ECE Alum Finds Dream Job at Disney World

“Follow your dreams.” That’s common advice given to college students, especially seniors. However, when Rachel Hutter said that to MSU College of Engineering students and faculty gathered for an awards dinner in February, it had more meaning. Hutter (Strelecky) graduated with a degree in electrical engineering and a minor in theater arts in 1993. As a young child she dreamed of working for Walt Disney. Originally she thought she wanted to do something with theater, but outgrew that dream and decided a degree in engineering would better suit her dream of working at Disney.

After graduating from MSU, Hutter’s early career involved a variety of roles, including doing medical research with the Veteran’s Administration, facilities and construction management at General Motors, controls engineering at General Mills, and technical support for Allen-Bradley Automation Controls Products (now Rockwell Automation).

Then in 1997 Hutter got her dream job. She joined Walt Disney World in Orlando, Florida, and was part of the team that built and then opened Disney’s Animal Kingdom. She also led technical services for all of Walt Disney World and initiated the position of director of attractions engineering services and quality assurance. In addition, she headed up a team focused on maintenance consistency for Disney theme parks worldwide.

Today, Hutter is the director of engineering services for Disney’s Animal Kingdom Region. She leads the teams responsible for maintaining the attractions, vehicles, facilities, and systems at the Disney’s Animal Kingdom Theme Park; and the rooms, buildings, and grounds of the Disney’s Animal Kingdom Lodge and Kidani Village, Coronado Springs Resort and Convention Center, and The All-Star Resort.

ECE Faculty Advance Nanotechnology with CAREER Awards

Two ECE faculty members, Lixin Dong and Wen Li, recently received CAREER Awards from the National Science Foundation (NSF). Within the past two years, nine College of Engineering faculty members have been named NSF CAREER Award winners.

The prestigious CAREER Awards are offered by the NSF to support early career-development activities of teacher-scholars who most effectively integrate research and education within the context of the mission of their organization. The goal is that these activities should build a firm foundation for a lifetime of integrated contributions to research and education.

Assistant professor Lixin Dong received his CAREER Award for research in nanorobotics, nanoelectromechanical systems (NEMS), and enabling nanomanufacturing technologies for fluidic, photonic, biomedical, and other nanosystems. Funding from this five-year, $499,000 grant, which began January 15, 2011, will support the development of new nanotechnology for nanorobotics, leading to new tools for manufacturing and other technology fields, such as the electronics and microscopy industries.

Sci-fi buffs will remember the 1966 film “Fantastic Voyage” where a submarine and its crew are shrunk to microscopic size and injected into a scientist’s blood stream in order to save him. Dong hopes that his research will be the “real” fantastic voyage, calling the possibility of doing surgery and delivering drugs with nanotools “the biggest dream for nanorobotics. It’s not...
Rachel Hutter is enjoying her dream job at Disney World.

One of the keys to getting that dream job, according to Hutter, is “to figure out how to make stuff work. I now have a good understanding of how Disney designs things.”

Hutter holds U.S. and European patents for a system she created in 2003. The system interlocks the computerized maintenance management system with the ride control systems at individual attractions. As rollercoaster trains move into the load station, the system analyzes all required work on each vehicle based on priority and scheduled completion dates of the work. Real-time analysis either allows guests to board the vehicle, or prevents guests from boarding and sends the vehicle to the maintenance bay for additional work. In addition, the system has a distributed user interface with real-time status and wireless handheld devices for the maintenance teams. The system is now used on rides at the Walt Disney World Resort in Florida and the Disneyland Resort in California. She describes Disney World as “a friendly place; different from other companies.”

Outside of work, Hutter has been married for 18 years to her husband, Larry, who is a jazz musician and stay-at-home dad to their two children—Lawson, 10, and Danielle, 7. In her spare time, Hutter runs marathons, half marathons, and triathlons. She enjoys living in Florida and it has become “home,” although she grew up in the Midwest.

Hutter says research is important in finding and keeping a dream job and had these tips:

• Search through the Internet and find things that interest you.
• Find a way to leverage a sure thing when going after the pipe dream.
• Make decisions and have priorities, but keep in mind you won’t get everything.
• Think long term. There will be multiple interactions in your life, and remember that the happy ending cannot come in the middle of the story.
• Tell everybody about your dream.

