calendar

May 3–4
VEF Spring Board Meeting
Zehmer Hall

May 4
VEF Recognition Luncheon

May 14
Retiring Faculty Reception

May 15
TJ Society Reunion Luncheon
Alumni Hall

May 19
Final Exercises

June 7–9
Reunions Weekend
('57, '62, '67, '72, '77, '82, '87, '92, '97)

June 8
Engineering Reunion Luncheon

October 4–5
VEF Fall Board Meeting

October 4
Thornton Society Dinner

Call 434.924.1382 for information

This issue of *Virginia Engineering* is dedicated to the life and memory of Patrick Sean Murphy (CS '87), who was a victim of the September 11 terrorist attack on the World Trade Center. See page 15 for further information.
features

Career Center Helps Students Transition to the Working World / 8
Many graduates say they would not be where they are today without the support they received from the Engineering Career Development Center.

Student Projects: Hands-On Translates into Know-How / 10
Teamwork, project management and communications skills develop along with the end product in student-run team projects.

The Class of ’02: Celebrating a Few of the Best / 12
Congratulations to Hiram J. Legrand, Brian Edmonds and Robert Bennett
Biomedical Engineering

J. Milton Adams, with Klaus F. Ley, received a grant from the Graduate Assistance in Department of Education Areas of National Need Fellowship Program (GAANN).

Brent French received a four-year award valued at almost $1.5 million from the NIH National Heart, Lung and Blood Institute. His research involves basic mechanisms of heart function that may lead to improvements of patient recovery after heart attacks.

Brian P. Helmke, the first faculty hire on the Whitaker Development Award, is studying the manner in which living cells and tissues adapt to their environment by altering structure, gene and protein expression, and biochemical functions.

John A. Hossack received an award from the Carilion Health System in Roanoke to work on a sleep apnea project. The project will use ultrasound to evaluate the anatomical origins of obstructive sleep apnea, which affects 18 million Americans.

CardioResearch Inc., a spin-off company built on Dr. J. S. Lee’s research on blood volume control, was invited to participate in the upcoming “Emerging Biotech & Medical Device Technologies Conference and Exhibition” at the Taipei World Trade Center in Taiwan.

Klaus F. Ley was named director of the Cardiovascular Research Center. He published an article on the role of chemokines in atherosclerosis and gave the Kurt Anderson Lecture at the University of Texas in Galveston on “Selectins, Integrins and Chemokines in Inflammation.”

Thomas C. Skalak and Richard J. Price were featured in a recent Inside UVA article titled “Researchers Study the Complex Process of Tissue Growth.” The article discusses the work they are doing with a multidisciplinary team of researchers on the growth of blood vessels and neural tissue and development of blood vessels in the kidneys. The group received a $200,000 seed grant from the U.Va. FEST program and an NIH grant of nearly $3.6 million.

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Chemical Engineering

Giorgio Carta was elected a fellow of the American Institute of Medical and Biological Engineering Association.

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John Knight was appointed editor-in-chief for IEEE Transactions on Software Engineering.

Kevin Skadron was awarded an NSF CAREER award for his project titled “Control-Theoretic Techniques and Thermal/Power Modeling for Dynamically Managing Temperature and Power in Microprocessors.”

John A. Stankovic received the IEEE Meritorious Service award for four years as editor-in-chief of IEEE Transactions on Distributed and Parallel Systems. He was re-elected to a three-year term on the Computing Research Association board of directors. He was a speaker in the Distinguished Lecturer Series at Northwestern in May 2002.

Kevin Sullivan received a letter of appreciation from NASA for his technical contributions in building the Galileo tool.

William A. Wulf was featured on a January segment of National Public Radio’s Talk of the Nation/Science, where he spoke on Technological Literacy.

Electrical and Computer Engineering

James Aylor chaired the annual meeting of the Electrical and Computer Engineering Department Heads Association (ECEDHA) in Stuart, Fla., from March 15–19.

Robert M. Weikle won a 2001–2002 Fulbright Scholar Grant. He is visiting Chalmers University of Technology in Göteborg, Sweden, to research communications applications of monolithic millimeter-wave integrated components.

See FACULTY NOTES, page 4

SPRING IS A TIME OF REFLECTION AND CELEBRATION IN the academic environment—a time to look back on the year and to appreciate the achievements of our faculty, our students and our programs.

In that spirit, this issue of Virginia Engineering magazine is dedicated in large measure to our students, both current and past. The focus of the magazine was inspired, in fact, by conversations we’ve had with alums over the years.

Ask alumni what they took from their years here and you’ll often hear terms such as “a world view on technology issues,” “a sense of myself as a leader” and “a commitment to use my technical skills to better the world.”

