The History and Future of Olin Hall

Reunion 2006

Class of 2006 Student Profile

Faculty and Student Awards
The star of this year’s issue of Olin Hall News is Olin Hall itself. This gracious old lady with her elegant brickwork that was so controversial in the 1940s and motifs reminiscent of the Empire State Building, which her architect also designed, provides the north and west “anchor” of the Engineering Quad. But this 65-years-young lady needs a makeover.

The College of Engineering is in the midst of a redesign of its facilities to maintain our prominence as a creative force in research and technology, and the School of Chemical and Biomolecular Engineering is in the vanguard of this planning. As I write this, we are about to complete the design phase of a multi-million dollar project to renovate the entire building. We also plan to create an exciting new wing that Director Dusty Rhodes planned but could not complete, in part because of geological obstacles. But to fund all this, we’ll need your help.

So please read about the history of the building and the attempts of directors beginning with Keith Gubbins in 1985 to renovate the north wing. It’s been 17 years since Ted Doan and other caring alumni raised funds to renovate Olin’s east wing, which still provides excellent space today. Our new dream is to complete the wing that Dusty Rhodes planned: please help us make this happen.

Energy concerns are at the forefront of our thoughts, like those of people across the nation. We sent more graduates to energy companies, from giants like Exxon Mobil to start-up biofuels companies, than to any other type of enterprise. Our research focus on energy and sustainability attracted more prospective graduate students to campus than we had imagined. Student interest has become a large driving force for us to offer a greater number of energy-related research projects. So it was fortuitous that we were able to attract to Cornell a new industrial practitioner, Andrew Hunter, who has worked in energy industries for 30 years (see story, page 3). With Andrew’s leadership and drive, we are offering a master of engineering program in energy economics and engineering this fall. This program will be a unique offering nationwide. I’ll report back on our progress in this regard next year.

A Cornell reception will be held in San Francisco at the AIChE annual meeting this November. Please join us at the Starlight Room of the Sir Francis Drake Hotel on November 14. I look forward to seeing you there.
Andrew Hunter talks about his career and how he came to teach in the UO Lab and Design courses.

Thank you to oil, I was in and out of academia for the first half of my working life. It started in high school when I was lucky to land an oil company scholarship from Caltex Petroleum Corporation to Edinburgh University, graduating first with a B.S. degree in chemical engineering and later with a second degree in applied mathematics. Several years later, I was posted to corporate headquarters in New York City and earned a master’s degree in economics from the New School; some years after that I completed a University of Hawaii mini-MBA business course. All of this education was sandwiched between years I spent in the Middle and Far East, first as a refinery process engineer (designing refinery units) and then as a project engineer (installing refinery units). Back in the head office, I ended up in strategic planning, probing into whether all this designing and installing had been worthwhile.

The company moved its offices out of New York and I elected to stay. Consulting work with the PIRA Energy Group took me into the heart of the U.S. oil and gas business, where I surveyed the micro- and the macroeconomics—and politics—of the industry. I also did stints with the World Bank, conducting energy balances of countries in the Middle East and South America. In the early 1990s, a client asked me to look at a set of Russian refineries and oil fields. That led to three years of interesting, chaotic work in a region that was going through convulsions. I dealt with engineers who had superlative technical skills but no idea of the value of money. The legal and financial systems were nonexistent. I subsequently went to help the Iraqi Kurds build a small oil refinery—they, at least, were grateful for any help. Saddam Hussein was threatening them with one hand and selling them gasoline at an exorbitant price with the other.

I have had a lot of experience with computers and systems modeling and I formed a partnership with a friend who had a novel way of analyzing databases for information—the start of “data mining.” We were able to extract useful relationships from telephone logs, drug test arrays, and protein sequences, but we were too far ahead of the game (this was just before the Internet took off) and the data we needed were only sparsely available. This was proof that timing is everything. I returned to the energy business when oil and gas hit low prices in late 1998 because it was clear that the recoil from this insanity would be substantial.

Following 9/11, I spent three years based in Uzbekistan after I put together financing with partners for a small refinery in northwestern Afghanistan. The aim was to provide fuel for the desperately poor local communities. Crude oil is available locally and an attempt had been made a decade earlier to construct a refinery. But it barely got off the ground and the site was abandoned. Subsequently, the Taliban and the weather wrought further damage. With one old crane, a front-end loader, a bulldozer, lots of willing local labor, and an assortment of pipes and pumps and the like purchased in Uzbekistan and the UK, I oversaw the construction and then did a brief test run. Through satellite Internet, Professor Al Center also provided a sounding board on key occasions. Sadly the refinery is still not running: Afghan politics are complicated.

I often ponder the widespread, generally beneficial but sometimes thoughtless uses of energy that we have created and consider essential. Scientific giants such as Kepler, Newton, Carnot, Otto, Maxwell, Hertz, and Einstein did not foresee what has emerged from their work. But our economy and culture have thrived on the varied uses of energy that have provided us with a rich, complicated life.

After he arrived at Cornell in 1999, Professor Center occasionally asked me here to talk about the oil market, refinery operations, and the prospects for alternative energy. I remember, in particular, a seminar presentation I made about four years ago. I had spent a year looking at research and attending conferences in an unsuccessful attempt to find arguments for investing in alternative energy. My talk was well attended but not well received because I put forward a rather bleak view for the possibilities for wind, solar, and other energy sources. I said that the economics of oil, gas, and coal were so strong relative to these alternatives (one of the problems resulting from the low prices in 1998) that it would take many years, or a shock, before the alternatives were truly competitive. It was frustrating and Al said afterward that if I wanted to make my point I should think of teaching.

The opportunity arose in the fall semester of 2005. Teaching has been a pleasant surprise: it is rewarding to deal with smart and focused students as they move through the learning process. There is satisfaction gained from seeing the concepts take form in another person and there is also, to be honest, rich personal satisfaction. I have been a part of the energy market for a long time, I respect it, and I would now like to pass on to students the insights gained. I believe that if you want to be a proponent of the growth of alternative energy you must first understand the existing energy markets and the economic and technology details of energy supply and demand. So equipped, you can generally sense what will happen even if your timing is not quite right. This is one way of saying that I jumped at the chance to teach an energy economics and engineering suite of courses (ChemE 664 and 665) this fall and in spring 2007. In these courses, I want students who are interested in energy to examine what we know about its economics and technology so that they can consider themselves “energy engineers.”

Brian Ford Leads Changes to Ken Ackley Unit Operations Laboratory

Thanks to the resourcefulness and skill of our facilities coordinator, Brian Ford, we are making small but significant changes to the Unit Operations Laboratory course. The goal is to move simpler experiments into several core undergraduate courses to serve as practical demonstrations of a particular topic described theoretically in the course. This will enable us to increase the writing content throughout our program and to put more emphasis on systems rather than individual equipment operations in the Unit Operations Laboratory course. We hope this will lead to the examination of more complex problems in the UO Lab course than we can currently consider.

