools to lead students in hands-on engineering projects. The Clark School is proactively exploring other strategies to attract students, such as establishing academic partnerships with 25 high-tech high schools within the next five years.

Beth Panitz is a freelance writer based in Rockville, Md. A graduate of the University of Maryland Merrill College of Journalism, she previously served as senior editor of ASEE Prism, the magazine of the American Society for Engineering Education.

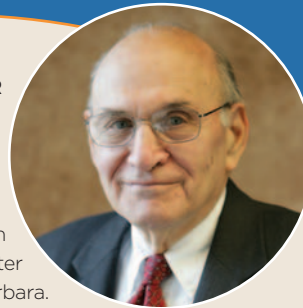
Less than three years into *Great Expectations: The Campaign for Maryland*, the university's seven-year, \$1 billion fundraising initiative, the Clark School has reached a crucial milestone: The school has raised over \$110 million toward its \$185 million goal. The Clark School has the largest goal of any unit in the university.

Several key gifts by long-time supporters of the school laid the groundwork for early success, including A. James

Clark for the A. James Clark Scholarship Endowment for Undergraduates, Robert E. Fischell for the Fischell Department of Bioengineering and the Robert E. Fischell Institute for Biomedical Devices, and Jeong H. Kim for the Jeong H. Kim Engineering Building.

While these donors have launched the Clark School's campaign, many additional supporters are now following suit.

THE BARBARA J. DIETER SCHOLARSHIP ENDOWMENT IN MECHANICAL ENGINEERING AND WOMEN IN ENGINEERING. The gift brings together two areas of special interest to former Clark School Dean George E. Dieter and his wife Nancy Dieter and pays tribute to their daughter Barbara.



THE MARILYN BERMAN POLLANS ENDOWMENT TO INSPIRE FUTURE WOMEN ENGINEERS. Board

of Visitors member and former Associate Dean Marilyn Berman Pollans is committed to bringing more women into engineering and has been a long-time supporter of the Women in Engineering Program.



Campaign Progress Exceeds All Expectations

THE ROBERT W. DEUTSCH FOUNDATION: SUPPORT FOR NANOSCALE BIOCHIP RESEARCH. Inspired by the exciting potential of nanotechnology as applied to health-care, Robert Deutsch and his daughter Jane Brown have placed their foundation's support behind biochip research at the Clark School.



THE WILLIAM AND GABRIELLE KORAB ENDOWMENT TO SUPPORT THE KEYSTONE ACADEMY. This gift from William and Gabrielle Korab will help place the best Clark School teachers in fundamental courses and improve student retention through the innovative Keystone program.



THE HILLMAN FAMILY FOUNDATION: HILLMAN ENTREPRENEURS PROGRAM. This innovative gift from David and Suzanne Hillman gives students at Prince George's Community College the opportunity to complete bachelor's degrees at the University of Maryland and obtain entrepreneurship training.



Campaign Progress Exceeds ALL Expectations



THE CHARLES A. IRISH, SR., SCHOLARSHIP ENDOWMENT AND SUPPORT FOR THE CLARK SCHOOL. Funding for an endowed scholarship plus an additional amount to serve the highest needs of the Clark School are provided by Charles A. Irish, Sr.



EMILIO FERNANDEZ: SUPPORT FOR THE CLARK SCHOOL. This gift to the Dean's Fund by Emilio Fernandez gives the school the greatest latitude to respond to new research and educational opportunities in a timely manner.



THE HARRY K. WELLS GRADUATE FELLOWSHIP IN THE UNIVERSITY OF MARYLAND ENERGY RESEARCH CENTER. This strategic gift by Harry K. Wells supports graduate students, one of the school's primary giving priorities, and furthers the capabilities of the school's new energy research center.



THE PATRICK AND MARGUERITE SUNG PROFESSORSHIP AND DISTINGUISHED PROFESSORSHIP IN CHEMICAL ENGINEERING. Moved by Jeong Kim's gifts to the school, Patrick and Marguerite Sung created two professorships in Patrick's area of study. They have also established a graduate fellowship in mathematics.



THE WILLIS H. YOUNG FACULTY FELLOWSHIP IN AEROSPACE ENGINEERING. By endowing a faculty fellowship, Erik Young, B.S. '74, is paying tribute to the excellent education his father received in aerospace engineering. Young has made additional contributions to other areas of the university.