Stephanie Boesch (SIE ’92) is a fairly recent graduate now employed by Microsoft Corp. She credits the discipline and methodology she learned here with her ability to see a problem holistically and, as she says, “to craft a clear roadmap to the solution.” Stephanie was involved in several student organizations while she was a student here and recently told me it was in those roles that she learned to look beyond boundaries and to challenge the norm.

Jackie Kerr (’82) studied chemical engineering while he was here, went on to medical school and eventually established a successful career as a surgeon. Jackie says principles he learned here guide his career to this day. He finds that defining a problem is the challenge, and that solutions become obvious once you know what the problem is. As an engineer as well as a doctor, he has found this to be so and credits his undergraduate class work with helping him develop this skill.

In the End Note section of this issue, Chip Perry (CE ’76) mentions the problem solving and work ethic he learned at U.Va. Chip is the founder and president of Autotrader.com, a brilliant businessman and an enthusiastic supporter of the school. He believes you can do anything with an engineering degree, and his professional success certainly proves this is so.

This issue of Virginia Engineering magazine includes a story about the leadership skills that emerge when students roll up their sleeves for hands-on team projects. There is also a story about our Center for Engineering Career Development and the vital role it plays in the maturation of our students. And there are stories about awards won and about tutoring and mentoring programs initiated and supported by our students.

Throughout these pages are stories of fulfillment and promise as a result of the U.Va. engineering experience. Our students come to us with great potential and we give them the training and the experiences in and out of the classroom that help them develop into ethical, thinking, technically astute and committed citizens. Whether they take this experience and remain in the engineering field or apply these skills to fields such as medicine, law or business, they are individuals about whom we can all be proud. And indeed we are.

—DEAN RICHARD MIKSAD
Materials Science and Engineering

Raul A. Baragiola was elected U.S. representative for the International Committee of Atomic Collisions in Solids.

James M. Howe was part of a team of scientists from McCook Metals, NASA and Lockheed-Martin that won an R&D Magazine 100 Award-Winning Technologies 2001 Award. He and David J. Srolovitz (Princeton University) organized the 2002 Physical Metallurgy Gordon Research “Interfaces: Properties, Kinetics, Mechanisms” Conference. Howe and co-authors M. Murayama (National Institute for Materials Science, Japan), H. Hidaka and S. Takaki (Kyushu University, Japan) had a paper published in Science titled “Atomic-Level Observation of Disclination Dipoles in Mechanically Milled, Nanocrystalline Fe.”

Robert Hull was featured in a U.Va. Top News article titled “Big Breakthroughs on a Small Scale.” The article discusses Hull’s research in Nanoscale Structures and the $5 million NSF grant Hull and others received to establish the Center for Nanoscopic Materials Design.

John Scully is co-organizer of an ECS Centennial Celebration Symposium on a retrospective of the corrosion field and the progress made over the last 100 years.

Mechanical and Aerospace Engineering

Joseph A. C. Humphrey received a joint professor appointment in the Department of Biology. This appointment paves the way for more in-depth educational and funded research collaborations between the Biology Department and MAE.

Gabriel Laufer was featured in an article titled “Small Chemical Detector Picks Up Pace As It Heads To Market,” which appeared in the October issue of the Washington Business Journal. His company, AVIR, won a Small Business Innovative Research (SBIR) grant, given in support of research and development work that has the potential for commercialization.

Pamela Norris was elected to a three-year position as chair of the ASME Committee on Heat Transfer Education.

Larry G. Richards is the ERM program chair for the ASEE annual conference in Montreal in June 2002. ERM (Educational Research and Methods) is one of the most active divisions of ASEE. He and Michael E. Gorman (TCC) presented a seminar to the U.Va. Psychology Department: “Reflections of Two Psychologists in Engineering.”

Kathryn C. Thornton, a former space shuttle astronaut, was quoted in USA Today on NASA’s discontinuance of a program to develop a smaller space suit for smaller astronauts, in a story headlined “One Small Step Backward for Women.”

Systems and Information Engineering

Roman Krzysztofowicz was invited to the Swiss Federal Institute of Technology, Lausanne, from May to June 2002. He will work as an adviser to several European research programs in statistical hydrology and environmental sciences.

Division of Technology, Culture & Communication

Rosalyn W. Berne received an NSF Career Award for a project on ethical and societal implications of nanotechnology.


John K. Brown and Kathryn A. Neeley received an NSF grant in support of the Liberal Studies and the Integrated Engineering Education of ABET 2000 Conference. The conference will explore diverse perspectives on the past, present and future of engineering education. It was held in April 2002 in Charlottesville.