The first step in this evolution is the introduction of a double pipe heat exchanger experiment into the fall Heat and Mass Transfer course (ChemE 324) followed by the inclusion of experiments in the Fluid Dynamics course (ChemE 323) in the spring.

Brian has taken “back of the envelope” sketches and turned them into experiments that are very simple to set up and use and that allow maximum visualization of the unit operation under study either by direct observation or through disassembly. Brian has been a member of the staff in Chemical Engineering for 29 years.
This year’s Raymond G. Thorpe lecturer was Tim Weldon ’80 from Intel. His talk was titled “Technology and Manufacturing in the Semiconductor Industry.” This was the first year without Ray’s presence and it was, of necessity, a more subdued event.

Weldon is the first in a long line of B.S., M.S., and Ph.D. alumni of the school who are employed at Intel; he has been a key figure in promoting and sustaining this relationship. Weldon served on our advisory council from 1997 to 2002 and has been a wonderful example of an alumnus who maintained a strong connection to the school throughout his long tenure at Intel.

The Raymond G. Thorpe lecturers for 2006 and 2007 have been set. On November 9, Rebecca (Beckie) Robertson B.S. ChemE ’82 from Versant Ventures will talk about her career as a venture capitalist in the area of biomedical engineering. In 2007, Evelyn Taylor Pearson B.S. ChemE ’84, a technology manager from BP-Amoco, will present the Thorpe lecture. Evelyn will be the first African American named as the Ray Thorpe Lecturer in the (by then) 14-year history of the event.

The 2006 Julian C. Smith Lecture was given by Professor Lanny Schmidt, Regents Professor of Engineering in the Department of Chemical Engineering and Materials Science at the University of Minnesota, on April 10 and 11, 2006. Schmidt’s visit drew an unusually broad audience of more than 100 chemists, engineers, and students to discuss thought-provoking and somewhat controversial lectures on two topics: “Does Renewable Energy Make Sense? An Engineering Perspective” and “Hydrogen and Chemicals from Fossil and Renewable Fuels by Autothermal Reforming.”

The 2007 Smith lecture will be given by Professor Carol Hall, North Carolina State University. She is an alumna of Cornell who was inducted into the National Academy of Engineering in 2005.
The Past and Future of Olin Hall

Beginning on page 6, we offer a detailed history of Olin Hall. To read about plans for the future of Olin, please see page 13.
Sixty-five years ago, construction began on the first official home of the School of Chemical Engineering. Here's a summary of events, changes to Olin, and personal reflections.

A New School and a New Building

At the time the School of Chemical Engineering was founded in 1938, classes were held mainly in Baker and Sibley Halls. Professor Emeritus Robert K. Finn ’42 recalls: “Julian (Smith) and I were classmates. Classes were small back then, so we knew each other well. I remember I had to study in Baker Lab before Olin Hall was completely built.”

Once established, the School of Chemical Engineering became part of the College of Engineering with Fred H. “Dusty” Rhodes as director. Rhodes and Dean Solomon Cady Hollister began to negotiate with Franklin Walter Olin, a member of the Cornell class of 1886 and president of Olin Industries, to raise funds for a new building for the School of Chemical Engineering. Olin graciously gave $685,000 in memory of his son, Franklin W. Olin, Jr. ’12, a Cornell civil engineering graduate. A grant of $29,000 from the university covered any excess costs. Another grant of $250,000, from the Parmalee Fund, was used to purchase laboratory equipment, lights, office furniture, and other necessary items. Olin Hall would be the first new engineering building at Cornell University in more than 30 years and the first on the south end of campus.

Construction Begins

The location chosen for the new building was known as Sage Green, bordering Sage Hall, which was a women’s dormitory in those days. The firm of Shreve, Lamb, and Harmon of New York City (the same firm that designed the Empire State Building in 1931) designed Olin Hall in the Art Moderne style. The firm worked closely with Rhodes in designing the interior of the building to his specifications. Assistant Professor Oscar J. “Och” Swenson also contributed his ideas to the project.

When digging of the foundations for Olin Hall began in April 1941, bedrock was discovered at the north end of the front wing, which made it necessary to shorten this wing by seven feet. During the summer of 1941, structural steel beams were put up. “World War II had already begun in Europe,” says Finn, “and war was imminent for the United States. Dusty took the precaution of ordering steel beams way ahead of time so that the supply was on hand. Completing a building during wartime in 1942 was no easy task.”

Brick Exterior Causes Controversy

The interior was designed with cinder-block walls, concrete floors, and windowless lecture rooms. This design, although not impressive, was functional and effective, and few people objected. The design of the exterior, on the other hand, generated a lot of controversy on campus. The brick construction was considered too modern and it clashed with neighboring buildings. Finn recalls: “The brick construction was considered a ‘radical idea’. . . .” A compromise was made to bring in native gray-brown Ithaca stone to use in addition to the brick. Finn notes that the building ended up being quite attractive.
The School Officially Moves

In September 1942 the school moved from Baker to Olin Hall, the first building on what was to become the College of Engineering’s new quadrangle. Finn says that there were a few offices and classes in Olin, but some classes were still given in Baker. Professor Emeritus Julian C. Smith ’41 recalls “watching Olin Hall being built, and our graduation ceremony in 1942 that was held in the lounge before the building was officially open.” By February 1943 the transfer was complete, and the building was dedicated.

Students Live in Olin

After World War II, an influx of students to the school led to many shortages, including housing. Finn describes Dusty’s concern about student life and his worry about the housing shortage: “During a period of time after the war, because of the influx of students, Olin Hall was used as a housing quarters.”

A Name Change

The school officially became the School of Chemical and Metallurgical Engineering in 1947. Professor Peter E. Kyle obtained a grant from Bausch and Lomb for a first-class metallography laboratory. He also received a grant from Air Reduction for a laboratory for metal cutting and welding. These laboratories were set up in Olin Hall. In 1951 the Geer Laboratory of Plastics and Rubber was established in the basement through a gift of equipment from inventor William C. Geer of Ithaca.

Hot Lecture Rooms

Emeritus Professor Ferdinand Rodriguez remembers the state of affairs of the lecture rooms in the 1950s. “When I arrived in 1956 few improvements had been made to Olin Hall since it had been first occupied. I am sure most students remember how hot the
lecture rooms got, even in the dead of winter. It made it hard to stay awake. I am afraid that our lectures often were not stimulating enough to keep some from drowsing off.”

Lab Benches and Student Offices Provided

Around 1961, laboratory benches were installed in Room 345 with the idea that the School of Chemical Engineering might need to teach its own physical chemistry courses. With an increase in the number of graduate students doing design projects and individual research projects, each student was given office space in Olin, which was usually shared by one or two others. “When I came to Olin Hall, there were few dedicated offices,” recalls Rodriguez. “Most rooms were office-lab combinations, and many grad students carried out their research right in their office-lab space. After renovations, separate offices were the rule. Fortunately, I was able to hold out for a combination as long as I taught. This enabled me to carry out experiments in a hood right next to my desk and phone. . . . Unfortunately, OSHA regulations now discourage the office-lab combination.”