She also points out that there is a lot of luck involved in life and careers. “Maximize your opportunities, and more things will fall into place that way,” says Hutter, who had these other suggestions to expand one’s luck.

• Listen to hunches. Learn as much as possible, but listen to your hunches.
• Project positive energy.
• Turn bad luck into good. The ability to problem solve is important.
• Determine who you are. Know where your skills and talents lie.
• Train your body, mind, and spirit. That will help to focus your energy. Regarding this point, Hutter says she learned a lot from running. In the beginning she couldn’t run a mile. Now she is an active participant in marathons.

Not surprisingly for her, a woman with big dreams, Hutter ended her presentation by quoting from the Dr. Seuss book, Oh the Places You Will Go: “Kid, you will move mountains—100 percent guaranteed.”
science fiction anymore. I’m excited about the possibilities, but it is difficult. Our ability at this scale is limited.”

These tools are a thousand times thinner than a human hair. "Nanorobots are designed for doing surgery on a cell, delivering drugs to a targeted place, and putting atoms together to make molecules mechanically," says Dong. “The CAREER project is focused on the development of the hands and tools for the future nanosized robots and the present nanorobotic manipulators that typically have larger sizes but nanoscale resolution. These tiny hands and tools are called end-effectors. They will be equipped with sensors that can detect a force or a displacement at an extremely small scale (e.g., $0.0000000001$ N and $0.000000001$ m).”

Dong joined the ECE department in December 2008 and has extensive nanotechnology experience, having worked in this field since 1999. Before coming to MSU he was with the Swiss Federal Institute of Technology in Zurich, where he led the Nanorobots Group in the Institute of Robotics and Intelligent Systems. Dong earned his BS and MS degrees in mechanical engineering from Xi’an University of Technology (XUT) in 1989 and 1992, respectively, and his PhD degree in microsystems engineering from Nagoya University in 2003.

In addition, he is the author or co-author of more than 170 peer-reviewed journal articles, book chapters, and international conference papers. He is a senior member of IEEE and serves as an associate editor of *IEEE Transactions on Nanotechnology* and *IEEE Transactions on Automation Science & Engineering*

Assistant professor Wen Li also sees the possibilities for using micro/nanotechnology. She received her CAREER Award to support the development of biocompatible systems that permit seamless interfacing with nervous systems for studying and treating neural injuries and/or diseases. Funding for this five-year $400,000 grant began March 1, 2011.

Li believes that the invention of new biomedical implants capable of monitoring and manipulating localized bio-electromagnetic fields will help reveal unknown cause-effect relationships between electrical and magnetic signals in biological systems. "In-depth understanding of neural responses to localized magnetic fields will lay the foundation for new neural-machine-interfaces in neurophysiology and clinical neurology," says Li. Ultimately this could mean neural implants that provide bi-directional electromagnetic guidance cues to enable neural circuit re-growth and lost neural function restoration.

“There are a lot of uncertainties with this project, things that have not been done before. So there are challenges, but at the same time, it is exciting,” says Li. The CAREER research could lead to the development of valuable tools to advance neuroscience and lead to new neural prostheses and therapies. This could mean the reduction of national healthcare costs and life quality improvement for patients suffering neural injuries and diseases.

Li joined the ECE department in January 2009 after completing her PhD degree (2008) and MS degree (2004) in electrical engineering from the California Institute of Technology. Before that, she studied in Tsinghua University and received an MS degree in microelectronics (2003) and a BS degree in material science and engineering (2001). She chose MSU and the ECE department because “the university has an interdisciplinary group of researchers to collaborate with and the department is supportive of the type of research I want to do,” says Li.

She is the adviser to Eta Kappa Nu, the international honor society for electrical and computer engineers, and was a facilitator for one of the spring capstone design projects. Li also has worked with the college’s K-12 summer program, giving students hands-on experience in her lab. 😊

— Jane L DePriest

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**University Distinguished Professor**

**Ning Xi**, the John D. Ryder Professor in the ECE Department and director of the Robotics and Automation Laboratory, was named a University Distinguished Professor in recognition of his achievements in the classroom, laboratory, and community.

Xi and nine other MSU professors were recommended by President Lou Anna K. Simon for the designation and approved by the MSU board of Trustees at its June 17 meeting.

This is among the highest honors that can be bestowed on a faculty member by the university. Those selected for the title have been recognized nationally and internationally for the importance of their teaching, research and outreach achievements.