Deborah Johnson received the American Society for Engineering Education’s Liberal Education Division Sterling Olmsted Award.
Student News

Markus Sperandio, a post-doctoral BME research student, received a prize from the German Society of Microcirculation for two recently published articles.

SIE students have formed a U.Va. student chapter of the Human Factors and Ergonomics Society. Activities of the group include visiting human factors-related labs located on University grounds. Ellen Bass (SIE) is the faculty adviser. Students are Andrew Marks, Saad Irfani, Jim Woodward, Altaf Bahora and Steve Davis.

Amy Throckmorton and Sonna Patel, BME graduate students, presented a poster display regarding pediatric circulatory support systems at the ninth Congress of the International Society for Rotary Blood Pumps, held in Seattle. The title was “Giving Kids a Chance: Pediatric Ventricular Assist Systems—a Literature Review.” The information presented in this poster display was converted into a journal article, which was accepted for publication by ASAIO in August 2001.

Elizabeth Partridge, a CS student, won honorable mention in the Computing Research Association’s Outstanding Undergraduate Award for 2002.

Evan T. Edwards, an MAE student working with Larry G. Richards, exhibited his invention “The EpiCard” at the Smithsonian Institution in Washington, D.C., as part of the NCIIA’s March Madness of the Mind.

Women Helping Women in the World of Engineering

Engineering students have formed Girls Excited About Math and Science (GEMS), a mentoring program in math and science for middle school girls. The students involved are president and founder Ginger Moored (MAE ’02), as well as Kristina Buenafe (SIE ’03), Kresy Gluchowski (MAE ’03), Brie Hudson (MAE ’02), Rebecca Um (SIE ’03) and Amanda Simson (MAE ’02).

The mission of GEMS is to provide students with women role models in math and science, to increase female students’ interest in math and science, and to build self-esteem in math- and science-related activities and classwork among female students. The group is working with Buford Middle School in Charlottesville with an implementation date planned for April 2002.

The group meets Mondays in MEC 347 from 5–6 p.m. and is seeking faculty and administrators to join their advisory board. Ellen Bass (SIE) is serving as faculty adviser.

Reunions Weekend
June 7–9, 2002
www.alumni.virginia.edu/reunions/2002

Friday, 2–3:15 p.m. Olsson 120
Melt it, Smash it, Make it Float
A children’s seminar on materials science

Saturday, noon, Thornton Hall, Darden Court
Picnic hosted by Dean Richard Miksad

Saturday, 1:30–2:45 p.m. Olsson 120
Engineering in the Nanoworld—Helping Nature Do It Better. Professor Robert Hull
Innovations in Mobility Explored at Conference

The Center for Transportation Studies and the Virginia Transportation Research Council hosted “Moving Virginia—A Workshop Focused on Research and Development to Support Mobility in the Commonwealth” in April.

The workshop attracted transportation leaders from industry, as well as local, state and federal government. It explored innovations in mobility as well as highlighted the innovative research program of the University’s Center for Transportation Studies.

Conference Explores Strategic Responses to Terrorism Risk

The Engineering School, Office of the Vice President for Research and Public Service, Center for Risk Management of Engineering Systems, Miller Center for Public Affairs, and MITRE Corp. sponsored the Strategic Responses to Risk of Terrorism Conference in April at the Boar’s Head Inn. The conference focused on assessment of the risks of terrorism to the critical infrastructures that sustain our democratic society, and explored a range of potential national strategic responses.

Former U.S. Secretary of Defense and CIA chief James Schlesinger and Virginia anti-terrorism director John Hager were among the guest speakers. Engineering School professors Yacov Y. Haimes, Barry M. Horowitz, Anita K. Jones and Miller Center director Philip Zelikow were co-chairs of the conference.

TCC Creates a Course on Impact of Engineering Choices on Global Environment

TCC received a $50,000 gift from AT&T to fund a course in Earth Systems Engineering and Management (ESEM). The course, believed to be the first of its kind in the country, explores the impact of engineering design decisions on the global environment. It encourages students to broaden their scope of analysis when investigating the costs of a particular design plan.

Braden Allenby (Law ’78, Col ’79), AT&T vice president of health, environment and safety and one of the country’s leading experts in industrial ecology, came up with the idea for the course. He is team teaching it with Matthew Mehalki, an engineering school post-doc, and Michael Gorman, TCC chair.

Multidisciplinary Group Developing Teaching Kits

The Payne Family Foundation, established by Karen Leshner Payne (EE ’81) and Christopher K. Payne, M. D. (Col ’81), has approved funding for the first year of a three-year $150,000 project titled “Teaching Engineering in the Middle Schools: Virginia Middle Schools Engineering Education Initiative” (VMSEEI). The course, believed to be the first of its kind in the country, explores the impact of engineering design decisions on the classroom environment. It encourages students to broaden their scope of analysis when investigating the costs of a particular design plan.