A Broad-Based Effort

In the university's last campaign, *Bold Vision, Bright Future*, the Clark School raised \$63 million in seven years—an achievement that required some 10,000 gifts. That same broad level of support will be required to help the school raise the remaining \$75 million required to meet its campaign goal. From across the Clark School community, friends and alumni are heeding the call. Additional recent gifts include:

A \$100,000 commitment to scholarships in civil engineering by RICHARD REED, B.S.'50, civil engineering, and his wife ELEANOR REED, B.S. '49, Spanish.

A pledge of \$25,000 to the Dean's Fund by STEVE AND MIRIAM DUBIN. Steve, B.S. '74, accounting, is a member of the Clark School Board of Visitors and CEO of Martek Biosciences.



Ronald, B.S. '67, mechanical engineering, is a retired Constellation Energy executive and member of the Board of Visitors.



Mark, B.S. '85, mechanical engineering, is a member of the Board of Visitors and COO of Constellation NewEnergy.

A pledge of \$50,000 to the Dean's Fund by RONALD AND KAREN LOWMAN.

A commitment of \$50,000 by MARK AND KAREN HUSTON to create a named endowed scholarship fund in engineering.

Mark, B.S. '85, mechanical engineering, is a member of the

A commitment of \$100,000 from WILLIAM AND PAMELA KOFFEL for the J.M. Patterson Renovation Fund for the fire protection engineering department. William, B.S. '79, fire protection engineering, is a Board of Visitors member.

A pledge of \$100,000 to the Jeong H. Kim Engineering Building from TOM AND SUSAN SCHOLL. Tom chairs the Board of Visitors.

More than \$100,000 in support primarily for the Fourney Scholarship Fund from Associate Dean WILLIAM FOURNEY and his wife CONNIE FOURNEY.

Bill is the former chair of both the mechanical and aerospace engineering departments.



Board of Visitors Campaign Steering Committee Spreads the Word

When James Redifer, B.S. '58, M.S. '71, electrical engineering, retired from Northrop Grumman in 1998, then Dean William Destler asked him to consider chairing the Clark School's Board of Visitors, on which he had served for many years. Redifer not only accepted the challenge, he remained chair until 2006 and now serves on the board's campaign steering committee.

"We all value and respect what Dean Farvardin accomplished and we are proud of the fact that we are the fastest rising engineering school in the country," says Redifer. In discussing the school's campaign progress, he notes, "Going forward, it really is a question of creating strategies for reaching a broader base and raising increasing amounts from that group."

It is clear from the history of donations to the school that a select number of individuals of significant means have provided the majority of support, says Redifer. "We know that there are large numbers of graduates who have not yet been engaged with the school. Through more personal meetings and increased contact with people of interest, we hope to change that."

One recently established board-based initiative is getting strong posi-

tive reviews. "We have started offering consultative dinners with the dean. They are social gatherings for relatively small groups of friends and donors at private homes and public venues, such as country clubs around the nation," explains Emilio Fernandez, B.S. '69, electrical engineering, and Board of Visitors campaign steering committee member. "We are looking to bring friends and donors who were somewhat removed back into the fold," says Fernandez. Dinners have been held in

Baltimore and at Fernandez's home in McLean, Va., and are planned for New York City, Palo Alto, Calif., and the greater Washington, D.C. area.

Fernandez is constantly encouraged by the passion board members share for the school. "Many of us received an education here that

shaped our lives. If we want future generations to have those same options, we can no longer depend on the state to fund the university," he says. "We have a great deal of momentum, in large measure because of the three wonderful deans who have led the school most recently. We are poised to capitalize on the opportunities before us."

"Going forward, it really is a question of creating strategies for reaching a broader base and raising increasing amounts from that group."

Start-up Specialist Heads MTECH VENTURES

As an engineering graduate student at Stanford University in the early 1990s, Dean Chang never dreamed he would help launch a company—much less one that would become a \$300 million technology leader. Entrepreneurship simply was not part of his rigorous mechanical engineering training at Stanford or at Massachusetts Institute of Technology, where he completed his undergraduate degree. But when a fellow graduate student persuaded him to help start a company based on their robotics research, Chang realized he had a passion not only for engineering but also for business.

