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**Virginia Engineering Foundation**

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The Virginia Engineering Foundation celebrates 50 years of dedication to the Engineering School.

Celebrating TC / 10
Executive director and vice president of development Thomas N. Connors retires this spring, leaving behind a legacy of success.

Professors James Aylor and John Lach work with undergraduate students to develop technology for health monitoring of the elderly.

Life in a D.C. Public School / 14
VEF 2002 Outstanding Student Award Winner Ginger Moored on postcollege life in D.C.

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Biomedical Engineering

James R. Brookeman was a featured speaker at Gov. Mark R. Warner’s Higher Education Research Summit. He spoke on “Research Highlight—Timely Advances in Lung Imaging.”

Brent A. French received an NIH grant for his “Gene Therapy for Myocardial Stunning and Infarction” research.

Brian P. Helmke received a grant from the Whitaker Foundation for his proposal “Mechanisms of Endothelial Nitric Oxide Production by Shear Stress-Induced Modulation of Cytoskeletal Deformation.”

John A. Hossack received the Heart Center Partners Award for “Quantitative Ultrasound Imaging of Mouse Hearts.”

The Carilion Biomedical Institute (CBI) recently licensed intellectual property covering a new low-cost ultrasound device being developed by the Virginia Medical Ultrasound Technology Group. The team includes John A. Hossack, William F. Walker and Travis N. Blalock (ECE).

Yuqing Huo and Klaus F. Ley’s findings on a new contributor to atherosclerosis were published in the December online issue of Nature Medicine.

Michael B. Lawrence received a grant from NIH to investigate the role of blood flow on leukocyte homing patterns underlying the inflammatory response.

Thomas C. Skalak and Roberta A. Nixon received a three-year grant from the Whitaker Foundation to support placement of undergraduate biomedical engineering students in corporate positions for 10 weeks in the summer. Skalak received a funding excellence in Science and Technology Programs (FEST) grant in support of his research on the manner in which genes direct the assembly of cells into structures that form tissues and organs.

William F. Walker participated in a Whitaker Leadership Development program with 23 other young faculty members. The goal of the program is to develop the next generation of leaders in biomedical engineering.

Zequan Yang received a grant from the American Heart Association and received the Atorvastatin Research Award from Pfizer Inc.

Chemical Engineering

Giorgio Carta presented a workshop at the PREP International Conference on Chromatography in Washington, D.C., and is organizing the 2003 meeting in San Francisco.

Robert J. Davis co-authored a new textbook published by McGraw-Hill. He authored a “Chemistry Perspective” that appeared in the August 15 issue of Science magazine.

Roseanne M. Ford spent the spring semester of 2003 doing research at the U.S. Geological Survey in Boulder, Colo.

Donald J. Kirwan is the founding director and secretary of the new Society of Bioprocessing Professionals.

The research of Matthew Neurock was featured on the March 14 cover of Science magazine. He is also a key investigator on a new multi-university project to study fuel cells.

John P. O’Connell was a visiting professor at the University of Canterbury, New Zealand, during the 2003 spring semester.

Civil Engineering

Susan E. Burns was appointed to the National Research Council’s Committee on Geological and Geotechnical Engineering.

Michael J. Demetsky was elected 2003–2004 president of the Council of University Transportation Centers, an organization of the major transportation research centers and institutes in the United States.

Lester A. Hoel received the Jack H. Dillard Best Paper Award by the Virginia Transportation Research Council.

Cornelius O. Horgan engaged in collaborative research with colleagues at Dublin City University, Ireland; Universidad Politecnica de Catalunya, Barcelona, Spain; Universita di Ferrara and Universita di Lecce, Italy, during Spring 2003. He also presented keynote lectures at international conferences in Cagliari and Cortona, Italy, in June on constitutive modeling of rubberlike and biological materials.

Roseanna M. Neupauer received a National Science Foundation (NSF) career award for her project “Wavelet Analysis of Scale Effects on Subsurface Flow and Transport.” She serves on the Dean’s Leadership Council at Carnegie Mellon University and was selected as a 2003–2004 U.Va. teaching fellow.

Brian L. Smith was awarded the Civil Engineering Teaching Award in May 2003.

Computer Science

Jorg Liebeherr’s textbook Mastering Networks: An Internet Lab Manual, co-authored with
Magda El Zarki from the University of California, Irvine, was published in August 2003 by Addison-Wesley.

David P. Luebke received a Department of Energy Early Career Principal Investigator award. He also wrote a book, *Level of Detail in 3D Graphics*, published by Morgan Kaufmann.

Kevin Skadron has been selected as a U.Va. teaching fellow and received the Seven Society Award for teaching.

Alfred Weaver was the organizer and technical program chair for the First IEEE Conference on Industrial Informatics, held in Banff, Alberta, Canada. He was the technical track chair for industrial information technology at the IECON’03 in Roanoke, Va. Microsoft made a gift of $250,000 to him to further his work in “Federated, Secure Trust Systems for Distributed Healthcare IT Services.”

**Electrical and Computer Engineering**

Scott T. Acton with Nilanjan Ray, received a best paper award in the IEEE International Conference on Image Processing for his prototype human cell tracking system called the “Robust Biomedical Tracker.”

James H. Aylor was invited to join the U.Va. Raven Society and was appointed the associate dean for academic programs.

N. Scott Barker received a 2003 NSF career award for his research on a spectrometer for use in detection and identification of DNA.

John C. Bean won an Educational Innovation award.

See *FACULTY NOTES*, page 4

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**THE GROWING IMPACT OF TECHNOLOGY ON OUR SOCIETY**

calls for public policy-makers who are well-versed in science and engineering and for scientists and engineers who are well-versed in public policy.

No longer can these two worlds exist side by side with minimal communication and collaboration. No longer can scientists and engineers remain focused on the technology alone without consideration of the ethical, political and social impact of proposed solutions. In addition, today’s scientists and engineers must have the communication skills necessary to educate non-scientific communities in order to contribute to improved decision making.