The funding provided by the Payne Family Foundation will allow the investigators to design, fabricate, test and display several sets of ETKs; conduct workshops for middle school science and math teachers; distribute the ETKs and their associated pedagogical materials to school science and math teachers; and conduct a national conference on engineering education in the K–12 curriculum at the University of Virginia.

FEST Grant Allows Researchers to Probe Tissue Construction

A multidisciplinary group of researchers at the University is addressing three related issues pertaining to understanding what genes do and how they interact with various cells, thanks to a $200,000 seed grant from the University’s Funding Excellence in Science and Technology (FEST) program and a subsequent grant of nearly $3.6 million from NIH.

The research team includes two biomedical engineers, Thomas C. Skalak and Richard J. Price; a molecular physiologist, Gary K. Owens; a development cell biologist, Douglas W DeSimone; and a...
pediatrician and expert in kidney organogenesis, R. Ariel Gomez. The team will investigate the growth of blood vessels and neural tissue and the development of blood vessels in the kidneys, building on research already under way in each of the team members’ labs.

The U.Va. research project has many potential applications to major public health concerns in the United States.

New Classes Strengthen Teaching, English Skills of International T.A.s

The Engineering School has seen a surge in its enrollment of international students over the past five years, signaling the public university’s growing name recognition overseas and the school’s successful outreach efforts.

Nearly half of the 600 graduate students in the School are international, according to Kathryn C. Thornton, assistant dean for graduate programs, and J. Milton Adams, associate dean for academics.

“Foreign students enrich our classrooms immeasurably, bringing a broad array of experiences and educational backgrounds—and their test scores are top flight,” Adams said. “But many of them, especially graduate students who will be teaching our undergraduates, need to work on their spoken English.”

The Engineering School teamed with the University’s Teaching Resource Center and the new Center for American English Language and Culture to create new classes to meet its burgeoning needs. The result was a semester-long class that helps prepare graduate teaching assistants for classroom teaching, with particular attention paid to the demands of engineering school courses.

U.Va. Students Showcase Videos

U.Va. students and community members watched animated video shorts made by students in David Luebke’s 3-D animation and special effects class in December. The videos were shown on the Scott Stadium “Hoovision” Jumbotron.

Luebke’s interdisciplinary course brings together students from all over the university to work in multi-talented groups on short animated video pieces. The 25 students in the class represented more than a dozen majors, ranging from computer science and systems engineering to drama, art and music. Over the course of a few weeks, the students learned to use production-quality software tools like Alias/Wavefront’s Maya and Pixar’s Renderman to create their animated video shorts. They wrote scripts, drew storyboards, modeled 3-D objects and scenes, animated characters, rendered frames, composited video, and in some cases indulged in a little amateur acting to produce the videos.

The design and development of this course was supported by a University Teaching Fellowship and the Provost’s Teaching+Technology Initiative Fellowship.

Rodman Scholars Offer Telephone Tutoring to Local Schools

The Homework Helpline is U.Va.’s first phone-based tutoring service. It was developed as an initiative of the Rodman Scholars program in an effort to support local school systems and to foster positive ties between the Engineering School and the community.

The Helpline is staffed by volunteer tutors from 7–10 p.m. (434-466-8706). During this pilot season, services are limited to Algebra I. If the program is a success it may be expanded to multiple math levels in high schools and middle schools next year. “It all depends on how successful the students think we are as tutors and how many tutors we have that are interested, which thus far has been many, many students,” Rodman Scholar Margaret Kramer said.
Career Center Helps Students Transition to the Working World

by Josephine P. Pipkin and Stacey Phelps

THINK OF IT AS A CONDUIT TO THE NEXT PHASE of a student’s life.

“We are here to be the link between students and the outside world,” C.J. Livesay, director of the Center for Engineering Career Development, said with a broad smile.

“We help students take the interests and skills they’ve developed, and we guide them in figuring out what their next step might be. This could be further study or an internship, or it might be a full-time position in the working world. The support we provide helps them figure that out, and at the same time we give them the tools they need to move along with their professional goals,” Livesay said.

The center’s services include online job searches, interviewing practice sessions, resume review, intern and extern programs, and hosting of several job fairs through the year.

The center also assists students in using the University of Virginia Alumni Association Career Assistance Network (UCAN), a networking tool designed to provide advice, ideas and education to alumni.

“The services we provide assist students in defining their career aspirations through experiential learning and preparing them for their career search,” Livesay said.