Today, as the new director of the Clark

School's MTECH Ventures, Chang hopes to spark that love of entrepreneurship in the school's engineering students and to help foster the growth of new technology companies. An initiative of the Clark School's Maryland Technology Enterprise Institute, MTECH Ventures provides technology entrepreneurship education, including the Hinman CEOs program, the nation's first living-learning entrepreneurship program for undergraduates; the VentureAccelerator program to help faculty and students commercialize technology inventions; and the Technology Advancement Program, a business incubator open to the public. Chang hopes to

raise the profile of MTECH Ventures' innovative entrepreneurship programs, attracting more participation from regional companies.

Immersion In Entrepreneurship

"Like many engineering students, I did not know how to run a company, much less start a business," says Chang, who helped guide the growth of Silicon Valley-based Immersion Corporation for 12 years, gaining his business acumen on the job and through MBA coursework at the Wharton School of the University of Pennsylvania. As Immersion's chief technology officer, Chang was at the forefront of creating an entire industry around haptics, the science of simulating the sense of touch in computer environments. Immersion's technology has been incorporated into such products as surgical training simulators and three-dimensional modeling and animation tools and video game systems like Microsoft Xbox 360 and Sony PlayStation 2.

Chang recognizes the importance of entrepreneurship. "Programs like MTECH Ventures are critical to this country's future," says Chang. "The major innovations are not coming from big companies today. More and more they are coming from universities."

Raised in Bethesda, Md., Chang is excited to be back in the Washington, D.C., area with his wife and three young children and is committed to inspiring the next generation of entrepreneurs. As he points out, "The concepts of entrepreneurship and innovation are as important to engineering students today as Ohm's Law and Newton's Laws."

Dean Chang, director of MTECH Ventures, right, discusses business strategy with Anik Singal, B.S. '05 finance, Hinman CEOs alumnus and founder of Affiliate Classroom, which provides online training for affiliate marketers.





doFlick founders, from left, Rama Sreenivasan, Shiva Pandit and Luis Corzo prepare to film a "how-to" video.

PHOTO BY MIKE MORGAN

Graduates Introduce "How-to" Video Sharing Site

What began as a chance meeting in a Clark School entrepreneurship class has led to a business venture that takes the concept of collaboration to new heights.

doFlick.com, a growing, Web-based, on-demand, audio-visual library of educational and instructional videos, is the brainchild of Rama Sreenivasan, Ph.D., '07, chemical engineering; Shiva Pandit, M.S., '07, electrical and computer engineering; and Luis Corzo, M.S., '05, specializing in project management. "The whole concept for doFlick builds on the creation of knowledge through teams of collaborators," says Sreenivasan, who is looking to build the business on the foundation of mass collaboration, much like Google and eBay.

A classroom experience motivated the three entrepreneurs to develop doFlick. "I remembered the personal pain of building a reactor from scratch for one of my thesis projects and thinking how my learning curve was slowed because of a lack of basic, practical information," says Sreenivasan. That frustration

prompted a general discussion about developing Internet-accessible videos to demonstrate how to do things—from bending a tube for a science lab to demonstrating a drum and bass groove in music.

Their coursework through MTECH and the Clark School's Professional Master of Engineering program gave them the tools and the confidence to move ahead as they developed an executive summary, a business plan and pitches to venture capitalists for the company. "We view our niche as capturing highly technical information from academia or the private sector and developing how-to videos that could be used to train future employees, provide learning models for students and teachers, or supplement coursework," says Corzo.

Currently, the group is working with Fluid Systems Solutions to create a video on how to operate its newest orbital welding product. "Smaller companies may not have the information technology infrastructure to develop or host new Web content. What better way to

introduce a new product than video," says Corzo, who notes the group is focused on providing security for their video content.

Initially, advertising was expected to generate revenues for the business, but now sponsorships, subscriptions and sales of the Web-based, patented Internet technology are emerging as possible revenue streams.

"Through subscriptions, we could provide a moderator with access to our infrastructure, and he or she could modify the organization and content for a whole range of instructional videos," says Sreenivasan.

As they develop the second generation of the doFlick Web site, the company founders are actively engaging university professors and business partners to produce relevant content. The trio promises not to forget their roots: Long-term plans include donating a portion of doFlick's profits to fund scholarships at higher education institutions at which the company develops partnerships, beginning with Maryland. To learn more, visit www.doFlick.com.

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Top Honors Go to Clark School in Business Plan Competition

Clark School representatives took top honors in all three categories of the 2007 University of Maryland \$50K Business Plan Competition. The contest, which is open to companies comprised of students, faculty or alumni from all majors, is hosted by MTECH Ventures.