Olin Hall had become very crowded, not only as a result of research equipment. Rodriguez says, “Multiple uses for some rooms sometimes led to interesting situations. Once in the 1970s when college officials were surveying the building, they came across a basement ‘lab’ in which a graduate student had just about finished constructing a full-sized canoe. The humor of the incident somehow escaped the officials.”

In May 1963 the metallurgical engineering faculty moved to Bard Hall, thus giving back some 12,000 square feet of floor space. We became the School of Chemical Engineering once again. In 1963 a model shop was set up in the basement of Olin Hall to accommodate the students taking Plant Design, where they spent six weeks of the spring semester building their models. Also established was a biochemical engineering laboratory for Professor Finn in the northeast corner of the first floor.
Computer Lab Created in the 1970s
In 1973 the Division of Basic Studies of the College of Engineering took over the north part of the first floor, and the Chemical Engineering library was moved to the second floor. In September 1976, Professor Keith E. Gubbins came to Cornell as the Thomas R. Briggs Professor of Engineering. His computing needs were greater than could be supplied by the school. Smith recalls, “In about 1979 we received a $500,000 grant to renovate the building. It didn’t go very far: we did improve the first-floor labs, and I bought Keith Gubbins a PDP computer for his simulation research, but there was far too little money for a real renovation or addition.” Thus Smith, who was director at the time, was able to make a computer facility out of two first-floor rooms and pay half the cost of the PDP computer. The rest of the cost was covered by an NSF grant. This became the first departmental computing facility in the College of Engineering.

Research Facilities Provided
A place to house an ultrahigh-vacuum for studying phenomena such as chemisorption and catalysis was constructed in the basement of Olin in 1977 when Robert P. Merrill became the Herbert Fisk Johnson Professor of Industrial Chemistry. This appointment is another example of the substantial financial commitment required by the school and the college to provide needed research facilities.

The first four years of Julian Smith’s directorship saw great changes to the facilities because of the increase in research conducted at the school. In addition to Merrill’s laboratory and the computer facility, new construction provided a microbiology laboratory on the third floor, nine refurbished laboratories in the east wing, an expanded electrical system, and a new roof. The Unit Operations Laboratory was painted for the first time since its construction in 1941. A Pew Foundation grant funded most of these changes.

Lounge and Mural Renovated
During the next four years of Smith’s leadership, more changes were made to Olin Hall. In 1980 Joseph Coors ChE ’40 provided funds to renovate the student lounge, which was renamed in honor of Fred H. Rhodes. As part of the renovation, the mural, which depicts the five-year chemical engineering curriculum, was restored by David Finn, son of Professor Finn, through funds supplied by Mike Sfat B.ChE ’43. The mural was originally painted in 1949 by Elizabeth Adelaide Briggs, daughter of Professor Thomas R. Briggs, a highly respected chemistry professor.

Labs Overhauled and Other Changes Made
Rooms on the third floor were overhauled as laboratories for studies of rheology and thermodynamic properties; the Sun Company awarded a grant to equip the Process Control Laboratory; and a Kinetics and Catalysis Laboratory was funded by Chevron USA. More additions were made to the computing facility, and a Hewlett-Packard data-acquisition
system was put in the Unit Operations Laboratory. The machine shop acquired a new lathe and a milling machine. Research expenditures reached almost $1.3 million in 1982–83.

Computer Facilities Deemed Inadequate
Olin’s computer facilities did little to help the undergraduates, who relied heavily on the university’s central computer system. Limited access to computers made it difficult for the students to use computer programs for their courses. When the Chemical Engineering Class of 1960 heard about this dilemma, they launched, as a 25-year reunion project, a fundraiser for an instructional computing facility that was to be used exclusively by the undergraduate students. The new facility had several microcomputers and printers with connections to a central DEC VAX computer. The class set out to raise $50,000; much to their surprise, they raised $85,000 and presented this gift to the school in 1985. The new facility was constructed in the basement of Olin and dedicated in May 1987.

First Major Renovation Planned in 1980s
By 1983 most of the entering M.S./Ph.D. students planned to complete a doctorate. Once again, space was in short supply. Despite recent improvements, Olin Hall was still unsuited for the school’s future needs in research and graduate instruction. The only remedy was a major renovation of the building.

When Keith E. Gubbins became director in 1983, one of his principal goals was to renovate Olin Hall on a grand scale. The university funded an architectural study of the building, and the following recommendations were made: grouping faculty offices and reducing their size; creating new laboratories suitable for advanced research; improving the lecture rooms; and making general improvements to comply with current building codes. When the Theory Center was given a temporary home in Olin Hall in 1985, it appeared that money would be available to renovate offices in the north wing. Unfortunately, the funds dried up.
The ever-changing fields of science and technology that guide chemical engineering once again made the learning environment and research facilities inadequate for the advanced research being undertaken by the students and faculty. A fund drive was initiated by the college’s development office to raise approximately $5–$7 million to renovate the east wing of Olin Hall. This became Phase I of a proposed multi-phase project. The drive started out slowly but, in time, was successful. The Eastman Kodak Company, Harry Mattin B.Chem. ’18, and Mattin’s company, the Mearl Corporation, contributed $1 million each, along with many other gifts, large and small, from alumni and industrial firms, which brought the fund to well over $5 million. The New York City firm of Wank, Adams, Slavin Associates developed the plans for the renovation and work began in August 1987.

The installation of new floor slabs in part of the high-bay laboratory on the first and second floors created new laboratory space. Twenty-three new offices and laboratories were installed in the basement and on the first and second floors. The plans also included a new stairway and Olin’s first passenger elevator. Overall, 10,300 square feet of new and renovated research laboratory space were added and utilities serving 3,600 square feet of teaching laboratory space were upgraded. The offices and laboratories were relocated and consolidated in stages so as not to disrupt instruction and research. These new laboratories provided state-of-the-art facilities necessary to attract superior students and faculty as well as ensure the continued excellence of the chemical engineering education at Olin Hall. These laboratories were set up for teaching and research in biochemical engineering, fluid mechanics, polymers, kinetics, catalysis, and thermodynamics.

A building fund committee, chaired by Herbert “Ted” D. Donn Ch.E ’49, solicited alumni for contributions toward the renovation of the third floor, which was the second phase of the renovation project. Twelve new laboratories were added. Renovation of the lower floors in the east wing was completed by the end of 1988 and the third floor renovation completed shortly thereafter. These new laboratories ensured Cornell’s position as a leader in chemical engineering in the United States.