With our excellent faculty and outstanding programs, the University of Virginia School of Engineering and Applied Science produces just such an engineer. And we have been doing so for many, many years.

Our students are educated to be leaders—to think logically, to speak clearly, to understand systems and processes and to be able to communicate that understanding to others. Our Department of Technology, Culture and Communication (TCC) teaches students the social impact of engineering and oversees a thesis project that has been required in our program for almost 100 years.

Our D.C. Internship Program places students each summer in high-level policy-making offices on Capitol Hill. This year’s interns worked in the Office of Senator Joseph Lieberman, the Office of Technology Policy, the National Science Foundation, the State Department, and the Environmental Protection Agency, among others.

Our faculty are leaders worldwide in work that impacts society. Deborah Johnson (TCC) is the Anne Shirley Carter Olson Professor of Applied Ethics. She is a philosopher specializing in ethics and technology, computer and engineering ethics, and science and technology policy. William Wulf (CS) is president of the National Academy of Engineering and is a world leader in technology issues particularly related to computer security and hardware-software co-design. Yacov Haimes (SIE), Quarles Professor and Director of the Center for Risk Management of Engineering Systems, is working with federal agencies to develop a system that will enable federal, state and local government agencies to identify and assess a broad array of potential threats to critical infrastructures.

Hilary Bart-Smith (MAE), recent winner of a David and Lucile Packard Foundation Fellowship award, works to revolutionize current engineering concepts by attempting to mimic the way nature handles the same challenges. This has implications for aircraft design and silent propulsion techniques of use in underwater security.

Garrick Louis (CE) works to assure safe, reliable, affordable sanitation services to underserved communities worldwide. To apply the technological solutions he devises, he must work with service industries, government agencies and grassroots organizations.

We create a learning environment here that allows our students to develop into leaders in the world of engineering and allows our faculty to work on research of vital importance to the country and the world.

Thank you for everything you do to help make this possible.

—DEAN RICHARD MIKSAD
John C. Lach won an Outstanding Young Faculty teaching award.

Arthur W. Lichtenberger received a $1.5 million grant from NRAO to develop superconducting detectors for a major international radio telescope project.

Mircea R. Stan was the general chair for the ACM Great Lakes Symposium on VLSI 2003.

John C. Lach

Materials Science and Engineering

Sean R. Agnew was awarded best reviewer for Scripta Metallography.

Raul A. Baragiola gave an invited talk on electron emission in plasma display panels at the International Seminar on Ion-Atom Collisions in Helsinki, Finland.

James M. Howe received the National Science Foundation Creativity Extension Award, 2003.

Robert Hull was elected a member of the European Academy of Sciences.

Robert E. Johnson was Gledden Fellow at the University of Western Australia, Perth, October 2002–January 2003.

Robert G. Kelly was elected Honorary Member, Golden Key International Honor Society.

John R. Scully served as a consultant to the Columbia Accident Investigation Board. His work focused on corrosion issues associated with the Columbia and the remainder of the orbiter fleet that might affect the thermal protection system.

Gary J. Shiflet was elected Fellow of Japan for the Promotion of Science.

Mechanical and Aerospace Engineering

Ioannis Chasiotis' research with George T. Gillies on the mechanics of single brain tumor cells appeared twice this year in Nanotechnology, and their atomic force microscopy image of tumor cell invasion was featured on the January 2003 cover.

Ronald D. Flack and George T. Gillies won the American Society of Mechanical Engineers’ Lewis F. Moody Award for a paper they wrote with S.O. Kraus, A. Habsieger, and K. Dullenkopf. The award was presented at the ASME/JSME Fluids Engineering meeting in Honolulu in July 2003.


Ted Iwasaki won a 2003 NSF career award.

Richard W. Kent was awarded the 2003 Elaine Wodzin Young Achiever Award from the Association for the Advancement of Automotive Medicine. This award is given annually to the young researcher who has made specific and significant contributions to the field of traffic injury control.

Pamela M. Norris and co-investigator James Landers received a Funding Excellence in Science and Technology Programs (FEST) grant in support of their research on miniaturizing laboratory analysis equipment.

Houston G. Wood III was quoted in a Washington Post article headlined “Depiction of Threat Outgrew Supporting Evidence.” He was also recently interviewed on CNN and on CBS “60 Minutes II.”

Kathryn A. Neeley, Rosalyn W. Berne and John K. Brown are leading a study of how written products by students in 402 and 200-level courses align with ABET objectives.

Kathryn Thornton, assistant dean for graduate programs and former astronaut, was quoted in a Richmond Times-Dispatch story headlined “At NASA, Safety Lost Out.” She has been appointed by NASA to the task group performing an independent assessment of the agency’s implementation of the Columbia Accident Investigation Board’s recommendations.

Donald E. Brown won the Outstanding Undergraduate Teaching Award for 2002–2003 from the student chapter of the International Council on Systems Engineering. He was recently quoted in a New Zealand Herald item headlined “Computers Predict Crime.”

TCC was chosen to represent the University in the MIT-Berkeley-Illinois National Nanotechnology Infrastructure Network proposal involving Michael E. Gorman and Rosalyn W. Berne.

W. Bernard Carlson, Edmund P. Russell and John K. Brown have an NSF grant that will continue a postdoctoral position in history of technology and the environment and provide new funding for several doctoral students in this interdisciplinary area.

Division of Technology, Culture and Communication

Donald E. Brown

Systems and Computer Engineering

Kathryn Thornton
The VEF Outstanding Student award is given at the fourth year Garden Party in May. It acknowledges a student who has exhibited service before self, integrity, and excellence in all spheres of life.