Research Associate Will Plishker, University of Maryland School of Medicine Adjunct Assistant Professor Raj Shekhar

and graduate students Yashwanth Hemaraj and Omkar Dandekar, all of electrical and computer engineering (ECE), captured first place in the graduate and faculty category. The team's biomedical company, Accelign, is developing hardware that fuses medical images from multiple sources, including PET scans and CT scans, into a single 3-D image.

In the young alumni division,

Aid Networks LLC placed first. The team, which included David Crawford, B.S. '09, ECE, created a wireless apparatus that monitors the vital signs of emergency room patients waiting to be treated and alerts medical staff if a patient needs urgent care.

The winning undergraduate team, IMPACT Education LLC, developed a low-cost educational kit that university professors can use to teach microelectro-

mechanical systems (MEMS) fabrication outside of expensive laboratory facilities. The interdisciplinary team included Ryan Herrera, B.S. '07, electrical engineering (EE); Steven Hoffenson, B.S. '07, mechanical engineering (ME); John Karvounis, B.S. '07, computer engineering; Peter Orlicki, B.S. '08, Hinman CEO student, ECE and finance; Jennifer Thompson, B.S. '07, ME; and Travis Young, B.S. '07, EE.

Students Gain a Competitive Edge



A Clark School Baja race entry.

Clark School students are making their mark in campus-wide, national and international competitions as they apply their talents and skills outside the classroom.

Students from the Clark School took second place in both the graduate and undergraduate divisions in this year's NASA Revolutionary Aerospace Systems Concepts—Academic Linkage (RASC-AL) space design competitions. The graduate team finished second to Georgia Tech and the undergraduate team took second place behind the University of Michigan. Eleven students traveled to Galveston, Texas, for the May competition supported by travel funds from RASC-AL and the Maryland Space Grant. For the last six years, Clark School students have participated in the RASC-AL competition. In 2004, they won the competition with MORPH-LAB, a design for modular habitat units that could travel from place to place on the moon and set up a base for human exploration.

This summer, a Clark School robotics team designed and built an automated underwater vehicle for the 10th Annual Association for Unmanned Vehicle Systems International Competition, an underwater obstacle course for college teams. The team placed 13th in a field of 27 competitors.

Two entrants from the Clark School participated in the ninth International Submarine Races held in Bethesda, Md., in June. The biennial engineering design competition hosted 22 experimental human-powered submarine teams

with 26 subs. The school's *RSR Fourier* placed 10th in the one-person propeller category.

At the Formula SAE West races in Fontana, Calif., the Terp formula vehicle team placed 15th out of 80 registered teams, capturing fifth place in the acceleration competition and first in fuel economy. At the Baja SAE course at the Rochester Institute of Technology, the Terps Baja vehicle team, composed of primarily engineering students, placed 15th among 140 colleges and universities.

Students from engineering, architecture and other schools are putting the finishing touches on the university's entry in the 2007 Solar Decathlon, a biennial competition organized by the U. S. Department of Energy's Office of Energy Efficiency and Renewable Energy. Their entry, LEAFHouse (Leading Everyone to an Abundant Future) is a smart, adaptable,

resource-efficient home powered by renewable energy. LEAFHouse is inspired by the university's location near the Chesapeake Bay: innovative components funnel rainwater into the home for washing and temperature control, a green wall of potted plants on one side of the house filters water and an inside waterfall acts as a dehumidifier. This fall LEAFHouse will be displayed on the National Mall in Washington, D.C., along with 19 other solar homes built by universities worldwide. The university's Solar Decathlon team won the People's Choice Award as the favorite design of the thousands of visitors to the Department of Energy's 2005 competition.

Clark School undergraduates swept the First Annual University of Maryland Undergraduate Science/Engineering/Technology Video Competition this spring. Aerospace engineering students Ali Husain, Heather Bradshaw and Adam Mirvis won first place for "MX-2 Space Suit Analogue." Edward Dechaumphai, mechanical engineer-

ing, and Jonathan Chung, electrical and computer engineering, won second place for "Bringing the Future to the Present: Flexible Macroelectronics." A team of Gemstone students, including many engineering students, won third place for "Examining Fire Safety of On-Campus

Housing." Engineering students won in three other categories as well. To view the winning entries, see the May 24 news release at www.newsdesk.umd.edu/ungradexp/



Students construct LEAFHouse, the university's entry in the 2007 Solar Decathlon.