“We start with students in their first year and assist them in developing skills that will follow them throughout their lives. From the creation of a resume, assistance with graduate school applications, preparation for interviews and learning to manage salary negotiations and evaluate offers, we assist students in any way we can.”

The center strives to give each student the individual attention he/she deserves. Some of the services that students find particularly helpful include mock interviews and the coordination of engineering career fairs.

“The career fairs have been the biggest help in my job search,” said Laura Gnoff, a fourth-year systems and information engineering student. “Without the career fair, I would not have been introduced to the recruiters of any of the companies who made offers to me.”

Corporations feel equally positive about the center and its services. Rick Mai, (MAE ’77, ’79) U.Va. Recruiting Liaison from Lockheed Martin, is especially enthusiastic about participating in the career fairs.

“The quality of applicants is outstanding, and our relationship with the folks in Career Development is strong and positive,” Mai said.

Lockheed Martin has been the No. 1 employer of engineering students for the last three years. They hire 15–20 graduates a year from all sorts of majors.

“Our point of contact begins with C.J. [Livesay] and Frances [Hersey, associate director of Engineering Career Development], along with programs coordinator Stacey Phelps, but it also includes engineering professors and members of student organizations,” Mai said. “The Center for Engineering Career Development puts in place the procedures that make contact between us and the Engineering School possible. It’s a system that works well, and we hope to continue to benefit from it for the foreseeable future.”

The importance of the support the center provides can’t be overestimated.

“I spent so much time with Frances Hersey,” said Bethany Cecere (ChE ’99), who is now employed...
with the Norfolk Naval Shipyard. "We went over my resume about 1,000 times. She knew about so many resources and kept me up-to-date on interview schedules and all. I often think I wouldn’t have a job at all right now without them.”

Emily Leigh, a fourth-year civil engineering student, found the resume critiques helpful and took advantage of the opportunity to do two internships during her years as a student. Leigh expressed appreciation for the emotional support as well.

"Frances was friendly and enthusiastic and knows how to work the system," Leigh said. "She helped me learn about all my options, but best of all, she kept it from becoming stressful."

Even students with clear career goals find the support of the office invaluable. Gnoff knew exactly what she wanted to do after graduation. She wanted a position in the area of defense and security in an organization where she could make a difference in the world.

“I knew I had a strong interest in working with the FBI, possibly in their crime labs,” said Gnoff. "Yet I was not really sure what area I wanted to go into or whether it was something I would really enjoy. Frances helped me apply for externships, and through phone calls and networking, I learned of many opportunities in the defense industry."

The Engineering School is a place where students can and do develop their intellect and skills as they grow into professionals. The environment is rich with possibilities, and career choices are extremely broad. The Center for Engineering Career Development is the place where students can examine their interests and match them with potential jobs. Through internships, externships, resume critiquing, interview practice and timeline development, Livesay and his staff help students maneuver their way through the transition. And they do it with a smile.
IT’S THE ENTHUSIASM THAT GETS YOU FIRST.

Ask any Engineering School student what the most exciting part of their school experience was, and most likely you will hear about a student project they planned or a team product they produced.

“It was amazing to be part of working on something start to finish,” said one student leader.

“It was incredibly hard, but I learned so much,” said another.

As a fourth-year civil engineering major, I was aware of projects like the Legends Car, the solar house, and the steel bridge project. Yet I was amazed by the enthusiasm I heard from one student after another as I gathered information for this article. Everyone spoke about the huge impact these projects had on them as individuals and on their career paths. And the enthusiasm was echoed by faculty advisers who spoke warmly about the experience of watching students grow into leaders as their projects develop.

A comment by Paxton Marshall, faculty adviser to the solar house project, was typical. “One of the most rewarding aspects of being an adviser for one of these projects is the opportunity to see the talents that emerge as students get energized by the challenges that come up,” he said.

Student projects at the Engineering School range from designing and building a solar house to designing and implementing a payload of sensors for a NASA rocket. Although each project requires a different set of engineering skills, they all include common challenges in the areas of teamwork, project management and communication. In order to create a viable product, students often must interact with other engineering students and with other students at the University, as well as with faculty, community members and professionals in a variety of fields.

Strong commitment and perseverance are also necessary to achieve project success since students have to be able to overcome frustrating roadblocks, coordinate group meetings, and manage resources effectively. David Click, a member of the solar house team, talked about the difficulty of integrating different parts of the house.

“We are in the Architecture School lab many hours each week to make sure both engineering and architecture students are aware of all design changes,” Click said. “We have to work together bringing all our skills to the project in order to have any hope of success.”

Despite the emotional and intellectual challenges that come with working on engineering projects, the students thrive. George Cahen, one of the faculty advisers for the Legends Car racing team, has been impressed by the perseverance of the students.

“Their ability to independently get the job done and pull everything together is very admirable,” Cahen said.

By the end of the project, students have a highly visible sense of accomplishment. Sarah Armstrong, a member of the Orion Rocket team, said, “I was so proud of it, so incredibly proud that it worked. You suffer and agonize and think that you’ll never get through the design experience and then all of a sudden it all comes together.”

Rob Hoffman expressed a similar attitude when he spoke of his experience with the Legends Car. “During a race, you get discouraged if the car isn’t working right; but what a great feeling it is when you get the car fixed and back out there in time,” he said.
Students thrive on overcoming the challenges of the projects, and they also thrive on the perspectives they gain along the way. Projects provide students with opportunities to see the “big picture” in engineering. By working within a team on a large-scale project, students learn to broaden their perspective beyond analysis of each aspect of a system. Instead they learn to see all aspects in order to create whole systems.

Communication is another skill that develops as a result of project participation. Students must present their projects in interesting ways to people outside their team in order to recruit new members and to gather community support. Effective communication skills are also needed to ensure good team dynamics and to make sure everyone understands their individual tasks and roles. Hoffman described how difficult it was to manage both internal and external communications.

“The work is centered around mechanical engineering and getting the job done, but you also have to think about raising money and getting support from outside sources. You can’t just think about the mechanics of creating the product,” Hoffman said.

Students spoke about the hands-on experience that student projects provide.

“The steel bridge was the first thing I helped design from the very beginning, and I saw it through fabrication and testing and construction,” said Orion Scott, a team member for the steel bridge project. “It was great to actually build something to our design specifications and then to test it to see how the results differed from the computer modeled predictions.”

In the end, student projects can provide an important influence on a student’s eventual career path. Click said participation in the solar house had a definite impact on what he plans to do after graduation.

“I was originally thinking of doing typical EE work—making chips and so forth—but now I’d like to do something with solar housing and the environment,” he said.

Hoffman spoke about the huge effect the Legends Car racing team had on the course of his career.

“I wouldn’t be where I am now without the team,” he said. “It started my career in automotive engineering, and I learned more than I ever thought possible. Every summer I have interned through the motorsports team, and now I’m going to graduate school in vehicle dynamics as a direct result of those experiences.”

As I interviewed each project leader, I was struck by how much their project experience influenced their lives. Beyond developing skills and focusing career goals, each person spoke animatedly about how the project had affected them in personal ways.

Hoffman spoke for many in saying, “Sometimes it seemed like a long and hard journey to get here, but somehow we made it. And the leadership and team-building that came out of it were very important to all the team members involved.”

“Tsedenia Woldehanna, David Click of the Solar House Project”

“Theyir ability to independently get the job done and pull everything together is very admirable.”
We begin each school year with an influx of new students who bring with them a host of experiences and potential. Within this group there are always a few who stand out, perhaps due to challenges they faced in their lives or achievements they managed during their time here.

Hiram J. Legrand, Brian J. Edmonds and Robert M. Bennett, M.D. are just a few from the Class of ’02 who deserve special recognition. We applaud them and are proud to be a part of their educational experience.

Hiram J. Legrand (Aero) is a young man who already has faced more than most of us can imagine. But you wouldn’t know it to meet him or to see his enthusiasm for life and for learning.

He is a native of Puerto Rico who grew up in New York City, living a life of danger and appearing an unlikely candidate for the successful student he became. His father died of AIDS when he was only 14 and his mother died of the same disease a year later, leaving Legrand and his younger sisters wards of the state, with only an uncle and a family friend for support. These events might have sealed his fate, but instead they served as a wake-up call and Legrand began the process of turning his life around. He took responsibility for his sisters to the extent he could, and he discovered a love of learning that carried him through the challenges ahead. He has impressed everyone along the road to earning his aerospace engineering degree, which he is slated to receive in May.

Legrand acknowledges the emotional support of his sisters and his aunt and uncle, and he feels special appreciation for Joseph Torres, a man who served as a mentor to him through his formative years. Torres was a friend of Legrand’s father and took care over the years to maintain contact with him, remembering birthdays and encouraging him to study and work hard.

“Mr. Torres was a New York City firefighter who died on September 11. I will always remember his kindness to me,” Legrand said.

Legrand will take a position with Boeing after graduation and hopes to be an astronaut someday. All who have met this young man agree that if that’s what he wants, he’s the man to do it.
Brian J. Edmonds (SIE) manages to juggle a heavy load of service activities along with his coursework. Edmonds is a young man of great integrity who spent last summer doing ministry in Nigeria, West Africa, on a mission trip with the Implementing AIDS Prevention and Care Project (IMPACT), a national Christian organization.