Xi’s pioneering work on Internet-based telerobots has laid the foundation for integrating robotics with information technology. He was named an IEEE fellow in 2007 for his contributions to the field of nano-robotic manipulation and assembly.

His research interests include robotics, manufacturing automation, micro/nano systems, and intelligent control and systems. Since coming to MSU, he has attracted more than $7 million of external research funding. His major research contributions include the development of a nanorobotic manipulation and assembly system that enables people to visualize and manipulate nano-scale objects in real-time. The system has been successfully applied to manufacturing nanosensors and electronic devices, and to biomedical investigation. His publications include more than 300 technical papers in reviewed archival professional journals and conference proceedings. He holds eight patents.

He is a consummate educator, providing students with an education that extends beyond the curriculum. He has mentored numerous doctoral students who are enjoying successful careers in academia and industry, and he played a major role in establishing the College of Engineering’s manufacturing program. 😊
Erik Goodman from MSU President Lou Anna K. Simon.

Erik Goodman receives the Distinguished Faculty Award University Awards

BEACON, was recognized with a Faculty Award during MSU's 2011 Awards Convocation held in February. The award is in recognition of outstanding contributions to the intellectual development of the university. Goodman is internationally known as one of the pioneers in the field of genetic algorithms and evolutionary computation. He provided the first real application of genetic algorithms and has been actively involved in research and education in the areas of computer simulation of biological systems, computer graphics, computer-aided design, and manufacturing. Through the courses he has developed, he has helped make MSU a world leader in systems biology.

His ability to apply advanced computational algorithms to real-world applications has been a distinct feature of his career. He has worked on more than 25 applications in such different areas as protein folding, medical prediction, circuit layout, scheduling, laminate composites, robotics, shape optimization, control, and automotive design. He has received several grants from the Environmental Protection Agency, the National Science Foundation, and General Motors, among others.

Goodman played a significant role in bringing the NSF Science and Technology Center Bio/ computational Evolution in Action CONsortium, known as BEACON, to MSU and is now the director of BEACON. Goodman also was instrumental in establishing the International Society for Genetic and Evolutionary Computation. Currently, Goodman's work is truly interdisciplinary, and he has successfully collaborated with colleagues across engineering disciplines as well as disciplines outside engineering, from zoology and microbiology to telecommunications.

"This award is a testimony to MSU's policy of encouraging multidisciplinary collaboration among its faculty at all levels," says Goodman. "After my education in mathematics, philosophy, systems science, and computer science, and my appointment in electrical and computer engineering, I have spent my entire career in joint research with colleagues in disciplines from A to Z—including anthropology, botany, civil engineering, computer science, fisheries and wildlife, horticulture, microbiology, telecommunications, and zoology. While I believe at some universities that would be a recipe for disaster, particularly for a junior faculty member, at MSU it was a path to constant fascination and lifelong learning, as well as a rewarding career. I am grateful to MSU and its leadership over the last 40 years for making this university the perfect home for a multidisciplinary science and technology center like BEACON."

MSU President Lou Anna K. Simon congratulates Shantanu Chakrabartty on receiving the Teacher-Scholar Award.

Shantanu Chakrabartty, associate professor, received one of six Teacher-Scholar Awards at the 2011 Awards Convocation. This award, supported by the MSU Foundation, is given to instructors, assistant professors, and associate professors who early in their careers have earned the respect of students and colleagues for their devotion to and skill in teaching. The purpose of the award is to recognize the best teachers who have served at MSU for seven years or fewer.

Chakrabartty believes that the art of teaching is the art of fostering creativity, self discipline, and active engagement. He is well respected by his students and colleagues for effectively communicating complex concepts using simple visualization techniques and challenging students to think outside the box.

Chakrabartty's love for circuits is reflected in his passion toward teaching and engaging his students in real-world research problems. Students note that he's always looking for new ideas and the latest literature to envision how such concepts might be incorporated into his course. Although highly recognized for his skill in the classroom, his teaching transcends the boundaries of MSU to reach the global circuits and systems community. He has taught students, scientists, and teachers at conferences around the world, giving guest lectures at universities, spending time with students across cultures, and brainstorming with colleagues.
In addition, he is one of the most active research members in the circuits and systems community. He is a widely recognized leader in the field of micropower analog and digital Very Large Scale Integration (VLSI) adaptive circuits and systems for sensory computation, with a distinguished record of publications and technical and service activities. His research program has been continuously funded by numerous federal awards, including the prestigious National Science Foundation CAREER award.