Show Your Team Spirit

Competitions give students valuable experience working in teams, meeting budgets and deadlines and devising solutions to real-world problems. Students frequently turn to experts in the field for professional guidance as well as financial support. If you or your company are interested in providing technical guidance, mentoring assistance or sponsorship of a Clark School team, contact Cornelia Kennedy, director of alumni relations and the Corporate Partners program, at ckennedy@umd.edu.

Getting Involved is Easy

Despite the demands of a high-pressure job, an active family and the pursuit of a graduate degree in business, when Eric Gwin, B.S. '86, chemical engineering, MBA '05, first learned of the Clark School's need for greater alumni involvement, he responded in spades.

Gwin was out of touch with the Clark School until the late 1990s, when Cornelia Kennedy, director of alumni relations and the Corporate Partners program, met with a number of Constellation Energy employees who were Clark School graduates. Gwin volunteered to join the board of directors of the Clark School alumni chapter and later served as its president. He also became a member of the Board of Governors of the university's alumni association and its finance committee, and currently is a member of the Innovation Hall of Fame Selection Committee.

One of the biggest challenges for the Clark School chapter, Gwin quickly realized, was drawing fellow alumni into the activities of the school. "The Clark School makes things as easy as possible for you to get involved," he notes. "It is great to be part of a group that can directly influence the chapter's activities and events and do so much for the school. The beauty of our group is there are so many dedicated people who respect time constraints and cover for each other as needed."

An early advocate for schoolwide post-commencement receptions, Gwin saw the events as vehicles for growing a legacy and solidifying student relationships with the school. Previously, each department held its own reception.

"There is so much anticipation surrounding graduation and then it is quickly over. We wanted to build a sense of community and make students and parents feel part of the Clark School," describes Gwin, who attests to the overwhelming success of the receptions.

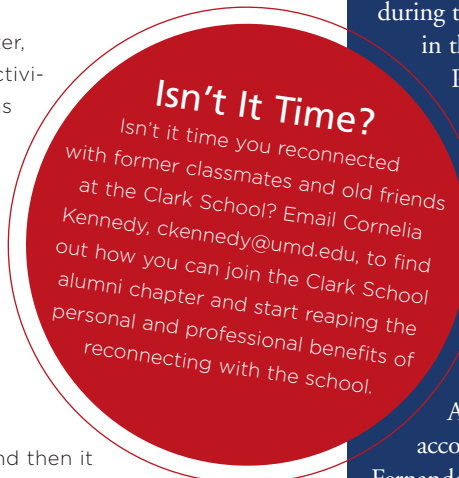


PHOTO BY MIKE MORGAN

Members of the Clark School Alumni Chapter include front row, from left, Anthony Dilibe Aneke, B.S. '01, mechanical engineering (ME); President-elect Catherine Stewart, B.S. '03, ME; President Norine Walker, B.S. '83, civil engineering (CE); and Past President Ralph Wheeler, B.S. '79, CE. Back row from left, Secretary Elisabeth Goldwasser, B.S. '03, ME; Past President Eric Gwin, B.S. '86, chemical engineering (ChE), MBA '05; Kimberly Brown, M.S. '98, Ph.D. '05, ChE; and Director of Alumni Relations Cornelia Kennedy, B.S. '82. Members not present include Treasurer Gregg Wollard, B.S. '89, CE; Harold Tagunicar, B.S., '04, computer engineering; Andres Kwasinski, B.S. '00, PhD '04, electrical engineering; David Pelgrim, B.S. '91, ME, MBA '04.

University Alumni Association Honors Five with Clark School Connections

The university's alumni association honored three Clark School graduates, a former Clark School associate dean and a member of the school's Board of Visitors during the university's annual awards gala in the spring. **MICHAEL D. GRIFFIN**,

Ph.D. '77, aerospace engineering, received the President's

Distinguished Alumnus Award for his work as chief administrator of the National Aeronautics and Space Administration. **EMILIO A.**

FERNANDEZ, B.S. '69, electrical engineering (EE), was presented with the Engineering Alumnus of the Year Award for his accomplishments in industry.