“Being in Nigeria, I felt more welcome than I have ever felt in my life. The love and hospitality of the people in the face of their extreme poverty was a testament to their culture,” Edmonds said. “It was also extremely powerful for me to stand on the soil of this great continent called Africa and understand that someone related to me had to come from there in order for me to be in America today. In one instance it represented the atrocity of slavery, but also the hope that lies in the future.”

Edmonds also has been involved in the National Society of Black Engineers (NSBE) and the Office of Minority Programs. He served as president of NSBE and is also a peer adviser through the Office of African-American Affairs.

“I have given a lot, but I have learned more from it than I could ever have imagined,” he said. “I learned to be genuinely concerned about people based in large part on the way I was treated by students and administrators when I first got here. They took the time to help me develop, and I count it as a privilege to turn around and give that support to someone else.”

Following graduation, he will do a one-year internship with Campus Ministry and then expects to go to graduate school.

Robert M. Bennett, M.D. (ME ’67) is one of those students who use their engineering degree as a foundation for study in a different field. In Bennett’s case, the field is medicine. Incorporating engineering concepts into his medical study eventually led Bennett to set aside a prosperous career as a cardiologist to return to school for an advanced engineering degree.

“My return to engineering was prompted by a desire to combine engineering system analysis and process improvement with healthcare delivery efforts. It has always been striking to me that there is no corporate memory in medicine. When a patient presents a problem, there is no uniform process to guide their therapy,” he said. “We have great clinical trials to address specific treatment questions, but never apply the lessons learned in a systematic way in the common domain. I want to change that.”

Bennett is the founding medical director for the Free Clinic of Goochland and the founding director and vice president of MERCI Foundation Inc. Last year MERCI collected over $2.5 million of surplus “clean medical waste” and recycled it to medical missions. Bennett is also a member of the Virginia Engineering Foundation Board of Directors (1996–1999 and 1999–2002). This May he will receive a graduate degree in systems engineering through the weekend program in Northern Virginia.
1950s

Robert L. Sackheim (Engr ’59) received an outstanding leadership medal from NASA’s Marshall Space Flight Center in Huntsville, Ala.

1960s

Frank D. Cox Jr. (CE ’69) is owner of the Cox Co., Charlottesville, Va. One of his current projects is the development of the multi-use Sperry property.

1970s

Steve Stone (Engr ’71) was named office manager of the year by Sunbelt Business Brokers. He resides in Virginia Beach, Va., with his wife and two children.

Bill Davidge (CE ’73) is a member of the consulting firm Wiley and Wilson in Richmond, Va. The firm just celebrated its 100th anniversary.

Fatma Gulay (CE ’73) is an associate professor at the Istanbul Technical University in Turkey.

Mark Virkler (CE ’74) is professor and director of graduate studies at the University of Missouri-Columbia.

1980s

Robert B. Gardner (CE ’80) was appointed senior vice president of SCS Engineers, a nationwide solid waste and environmental consulting firm. He is responsible for overseeing the firm’s solid waste management practice. He has been with SCS for 22 years, and for the prior 14 years had established and managed its Florida operations. He also serves on the firm’s board of directors and Executive Management Committee.

Kelly P. King (Engr ’80) is a partner with The Partnering Group. He and his wife and four children reside in Cincinnati.

Kenneth A. Bronfin (EE ’81) was named president of the interactive media division of the New York-based Hearst Corp.

1990s

A Gift Worth Giving

Gifts to the Annual Fund for Engineering support a range of important programs and provide the means to respond to the urgent needs and unexpected opportunities that arise throughout the school year.

We invite you to join more than 3,000 other U.Va. alumni and friends who have formed an honorary circle of Engineering School supporters this year.

The staff of the Virginia Engineering Foundation is available to consult with you or your adviser about giving opportunities. You can also find more information or make your gift online at http://www.seas.virginia.edu/vef/giving.html.

Please contact:
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Charlotte O. White of Charlottesville, Va., died in December 2001. She is survived by her husband, K. Preston White Jr., professor of systems and information engineering. Contributions may be directed to the Gibson Scholarship, Department of SIE, P.O. Box 400747, Charlottesville, Va. 22904.

1940s

Richard D. Boutros (ME ’43) of Fairport, N.Y., died in December 2001.

Horton B. Fall (Engr ’47) of Pittsburgh died in January 2002 in St. Augustine, Fla. He is survived by two daughters, a son, a sister and two brothers, James H. Fall Jr. (Engr ’37) and L. Frazier Fall (Engr ’39).

1950s

John R. Haymes (Engr ’53) of Richmond, Va., died in September 2001.

William P. Rule (ME ’53) of Chesapeake, Va., died in March 2002.