2011 Withrow Awards

Professor Timothy P. Hogan received a Withrow Teaching Excellence Award at the college’s annual awards luncheon in March. Hogan has a reputation as an excellent and dedicated instructor. Teaching at both the undergraduate and graduate levels, his student evaluations are among the best in the department.

Hogan is passionate about teaching and wants his students to fully comprehend the material he teaches before moving on to the next topic. One student says, “Professor Hogan is a great teacher and gives the students the most value per credit hour!” He takes on large courses like ECE 201 (Circuits and Systems I), the first required course in the ECE curriculum.

He involves undergraduate students in his research, providing them with valuable experience. As an indication of success of this undergraduate research experience, several of these students have continued their studies as graduate students at MSU. One student sums it up: “Tim Hogan was a role model for me. He is an excellent example of how a professor should be—both academically and personally.” Hogan is a second-time recipient of this award.

In Memoriam

Thomas Jerome Manetsch of Delavan, Wisc., died January 1, 2011, at Mercy Hospital in Janesville, Wisc. He was 78 years old. Manetsch was a professor in the ECE department for 28 years. He came to MSU in 1966 from the University of California at Los Angeles where he was an assistant professor of engineering in the large scale systems area. Prior to that Manetsch was with Sandia Corporation and the Boeing Company, where he worked on control and electronic systems. Manetsch served as an officer in the U.S. Navy during the Korean War. He received his PhD from Oregon State University in Corvallis, Ore.

While at MSU he was involved in interdisciplinary research projects in such countries as South Korea, Nigeria, and Brazil. His research areas included large-scale system methodology, modeling, simulation, and optimization. Areas of application included problems of hunger and food policy and decision support systems.

Manetsch is survived by his wife of 55 years, Edna; 2 daughters, Jennifer (Robby) Aikin and Janet (Jim) Versweyveld; 1 son, Scott (Cathy); and five grandchildren.

ECE Department Receives Grad Student Support from II-VI Foundation

For the second year in a row, the ECE department has received $100,000 through the II-VI Foundation’s Block-Gift Program for Graduate Student Support for Professor Fang Peng’s project “High Temperature Power Converters for Applications in Harsh Environments.”

The mission of the II-VI Foundation is to “encourage and enable students to pursue a career in engineering, science, and mathematics.”

“This gift has provided us the maximum flexibility and freedom to explore new ideas and push new frontiers in power electronics research,” Peng says. “We have used the gift for graduate students to travel to IEEE conferences to present their research results and findings. It complements our power electronics research program with other industry-sponsored R&D projects that have specific deliverables and specifications.”

Carl Johnson, chairman of II-VI Inc. and co-founder of the II-VI Foundation, was on site May 12, 2011, for an official signing ceremony at MSU’s College of Engineering.

II-VI (pronounced “two-six”), the company Johnson founded in 1971, refers to groups II and VI of the periodic table of the elements, the two groups of elements serving as the basis for many of the components and materials made by the company. II-VI Inc. develops and manufactures optical and optoelectronic devices used in laser and sensor systems, with applications in industry, medicine, aerospace, and the military.
PhD fellowships through Hewlett Packard and the Office Fellowship Award, GEM Master’s and Graduate Student Networks

Mahmoud Taghizadeh Mehrjardi is congratulated by his adviser, ECE associate professor Subir Biswas.

Mahmoud Taghizadeh Mehrjardi, a doctoral student under the guidance of ECE associate professor Subir Biswas, was named the 2011 ECE Outstanding Graduate Student. His research focuses on cooperative content caching for capacity and energy management in social wireless networks. The main goal of the project is to reduce the bandwidth stress on 3G networks by encouraging users to share content through ad-hoc wireless connections instead of downloading it from the Internet. Mahmood received a best paper award for his caching work in COMSNETS 2011.

He received bachelor’s and master’s degrees in computer science from Sharif University of Technology in Tehran, Iran. Taghizadeh Mehrjardi hopes to finish his PhD in May 2012 and would like a postdoc position in his research area.

2011 Outstanding Graduate Student

Anthony Plummer Jr., a doctoral student, received second place in the 2011 Fitch Beach Awards. His interests and research are in the field of wireless networking, specifically dynamic spectrum access and multiple channel, multiple interface networks. Associate professor and associate chair for research in the ECE department Subir Biswas is Plummer’s adviser.

Plummer’s other honors include an ECE Graduate Office Fellowship Award, GEM Master’s and PhD fellowships through Hewlett Packard and Intel respectively, an MSU Enrichment Fellowship, and a Best Paper Award at the Globecom 2009 conference. He received a master’s degree from MSU in 2007 and a bachelor’s from Morgan State University in 2005, both in electrical engineering.

He defended his dissertation in February 2011 and graduated in May 2011. Plummer has accepted a job with the Johns Hopkins University Applied Physics Laboratory as an industry researcher.

Distinguished Service Award

Senior LT Thomas received a Distinguished Service Award for notable service to the College of Engineering, Michigan State University, and the community. He was nominated by ECE professor Gregory Wierzba. Thomas received the award during an awards banquet in February hosted by the Society of Women Engineers.

Thomas majored in computer engineering and graduated in May. He is now working for Texas Instruments. He chose his major because he wanted to understand every aspect of how a computer works, down to its components. He was chair of the IEEE Student Professional Awareness Conference and vice president of the Audio Enthusiasts and Engineers. During his college career he had two research jobs in the ECE department, one with associate professor Andrew Mason and another with associate professor Robert McGough.

Originally from Brighton, Mich., he is the son of Les Thomas and Karen Wimberly. His senior advice is: “A student organization is the best way to implement your knowledge in real-world applications. I recommend everyone test out membership in at least one organization before they graduate.”

Outstanding Diversity Programs Awards

Three ECE students received Outstanding Diversity Programs Awards at an awards banquet in February. They are Crystal Caddell, a freshman, whose award was sponsored by ArcelorMittal; Terry Pharaon, a sophomore, whose award was sponsored by Alcoa, Inc.; and Leronn Wilson, a junior, whose award was sponsored by Belden Inc. These awards are presented to students who are active in Diversity Programs Office activities and student groups. Students must apply for the awards and award winners are chosen by committee for the quality of their overall application and dedication to the organization in which they are involved.

High-Achieving Student Recognition

Congratulations to high-achieving students from the ECE department. Undergraduate students with the highest grade point average in each engineering department and program were recognized for their academic efforts at an awards banquet hosted by the MSU Society of Women Engineers in February.

The Electrical Engineering students are Matthew Affeldt, Zane Crawford, Yanqing Li, Zhichao Lu, Faisal Tameesh, Grayson Wright, and Kenneth Young. The Computer Engineering students are Marco Botros, Matthew Durak, Mark Holzhauer, David Rogers, and Christopher Sigler.

Consumers Energy Diversity Scholarships

This past winter, Consumers Energy presented three students from the ECE department, along with 11 other engineering students, with scholarships through the college’s Diversity Programs Office. The scholarships are given to help increase the number of students who will potentially become part of the energy workforce. The ECE students are Micqueal Harris, a sophomore; Moses Jones, a sophomore; and Tayloire Thomas, a junior.

Spartans Save Woman’s Life

Ryan Hunt, an ECE senior, and Adam Rainbolt, a mechanical engineering senior, saved the life of a pregnant Bay City woman—28-year-old Jessica Dore.

On May 31, Hunt and Rainbolt were headed home from their jobs as Dow Corning Corp. engineering interns at the Hemlock Semiconductor Group plant in Saginaw County’s Thomas Township when they came upon the burning car. Together, they pulled Dore to safety. About two minutes later, they said, the car was engulfed in flames. Read more at http://www.egr.msu.edu/news/2011/06/02/two-spartan-engineers-save-bay-city-woman%E2%80%99s-life
2011 John D. Ryder Electrical and Computer Engineering Alumni Award

William M. Seifert (BS ’71, MS ’75) received the 2011 John D. Ryder Electrical and Computer Engineering Alumni Award at the annual College of Engineering Alumni Awards Banquet in May. Established in 2004, this award commemorates the outstanding professional contributions of John D. Ryder, former dean of the College of Engineering and a professor in the department.

Seifert, chief technology officer of Avaya Data Solutions, is an accomplished entrepreneur, an innovative technologist, and a corporate strategist. Upon receiving his BS degree, Seifert enlisted in the Michigan Army National Guard, graduated from Officer Candidate School at Fort Benning, Ga., and was commissioned a second lieutenant in May 1972. He returned to MSU in 1973 and earned his MS degree in 1975.