Fernandez, an entrepreneur who co-founded Pulse Electronics, is a member of the Clark School's Innovation Hall of Fame and Board of Visitors. **MARILYN BERMAN POLLANS**, former associate dean of the Clark School, received the Tyser Gottwals Award for her service to the university. She is a member of the school's Board of Visitors and has played a key role in the formation of the new Women in Engineering (WIE) Advisory Board and the WIE living/learning initiative (see related story, p. 10). **SUDHITHAM CHIRATHIVAT**, B.S. '71, EE, was presented with the university's international alumnus award in recognition of his career in the retail industry worldwide. Chirathivat is president and CEO of Central Pattana Public Co. Ltd. in Thailand. **LINDA GOODEN**, a member of the Clark School Board of Visitors, was presented with the alumni association's Honorary Membership for her work with the university. Gooden is president of Lockheed Martin Information Technology.

A Celebration of Leadership (1936-1966)

Quality Rises, Enrollment Grows



Sidney Steinberg

Frederick T. Mavis

(This article is part of a continuing series on the leadership of the Clark School.)

In 1936—as in 2007—engineers played key leadership roles at the University of Maryland. H. C. “Curley” Byrd, a 1908 graduate of the Maryland Agricultural College with a B. S. in engineering, was named president of the university. That same year, Sidney Steinberg, professor and head of civil engineering, began his 20-year tenure as dean of the College of

Engineering. Educated at Cooper Union, Steinberg served with the New York and South Carolina highway departments before coming to Maryland as assistant professor of civil engineering in 1918. Early in his deanship, the departments of civil, electrical and mechanical engineering were accredited and have remained so to this day. Under his leadership, the College of Engineering conducted several special training programs supporting the war effort, including the Civil Aeronautics Pilot Training Program to train U.S. Army and Navy pilots. Steinberg oversaw the construction of four buildings for the college, funded by a generous \$2.5 million gift in 1944 from Glenn L. Martin, president of the Glenn L. Martin Company, predecessor to Martin-Marietta and Lockheed Martin, and supported the creation of the Department of Aeronautical Engineering in 1949 along with the Institute of Fluid Dynamics and Applied Mathematics. Steinberg retired in 1956 to assume the presidency of the Aeronautical College of Brazil.

George Corcoran, who served with distinction during the 1940s and 1950s as chair of electrical engineering and was well known for his classic texts on electrical circuits and networks, served briefly as acting dean. Frederick T. Mavis, previously chair of civil engineering at Carnegie Tech, now Carnegie Mellon University, assumed the deanship in 1957. The nine years of his deanship represented a period of steady growth in the quality of programs and numbers of students. New partnerships were established with surrounding federal laboratories, and the Glenn L. Martin Institute was at the forefront in introducing new technologies to the university. Among the advances of the day was the first digital computer, which Mavis unlocked daily for student and faculty use.

Upcoming Events

HOWARD COUNTY ENGINEERING ALUMNI NETWORKING EVENT

Hear Darryl Pines, chair, Department of Aerospace Engineering, discuss “Deep Space Navigation Using the Stars,” on Thursday, September 20, 6:30 p.m. at the home of Steve Walker, M.S. ’68, and his wife Brenda Walker, in Glenwood, Md. To RSVP or for directions contact Gilian Brannan at 301.405.3870 or gbrannan@umd.edu.

ENGINEERING ALUMNI REUNION CLASSES OF 1947, 1957, 1967

Alumni and their guests from the reunion classes of 1947, 1957 and 1967 are invited to the Engineering Alumni Reunion at the Jeong H. Kim Engineering Building on Thursday, October 18, from 6 to 8:30 p.m. Hearty hors d’oeuvres will be served and a cash bar will be available. Meet faculty members and tour the Kim Building following a faculty presentation.

For more information on any of the events, please contact Cornelia Kennedy, director of alumni relations at ckennedy@umd.edu or 301.405.2150.

Alumni News

HSU-WEI FANG, M.S. ’96 and Ph.D. ’03, chemical engineering, has been promoted to associate professor in the Department of Chemical Engineering and Biotechnology at National Taipei University of Technology in Taiwan.

STEVEN GOTOFF, B.S. ’78, zoology, and ’82, electrical engineering (EE), received a Director of National Intelligence Fellows Award for technical achievement within the intelligence community.

AJAY GUPTA, B.S. ’95 and M.S. ’98, EE, founder of the Greenbelt, Md.-based cybersecurity company, Gsecurity, Inc., recently chaired Maryland Governor Martin O’Malley’s cyber security and data privacy transition work group.

YAN LINDSAY SUN, M.S. ’03 and Ph.D. ’04, EE, and Institute for Systems Research, an assistant professor in electrical and computer engineering at the University of Rhode Island, received a National Science Foundation Faculty Early Career Development Award.