David L. Simpson, an engineering science major with a double minor in biomedical engineering and applied math, was the 2003 winner. Simpson plays the viola, volunteered with Alzheimer’s patient support, participated in Spanish Club, Science Olympiad, the debate team and E-Council, where he chaired the academic concerns committee. He was a member of the undergraduate curriculum committee, conducted research in the medical school and served as editor of *Vital Signs*.

Simpson was also a calculus and chemistry tutor, worked with the Summer Bridge Program, worked on the Engineering Academic Resource Center, and for fun he sang with the University Singers and the Virginia Glee Club.

The Engineering School Undergraduate Research and Design Symposium is an annual presentation and selection of the best of the undergraduate research theses.

### Awards

**1st Place—David Simpson**

*CXCR6-positive T Cells Display Extralymphoid Homing Potential*  
Technical Advisor: Klaus Ley  
TCC Advisor: Ingrid Townsend

**2nd Place—Elisa Ferrante**

*Fluid Flow Visualization and Analysis Inside a Magnetically Guided Microcatheter*  
Technical Advisor: Joseph Humphrey  
TCC Advisor: Bryan Pfaffenberger

**3rd Place—Baron Schwartz**

*Transforming XML into Music Notation*  
Technical Advisor: Worthy Martin  
TCC Advisor: Betsy Mendelsohn

The Harrison Undergraduate Research Awards Program, administered by the Faculty Senate, gave awards to eight Engineering School students for outstanding undergraduate research projects.

**Edward Benson** (TCC) *Ending the Privacy Arms Race.*

**Charlotte Bolyard** (MAE) *Is Diamond the Perfect Material for MEMS Machines?*

**Julie Guyenet** (CE) *The Prevention of Water-Borne Illnesses.*

**Christina Haden** (MAE) *Tachycardia-Induced Remodeling Computational Model of Atrial Fibrillation.*

**Patrick Hopkins** (MAE) *Testing the Accuracy of Transient ThermoReflectance Technique.*

Sally Moffett (MAE) and Keith Moored (MAE) *Wavelet Analysis of the Turbulent, Energy Cascade Burgers Equation.*

Merve Satoglu (MAE) *An Investigation of Odor Detection in Crayfish.*

Shan Wu (BME) *Molecular Mechanism of Leukocyte Transmigration in Developing Atherogenesis.*

### Capstone Project Awards

The Systems and Information Engineering Department had three capstone teams win best paper awards at the IEEE Systems and Information Engineering Design Symposium. The areas were Systems Engineering Applications, mentored by James Lambert; Process Design, mentored by Preston White; and XML and Web Applications, mentored by Donald Brown.

### Otis and Mary Updike Professional Development Award

The award, established to foster young people’s passion to make a difference in the lives of others, was awarded to BME students Wesley Gilson and Rosalind Mott. The award is given in honor of Dr. Updike, who was one of three founding faculty members of the BME department.

### Modern Day Technology Leader Award

This award, given at the Black Engineer of the Year Conference, was awarded to graduate student John Haskins (CS).

### Outstanding Contribution Award

Peggy Reed, project support technician for the Computer Science department, was one of 11 winners of the U.Va. Outstanding Contribution Award in May 2003.
Fellowships

Alcoa International Graduate Research Fellowships
Three graduate students were awarded Alcoa International graduate research fellowships.

Shannon Bartelt-Hunt will spend two months at the University of the Witwatersrand in South Africa where she will learn techniques being used to isolate methane-oxidizing bacteria, and will begin preliminary research into the environmental factors that influence growth of these bacteria.

Mark Loeffler will spend six weeks visiting premier laboratories in Italy and Japan, learning the use of infrared reflectance spectroscopy and novel irradiation techniques to analyze weathering of surfaces in space.

Tom Schamp plans to use unique facilities at the University of Port Elizabeth to grow GaAsSb nanoparticles and measure various parameters as a function of composition.

Ballard Fellowship
Michael Smith, BME graduate student in Klaus Ley’s lab, was recently awarded a Ballard Fellowship.

Virginia Engineering Foundation Fellowship
Rosalind Mott, a BME graduate student in Brian Helmke’s lab, was awarded a VEF Fellowship. These fellowships are given for a combination of academic and research excellence.

Mira S. Olson (CE) was selected for a Science-to-Achieve-Results (STAR) Graduate Fellowship from the U.S. Environmental Protection Agency. She is working with James Smith (CE), Roseanne Ford (ChE) and Erik Fernandez (ChE), studying the transport of bacteria in ground water.

A Window on Scanning Technology

Visitors to the New Orleans Museum of Art were able to peer through the windows of a reproduction of Monticello’s west façade and see a 3-D image of Thomas Jefferson’s library, thanks to a collaboration between David Luebke (CS) and Lars Nyland of the University of North Carolina.

The Monticello exhibit was part of the museum’s exhibition of “Jefferson’s America and Napoleon’s France,” which commemorates the bicentennial of the Louisiana Purchase.

Luebke began the project after learning about a prototype laser scanner built by Lars Nyland at UNC. Nyland’s startup company is refining the scanner—a sort of giant digital camera that records a scene in minute detail by scanning every inch of a room with a laser—and reducing their television-sized prototype to a smaller, more lightweight, portable scanner. The current model is a 12-inch-by-12-inch-by-4-inch box weighing about 30 pounds. For their part, Luebke and his students have focused on improving the speed and quality of the visual display of the scanner.

The project fits in with Luebke’s research interest in creating rapid, understandable visual displays of huge data sets. With each scan of Monticello made up of 10 million data points, the challenge was to create software that can organize and display the information fast enough to create a meaningful picture for an interactive display. The solution involved inventing techniques to enable the computer to identify the most important 10th of the information and ignore the rest.

The technology has applications in the fields of architecture, archaeology, medicine and emergency rescue work, among other fields. For a glimpse of this project, visit the Scanning Monticello Web site at http://www.cs.virginia.edu/Monticello/.