He was hired as a microprocessor software developer in the Electronics Division at the Los Alamos Scientific Laboratory in 1975. In 1979, he co-founded Interlan, Inc., an early manufacturer of Ethernet controller board, software, and system products. Interlan was acquired by Micom Systems in 1985.

In 1986, Seifert founded Wellfleet Communications. As vice president and CTO, Bill invented the multiprotocol bridge-router for interconnecting multiple Ethernets over high-speed data circuits. He recruited and staffed the core engineering team that delivered Wellfleet’s first product to the market in 1988. In 1992, Seifert founded Agile Networks as president and CEO. Agile launched the world’s first automated virtual LAN backbone switch, the ATMizer 1000, at Networld-Interop ’94; it was awarded the show’s Most Innovative New Product. The company was sold to Lucent Technologies in 1996.

Seifert served on the board of directors of Digital Lightwave from 1997 to 2000, where he was the lead outside director, bringing the company back to profitability and increasing the company’s share price over 6000 percent. In 1998, he was recruited into Prism VentureWorks, an early-stage information technology and life science venture capital firm. He served as an active board member for 15 companies over 11 years, and held offices of chairman and acting CEO for Colubris Networks and Sagamore Systems. From 2009 to 2010, he served as an independent consultant for a number of high-tech startup companies.

Since joining Avaya in the spring of 2010, Seifert has developed strategic relationships with a number of technology and business partners, identifying key technology adjacencies, offering leadership and guidance for new product initiatives and architectures, and participating in industry events and technology forums for the former Nortel data networking business unit acquired by Avaya in late 2009.

Seifert resides in Wellesley, Mass., and is a member of the Woodland Golf Club in Auburndale, Mass. He enjoys boating, skiing, and reading.

He and his wife, Sandy, are the proud parents of Charlie (8) and Tom (7), as well as four older children: Erich, Samantha, Amy, and Elizabeth. Bill’s brother, G. Robert, graduated from MSU in 1970 with a degree in criminal justice; his sister, Marianne Hultgren, graduated from MSU’s nursing school in 1979.

Seifert remains an enthusiastic member of the MSU Alumni Band, having been a member of the Spartan Marching Band from 1967-1971. His alto sax remains in fine condition even though he does not play as often as he would like. ☺️

In Memoriam

Richard Bauder (BS EE ’69) died January 25, 2011. Bauder dropped out of school in the ninth grade, but earned his GED; using the GI bill he was the first member of his family to graduate from college. After graduating from MSU, he held various jobs, but eventually settled in at the Lansing Board of Water and Light. After 30 years there, he retired as the supervising electrical engineer.

Gerald Max Flachs (BS ’62, MS ’63, PhD ’67 all in EE) died April 3, 2011, in the care of Mesilla Valley (N. Mex.) Hospice following a battle with glioblastoma. Flachs served as professor of electrical and computer engineering at New Mexico State University from 1969 until 1996. He was awarded the Robert L. Westhafer award for excellence in research in 1996.

Howard Edmonds Gerlaugh (BS ’47, MS ’51 EE) died January 14, 2011. Gerlaugh pursued his passion for aircraft by serving as a second lieutenant in the Army Signal Corp, training servicemen in microwave radio communications.

A licensed professional engineer, he worked for General Electric for 57 years. His love of airplanes manifested in his design work on high-bypass turbines used to power some of the largest jet aircraft. As part of the Apollo lunar mission space program in Daytona Beach (1962-69), Gerlaugh managed a GE team that developed early computer database and networking systems.

Christopher Allen Potter (BS EE ’70) died January 6, 2011. Potter was born June 5, 1948. He retired from General Motors as an electrical engineer after 34 years of service. In addition to his bachelor’s degree, Potter earned an MBA (’88) from the University of Michigan – Flint.

Stanley J. Whitehair (BS ’80, MS ’82, PhD ’86 all in EE), 52, died unexpectedly from heart failure in his Peekskill, NY, home March 31, 2011. Whitehair’s career as a research scientist included working at NASA, IBM, Cober Electronics, Aria Microwave Systems, and consulting with private clients.

To read the full obituaries, visit http://www.egr.msu.edu/alumni/class-notes-obits.
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