PHOTO BY MIKE MORGAN

Show Your Clark School Pride

Visit the University of Maryland Alumni Store to purchase the latest gear prominently displaying the A. James Clark School of Engineering tagline. Men’s and women’s polo shirts, sweatshirts, oxford cloth shirts, t-shirts and hats are just a few of the styles from which to choose. To place your order, see www.clubcolors.com/uofmarylandalumni.

Quality Teaching Engages, Retains Students

Korabs Support New Keystone Program

The Korab family's involvement with the Clark School of Engineering began with Arnold A. Korab, B.S. '38, mechanical engineering. Korab was a life-long supporter of what was then known simply as the College of Engineering and served as president of the Engineering Alumni Chapter. When his son Bill was considering schools, Arnold could recommend the college based on his own positive experiences.

Bill Korab earned his bachelor's degree in chemical engineering in 1964. He then obtained his M.B.A. in 1966 from Northwestern University's Kellogg School of Management and began his career with General Foods (now Kraft Foods), the parent company of such well-known brands as Maxwell House, Post Cereals, JELL-O, Kool-Aid and Country Time.

While Bill started in marketing and sales, his combination of engineering and business degrees was unusual at the time and provided a helpful point of distinction in his ascent up the corporate executive ladder, which took him from a management trainee to the executive vice president position of a multi-billion dollar corporation some 24 years later.

Bill returned to Maryland in the early 1990s to become chief executive officer of the fire alarm systems business his father created in 1957. Bill reconnected with his alma mater, becoming a member of the Clark School Board of Visitors. Soon after, he and his sister, Anne K. Faffley, B.A. '69, established the A. A. Korab Endowed Scholarship in honor of their father.

Based on his experience in business, Bill is a strong proponent of an engineering education. "The engineering school taught me how to think in terms of answers or possible solutions, with great results no matter what the business." The graduate business program, as Bill sees it, "teaches how to work in groups and to persuade others to lead as well as follow successfully. The Clark School's multidisciplinary focus is similar in concept and extremely relevant for students, especially those about to enter the work world."

Underlying the Clark School's focus is the quality of undergraduate education. The school recently initiated a major program called Keystone: The Clark School Academy of Distinguished Professors, which ensures the school's best teachers lead the school's most fundamental courses and develop student teamwork and other important skills. (See story, pg. 10)

"Keystone improves the quality of teaching and enables young students to understand and apply concepts early on," says Bill. "Clark School programs such as those in nanotechnology and



biotechnology have the potential for major, positive, life-improving changes, but will require more highly trained individuals capable of working on teams." With his wife Gabrielle, Bill has committed \$250,000 to fund the William and Gabrielle Korab Endowment to support the Keystone Academy.

The Korab's long history with the Clark School and the desire to help female students reach their potential led Gabrielle Korab, a physics and math graduate of New York's Hunter College, to join the school's newly established Women in Engineering Advisory Board. Gabrielle, a former senior business executive and consultant, notes, "There is so much opportunity to attract women to engineering, if we can create a more appealing image of the profession and women's role within it." She sees Keystone as a vehicle to shepherd and mentor female students through the Clark School.

Gabrielle says, "My father-in-law Arnold was dedicated to the school, my husband Bill's career has been enhanced by it and we will continue to offer our support."

TO LEARN MORE ABOUT MAKING A PLANNED GIFT OR FUNDING A SCHOLARSHIP, PLEASE CALL OR WRITE:

Steve Beeland, assistant dean for external relations, Clark School of Engineering, University of Maryland, College Park, Maryland 20742-2831 ■ 301.405.0317 ■ sbeeland@umd.edu



Do You Remember?

Do you know what is going on in the photo above? The names of the people shown? Send your answer to mcorley@umd.edu and you may be eligible for a prize!

Winner of Last Issue's Contest

Congratulations to Bill Katz, B.S. '71, mechanical engineering, who correctly identified the instrumentation lab in the 1960s. Bill said that he is in the photo (lower right) and Herb Lew, B.S. '70, mechanical engineering,

is also pictured (lower left). Bill won a copy of the book *MARYLAND: Reflections on 150 Years*.



Remember This

You can help to protect the Clark School's history and create an even brighter future by participating in *Great Expectations: The Campaign for Maryland*. Thank you for your support.



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