The Seven Society placed a stone in front of Thornton Hall in December 2002 in honor of William Myyn Thornton.
Student Featured in Mechanical Engineering Magazine

Amy Throckmorton (BME), a graduate student of the Virginia Artificial Heart Institute (VAHI), was featured in two articles of Mechanical Engineering, a publication of the American Society of Mechanical Engineers (ASME). In the June 2003 issue, the article entitled “The Telltale Heart,” with subsection “The Littlest LVAD,” details VAHI’s goals for developing a ventricular assist device (VAD) for the pediatric population. Likewise, in the August 2003 issue, the article entitled “A Whole New Heart,” with subsection “Mapping the Flow,” discusses the computational and experimental techniques that VAHI employs to analyze the fluid flow characteristics in blood pumps.

Graduate Student a Finalist in the Darden Business Plan Competition

Evan Edwards (SIE) was one of the top four finalists for the 2003 Darden Business Plan Competition. His business, Intelliject Inc., was created to develop an invention for which he received a patent in March—a credit card-sized drug delivery system. Edwards won a $200 cash prize, plus $2,000 for his business, and has been entered into the Progressive Incubator, where he will receive two years of office space at Darden and a $1,500-a-month summer stipend to work on his project. His graduate thesis will focus on how the invention process relates to systems engineering.

Students Collaborate on Public Safety Software

The Defense Group Inc. collaborated with undergraduate students from the SIE to develop a software tool to assist public safety personnel who might have to respond to an incident involving radiological contamination. This tool will be a new module in the Chemical Biological Response Aide (CoBRA*), which is in wide use by almost 2,000 First Responder agencies across the country. The students designed an intuitive user interface and built the connections between the new tool and the existing CoBRA software. The “Rad Tool” will soon be available to all current users of CoBRA software.

GAANN Supports Interdisciplinary Doctoral Training Program

The Engineering School will take the lead in a new interdisciplinary doctoral training program. Under the directorship of Dr. Teresa Culver, and through $890,000 in funding from the U.S. Department of Education’s Graduate Assistance in Areas of National Need (GAANN) program and the University, the new program will support nine doctoral students for three years.

This award will provide fellows with stipends of up to $21,500, tuition, fees, and research support. Eight faculty members from the departments of Civil Engineering, Chemical Engineering, and Environmental Science, in collaboration with experts from the University’s Teaching Resource Center and the Office of Minority Programs, will participate in this training program. The intent of the new program is to increase the number of students prepared to seek academic positions related to contaminant hydrogeology and to train a new generation of interdisciplinary scientists and engineers who can grapple with the vexing environmental problems that beset our nation’s water resources.

The GAANN program will provide fellows training and mentoring in both research and teaching. Associate directors are Roseanne Ford (ChE), Janet Herman (Environmental Science), and James Smith (CE).

Luther Y. Gore Contributes Painting

Technology, Culture and Communication Professor Emeritus Luther Y. Gore donated his own original oil painting “The World’s First Successful Airplane” to the school. This beautiful work commemorates the Wright Brothers’ first controlled glider flight in October 1902 and adds to the growing aeronautics and space art collections in the Mechanical Engineering Building.

Send Us Your Thoughts

Was there a professor who you thought was special while you were in school here? Was there a class you took that changed the course of your life? Write us at vef-info@virginia.edu to tell us your stories and send photos if you have some to share. We’ll feature these stories in an upcoming issue of the magazine.
THE THREE ENGINEERING ALUMNI WHO MET in 1953 to incorporate the Virginia Engineering Foundation (VEF) weren’t soothsayers. They didn’t know the organization they were launching would become so vital to engineering education at the University of Virginia that it would survive to celebrate its 50th anniversary and raise more than $100 million during the last decade for the School’s benefit.

But they were good businessmen. “We knew it was important to raise money for the School, and we thought establishing the foundation would be the right way to begin,” recalls James R. Phillips (’50), who met with John H. (Jack) Sidebottom (’40) and Charles C. Plummer (’22) in his Washington, D.C., office.

A sales manager at the time for a division of the Carrier Corporation, Phillips still remembers his less-than-successful call on a school bus company owner in Charlottesville on behalf of VEF. But he was comfortable with his assignment. “I was glad to do what I could for the School, because U.Va. made a big difference in my life,” he says. Phillips describes being admitted to the University “on probation,” graduating as president of his class, and going on to success in industry and as deputy assistant secretary of the U.S. Department of Commerce, a White House appointment. Today he is senior vice-president of RDS Global Ltd., a consulting firm.

Phillips and his colleagues weren’t the first engineering graduates who came together to support the School. As early as 1936—centennial of the introduction of the engineering curriculum, when enrollment in the School numbered fewer than 150 students—the University’s own Engineering News proposed an association to “assist the engineering faculty in maintaining a high type of student body and an up-to-date, comprehensive curriculum, and to keep the School informed as to alumni endeavor and achievement.”

But the association didn’t coalesce until veterans began to return to U.Va. classrooms after World War II. In 1948, five alumni—Grafton C. Colvin (’39), a drawing instructor in the Mechanical Engineering Department; Robert R. Harmon (’23), founder and president of Southern Welding & Machine Co.; Henry L. Kinnier (’42), a civil engineering professor;
John H. Robinson (’34), superintendent of the Charlottesville Woolen Mills; and Joseph L. Vaughan (’26), an English professor in the Engineering Department—met to create the Engineering Alumni Association. They received encouragement and support from Dean Edward “Bucky” Watts Saunders Jr., who led the School’s post-war enrollment increase to nearly 600 students.

Kinnier, now an emeritus professor and an emeritus director of VEF, served as the association’s secretary and published the first engineering alumni directory—featuring 2,300 graduates—in 1950. In its early days, the group focused on hosting alumni social events. When Lawrence R. Quarles became dean in 1955, he expanded its mission. “Dean Quarles encouraged us to ask alumni and corporations to help provide for the School’s future,” Kinnier recalls. “Thanks to him, we began to focus on fund-raising for the first time.”

Their efforts got off to a slow start. The $6,500 raised in the foundation’s first annual fund drive in 1956 quickly went to student aid and scholarship support. Two facts were obvious to the alumni involved: The School needed additional funds, and the volunteer fund-raisers needed help. VEF needed a full-time director. Until that goal could be met, the foundation experimented with unpaid and part-time fund-raisers, managing to raise $100,000 by 1973 to endow a professorship named for Quarles.

By the time the dean stepped down that year, School enrollment had quadrupled. A total of 175 undergraduate and 73 graduate engineers—including the first minority and women graduates—earned degrees. They took advantage of a curriculum that had grown to include five new graduate programs. This increasingly sophisticated academic program required a state-of-the-art fund-raising program. VEF responded by introducing a class manager program and gift clubs to encourage donations at various levels. The foundation—led by its first full-time director—also raised funds to endow professorships honoring esteemed faculty members. Following the successful conclusion of the University’s first capital campaign in 1984, VEF established the Thornton Society, a group of the School’s major donors.

In 1990, Dean Edgar A. Starke Jr. announced that the School would respond to a nationwide shortage of engineers and scientists by increasing enrollment 25 percent over the next decade. At the same time, a drastic reduction in state funding and the University’s plans for a capital campaign prompted VEF to make major changes. In addition to boosting corporate and foundation fund-raising efforts, the foundation began to build an infrastructure capable of meeting the campaign’s demands.

Richard W. Miksad came to Virginia as dean in 1994, determined to continue preparing engineers as effective industry leaders despite the challenging times. In his quest for new support for bricks-and-mortar and curricular needs, Miksad pledged to build a foundation capable of meeting the capital campaign’s healthy $37.5 million goal.

In addition to increasing the fund-raising staff led by Tom Connors (see sidebar, page 10), Miksad encouraged the VEF board to recruit board members interested in philanthropy. He also established the Dean’s Advisory Council, a group of alumni business leaders who could, in his words, “tell me where the engineering and technology fields are going” and explore important collaborations.

When the School concluded its campaign in 2000, it was clear the dean’s prescience had paid off. Annual Fund revenues increased from $500,000 in 1996 to nearly $1 million in 2002, and VEF raised $75.4 million from the School’s 4,000 alumni and many corporate friends, an amount more than double its original campaign goal and guaranteed to ensure greater stability for the School.

These days, Miksad foresees continued close ties between the School and the foundation. “Our faculty views the fund-raising staff as their partners in making entrepreneurial things happen,” says the dean, who is in the final year of his term.

As VEF celebrates its golden anniversary, the new board chair is similarly upbeat. “I think engineering students benefit from the broad education they receive at U.Va.,” says Howard Todd, who worked with the DuPont Corporation since his 1960 graduation, retiring four years ago as president of the North American Region. “Just as in the past, I believe the Engineering School remains committed to preparing its graduates for leadership roles in society.”
ASK DEAN RICHARD MIKSAD ABOUT TOM Connors’ accomplishments as executive director of VEF, and he quickly makes a list.

“Tom guided our capital campaign to success, raising funds for two new buildings, transforming our Annual Fund’s performance, hiring a professional staff, and establishing VEF as a true partner in the University development community.”

Miksad recruited Connors from Sweet Briar College, where Connors was vice president and treasurer for nine years after a successful career in banking and business.

“He’s become a trusted friend,” says James R. Phillips (’50), one of the founders of VEF.

Among his many accomplishments, Connors helped facilitate an agreement between VEF and the Health System Development Office that led to a $12.5 million gift from the Whitaker Foundation for U.Va.’s new biotechnology building.

He and his wife have restored an old house in Lynchburg, where they plan to retire after Connors leaves U.Va. in June 2004.

Jim Knight, former associate vice president in Health Services development, calls Connors a “sensible, no-nonsense colleague who helped bring about as successful a collaboration as the University enjoyed during its recent campaign.”

Highlights During the TC Years

1995 Thomas N. Connors is hired as the new VEF vice president for development. A consortium of University-related foundations is formed, leading to reduced health care costs for staff in the foundations. Campaign goal is set at $37.5 million; VEF offices are renovated and a staff of seven is hired.

1996 Annual Fund surpasses the $500,000 mark; alumni participation reaches 25 percent, capital campaign reaches $16.2 million.

1997 Capital campaign reaches $22.1 million.

1998 Capital campaign exceeds $46 million.

1999 Thornton Society celebrates its 15th anniversary; Annual Fund donations reach $950,000, including funds to establish the VINTLab.

2001 Capital Campaign raises $75.4 million; new Web sites designed for the Engineering School and for VEF.

2002 Amendments to the bylaws are ratified after several study years; Thornton Hall is renovated; $980,000 raised for Annual Fund.
IF YOU FELL AND COULDN’T GET UP, YOUR doctor would know about it.

That’s the goal of a small group of U.Va. researchers who last year launched an interdisciplinary effort to develop new medical devices to monitor aging patients and help them stay independent as long as possible.

“Everyone is affected by the diseases of the aging process,” said John Lach, assistant professor of electrical and computer engineering. “The more we can do to help older people cope, the better off we’ll all be.”

Diseases of the elderly range from debilitating physical ailments, such as Parkinson’s disease, to conditions affecting memory and mental acuity, such as Alzheimer’s. Dr. Mark E. Williams, professor and chief of the Division of General Medicine and Geriatric Medicine, is spearheading the development of an Institute on Aging at U.Va. to strengthen efforts around the University to tackle various aspects of the aging process.

The Virginia Embedded Systems Laboratory (VESL) at U.Va.’s School of Engineering and Applied Science is a major part of this interdisciplinary approach. Medical researchers associated with the lab are working to gain a better understanding of the aging process—what happens to people as they age and why their ability to function declines—while engineers are creating new technologies to enable physicians to better understand, diagnose and treat the mental and physical disorders associated with aging.
Members of the VESL team include Dr. Williams, who is an expert on the body’s functional degradation associated with aging; Timothy Salthouse, professor of psychology, who is exploring changes in cognitive ability as people age; and Dr. G. Frederick Wooten, professor and chair of the Department of Neurology, whose research focuses on neurological disorders related to aging, such as Parkinson’s disease.

One of the lab’s main projects is to develop non-invasive, wearable technologies that will monitor a wearer’s motion—such as a Parkinson’s patient’s tremors—and signal changes that suggest a patient is in trouble. This summer, undergraduate students in electrical and computer engineering are building a prototype—a radio transmitter that patients will strap on at home. The wireless device will send signals to receivers installed throughout a patient’s house. The receivers will, in turn, transmit data to an in-home computer connected to the Internet so the patients’ physicians can log into a data collection center and monitor their patients’ vital signs from a distance.

The researchers are also interested in collecting patients’ biological data, such as heart rate, blood pressure and body temperature, and environmental data, such as room temperature, noise and light, for use by physicians.

The project promises to make health care for the elderly more efficient, providing help only when needed and only as much as needed by calibrating the treatment to fit an individual patient’s needs, said James Aylor, professor and chair of the Electrical and Computer Engineering Department.

“We often care for the elderly in a one-size-fits-all way,” Aylor said. “But one size doesn’t fit all. And there is danger both in providing too much help and in not providing enough help. Inadequate care clearly falls short of our mission. And too much help can create dependence where it didn’t exist before.”

The goal is to make the technologies as passive and non-invasive as possible, Lach added. “Eventually, we’d like them to be as small as a quarter-sized Band-Aid or something that would fit on a watchband or a belt,” he said. Lach believes they will have small, wireless, working prototypes within two years.

Aylor said the researchers haven’t ruled out a fashionable approach to the problem, as they consider embedding technology in jewelry, such as earrings with transmitters or finger rings that monitor a pulse.

“Who says technology has to be ugly?”

“The more we can do to help older people cope, the better off we’ll all be.”
1940s

Thomas P. Hughes (ME ’47), considered to be the leading historian of technology in the United States, has been elected to the National Academy of Engineering.

1950s

Robert L. Sackheim (ChE ’59) is the assistant director and chief engineer for propulsion at NASA’s Marshall Space Flight Center in Huntsville, Ala. The Association of Aeronautics and Astronautics of France honored him with its sixth international symposium award.

1960s

Robert M. Elliot (ME ’66) received a lifetime achievement fellowship from the American Society of Mechanical Engineers International. He is employed by Eastman Chemical Co.

1970s

John M. Bryson II (Nuc. ’71) is a partner in the corporate diversity counseling group at Holland & Knight in Washington, D.C.

John Cormier (CE ’73) is client services manager for R.D. Zande and Associates, a consulting engineering firm.

James J. Rooney (ChE ’75) was named a fellow of the American Society for Quality. He is a senior engineer with ABS Consulting in Knoxville, Tenn.

Thomas L. Rouse (CE ’75) joined the law firm of Cors and Basset. He resides in Erlanger, Ky., with his wife and children.

Sid Kere (Nuc. ’77) works as a nuclear engineer at Dominion Power in Richmond, Va.

1980s

David R. Arnold (CS ’82) is a deputy with the U.S. Navy’s Naval Network and Space Operations command detachment in Washington, D.C. He was recently promoted to the rank of captain.

Don Dunham (ME ’82) lives in Anchorage, Alaska, with his wife and children. He is vice president of a large natural gas field development project. He also coaches basketball and baseball, is cubmaster of his son’s Cub Scout pack, and is a board member and treasurer of Habitat for Humanity–Anchorage.

William F. Swanson III (ME ’82) is general manager of Diamond Holding Corp. in Marietta, Ga.

Commander Stephen S. Bell (CE ’83) is the resident officer in charge of construction at Pearl Harbor, Hawaii.

Christopher Cosner (Aero ’83) was selected as a Boeing Technical Fellow.

Daniel Sorkowitz (CS ’83) just returned to the United States after two years as an English teacher at Dung Hua University in Hualein, Taiwan.

Scott Carson (CS ’81, ’84) was recently appointed to the Storage Networking Industry Association board of directors. He serves as the chief technology officer and managing director for technical services at IMS Systems Inc.

John W. Via III (ChE ’84) completed the program for management development at Harvard Business School in 2001 and received his doctor of engineering degree in engineering management from Southern Methodist University in 2002. He is director of manufacturing, consumer products, for Alcon Manufacturing in Fort Worth, Texas.

Brian D. Killough Jr. (ME ’87) received his doctor of philosophy degree in applied science from William and Mary in 2003. He works at NASA Langley Research Center.

David A. Sutton (CS ’86) is president and CEO of Zyman Marketing Group. He has co-authored a book titled Enterprise Marketing Management: The New Science of Marketing.

C. Michael Holloway (CS ’83) was selected for the 2003–2004 Floyd L. Thompson Fellowship at the NASA Langley Research Center. This is the research center’s most prestigious fellowship. During his two-year fellowship, Mr. Holloway will be working with researchers at

Family Tradition

Being a U.Va. student is a family affair for the Rohrbaugh family. The father, Tom Rohrbaugh, is a student in the Systems and Information Engineering Accelerated Masters program (www.sys.virginia.edu/accelerated/). His daughter, Nikki, graduated from U.Va. with a double major in English and economics in 2003. His son, Scott, graduated with a BS in physics in 2000 and is currently working on his doctorate in physics here. Tom is also a frequent participant in on-Grounds recruiting fairs and has hired more than 20 engineers for his company, URS.

Scott Rohrbaugh (’00), Cindy Roy, Nikki (’03) and Tom Rohrbaugh (SIE).
March 2002
“‘I’m going to be a teacher,’” I told the Boeing representative who was visiting the Engineering School. “Interesting. At what university will you have a teaching assistant position?” he replied.
“No, I’m going to be a high school teacher.” “Oh, you’re going to be a high school teacher,” he repeated, incredulously. Finally, mutual understanding.

Sitting in Dean Miksad’s office with this Boeing representative, I began to preach the classic U.Va. E-School mantra: “The U.Va. Engineering School focuses on a multifaceted education. Our engineering students might work at NASA or Microsoft, but many also pursue degrees in medicine, work on Capitol Hill, or go to law school.” He gave a half head-nod. The tour guide info I’d memorized seemed to be making sense. I continued, “I want to apply everything I’ve learned in the E-School to social problems. That’s why I am teaching in an urban public school.”

October 2002
“Why am I teaching in an urban public school?”

Ah, the question du jour.

It is my second month as a math and science teacher at Washington, D.C.’s Dunbar Senior High School, home of the Crimson Tide. My windowless classroom is next to the day-care center. Not day care for teachers’ kids, but day care for students’ kids. It’s a crazy day down in room BG021. My ninth-graders are doing a lab and using pennies as masses. As several fights break out, pennies are thrown everywhere—at desks, at students, at me.

School is disorderly. When the second-period bell rings, an announcement permeates the school: “This is a reminder that all students and teachers should be in second-period classes. Mr. Contal, please report to your area.” It’s disheartening when they have to remind students and teachers to report to class. In fact, teacher absences are so common that at least once a week a random kid will shout, “Ms. Moored, you’re here every day!”

School chaos, in addition to larger, systemic urban social problems, is reflected in my students’ knowledge acquisition. Many students are years behind their suburban counterparts. For instance, I had a conversation with my 12th-grade physics student Tyrone that went like this:

Moored: “So now you have $t = \frac{1}{6} + \frac{1}{3}$, so what do you have to do?”
Tyrone: “Uh-huh.”
Moored: “No, Tyrone, that wasn’t a yes-or-no question. You want to find the common denominator. Tyrone, you have heard of common denominators, haven’t you? Tyrone?”
Tyrone: “Hmm … that sounds familiar.”

Although I cannot single-handedly change the environment at Dunbar I can single-handedly determine my classroom environment. I want my classroom to be an epicenter of learning, a place to ask “Why?” and figure out “How?” The good news: My students have determined that my classroom is a place where they must actually do work. Hard work. By January, BG021 is the “Stacks” of Dunbar Senior High.

In March, my students make manometers. After a day of tangled U-tubes and unacceptable data, several lab groups stay after school to perfect their manometers. After hours of work, I hear frantic screams when my students finally see that oh-so-precious $\Delta h$. Screams of joy similar to those heard in Stacks after finishing a CS 201 tic-tac-toe game, and those in the basement of Cauthen after solving the infamous Washer Problem assigned in Engineering Concepts.

Motivation for hypothesizing and creating and discovering stems not from individuals, but from communities. For example, late-night study groups in Thornton working on CHEM 151 problem sets or senior theses often turned into “What if …” or “How does …” jam ses-
U.Va. and the University of Glasgow, Scotland, to improve techniques for analyzing accidents in complex, software-intensive systems.

1990s

Sten Berge (Aero ’93) works for Swedish Space Corporation in Solna, Sweden. He is the primary designer of the Attitude and Orbit Control System of the ESA SMART-1 satellite. He is married to Maria Nord, and they have two children.

Kristin Deason (CS ’98) lives in Bielsko-Biała, Poland, where she is teaching English. She has visited much of Eastern Europe, and also introduced her students to the idea of fund-raising by organizing a Valentine’s Day party and teacher auction to raise money for a local orphanage.

Ron Eliasek (ME ’93) is a vice president with Wachovia Securities Investment Banking. The family resides near Baltimore.

Debbie Umbach (SE ’94) works as a product marketing manager for a small software company in Cambridge, Mass.

George Weinmann (Aero ’97) is a research associate with the University of Michigan Center for Venture Capital and Private Equity.

William Arel (CE ’98) is a graduate student at the International MBA Moore School of Business, University of South Carolina.

2000s

Tapan Sen (EE ’00) is a second lieutenant in the U.S. Air Force. He was recently designated a naval flight officer while serving with Training Squadron 86 at the Naval Air Station in Pensacola, Fla.

Thomas Everett (BME ’01) finished a postdoctoral fellowship at the Kranzerr Institute of Cardiology, Indiana University School of Medicine, Indianapolis, and has taken a position as a research specialist in the department of medicine, cardiology division, at the University of California, San Francisco.

Michelle A. Carpenter (CE ’02) is an ensign with the U.S. Navy. She completed Aviation Officer Candidate School at Naval Aviation Schools Command at the Naval Air Station in Pensacola, Fla.

Ginger Moored, winner of the VEF 2002 Outstanding Student Award, is working at Dunbar High School as part of the Teach America Program.
Special Friends

William H. Bache Sr. (MAE ’39) of Duluth, Ga., died in May 2003. He was the owner of W. Hugh Bache Consulting Engineers for 35 years and a consultant with Bache Enterprises for 15 years. He was a member of the Jefferson Society and Thornton Society, among others. He is survived by his wife of 61 years, Doris Sullivan Bache, as well as a daughter and son, two grandchildren and a great-grandchild. An endowed scholarship in his name has been established at the Virginia Engineering Foundation.

Ross Brent Pickering was a second-year engineering student who died in a vehicle accident in June 2003. He was a graduate of Charlottesville High School, where he graduated in the top 10 percent of his class and participated in many sports and activities, including Key Club, National Honor Society, band and Young Life Club.

Louis T. Rader of Rochester, N.Y., died in August 2003. He served as department chair of Electrical Engineering for many years, following a long career in industry with General Electric. “He was deeply committed to producing the well-rounded engineer,” according to James Aylor, who holds the Louis T. Rader Endowed Chair. “He believed that engineers must be educated in business practices in order to be successful in their chosen fields.”

Edward C. Stevenson (Engr. ’28) of Charlottesville, Va., died in July 2002. During World War II, Mr. Stevenson served as a lieutenant commander in the U.S. Navy and earned a Bronze Star. He was a professor emeritus of electrical engineering at U.Va. He taught at Harvard University and the U.S. Naval Academy before joining the faculty at the University in 1950. While at U.Va., Mr. Stevenson was a member of the Raven Society.

William D. Vick (CE ’58) of Glen Allen, Va., died in May 2003. Mr. Vick retired from Honeywell Corporation (Allied-Signal) after 30 years of service. He was a member of Tau Beta Pi, Virginia Society of Professional Engineers, American Society of Civil Engineering and the Thornton Society.

1930s


Henry H. Black (Engr. ’36) of Chase City, Va., died Sept. 18, 2002. Mr. Black was a retired farmer.


1940s

Charles E. Batchelder Jr. (ME ’40) died in June. He was a member of the engineering fraternity Tau Beta Pi and was past president of the Philadelphia Engineer’s Club.

Leslie L. Thacker (ChE ’41) of Saint Petersburg, Fla., died in October 2002.

James H. Kabler Jr. (CE ’43 L/M) of Virginia Beach, Va., died in September 2002. Mr. Kabler attended the U.S. Naval Academy, where he earned his commission as lieutenant serving aboard a minesweeper until the end of World War II. He worked for the Columbia Peanut Co. of Suffolk, Va., until 1952, when he became a developer of Sandbridge Beach.

William H. Kite Jr. (ME ’43) of Fern Park, Fla., died in October 2002.

Lucien D. Burnett Jr. (ME ’45) of Charlottesville, Va., died in June 2003.

1950s

James L. Dooley (ME ’50) of Charlottesville, Va., died in October 2002. Mr. Dooley was a partner in the patent and trademark law firm of Cushman, Darby, and Cushman in Washington, D.C., practicing from 1952 until 1989. During Mr. Dooley’s career, he became the first attorney to present evidence from the moon, based on an affidavit from NASA astronaut Edwin “Buzz” Aldrin.

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1960s

Francis M. Regnier (Aero’68) of Harrisonburg, Va., died in December 2002.

Arthur L. Hasty (CE ’69) of Ashland, Va., died in December 2002.

1970s

Joseph W. Kamps (EE ’71) of Houston died in September 2002.

Kenneth W. Gravely (Engr. ’73) of Charlottesville, Va., died in July 2003.

William G. Barton Jr. (CE ’75) of Sugar Land, Texas, died in December 2002.

1980s


1990s

Christienne O’Flaherty Zdinak (CE ’95) of Richmond, Va., died in December 2002.

Kwame N. Ayer (EE ’97) of Fairfax, Va., died in September 2002.

Capt. Paul J. Melchiorre (EE ’97) died in December 2002.
“This institution of my native state, the hobby of my old age, will be based on the illimitable freedom of the human mind, to explore and to expose every subject susceptible of its contemplation.”

—THOMAS JEFFERSON, 1820

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Christine Ann Wasylko ’87, ME ’94
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Ida S. Jaffe
Fifteen Years
In memory of Joseph A. Jaffe ’40
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Fifteen Years
Thomas M. Taylor ’82
Two Years
David A. Thompson ’51
One Year
Earl R. Thompson, Ph.D. ’66
One Year
Eric D. Tumperi ’83
One Year
Wayne M. Uptike ’63
One Year
David E. Walton ’92, ME ’93
One Year
Walter Watson II ’50
One Year
John B. White Jr. ’45
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The Virginia Engineering Foundation’s mission is to aid and promote Engineering and research at the University of Virginia School of Engineering & Applied Science.
I AM AN ENGINEER-TURNED-PRIEST.

I planned to enter the University of Virginia in the fall of 1942 but Pearl Harbor suddenly made it seem more sensible to sign up for R.O.T.C. at Virginia Tech. I did this for two years and then withdrew from school in my junior year to serve in naval aviation electronics. After the war, I got back on track and June ’46 found me in Thornton Hall at the University of Virginia, trying to regain a grip on differential equations.

Two years later, I began a career with DuPont in rayon research, and for four years I learned a great deal, never suspecting that from engineering studies and practice, I was actually on my way to becoming a priest.

“The Call” came unexpectedly. Within two months of knowing this was what I wanted to do with my life, I was sitting in classes at the Episcopal Theological Seminary in Alexandria while some of the faculty muttered under their breath, “Another one—no philosophy, no literature, no history … well, we’ll do the best we can.” Thankfully, theology proved easier than engineering, and after ordination and two parish rectorships, I was back at the Seminary as a professor. “That’ll show ’em something about engineers!” I thought.

Much about engineering has been useful in ordained ministry, but everything I learned about being an engineer carried over. My first supervisor at DuPont forced me to write reports with crystal clarity—a skill I learned while a student here. I developed this skill further as a priest, thanks in part to my wife’s loving but relentless pre-Sunday critiques of my sermons.

But engineering taught me much more than communication. My engineering degree taught me a process for resolving problems (the Church does have them!); that teamwork thrives on respect for the contributions of all; not always to look for a single right answer, but for the best outcome; to bring order out of chaos; to focus intensely on the immediate issue; to add imagination to analysis; to value proficiency; and to be accountable for my decisions and actions. And, from such a luminary as Professor Joseph Vaughan, I learned that technology is meant to serve “the human dimension.”

I wouldn’t trade my engineering background for anything. Few people are certain about their destiny when they enter college, but many will testify that an engineering degree has the power to shape that destiny in the years to come. I am one of those many.

—THE REVEREND EDWARD MORGAN III (ME ’48)

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