Olin Hall in the 1990s

In 1995, for its 35th reunion project, the Class of 1960 set out once again to raise funds to benefit the instructional computing facility. Advances in scientific and technical computing, the dawn of networking workstations, as well as the demand for increased access to the information highway demanded constant upgrading and purchasing of additional hardware and software. Likewise, a generous gift establishing the H. Laurance Fuller (B.ChE ’61) and Nancy Lawrence Fuller (HE ’62) Endowment Fund provided the funds necessary to continue to improve and update the computing facility. The generous support of the Class of 1960 along with the support of the Fuller family enabled Olin Hall to keep pace with the ever-changing technological environment.

An Intel PC lab was established in 1995 to help meet the needs of the increased enrollments and the technical complexity of our B.S. and M.Eng. programs. In response to a proposal written by Professor Brad Anton, Intel Corporation funded the purchase of 20 Pentium-based personal computers. Computer equipment dedicated to research was moved to the second and third floors of Olin Hall to institute Room B-78 as the new lab. Intel’s donation to the B.S. and M.Eng. programs also made it possible for Olin Hall’s students to keep pace with technological advances.

New Distillation Column Built

In 1996 visiting fellow Ken Ackley, B.ChE ’61, M.Eng. ’66, worked on getting a new distillation column built in the Unit Operations Lab. The original distillation column had been removed when the east wing of Olin Hall was renovated in 1989. To many alumni the old distillation column represented the LONG hours spent in Olin. Additionally, unusual happenings in the Unit Operations Lab, such as animal invasions and occasional explosions, have lent themselves to Olin Hall legend. Distillation was the most common separation method used in chemical engineering, and for this reason, Ackley built the new, large distillation column in the lab to familiarize the students with this method.
Another Name Change

Faculty discussions that began in 2000 in regard to forming a drug delivery program led to consideration of a name change for the School of Chemical Engineering. It was decided that the name should include “biomolecular engineering.” This phrase was first used in 1992 at an NIH meeting and defined as follows: “Biomolecular engineering is research at the interface of biology and chemical engineering and is focused at the molecular level.” In 1955, when Professor Finn joined the faculty, the school started teaching and doing research programs in biomolecular engineering. Those programs had grown over the years as more faculty and students became involved in that discipline. The faculty believed that the new name, the School of Chemical and Biomolecular Engineering, better reflected their educational activities and strategic plan and was consistent with changes happening at the national level as well as within our own school. Moreover, several of the faculty had already been focusing their research at this interface. In October 2001 the name change was approved. The School of Chemical Engineering at Olin Hall began a new era as the School of Chemical and Biomolecular Engineering.

Students in the undergraduate class of 2006 were the first required to take a course in modern biology because of the growing importance of the connections between chemistry and biology. A biomolecular track was also considered, which would allow students to substitute courses and would require others, such as Principles of Biochemistry, Molecular Bioengineering, Cellular Bioengineering, Biomedical Engineering, and Bioprocess Engineering.

What Next?

Olin Hall has undergone many changes since its construction in 1941. An influx of students to the chemical engineering field after World War II led to the arrival of new faculty and spurred the need for facilities and laboratories to develop vibrant research and teaching programs. Since that time, the dedicated professors who became part of the school’s history brought new visions of leadership in chemical engineering in the country. Through their visions, we have been able to provide the best learning and teaching environment that we can for our students. Support for the creation of this wonderful environment has been made possible by Olin’s famously generous alumni and corporate sponsors.

Where do we go from here? We have new plans to extend the reach of chemical engineering research: from new burn treatments and breast cancer therapies, to biomass conversion strategies, new electronic materials for faster computers, and areas that we can only imagine. A new wing is slated to be built onto Olin Hall to house new laboratories, new student spaces, and perhaps a new center for the study of energy systems. This is a very exciting time for the school.

Olin Hall Needs a Facelift

When I read the history of Olin Hall and the recommendations of the architectural study conducted in the 1980s, I was struck by similarities to the study just completed in August. As part of a facilities master plan that is under way for the College of Engineering, we hired Ballinger Associates of Philadelphia to draw up plans for the second major renovation of Olin Hall, in particular its infrastructure. Key design goals of the project were to group faculty offices together; create new laboratories suitable for advanced research; improve the lecture rooms; and make general improvements to comply with current building codes.

When Ballinger assessed the buildings in the Engineering Quad this past spring for quality and suitability for renovation to accommodate research and teaching needs for the next half century, Olin Hall ranked among the top buildings. Olin has good “bones”: soaring high ceilings, few load-bearing walls, and good construction. Not bad for a 65-year-old!

But functional changes are urgently needed.

New Laboratories
Additional laboratory space is again needed as the size of our faculty continues to grow (by about 25 percent). Now, more than ever, the role of the synthetic chemist and chemical engineer is growing in importance in the research undertaken in Olin. This could be to nanofabricate new materials that have exotic separation abilities or to create new chemical constructs to encapsulate and guide drugs to specific targets in the brain.

Student Space
The past 20 years have seen the development of a tightly knit cooperative undergraduate student body. Because of the intense nature of the senior classes and the central importance of teamwork, students spend a lot of time in Olin Hall, whether sweating over hand-drawn McCabe-Thiele diagrams or Aspen simulations. Students work, eat, sleep, and play in the basement. The George F. Scheele Lounge has played an important role in housing these activities (see page 20). Next to the Scheele Lounge are the Class of ‘60 computing facilities. But computing has changed: with the advent of wireless and laptops, there is no longer a need to separate the computing function and the workspace. We hope to integrate computing facilities with workspaces and move the student spaces out of the basement.

Classrooms
An increasing amount of what used to be “homework” is now team-based project work that requires a different collaborative learning space. We need rooms where students can work together, aided by TAs and faculty. Recent growth in our involvement in student teams, such as that for the AIChE Chemical Car, and the likelihood that chemical engineering students will become more actively involved in student teams such as Engineers for a Sustainable World, also requires space.

General Improvements
One of the original solid brass boilers was decommissioned only last year. Olin has no central air conditioning; unaesthetic window A/C units provide cooler air in the summer but mar the graceful lines of the exterior. The windows are original to the building; many are cracked and leak. Experiments and computational needs require a major power upgrade and access to vibration-free “space.”

Help Us Renovate Olin Hall

With Ballinger Associates’ help, we have a design to provide modern HVAC systems, an electrical upgrade, windows, and a sprinkler system; to add new classroom spaces and student conference rooms; and to dedicate the foreshortened wing (mentioned in “The History of Olin Hall,” pages 6-12) to research, creating laboratories to replace the current offices. It is also possible to build a new wing on Olin Hall.

Chemical Engineering alumni are among the most generous in the college. When we need your help to create something new and lasting to improve our programs, you respond.

We need to raise roughly $12 million to complete the transformation of Olin Hall and refit it for the 21st century. Here are some opportunities for alumni to contribute to the renovation:

• Name the entire department of Chemical and Biomolecular Engineering: $25 million
• Build a new addition on Olin Hall to expand the wing to Dusty Rhodes’ original plan: $12 million
• Fund the creation of the new west wing research unit: $5 million
or name an individual laboratory: $250,000 (16 new labs planned)
• Fund the creation of the entire new student studies unit: $2 million
or name a teaching space: $100,000
or name a student team space: $100,000
• Name the space where you sat in your favorite Olin Hall classroom: $10,000

Hurry: There are 725 seats in the building and 3,186 students have graduated since the building was new, so there will be competition for your seat!

~Paulette Clancy
It was the turn of classes 6s and 1s this past June 10 to celebrate Reunion with the CBE School.
Alumni Involved in Teaching

In addition to the invaluable assistance of the alumni members of the Advisory Council to help guide us to improve our educational programs, alumni participated in several CBE courses last year. Most of this participation occurred as a result of AI Center’s efforts and the generosity of spirit to participate in our courses. Participation ranged from a one-day to one-week stay of alumni who have the relevant expertise and the generosity of spirit to participate in our courses. Participation ranged from one-day to one-week stay at Cornell teaching in our classes or assisting graduate students (in the case of the adjunct professors). Alumni involved in this way last year included:

Advisory Council: Gus Noojin (AC Chair; Shell, retired), Bob Gane (Exxon-Mobil), Bob Ware (Rohm and Haas), Jeff Tester (MIT).

Adjunct Professors: Kathy Vaeth (Kodak)

Board of Directors for “Managing New Business Development”: Terry Yamada was here in the fall to give a talk about risk management. The Board of Directors for the class included Jay Abbe, Martin Schwartz, Charlie Shafran, Jim Staid, Chris Wolcott, Claudia Elkins, and Steve Elkins. Claudia (Wells ’66) was a senior research manager with Akzo Nobel and Steve (Arts ’65) was VP of financial risk management for the Bank of New York.

Plant Design: John Carberry (environmental issues), Kent Golden (Merck), Bill Cleary (Corning), and Jim Staid (formerly of Exxon) provided us with their expertise to head up “Fresh Eyes Reviews” for the Plant Design Course. Jim has recently retired to Ithaca and we hope to be able to take more advantage of his expertise.

Nonresident Lecturers: Mike Di Angelis (Intel), Kelly Bland (Shell; MAE grad.), Bill Cleary (Corning), Charles Jordenik (J&J), Joe Gryzb (Reactive Nanotech.), Lily Chu (Genentech), John Kone (Merck), Gary Calabrese (Rohm & Haas), Brian Ranade (P&G), Sarah Genovese (GE Global; MSE grad).

Alumni Notes

50s
Deran Hanesian, B.S. ChemE ’52, Ph.D. ChemE ’61, received the Saul K. Fenster Innovation in Engineering Education 2006 award at the Newark College of Engineering, New Jersey Institute of Technology. He was cited for numerous innovations in teaching chemical engineering, specifically for introducing the first integrated lecture-laboratory course in Process Control, designing the senior laboratory facility and experiments, introducing the oral presentation format in the senior unit operations laboratory, and being a prime developer of the Freshman Engineering Design Interdisciplinary Environmental modules. He sends his hello to his professors (all retired) from the 1950s and 1960s and says he owes them everything that has happened to him in chemical engineering. He hopes he can visit his alma mater again one day.

Harold Reisman, M.S. ChemE ’59, is retired. He and his wife travel to Israel as often as possible to visit their daughter and growing family in Efrat (south of Jerusalem). He had a letter published in Fortune (March 6, 2006) on ethanol as an alternative fuel.

80s
Andrew Irwin, B.S. ChemE ’81, M.Eng. ’82, and Irwin Engineering have been recognized as an “exemplary 21st Century Local Section” with active AIChE membership and outreach activities to student sections, academics and professionals. Andy is considered a “Kingsfish” of “Ichthyologists.” AIChE Boston Leadership has received this achievement award from the Executive Council of AIChE National.

Aron Krasnopol, B.S. ChemE ’88, is working for GeoSyntec Consultants in Columbia, Md., as an environmental engineer specializing in soil and groundwater remediation. He is the proud father of Yehoshua, 3, and Aliza, 9 months.

90s
Peter J. Adams, B.S. ChemE ’96, was promoted to associate professor of civil engineering at Carnegie Mellon University.

Joseph Arencibia, B.S. ChemE ’97, New York City, works with his dad at their own engineering company. Joe has taken over most of the technical engineering side of the company. Their current technology focus is larger plants for cryogenic gas recovery as well as developmental projects for waste-to-H2 reforming and work in fuel cell projects. He married his wife, Akiko, in October 2005. She is a ChemE from Penn State working for Unilever in food R&D. They met at Procter & Gamble.

Kelley Burridge, B.S. ChemE ’96, went to work at Dow Corning after graduation. She defended her Ph.D. at Boston University, biomedical engineering in January 2006—“Targeted Drug Delivery: Effects of Grafted Polyethylene Glycol on Ligand-Receptor Binding Under Flow.” Her advisor was Joyce Wong. Kelley recently started a postdoctoral position with Professor Morton Friedman in Duke’s BME department, working in the general area of atherosclerosis, looking at how characteristics of the blood flow field affect endothelial cell biology and lead to plaque formation. Kelley plans to apply for faculty positions in fall 2007.

Steven Chan, B.S. ChemE ’99, M.Eng. ’00, was recently accepted into the financial engineering degree program at the National University of Singapore. Steven works for the Standard Chartered Bank in the Decision Science Group. He and his wife are expecting their first child.

Deborah Follman (née Kaufman), B.S. ChemE ’94, is an assistant professor in Purdue’s Department of Engineering Education, the first of its kind in the nation. Her principal area of research is engineering education. We are proud that Deborah got her start (continued overleaf)
in teaching by serving as a TA in ChemE 112 in Fall 1993. She entered the Ph.D. program at NC State where she published a paper with Rich Felder in ASEE’s Journal of Engineering Education on collaborative learning and teamwork. Her Ph.D. advisor was Ruben Carbonell. She also worked at Genentech for several years. Recently, Deborah received an NSF Career award.

Ann Friedholm (née Curson), B.S. ChemE ‘93, left Procter & Gamble to pursue a career in marketing. She attended the University of Southern California’s business school to get her MBA after which she worked for Nestlé in Los Angeles on the Nesquik brand for two years. Ann is married to Jon Friedholm, B.S. ChemE ‘92, whom she met at P&G. They moved to Chicago, where she worked for ConAgra on the Eckrich brand. When Ann was given the opportunity to return to Nestlé in Cleveland, she accepted it and is now brand manager for the Stouffer’s family business. Jon is vice president of a construction materials company. They have two children—Tyler, 2 1/2, and Aliy, 14 months.

Christine Hewitt, B.S. ChemE ‘97, MBA ‘02, is the head of R&D finance for Europe and living in Cambridge, UK, as part of an “expand” experience for Amgen. She relates that Amgen is growing rapidly in Europe. John Murphy, B.S. ChemE ‘99, married Kate Alche, Cornell ‘99, in 2002. He finished his Ph.D. in ChemE at Caltech in 2004. They had their first child, Sarah Murphy, in June of this year. He just started his final year at Harvard Law School, where he is editor-in-chief of the Harvard Journal of Law & Technology. This past summer he was an associ-
products. He and his wife, Pearl Ann Hendrix (ILR ’02), are expecting their first child in October.

Kristin Kielblock, B.S. ChemE ’05, works for Ortho-Clinical Diagnostics in the Analytical Services/Product Support Group. She received an offer from Consumer Personal Products Worldwide (a J&J company) and will be in the tech transfer group for liquid products such as shampoo and mouthwash and will be involved with the scale-up of pilot plants in the manufacture of the different products. Kristin had also toured Europe for a month this past summer.

Joanne Lu, B.S. ChemE ’03, works at Amgen in Rhode Island in plant engineering. She married Paul Deforest, B.S. ChemE ’03, a supervisor at Frito Lay. Jon Lu, B.S. ChemE ’02, is a senior materials engineer with Procter & Gamble. He is working from the Latin America Headquarters in Caracas, Venezuela, managing business development for emerging markets.

Lauren Macri, B.S. ChemE ’04, is working in process development at Regeneron Pharmaceuticals, Inc. in Tarrytown, N.Y. She started a Ph.D. graduate program at Stony Brook University this fall.

Eric Margelefsky, B.S. ChemE ’04, appeared on Jeopardy on June 22, 2005. He did well in the first round but got outbuzzed in the second round and finished in third place. He said, “But I had a blast!” He just started in third place. He said, “But I did well in the first round and finished but got outbuzzed in the second round.”

Serena Schlake, B.S. ChemE ’02, received her M.S. in food science from UC Davis in 2004. She works for the company that makes Hidden Valley Ranch and KC Masterpiece BBQ sauce. Her first project was to develop a new BBQ flavor—KCM Honey BBQ. She teamed up with Kristina Phipps to ensure that the product she developed on the benchtop could be manufactured in the plant. Serena is a product developer and Kristina is a process developer.

Regan Tillou, B.S. ChemE ’03, works for L’Oreal in Paris. The language barrier is a bit difficult, but she is learning. She works with a great team and is fortunate to have an American boss.

specialize in product management. She and her fiancée (UPenn ’00) plan to get married in June 2007.

A sheen Phanseay, B.S. ChemE ’02, joined a small molecular pharmacology startup, Beyond Genomics, after graduation. He spent two years doing biochem bench work in the proteomics lab, writing bioinformatics software for mass spec analysis, and doing some project management. He then spent a year helping to start a new company. As third employee of a contract manufacturing facility specializing in aseptic lyophilization, he built out Class 100 cleanrooms, validated equipment and processes, trained and supervised manufacturing technicians, and performed production runs for oncology drugs in clinical trials. He is currently a development engineer at a small company at Cambridge Biotech that makes bone substitute material. He performs tech transfer from R&D into manufacturing and process development. He is working on his MBA at the F. W. Olin Graduate School of Business at Babson College.

Robert Lee Von Berg, professor emeritus of chemical engineering, passed away on August 11, 2006.

Bob graduated from the University of West Virginia with a B.S. and M.S. in chemical engineering in 1940 and 1941 respectively. He graduated from MIT in 1944 with an Sc.D. degree in chemical engineering and immediately joined Du Pont’s Industrial Engineering department where he worked on process design and development from 1944 to 1946. In 1946 Bob joined the then School of Chemical and Metallurgical Engineering at Cornell. He was promoted to associate professor in 1949 and to professor in 1958. Bob spent six summers at Oak Ridge and Brookhaven National Labs working on reactor design and one summer at Du Pont’s Savannah River plant working on nuclear fuel processing. He was a visiting professor at Los Alamos National Laboratory’s cryogenic engineering division. He spent a one-year sabatical at Dow in Midland, Mich., working on process development and held a NATO Fellowship at the Delft Technical Institute in the Netherlands. He spent sabatical leaves at universities in New Zealand and Australia.

Bob retired in June 1988 after 42 years of service to the university. He spent the first six months of his “retirement” in New Zealand at the University of Canterbury where he taught process design and forged a friendship with Brian Earl. Thanks to Bob’s interaction with Brian, the latter is now a valued industrial practitioner who teaches at Cornell most fall semesters. Bob was frequently recruited out of retirement to help train new chemical engineering faculty to teach in the senior design course.

Kenneth Bischoff, a former faculty member and director of the School of Chemical Engineering, died on August 27, 2006, at age 71.

Ken Bischoff received his B.S. and Ph.D. degrees in chemical engineering from the Illinois Institute of Technology in 1957 and 1961, respectively. He began his academic career at the University of Texas, Austin, in 1961, where he developed the well-known Bischoff-Dedrick compartmental pharmacokinetic models that have become the standard of the pharmaceutical industry. Ken was associate professor at the University of Maryland from 1967 to 1970, before becoming the Walter R. Read Professor of Engineering and the director of the School of Chemical Engineering at Cornell where he stayed for six years until 1976. He left Cornell to become the Unidel Professor of Biomedical and Chemical Engineering at the University of Delaware, 1976 to 1996. He was chairman from 1978 to 1982 and acting director of the Center for Catalytic Science and Technology from 1983 to 1984.

Ken received many professional awards and honors including the Ebert Prize from the Academy of Pharmaceutical Sciences and numerous AIChE awards. He was AIChE director from 1972 to 1974, was given the AIChE award for Professional Progress in 1976 and the Food, Pharmaceutical, and Bioengineering Division Award in 1982, and became AIChE’s 34th Annual Institute Lecturer the same year. In 1987 he received AIChE’s R. H. Wilhelm award. In 1980 he became a fellow of the AAAS and of AIChE in 1987. He was elected to the National Academy of Engineering in 1988.

In Memoriam

We are sad to note the passing of several alumni and one emeritus faculty member last year. They remain alive in our memories.

Charles W. Alcott ’43, November 16, 2005
George F. Baker Jr. ’61, December 1, 2005, Houston, Texas
Donald D. Campbell ’52, October 2, 2005, Cincinnati, Ohio
Stanley S. Christenfeld ’39, December 7, 2005, Woodcliff Lake, N.J.
Herbert D. Doan ’45, May 16, 2006, Midland, Mich.
Victor K. Hendricks ’31, January 23, 2006, Houston, Texas
Herbert H. Hinrichs ’41, April 27, 2006, Tenafly, N.J.
Richard I. Larson ’63, May 15, 2006, Wilmington, N.C.
John G. Marder ’48, December 10, 2005, New York, N.Y.
Richard S. Miller ’65, January 7, 2006, Crofton, Md.
Karl J. Nelson ’38, February 7, 2006
Robert H. Park ’64, December 10, 2005
John H. Pickin ’49, October 26, 2005, Madison, N.J.
Charles S. Re Velle ’60, August 10, 2005, Towson, Md.
Howard J. Sanders ’45, January 1, 2006
Richard L. Shaner ’49, October 7, 2005
Raymond Gerald Thorpe ’47, Cornell emeritus professor of chemical engineering, September 6, 2005, Cortland, N.Y.
Fifty-seven Bachelor of Science degrees in chemical engineering, as well as two for independent majors, were awarded during our school’s diploma ceremony on May 28. Undergraduate and graduate students, relatives, friends and faculty, approximately 515 in total, attended the ceremonies and buffet lunch.

The undergraduate diploma ceremonies were presented in two lecture rooms to accommodate the large number of students and guests. Families and guests of the graduates enjoyed a slide show of class memories and mock awards in the lecture halls as the seniors assembled for a photo on the steps of the south building entrance. Professor Clancy began the ceremony on the first floor with an opening speech. Meanwhile Professor Duncan opened the second-floor presentation by describing the design course and team work involved in the projects. The faculty presenters—Professors DeLisa, Hunter, Anton, and Center—announced each person and noted the project team contributions as the group posed for photos with their diplomas in hand. The senior capstone design course groups were then congratulated for their presentations in ethanol from corn, coker product upgrading, ethylbenzene to styrene, and MTBE alternate use projects.

Of the Class of 2006, 37 percent are continuing their studies in graduate school: seven have begun chemical engineering Ph.D. programs, five are pursuing other graduate degrees in such areas as biomedical (2), chemistry (1) and bioengineering (1), five have joined our M.Eng. program, one entered the biomedical engineering M.Eng. program at Cornell, two expect to go to medical school and one plans to attend dental school.

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Forty-seven percent of the class accepted employment at 18 different companies. The largest employers were Exxon Mobil (5), Procter & Gamble (5), and Sunoco (2). The average starting salary was $58,723. These recent graduates are employed in the following areas: petroleum products (1), consumer products (2), finance and investing (1), electronics and semiconductors (2), food products (2), consulting/engineering (1), and other areas such as automotive repair supply (1), biofuels (1), biomedical research (1), biotech (1), and Peace Corps volunteer in education (1). Six students were still looking for employment at the end of June.
Undergraduate Program News

There’s no getting away from it: a degree in chemical engineering is becoming more popular.

For the third year in a row, the sophomore class has more than 100 students. Even Mike Duncan’s efforts to keep freshman numbers to a reasonable level by holding his overflow ChemE 112, Intro to Chemical Engineering, class at 8 a.m. did not deter eager young students from the trek to Olin Hall from their dorm rooms. The number of affiliated students in chemical engineering is historically high—an average of about 80 students a year.

While any ChE alum would feel at home looking at our undergraduate curriculum, the school has made several evolutionary changes in the past five years. These changes reflect students’ interests and career goals and are mostly offered as advanced electives.

Adding “Biomolecular Engineering” to our name in fall 2001 was backed up by the addition of three electives: Molecular Principles of Biomedical Engineering, Cellular Principles of Biomedical Engineering, and Engineering Principles for Drug Delivery. All three are cross-listed with Biomedical Engineering. These new electives augment our long-standing electives in Bioprocess Engineering and Biomedical Engineering.

The school added a biology requirement that started with the Class of 2006. Initially, the requirement could be fulfilled with existing courses in general biology, biochemistry, or microbiology. In spring 2006 Kelvin Lee created a ChemE course specifically tailored to meet the school’s intent for the biology requirement—Biomolecular Engineering: Fundamentals and Applications. The first third of the course covers fundamentals of biology, such as cells, the molecules of life, the chemical reactions of life, gene expression, and biochemical pathways. The remainder covers a series of applications and case studies drawn from biotech and pharmaceutical companies such that each example introduces a new biology concept, such as the molecular basis for cancer, antibodies and the immune system, protein engineering, stem cells, and bioethics.

This course is targeted to second-semester sophomores and is intended to appeal to students whether or not they have a strong interest in biomolecular engineering. We will face an interesting “scale up” challenge of our own when we move from the enrollment-capped “bench scale” sample of 24 students who took the class this spring to “production scale” next spring when we will be catering to a potential audience of up to 100 students. We now have a coherent set of six electives that together constitute a concentration in biomolecular engineering.

We plan a slate of electives in the energy/sustainability area, beginning with Energy Economics, introduced this fall, and Energy Engineering in spring 2007. We are also offering a new 1-credit module, Renewable Feedstocks, taught by Samir Somaiya B.S. ChE ’90, M.Eng. ’92, M.B.A. ’93, on biomass conversion. Somaiya’s family owns several sugar mills in India; his work on biomass challenges there will be an interesting counterpart to an existing course on biomass production of ethanol from corn offered by the College of Agriculture and Life Sciences. Shell has provided a significant amount of materials to use in developing a one-hour course module, Finding and Developing Hydrocarbon Resources, with the internal working title of “Rocks to Docks.”

We also have new electives in Process Control Strategies, Aerosols and Colloids, and Managing New Business Development that are well received by the students. Of course, we continue our electives in traditional areas: Polymeric Materials (now taught with the fifth edition of emeritus professor Rodríguez’s textbook, Principles of Polymer Systems, co-authored with Professors Cohen, Ober, and Archer), Air Pollution, and Chemical Processing of Electronic Materials. To address the popularity of nanotechnology we now offer Microchemical and Microfluidic Systems, developed by Jim Engstrom.

To create more opportunities for students to take advanced electives in their junior and senior years, we have shifted the curriculum forward. We moved Fluid Mechanics ahead one semester to spring of the sophomore year and Heat and Mass Transfer ahead to fall of the junior year. These changes help students take advantage of advanced placement credit; the typical ChemE undergraduate arrives with 14 AP credits.

AICheck Student Chapter News

The AICheck Student Chapter was headed in 2006 by Stephanie Glass, who won the AICheck award for her wonderful leadership skills. Members of the Class of 2006 were a particularly outgoing and enthusiastic group who initiated such social events as “Derive-In” movie nights. They also followed the lead of the Class of 2005 in putting together an attractive yearbook, this year dedicated to senior lecturer Al Center, to immortalize their friendships and the fun they had at Cornell. (Who says that ChE is all work?)

This was the year that the AICheck Chemical Car program really “got serious.” The team fielded a competitive car and significantly improved its performance over last year. The team involved 22 ChE students, led by Miriam Gladstone and Sean Branagan. Unlike the teams for many Cornell car projects, our team is impressively diverse with three underrepresented minority participants (one of whom was a leader in the group) and nine women. This year, the team acquired College of Engineering Bartels funding to supplement funds from the CBE School. At the RPI regional conference they placed third out of 12 teams (and the best of the “PV” designs), beaten only by two fuel cell designs (see photo). This performance qualified our team for the national competition at the AICheck annual meeting where they set a personal best distance but were unplaced. Cars from several other teams exploded, so we were pleased with our performance! Brad Anton is the faculty advisor. Yang Lu will be team captain next year.

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The Scheele Undergraduate Study Lounge

The George F. Scheele Undergraduate Study Lounge in B-49 Olin Hall is often a center of activity around the clock for CBE students. Recently, I entered Olin Hall at 7:00 a.m. to check the lounge. The building was quiet and the study lounge was dark. I opened the door and turned on the lights, awakening yet another student who was asleep on the couch with books and papers everywhere.

Undergraduates use the Scheele Lounge for studying and taking study breaks. In the fall, seniors prepare chemical engineering laboratory (Unit Operations) reports there. Chemical process design teams make their home in the study lounge during the spring semester. Engineering co-op students are found in B-49 during the summer when they take their fall courses, allowing them to be at job sites during the semester. A refrigerator, microwave, and coffeemaker are available, and chairs and tables can be rearranged as needed. During the academic year, coat racks are filled with suits and professional clothing for class presentations and job interviews. Backpacks are everywhere, lockers are filled. One corner of the lounge has comfortable sofas and chairs. A display case with photographs and information is dedicated to the memory of Professors Scheele and Ken Ackley, both of whom were devoted to the undergraduates.

The Scheele Lounge is supported by a fund that was established to benefit undergraduates in the School of Chemical Engineering after Professor Scheele’s death in February 1993. Alumni, students, faculty, staff, friends, and family of Scheele have made contributions over the years. The fund’s first project was to give a facelift to B-49 to make a comfortable study space for undergraduates. Subsequently, the fund has awarded summer research grants, purchased software and hardware for the Undergraduate Computing Center and laboratory equipment for classes, and maintained the study lounge. During the past year the lounge was painted and new carpeting was installed. The remaining vintage Olin Hall lockers were replaced and an additional coat rack was purchased. This maintenance activity has substantially reduced the fund. Contributions in any amount would be greatly appreciated and can be sent to the George F. Scheele Memorial Fund, c/o Director, School of Chemical and Biomolecular Engineering, 120 Olin Hall, Cornell University, Ithaca, NY 14853.

Carol Scheele

Chemical and Biomolecular Engineering Advisory Council

The Advisory Council of the School of Chemical 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 industry and academe 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, meeting with faculty and students of the School of Chemical and Biomolecular Engineering and administrators of Cornell University and the College of Engineering. This year’s meeting was held on September 29 and 30.

Current Members

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

Carol Boyd Amos
Supervisor, Process Engineer, DuPont Engineering

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

Samuel Bergh
Vice President of Engineering, Symyx Technologies, Inc.

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

Robert A. Ganz
Senior Advisor, ExxonMobil Chemical Company

Kent E. Göklén
Senior Scientific Director, BioPurification Development
Merck & Co, Inc.

Martha Jones
Staff Reliability Engineer, Technology Manufacturing Group
Intel Corporation

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

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

Dennis C. Prive
Ogil 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. Meissner Professor of Chemical Engineering
Chemical Engineering Department
Massachusetts Institute of Technology

Matthew Y. 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
Austin Hooey Director’s Fund Update
The wonderful windfall gift of more than $4.0 million bequeathed to us by Ms. Austin Hooey to endow the director’s position created an opportunity to make important initiatives. Ms. Hooey’s Graduate Fellowship Fund was used to support two female Ph.D. students, aided by two half-tuition fellowships from the Graduate School.

Hooey prizes for excellence in Ph.D. research were awarded to Keith Neeves (Olbricht) and Venkatachala Minnikanti (Archer) in fall 2005 and Mohit Haran (Clancy) and Xia Olong Yin (Koch) in spring 2006.

Hooey grants were awarded to provide two pieces of shared equipment: (1) a motion-recording camera and a CCD camera for fiber-spinning (Joo), particle-velocimetry (Koch), and melt-casting image-capture (Steen); (2) an ultracentrifuge for DeLisa, Lee, and Stroock.

The Hooey Graduate Lounge in the penthouse has been well used in its first year. The Hooey Director’s funds were also used to reward the staff by holding an appreciation day (a tour of local vineyards). And we subsidized an ultracentrifuge for DeLisa, Lee, and Stroock.

Profile: Graduate Degree Class of 2006
On Sunday, May 28, the accomplishments of 25 graduate students in chemical engineering were recognized during the CBE school’s graduate diploma ceremony. Eleven of these were master of engineering degrees (M.Eng.), one was a master of science degree (M.S.), and 13 were doctor of philosophy (Ph.D.) degrees. Following the success of our inaugural graduate degree ceremony in 2005, we decided to make this an annual event and this year we hosted the celebrations of nearly 100 graduate students, their relatives and friends, and members of the faculty.

We were delighted to welcome to Cornell friends and family who had traveled from as far away as Ireland, Greece, Mexico, India, and China to join in this important day in the graduates’ lives. The graduate diploma ceremony began with an opening welcoming speech by the director. The thesis focus and scientific accomplishments of each M.S. and Ph.D. graduate were then described by the student’s faculty advisor. A champagne brunch for advanced degree holders and their families followed the ceremony in a tent outside Olin Hall on a wonderfully sunny day.

Our graduate students will be moving on to positions in industry and academia. A partial list of the destinations of our grad this year is:

- Bristol Myers Squibb
- Cordis Corp. (a division of J&J)
- DuPont
- Eli Lilly (Puerto Rico)
- Intel Corporation (2)
- Shell Oil

Several students are taking up postdoctoral positions at Princeton, U. Penn., U. T. Austin, and in Denmark. One student is starting a Ph.D. program in Biophysics at Cornell.

Intel Computing Lab
Over the past three years, Intel has provided the Graduate Computing Lab with more than $100,000 in equipment. Thanks to their support, we have a dedicated cluster of fast workstations available for all of our 100 graduate students to use.

Industry-sponsored Graduate Prizes
Thanks to an alumnus, Bill Cleary B.S. ChemE ’86, we initiated a new graduate prize funded by Corning Inc. this year. Corning’s new graduate student prize was awarded to the Ph.D. student with the highest GPA in core ChE classes. Prizes were awarded to Heidi Park (Anton/Joo) and Henrik van Lenerich (Steen) who had inseparable top scores in the class. Corning will also provide a two-year Ph.D. fellowship to a ChemE Ph.D. student next year.

Rohm & Haas provided new prizes to allow students to attend professional conferences, winners chosen on the quality of their abstract. This year's inaugural winners were Colman Carroll (Joo), Peter Zawaneh (Putnam), and Geoffrey Genesky (Cohen).
Three CBE faculty members received teaching awards from the College of Engineering this year, the most ever for a single year. Awards were given to Professors A. Brad Anton, Yong Joo, and Abraham Stroock.

Yong Joo has taught the undergraduate separations course for the past five years. During this time he has modernized the content including introducing the students to Aspen so that their design course work is able to be more sophisticated. This year, he received two perfect scores (5.0/5.0) for his helpfulness to students and for the overall quality of the course. And, for the fourth year in a row, Joo’s teaching score for the graduate Advanced Fluid Mechanics course was outstanding.

This is the third time that A. