From the Director

September was a harsh month for us with the loss of three valued members of our team. Lenore O’Donnell, Betty Giarrizzo, and Carol Mattioli’s care and expertise will be sorely missed by all of us. Lenore’s vision and dedication to our company’s success will be hard to fill. We extend our deepest sympathy to their families.

September was also a month that brought us to the start of the new academic year. For many of our students, this was the start of their medical careers, or at least the beginning of their medical education. For many of our students, this was the start of their medical careers, or at least the beginning of their medical education. For them, September was a month of new beginnings, of challenges, and of opportunities. We wish them all the best on this journey of discovery and learning.

As the new academic year begins, we continue to work hard to ensure that all of our students have the resources they need to succeed. This includes our new student orientation program, which provides a comprehensive introduction to the medical profession and the medical school environment.

We are also pleased to announce that our 2020-2021 academic year has been very successful. Our student retention rates continue to be high, and our alumni are doing well in their careers.

We would like to extend our thanks to all of our students, faculty, and staff for their hard work and dedication. We look forward to a successful year ahead.

Susan M. Clary, Ph.D.
President and CEO
Remembering Ray Thorpe

Raymond Gerald Thorpe, beloved faculty member of the School of Chemical and Biomedical Engineering for more than 50 years, died at home at age 84 on September 6, surrounded by his family. Professor emeritus of chemical engineering and former dean of engineering Bill Streett delivered the following remarks at a memorial service held Monday, September 19, at Cornell University's Sage Chapel.

Welcome to this celebration of the life of Raymond Gerald Thorpe—Ray, or "Ray" as most of us knew him, or "Uncle Ray" as he was known to the more than 50 classes of Cornell students for whom he was a teacher, mentor, advisor, coach, confidant, counselor, and good friend. I had the good fortune to work with Ray for most of the past 27 years.

Most of you know about Ray's distinguished career at Cornell. I want first to tell you about his life before Cornell and some of the events that shaped his outlook and made him the man he was. He was born in Utica, N.Y., on January 20, 1921. He grew up in Herkimer, N.Y., and graduated from Herkimer High School in 1938. That fall he enrolled in the chemical engineering program at Rensselaer Polytechnic Institute (RPI). In May 1941, at the end of his junior year, he joined the navy and, because of his engineering background, was commissioned as an ensign. After a brief period of training in New York City he was released from active duty to complete his studies. Three months later, in December 1941, Pearl Harbor was attacked, plunging the United States into World War II. Thus Ray became one of those everyday people whose lives were transformed by the extraordinary circumstances of World War II and who helped to preserve freedom and democracy in America in a time of turmoil and uncertainty.

In May 1942, immediately after receiving the degree of B.Ch.E. from RPI, Ray was assigned to the Brooklyn Navy Yard. He was stationed in Washington, D.C., and on several ships as an ordinance inspector and fire control specialist—person who directs gun "fire" from a ship—and for a year or more he held the post of ordnance ships superintendent at the Brooklyn Navy Yard. He soon realized that because of his engineering expertise he was destined for state-side assignments for the duration of the war, so he requested duty—"in other words, a combat assignment. He first had temporary assignments on a destroyer escort in the Atlantic, and then early in 1944 he was assigned as assistant gunnery officer on the USS Bennington, a new Essex Class Carrier that was being fitted out in Brooklyn. In June he took a short leave and was married to Eleanor Livingston Crofts in Cortland, N.Y., on June 29, 1944. He had been promoted to the rank of Lt JG (equivalent to first lieutenant in other services), and two days after his marriage he was promoted to the rank of lieutenant (equivalent to captain in other services). He held that rank until his discharge nearly two years later.

In late 1944 the Bennington departed New York, bound for the Pacific, and on February 16, 1945, saw its first action in the Pacific War. Over the next six months the Bennington took part in the campaigns at Iwo Jima and Okinawa. Ray's job was to train the gunners and technicians in the fire control center who used information on the altitude, speed, and direction of approaching aircraft to direct the defensive fire from the carrier. Eleven U.S. aircraft carriers were sunk in the Pacific War. The Bennington was attacked by enemy aircraft and, late in the war, by Kamikazes (suicide planes) but was never damaged. Ray and his gun crews were proud of that record.

Because of his long and honorable service, Ray was among the first to be released from active duty. He was sent to New York, where he was formally discharged from active service on February 11, 1946, at the age of 25. He served in the naval reserve until 1955.

Ray Thorpe was a true American hero. His military experience strengthened his commitments to integrity, to honor, and to caring for his fellow man. To this he added his own deep sense of compassion, his commonsense approach to everything in life, and his ability to inspire and motivate others. It was these characteristics that made him so successful and so well loved for the next 59 years of his life, most of which were devoted to Cornell. Had Ray remained in the navy he would surely have risen to the highest ranks.

But he chose another path. In March 1946, a month after his release from active duty, he enrolled in the School of Chemical Engineering at Cornell and was awarded a master of chemical engineering degree in September 1947.

After a brief period as a process engineer at Monsanto, Ray returned to Cornell in 1949 as a research investigator, and in 1951 he was appointed assistant professor of chemical engineering at the princely annual salary of $4,800. He was appointed to the rank of associate professor with tenure three years later, in July 1954.

His success as a teacher for 39 years, his remarkable rapport with students, and his ability to motivate and inspire them is the stuff of legend. Students who were overwhelmed by academic pressures and by personal problems were often invited (continued on page 4)
Editor's Note

For nearly eight years I have had the pleasure of meeting many of you in person at Reunion, Homecoming, and other events. During this time I have heard many stories about Olin Hall and the evolution of the School of Chemical Engineering. One key individual who was always mentioned during these conversations was Ray Thorpe. Ray had a profound effect on my life as well as the lives of many others in Chemical Engineering, which is why I dedicate this issue of Olin Hall News to him.

Ray was always there with a listening ear, and his presence could brighten any room. He had an excellent sense of humor, often had a great story to tell, and was greatly admired by students and faculty alike. From many of the stories I’ve heard, he had an uncanny ability to be firm and loving with a student at the same time. Ray exemplified the true meaning of a dedication to teaching. I’m sure you all share my sentiment when I say “Ray, you will be greatly missed.”

Julia Kornegay

Best regards,
Felicia Kornegay

Remembering Ray Thorpe (continued from page 3)

to spend a few days at Ray’s home, where he helped them through a difficult period. When they had serious financial problems, he sometimes would write a check to help them through difficult times. When I first came to Cornell in 1978 I learned quickly that Ray was the most popular and successful teacher in Chemical Engineering, and I used to pause in the hallways outside his classrooms to pick up a few pointers on his technique. Of course you all know his reputation as a storyteller and how his students used to chant, “story, story,” to get him to talk about some event in his past.

The extent of Ray’s influence on his students is illustrated by the teaching awards he won. He twice (1974 and 1983) won the Tau Beta Pi Award for excellence in teaching. The student honor society selects the winner of that award. At that time it was one of a small number of teaching awards and was the most prestigious in the College of Engineering. At the time of his retirement in 1988, he was one of only two faculty members who had won that award twice.

In 1982 he was awarded the title of “Master Teacher” by the School of Chemical Engineering. In 1984 the university inaugurated the Merrill Scholars Program, a program under which students from the top 2 to 3 percent of each graduating class are screened and 35 are chosen as Merrill Scholars (out of about 3,000 graduates). Typically about six of these are from the College of Engineering. Merrill Scholars are asked to identify the high school teacher and the Cornell professor who contributed most to their success, and those people are invited to a luncheon where the awards are presented. In the first four years of that program there were four Merrill Scholars from Chemical Engineering, and they all identified Ray as the Cornell faculty member who had contributed the most to their success. No other faculty member in the university came close to that accomplishment during that time.

A few other brief notes about Ray’s career. He was on the staff of the University Division of Unclassified Students (known as DUS) from 1973 to 1979, and he was director from 1979 until his retirement in 1988. DUS (I don’t know if it still exists) was then a kind of “purgatory” where students seeking to transfer to another college were assigned until they met the requirements for transfer. There is a letter in Ray’s Cornell files from the vice provost for undergraduate education, pointing out that before Ray took over, many of the deans wanted DUS shut down because it was ineffective. With Ray’s leadership it became very effective, and it gave him the opportunity to help students from across the university.

When I became an associate dean of engineering in the early 1980s, I was astonished to discover that Ray had been held in the rank of associate professor since 1944—nearly 30 years! That failure was corrected in the summer of 1984, when he was promoted to full professor—a promotion that, in my book, was 25 years overdue!

Ray retired at the end of 1988 to care for his wife, Eleanor, who was seriously ill. She died in 1990.

In 1991 I called Ray and asked him to return to Cornell to work in the Engineering College Advising Office. He readily agreed, and he worked there continuously until a few weeks before he died. He also taught part-time in Chemical Engineering. With Ray’s guidance and leadership, he and his colleagues made the advising office more effective and successful than it had ever been. He was back in his element, and he loved it.

Bill Streett

4 Olin Hall News • December 2005
Lee Is Appointed Head of Institute for Biotechnology and Life Science Technologies

Kevin Lee, associate professor, was appointed the new director of Cornell’s Institute for Biotechnology and Life Science Technologies in July 2005. The institute promotes research, education, and technology transfer to benefit the life sciences industries, including agriculture and medicine. Lee’s primary role will be working with institute staff to facilitate and foster the infrastructure for doing life sciences research at Cornell. In addition, he is responsible for maintaining a healthy relationship between Cornell and the New York State Office of Science, Technology, and Academic Research (NYSTAR), the state’s funding program to spur technology-based research and economic development. Lee also will administer the institute’s Center for Life Science Enterprise, one of 15 Centers for Advanced Technology in New York State, which is funded by NYSTAR.

Lee’s own research focuses on studying changes in protein expression in the central nervous system that relate to the diagnosis and treatment of Alzheimer’s disease. He collaborates with the Weill Cornell Medical College, where his biomolecular information regarding the disease is clinically applied. Lee cites positive results thus far. He also works with Cornell’s Nanotechnology Center to create next-generation technologies for studying proteins, such as microfluidic devices for separating and analyzing proteins more efficiently. In addition, Lee collaborates with the U.S. Department of Agriculture’s Agricultural Research Service on campus to research a bacterial pathogen (Pseudomonas syringae) that damages tomato crops and serves as a model system that may help shed light on pathogens that have an impact on humans and animals.

Lee, who received his Ph.D. in chemical engineering from the California Institute of Technology in 1995, joined the Cornell faculty in 1997. In 2004, he received a $750,000 award through the NYSTAR Faculty Development Program.

Lee succeeds Stephen Kresovich, who is now vice provost for life sciences and is involved in promoting and administering the university’s groundbreaking New Life Sciences Initiative.

Kresovich notes that “Kevin is recognized regionally, nationally, and internationally as a leading investigator and educator at the interface of life sciences and engineering. He’s the perfect director based on the priorities of both Cornell and NYSTAR.”

Engstrom Is Named Fuller Chair

On October 27, 2005, the School of Chemical and Biomolecular Engineering recognized Professor James Engstrom as the recipient of the BP-Amoco H. Laurance Fuller Chair in Chemical Engineering.

The chair was established in 2000 by BP Amoco in honor of Mr. Fuller’s years of service. Fuller was employed by Amoco Corporation or its affiliates, from the time of his graduation from Cornell University in 1961. In 1991, he became chief executive officer of the company. In August 1998, Amoco Corporation merged with British Petroleum Co. to form BP Amoco PrC. Fuller served as cochairman of the combined company until his retirement in April 2000.

A director of Abbott Laboratories, the Chase Manhattan Corporation, Motorola, and a member of the latter’s International Advisory Council, Fuller is also a director of Chase Manhattan Bank, the American Petroleum Institute, the Rehabilitation Institute of Chicago, and the Central Area Committee of the Chicago United Way. He has served as a member of the Board of Directors of the Society of Biotechnology and as a trustee of the Chicago Art Institute. Fuller’s educational affiliations have included memberships on the Visitation Committee of DePaul University, the Board of Trustees of Northwestern University, and the Parents Committee of Duke University.

A member of the Cornell University Board of Trustees, Fuller serves on the Finance Committee and the Committee on Alumni Affairs and Development. He also is serving on the board of the Laboratory of Ornithology. During the Cornell campaign “Creating the Future,” Fuller served on the College of Engineering, Special Gifts, and Corporate Campaign Committees. He also was co-chair of the Chicago City Campaign Committee.

In October 1992, Fuller delivered the second Raymond G. Thorpe Lecture in the School of Chemical Engineering; he has been a consistent supporter of the school for many years.

Engstrom’s research focuses on developing a fundamental molecular-level description of gas-source thin film deposition processes. With this fundamental understanding, he seeks to provide improved strategies for substrate, in situ feedback control and alternative approaches to the deposition and growth of materials that are difficult to synthesize via more traditional, thermal-based techniques. Over the past several years the Engstrom research group has been conducting a set of benchmark studies related to the reactions of molecular thin film precursors that possess thermal to hyperthermal (>1 eV) kinetic energies.
Lynden Archer Is Named Hart Chair

Lynden Archer, professor of chemical and biomolecular engineering, has been named the Marjorie L. Hart Professor in Engineering. The Hart chair was established in 2001 by Marjorie Hart ’50 as the first chair in the School of Chemical and Biomolecular Engineering.

Hart enjoyed a long career with Exxon Corporation, where she established many firsts for women, including being the first woman to be given an overseas assignment and the first woman vice president of a corporation. Hart stayed with Exxon for 30 years serving in several different capacities. She provided her service in the corporate planning department in New York City and was assistant manager for corporate planning in Tokyo in the 1960s. Later she was assigned to the marketing department in Exxon’s London affiliate. During the 1970s Hart went on to work on energy policy in the Middle East.

After Hart left Exxon, she established her own consulting practice, which entailed such duties as strategic development for Fuel Tech, a venture capital company. Now retired, Hart focuses her energies towards educational and environmental issues and an education. She is chair of the board of Scenic Hudson, an organization dedicated to preserving and protecting the Hudson River Valley. She also has served on the President’s Advisory Council of Teacher’s College, Columbia University, and on the board of directors of the Institute for Life Coping Skills.

Hart also has been an influential and productive volunteer for Cornell. She is a lifetime member of the Cornell University Council and served as the council’s vice chair from 1979 to 1982 and as chair from 1986 to 1987. She was named a presidential councilor in October 1996 and served on the Cornell Board of Trustees from 1979 to 1985. Hart also is a founding member of the Cornell University Engineering Advisory Council, provides annual support for a female graduate engineering student, and has established a deans’ discretionary fund that has been applied to a program that encourages talented female high school students to consider careers in engineering.

Archer’s research focuses on transport properties of polymer liquids. His interests include novel self-lubricating polymer coatings for small mechanical systems and applications of nucleic acid branched junctions for sequence-dependent sorting of DNA.

Alumni Focus: Samuel Fleming ’62

Samuel C. Fleming, B.Ch.E. ’62, who serves as the first chairman of Cornell’s Life Sciences Advisory Board, founded Decision Resources, Inc., a company best known for its analyses of global biopharmaceutical and managed care markets. From 1980 through 2003, he served as chairman and chief executive officer of the firm. Fleming’s current activities focus on the impact of the life sciences revolution on the quality of health care. He is president of Briland Ventures, which analyzes the impact of transforming technologies. Fleming joined the Cornell Board of Trustees on July 1, 1997, and has served as a vice chairman of the board since 2002. He is a member of the Engineering Advisory Council and earlier served on the Chemical Engineering Advisory Council.

I had the pleasure of meeting Sam Fleming a couple of years ago in his Waltham, Mass., office. He has an easygoing demeanor that makes me feel welcome as did a tour of his company, Decision Resources. It is always nice to meet our alumni and be able to place a face with a name, but it is even more gratifying to be able to share in their world. So here is “Up Close and Personal” with Sam Fleming.

Felicia Why did you choose to attend Cornell University? Sam: When I was a high school junior in Wilmington, Delaware, Walter Carpenter of the DuPont Company sponsored a program to provide students interested in chemistry and chemical engineering an opportunity to visit Cornell for a weekend. My chemistry teacher asked if I had any interest. I said yes. That weekend was my first exposure to the famed Dorary Rhodes program in chemical engineering. It was a fascinating opportunity to learn about chemical engineering and Cornell in the Soviet era. After that weekend, studying chemical engineering at Cornell was my first choice.

What was the value of your Cornell education? My Cornell education was valuable in many ways: one of the most important was learning how to solve complex problems. Another was exposure to a realm where the highest standard of performance was the expected norm. Was there a specific ChemE class that you found particularly useful in terms of theory or practice in your professional encounters? Prof. York’s unit operations course was one, but not for the reason that today’s students might think. Prof. York gave two grades on any work you did—one for technical quality, and the other for presentation, and then he multiplied the two grades together. If you got a 90 for technical and 80 for presentations, your overall grade was 72. This really focused our minds on the fact that to get the hoped-for results from technical work, it had to be presented effectively.

Who was your favorite ChemE professor? I can’t pick one—the quality of the program was high, with many interesting and talented professors.

As a School of Chemical Engineering alumnus, what do you think about the growth of the chemical engineering discipline into new areas, particularly the life sciences? I think it has evolved in a natural way over time. For example, my first job was as

(continued on page 9)
Jeffrey D. Varner Comes to CBE School from Industry

Jeffrey Varner had been working as a consultant to Genencor International, Inc., and DuPont Biotechnology on a joint project that would win the Presidential Green Chemistry Award when his postdoctoral adviser, the renowned James E. Bailey of the Institute of Biotechnology at ETH-Zurich, died of colorectal cancer. Varner’s part of the project had been to develop mathematical models of microorganisms producing small molecules that, when polymerized, could be used to make fabrics with appealing properties.

When Bailey, who (along with the department’s Michael Shuler) had been a seminal thinker in bringing the field of biology into chemical engineering, died before reaching the age of 60, so did that person Varner would later describe as “the old me.”

“It took a while but I began thinking to myself, is this how I want to use my talents, or can I expend my energy having a health impact?” Varner recalls. “If you can give somebody six more months of a good life with their family, it’s worth a professional risk.”

Varner has come to this conclusion not once, but twice in his relatively brief career. The first time, it prompted him to accept an offer as a staff scientist with Genencor to pursue medical therapeutics full-time; the second, to come to Cornell.

Way of targeting and hitting only the cancer cell, without poisoning other parts of the body,” Varner explains. “While this approach is the cutting edge of cancer research, there are many questions to be answered.”

The questions his group will be investigating fall into three main categories: making the targeted protein molecules, delivering them to the cancer cells, and discerning the various mechanisms of cellular death they could deliver.

In addition to his research programs, Varner will play a key role in expanding the CBE School’s core curriculum in mathematics, required for all graduate students. No stranger to teaching, Varner was awarded the teaching assistant of the year award twice while pursuing his Ph.D. at Purdue University. After his postdoctoral years with Bailey in Switzerland, Varner took a 14 months in the Department of Chemical Engineering and Materials Science at the University of Minnesota. There was awarded the highest teaching rankings in the department for his courses on the mathematical modeling of biological networks.

Varner’s own evolving attitude toward the field of mathematics offers a great advantage.

“I hated math in high school and didn’t care for it much as an undergrad either,” Varner explains. “But over the years it grew on me until now I love it, so I hope to impart some of my enthusiasm to students.”

As a self-described risk-taker, he’ll also offer students the voice of experience when it comes to the vagaries of pursuing entrepreneurial science. Varner had been lured away from his first stint in academia by the dot.com boom. He founded a startup called Akiva, a company that developed a software infrastructure to rapidly and easily interconnect different data formats for electronic trading as well as for moving different kinds of content into different devices such as cell phones, PDAs, and conventional PCs.

Akiva lived two years. To hedge against the possibility

“It took a while but I began thinking to myself, is this how I want to use my talents, or can I expend my energy having a health impact?”

“Mathematically speaking, which is my area of expertise, they are very close to each other.”

Varner was just hitting his stride when, owing to a series of business decisions, Genencor closed his unit on July 29, 2005. By mid-August he was settled in Ithaca. An academic setting will allow him to build his own research group in computational molecular medicine. The team he assembles will work on developing targeted protein therapies for colorectal cancer and two variants of leukemia, one being pediatric leukemia.

“At Genencor we were working on a molecular way of targeting and hitting only the cancer cell, without poisoning other parts of the body,” Varner explains. “While this approach is the cutting edge of cancer research, there are many questions to be answered.”

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LECTURES

Georgiou Delivers 2005 Julian C. Smith Lectures

George Georgiou, the Joe C. Walter Chair in Engineering at the University of Texas at Austin, delivered the 18th annual Julian C. Smith Lecture in the School of Chemical and Biomolecular Engineering on Monday, April 18, and Tuesday, April 19. Georgiou’s lecture topics included “Synthetic Biology: Biochemical Engineering Revisited” and “Engineering and Structure-Function of Therapeutic Antibodies and Enzymes.”

Georgiou received his B.Sc. degree from the University of Manchester Institute of Science and Technology in 1981. He received his M.S. and Ph.D. degrees from Cornell University in 1983 and 1987, respectively. Georgiou’s research currently focuses on the engineering of antibodies and enzymes, and protein folding (in vivo).

Georgiou’s research interests are in biotechnology with special emphasis on development of new technologies for protein engineering and molecular therapeutics. His group also is working on mechanistic aspects of protein biogenesis, focusing on protein secretion in bacteria, protein oxidation and folding in the cell, and the regulation of mRNA degradation. Georgiou has authored over 150 research publications and is co-inventor of 30 issued and pending patents. He recently was elected to the National Academy of Engineering (NAE).

Georgiou is the recipient of many prestigious awards, including the Professional Progress Award for Outstanding Progress in Chemical Engineering from the American Institute of Chemical Engineers, the Presidential Young Investigator Award, and the E. Bergman Prize from the U.S.-Israel Science Foundation.

Ware Presents 11th Annual Raymond G. Thorpe Lecture

Robert Ware, senior process technologist in the engineering division of the Rohm and Haas Company, delivered the 2004 Raymond G. Thorpe Lecture in the School of Chemical and Biomolecular Engineering. His talk, titled “Process Innovation in Specialty Materials Design and Manufacture for a Sustainable Future,” was presented on Thursday, November 18, 2004, in Olin Hall on the Cornell campus.

Ware’s responsibilities at Rohm and Haas include process development, identifying improved manufacturing solutions, and leveraging process technology across the company to help achieve business objectives. Before joining Rohm and Haas in 2000, he spent 16 years with Mobil Oil in various positions of responsibility in research and development, process scale-up and design, and commercial support of petroleum refining and petrochemical technology. Ware earned an Sc.D. from the Massachusetts Institute of Technology, an M.S. from Cornell, and a B.S. from Worcester Polytechnic Institute, all in chemical engineering. He is the co-inventor on 25 U.S. patents.

Ware is a member of the American Institute of Chemical Engineers, American Chemical Society, Sigma Xi, and Tau Beta Phi. He has served as chairman of the Catalysis Club of Philadelphia and currently is active in community organizations. He has maintained ties with Cornell through the college relations team of Mobil and Rohm and Haas and currently serves on the CBE School’s advisory council.

The Raymond G. Thorpe Fund enhances undergraduate education by bringing industrial and academic visitors to the School of Chemical and Biomolecular Engineering. It was established in 1989 by alumni and friends to honor Thorpe on his retirement after 39 years on the faculty.
Chemical and Biomolecular Engineering Advisory Council

The Advisory Council of the School of Chemical and Biomolecular Engineering was created in 1981 to assist in the development and long-range planning for the rapidly growing school. To continue the tradition of excellence in professional programs while expanding graduate research programs, Julian C. Smith, then director of the school, asked representatives from the industry and academia to join in giving the school the guidance from knowledgeable people who have an interest in the quality of our future—and who can help us in charting our directions.

Advisory Council members serve a three-year term and convene once a year, with meetings at the faculty and students of the School of Chemical and Biomolecular Engineering and administrators of the university and College of Engineering. This year’s meetings were held on September 30 and October 1.

2005 Advisory Council Members

Rakesh Agrawal
Winthrop E. Stone Distinguished Professor of Chemical Engineering, Purdue University School of Chemical Engineering

Timothy J. Anderson
Professor, Chemical Engineering Department, and Associate Dean, College of Engineering, University of Florida

Leon B. Anziano
Visiting Professor, University of New Haven School of Business

Pablo G. Debenetti
Class of 1950 Professor, Department of Chemical Engineering, Princeton University

Juan J. de Pablo
Howard Curier Distinguished Professor, Department of Chemical Engineering, University of Wisconsin, Madison

Robert A. Ganz
Senior Adviser, ExxonMobil Chemical Company

George Georgiou
Joe E. and Walter Chair in Engineering, Chemical Engineering Department, University of Texas at Austin

Kent E. Göken
Senior Scientific Director, BioPurification Development

Ronald Larson
Chair and G. G. Brown Professor of Chemical Engineering, University of Michigan

A. Y. (Gus) Noojin III
Past President and CEO, Shell US Gas and Power

Dennis C. Prive
Gulf Professor of Chemical Engineering, Center for Complex Fluids Engineering, Department of Chemical Engineering, Carnegie Mellon University

Charles M. Shafran
Vice President, Strategic Planning for Pfizer Global Manufacturing, Pfizer Inc.

Jefferson W. Tester
H. P. Messner Professor of Chemical Engineering, Chemical Engineering Department, Massachusetts Institute of Technology

Matthew V. Tirrell
Richard A. Hull Professor and Dean, College of Engineering, University of California, Santa Barbara

Robert A. Ware
Senior Process Technologist, Rohm and Haas Company

December 2005 - Olin Hall News 9
The Legacy of Austin O. Hooey

Just months before her passing in February 2004, former securities analyst and animal lover Miss Austin O. Hooey announced that she had given the Cornell School of Chemical and Biomolecular Engineering (CBE) a gift of over $3 million in memory of her father, William C. Hooey, Class of 1912.

As part of her gift, Miss Hooey requested that the directorship of the CBE School be named in memory of her father, who passed away in 1963. William Hooey felt he owed much of the success of his career to his education at Cornell and to the profession of chemical engineering in particular.

This gift was the latest in a succession of financial gifts given to the university and its students over the decades by the Hooey family. In addition to honoring her father, Miss Hooey showed her care and concern for animals by giving her name and funding to the deanship at the College of Veterinary Medicine and a scholarship to support students in the field of veterinary medicine or chemical engineering.

The following profiles give a representative sample of the people, research, and technologies of the School of Chemical and Biomolecular Engineering that are benefiting from the generosity and foresight of such people as Austin and William Hooey.

The Directorship

The current William C. Hooey Director of the School of Chemical and Biomolecular Engineering, Paulette Clancy, has many reasons to be grateful for the generosity of the Hooey family.

In addition to a new lounge for graduate students in Olin Hall named after Austin Hooey (see sidebar, page 11), this woman's gifts helped to establish awards and prizes for graduate students in the field. The latest awards, which Clancy describes as "a recognition of the quality of their research," went to Cormac Byrne and Qiang Zhang. Their work was presented to the Cornell community as two seminars that highlighted their contributions to the areas of fluid mechanics and polymeric nanostructures, respectively.

CBE graduate students also benefited from Austin Hooey's generosity from a scholarship of more than $1 million.

"With help from the Cornell Graduate School," says Clancy, "the Austin Hooey scholarship made it possible to leverage two fellowships, both of them to women graduate students."

Clancy notes that Miss Hooey's gifts "help us to attract the best graduate students--giving us an edge in recruiting high-quality scholars and researchers for Cornell."

Having had the benefit of excellent mentors when she came to Cornell in the 1980s to work as a postdoctoral researcher in perturbation theory of fluids, Clancy has returned the favor to the school's students and faculty, recognized by awards she has received for mentoring students and promoting women's advancement at Cornell.

"Smart Dressing"

Someday patients with chronic wounds, those that take weeks or more to heal, may find themselves outfitted by their doctors with a "smart dressing," a special bandage that could take in and remove fluids and "adapt" with the wound as it changes.

Abraham Stroock, an assistant professor in the School of Chemical and Biomolecular Engineering, says he "came up with the idea very naively here in Ithaca, then brought it down to Dr. Roger W. Yurt (a burns surgeon and head of the Burns Center at New York Presbyterian Hospital in New York City) with my postdoc in the fall of 2003."

Stroock, whose interest is in "the physical chemistry of materials," also conducts research to create methods of miniaturizing chemical approaches for biomedical applications. When Stroock received seed funding to initiate a research collaboration with Weill Medical College and the New York Presbyterian Hospital Burns Center, he took his expertise in chemical engineering and applied it to create an "active wound dressing" that would control the wound area using microtechnology.

Stroock emphasizes that the "smart dressing" is "still in the early stages of development. We are studying these nonhealing wounds and the technology to repair them at the same time."

He notes that "Cornell is primed to take advantage of this compatibility between engineers and doctors. For such broad applications, Cornell is the leader in this area."

Biomarkers

Another Cornell faculty member who has benefited from the funding and has collaborated with Weill Medical College is Kelvin Lee, director of the Cornell Institute for Biotechnology and Life Science Technologies and director of the New York State Center for Life Science Enterprise. Lee is the Samuel C. and Nancy N. Fleming Associate Professor in the School of Chemical and Biomolecular Engineering.

Lee's knowledge and experience with chemical and biomolecular engineering have led him to work closely with doctors at Weill to identify and study biomarkers for diagnosing Alzheimer's disease, an illness that slowly robs people of their memories and eventually their lives as it destroys the brain.

"With current methods, we can identify Alzheimer's only during a postmortem examination, but new approaches may permit a premortem," explains Lee. "We also want to identify the disease earlier to support finding a cure."

Lee notes that the preliminary results of the Phase 1 clinical trials at Weill using a new strategy for treating the disease look promising.

He and his colleagues also have benefited from the Merck Bioprocess undergraduate research funding scholarship awarded in 2004.

"We've each hired one Cornell undergraduate for the summer to work on various projects that relate to biomolecular engineering and broadly intersect with the sponsorship," says Lee.

"This is a very exciting time at Cornell," he adds, "across the campus and in our field for both students and faculty."

10 Olin Hall News • December 2005
Hooey Gift Establishes Graduate Student Awards and Graduate Student Lounge

As part of Austin Hooey’s endowment fund, the School of Chemical and Biomolecular Engineering now is in a position to recognize a small number of Ph.D. students for excellence in course work and research.

The Austin Hooey Prize for Graduate Students consists of a certificate and a check for $500. Up to four awards will be made each year to Ph.D. students cited for “outstanding performance in research leading to the Ph.D. degree.” Winners of the Austin Hooey Prize are invited to make presentations in the CBE seminar series. The winners of these awards are chosen from nominations made by their peers and the faculty and chosen by the director of graduate studies.

In this inaugural year of the award, we made four awards to Ph.D. students. Two prizes were awarded in the fall 2004 semester to Leonard Harris and Aravind Kallampalli. Harris (Clancy research group; B.S., University of Denver) is developing an elegant multiscale modeling approach that can be used to study population dynamics in stochastic (noisy) systems, from flagellar construction in E. coli to interstitial defect clustering in semiconductors. Kallampalli (Engstrom group; B.S., Birla Institute of Technology, India) is using energetic molecular beams to understand fundamental physical phenomena associated with growing high-quality organic and inorganic semiconductor films for molecular electronics applications.

Edna O. and William C. Hooey Prizes were made to Cormac Byrne (Stein group) and Qiang Zhang (Archer group). Byrne, a graduate of University College Dublin, Ireland, was cited for his research on the mathematical modeling of a novel method to cast micron-scale aluminum ribbon in a single stage. Zhang, a graduate of Tsinghua University, China, was cited for research that explains the origin of solid-like properties of isotropic spherical nanostructures dispersed in polymer hosts at concentrations well below the continuum percolation threshold.

In addition to the graduate student awards, to honor Austin Hooey’s keen sense of extended family, we have used the endowment to set up a graduate student lounge in the so-called “penthouse” in Olin Hall. Though not as elegant as a Manhattan loft, a room in the newly renovated penthouse was dedicated to provide the first lounge specifically for graduate students. Hooey funds were used to buy furniture for the lounge and to install a foosball table, dartboard, and other “essentials” for the space. The lounge is well used by the nearly 100 M.Eng. and M.S./Ph.D. students in Olin Hall.

December 2005 • Olin Hall News 11
Alumni Notes

30s
Victor K. Hendricks, B.Chem ’32 (Class of ’31), has been retired from C. E. Lummus for 15 years. After having completed a four-year consulting contract with Brown & Root, he is enjoying caring for his Missouri home with his wife, Nan.

50s
Stephen R. Cohen, B.Chem. ’51, is retired from fundamental research in neurochemistry. He is living in Bronx, N.Y., and spends his time composing classical music. Recently he wrote a piano sonata and four-movement suite for unaccompanied flute.

Dean E. Danzer, B.Ch.E. ’59, is retired from Monsanto and actively traveling, biking, hiking, doing church work, and managing retirement investments in St. Louis, Mo.

Jesse Tarleton, Ph.D. ’58 and Lavonne Tarleton, B.Ch.E. ’57, are still happily married after 44 years. Both are retired, Jesse after two years at DuPont and 27 years as a professor of business administration at College of William and Mary, and Lavonne after two years at DuPont. They have two children and are enjoying life in their Williamsburg, Va., home.

60s
Albert J. Berger, B.Chem. ’64 (Class of ’63), has been appointed acting chair, Department of Physiology and Biophysics, School of Medicine, University of Washington.


Jeffrey F. Sheara, B.S. ’67, M.Eng. ’68, is working for DuPont in Wilmington, Del., and living in West Chester, Pa.

Larry Wheeler, B.Ch.E. ’61, retired from Shell Chemicals in August 1999 as VP-Middle East based in Dubai, UAE. He is now an independent petrochemicals consultant in Houston.

70s
Joyce C. Chiu, Ch.E. ’78, is an MBA candidate at Babson College and is working as project manager/quality engineering for the Polaroid Corp.

David A. Hurwitz, B.S.Ch.E. ’70, after more than 10 years with Arthur D. Little, Inc., is doing strategic planning, mergers and acquisitions, and technology management for chemical companies, particularly specialty and fine chemicals.

Stu Korchin, M.S. ’77, became Board Certified by the American Board of Radiology in Therapeutic Radiological Physics and previously was certified in Diagnostic Radiological Physics and Nuclear Physics. He also is serving as radiation safety officer at New Britain General Hospital in Connecticut.

Jerry Miknis, B.S. ’72, is living in Carbondale, Pa., where he is the director of program management with Gentex Corporation.

This year classes 5s and 0s celebrated with the CBE School on Saturday, June 5. The day began with the annual breakfast at 8:00 a.m., followed by a talk from resident industrial practitioner Al Center ’65. Director Paulette Clancy made her annual welcome to alumni, and Dean Kent Fuchs greeted alumni individually. It was a beautiful day in Ithaca, and everyone had a great time.
Profile: **Class of 2005**

Forty-two bachelor of science degrees in chemical engineering, as well as one independent major, were awarded on Sunday, May 29, during the CBE School's diploma ceremony. Approximately 350 undergraduate and graduate students, relatives, friends, and faculty attended the ceremonies and lunch.

Past diploma ceremonies have been presented in two lecture rooms to accommodate a large number of students and guests. This year we were able to present degrees to this close-knit group of seniors in our large auditorium on the first floor. Professor Paulette Clancy began the ceremony with an opening speech. Then Professors Matthew Delisa, Al Center, and Bob Ferguson announced each person and congratulated the senior capstone design course groups for their presentations on ethanol production from corn, ethylene oxide to styrene, and the isosocetene project.

Of the Class of 2005, 45 percent are continuing their studies in graduate schools six have begun chemical engineering Ph.D. programs, five have joined our M.Eng. program, three have entered a biomedical engineering M.Eng. program at Cornell. Four are pursuing other graduate degrees, and one expects to go to medical school.

Thirtysix percent of the class accepted employment at 17 different companies. The largest employers were Monsanto Co., Inc. (6), Automation & Control Specialists (2). The average starting salary was $56,614. These recent graduates are employed in the following areas: pharmaceuticals (3), consumer products (2), food products (2), chemicals (1), consulting/engineering (1), finance and investing (1), petroleum products (1), and other areas such as education (2), automation engineering (1), industrial gases (1), and environmental software (1). Seven students were still seeking employment at the end of June.

**Class of 2005 Destinations**

- Graduate Study
- Employment
- Seeking Job

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Staff News

CBE School Holds Hooey Staff Appreciation Day

In honor of the Austin Hooey gift to the School of Chemical and Biomolecular Engineering, Director Paulette Clancy held an appreciation day on June 20, 2005, for the CBE staff. The day commenced with lunch and a wine tasting along the Cayuga Wine Trail. Each staff member received a small token of appreciation, and prizes were given out during the course of the day. Clancy said “this was a small show of appreciation for the tremendous efforts of the CBE staff members to further our educational and research programs.”

Left to right (top row): Brian Ford, Bonnie Sisco, Sally Carland, Felicia Kornegay; (middle row): Belinda Floyd, Glen Swan, Shelby Clark-Sheveller, Carol Caster, Colleen McElhahna, Jan McBride; (bottom): Brandy Lobdell

Faculty Awards and Honors 2004–2005

Lynden A. Archer was promoted to full professor in January 2005 and named the Marjorie Hart Chair of Chemical Engineering. He will begin a sabbatical leave in January 2006 (see story, p. 6).

Paulette Clancy, professor and director, assumed the title of William C. Hooey Director, in recognition of the generous endowment of the directorship by Austin Hooey in memory of her father. Clancy also was recognized by a 2005 Alice and Constance Cook Award for contributions to women’s issues at Cornell.

J. Michael Duncan, associate professor, was honored with a 2004 Stephen H. Weiss Presidential Fellowship Award. This lifetime designation is given to two or three faculty members per year from among nominees across Cornell University for their extraordinary teaching and mentoring abilities.

Yong Joo, assistant professor, was honored with the 2005 NSF Career Award for “Nanofiber Formation Directly from Polymer Melts: A Solvent-Free Approach,” and a 3M Non-Tenured Faculty Award for 2005, designed to support new faculty members. Joo also was awarded a 2005–2006 DuPont Young Professor Grant for his work on electrospun nanofibrous mats.

James Engstrom was promoted to full professor in May and designated the BF-Amoco/H. Laurence Fuller Chair of Chemical Engineering. Engstrom will begin a sabbatical leave in academic year 2006.

Matthew Delisa, assistant professor, won the 2005 NSF Career Award for “Biomolecular Engineering of Complex Protein Machinery in Living Cells” and the 2005 Arnold and Mabel Beckman Foundation Young Investigator Award for “A New Approach to Synthesis and Folding of Modular Proteins via Ribosome

Fernando Escobedo was promoted to associate professor and awarded tenure in fall 2004. Currently he is on sabbatical leave; when he returns he will assume the role of director of graduate studies.

Kelvin Lee has been named the inaugural Samuel C. and Nancy M. Fleming Associate Professor and new director of Cornell’s Institute for Biotechnology and Life Science Technologies. The institute promotes research, education, and technology transfer to benefit the life sciences industries, including agriculture and medicine. Lee received the New York

Upcoming Events

Julian C. Smith Lecture
Spring 2006
Check the CBE web site for details.

Reunion Breakfast
June 10, 2006
Olin Hall, tent on Ho Plaza
Breakfast and talk by Industrial Practitioner Al Center ‘65

14 Olin Hall News • December 2005