Russell C. Mountcastle II (Engr ’57) of Marietta, Ga., died in June 2001.

1990s

Andrea Brotto (SIE ’99) died in Charlottesville, Va. A native of Carimate, Italy, Mr. Brotto was a brilliant student and golfer who impressed everyone with his sharp wit, love of family and friends, desire for any intellectual and physical challenge, and love for life itself.

Mike McLernon (EE ’83) is team leader for the communications development software team of The MathWorks in Natick, Mass. The MathWorks is the maker of MATLAB and Simulink, technical computing and simulation software packages for the engineering and scientific community.

Bruce Swenson (Engr ’86, Grad ’88) is vice chair of the Northern Virginia Technology Council’s eBusiness committee.

Jay D. Miller (BME ’87) was named president and CEO of Minneapolis-based Vital Images Inc., a medical imaging software company.

Doug Harshbarger (Engr ’89) and his wife had their third child in July 2001. He is director of marketing for Coming Inc. The family resides in Tyngsboro, Mass.

1990s

Marlon Smith (EE ’90), a motivational speaker, was featured in a recent Riverside (Calif.) Press-Enterprise article headlined: “Hemet High—A Speaker Talks About Breaking Down Stereotypes During a Multicultural Week.”

Karen Aspelin (CE ’91) is transportation engineer/project manager with the Parsons Brinckerhoff firm in Albuquerque, NM.

Sherry Smoot (Engr ’92) was married in September to Mark J. Freitas. She is product manager at BetaSphere, a software start-up company. The couple resides in the San Francisco Bay area.

Jennifer A. Whitaker (CE ’95) is assistant city engineer with the City of Charlottesville, Va.

Weis Sherdel (SIE ’99) was featured in a New York Times article titled “Exiles, Torn Between Countries, Want to Help Rebuild Afghanistan.”

1990s

This issue of Virginia Engineering is dedicated to the life and memory of Patrick Sean Murphy (CS ’87) who was a victim of the September 11th terrorist attack on the World Trade Center.

He was vice president at Marsh & McLennan, the father of two young children and an avid fisherman and basketball player.

His family and friends have established the Patrick Sean Murphy Endowed Scholarship Fund. Contributions to this fund may be sent to the Virginia Engineering Foundation, Box 400256, Charlottesville, Va. 22904-4256. A teak memorial bench honoring Patrick will also be placed in the A Wing of Thornton Hall.
HOW CAN ONE PLACE A VALUE ON AN ENGINEERING education?

Value is an inherently relative concept, viewed differently by different people, particularly with something as intangible as an educational experience. Occasionally we see newspaper stories that try to estimate the financial value of a college degree in terms of increased lifetime earnings. To me, this effort is futile and misplaced, because the value of an education cannot be summed up in such simplistic economic terms.

As I look back on my five years at the Engineering School, what I took away from the experience was much richer and more significant than the initial job it helped me obtain or the earning power it has provided me. The words that best capture how studying engineering at U.Va. changed me are “role models,” “world view” and “life ambition.”

As a first year student, I knew that I wanted to study engineering and that I wanted to excel at it. Perhaps it was the encouragement and advice I received from David Morris, my first faculty adviser, that “you’ve got what it takes” and “you can do anything with an engineering education” that made the difference for me. Later, I encountered other remarkable professors like Henry Kinnier, Furman Barton and Charles Echols, who inspired me with their enthusiasm, their wit, and their uncompromising focus on excellence. They taught more than engineering concepts and problem-solving techniques. They shared their view that engineering is a field as vital for its “world view” as for its specific technical content. The world view I’m speaking of here is the view that engineering problems exist in a broader context, and that understanding that context is critical to finding the best answer.

In terms of life ambition, I’ve since learned that Mr. Morris was right that you can do anything with an engineering education. And Mr. Barton was right that “hard work does pay off” and “seeking big challenges is fun and rewarding.” Although I spent only two years in hardcore engineering work after graduation, I believe all the time I spent on labs and problem sets and theses was very worthwhile, and the thought process and work ethic and social skills I learned at U.Va. were instrumental in enabling me to branch out in the business world in areas far removed from engineering and applied science.

Our careers frequently take us in unforeseen directions, so the foundation provided by our education must be strong and broad enough to sustain us for a lifetime. I believe studying engineering at U.Va. gave me this foundation, and I am grateful to the institution and to the Civil Engineering faculty, who ignited my intellectual curiosity, sparked my ambition, provided great role models, and enabled me to see how studying engineering could lead to success in literally any walk of life.

—CHIP PERRY (CE ’75, ’76)


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For more information on making planned gifts to the Engineering School, call the Virginia Engineering Foundation (434-924-3045).
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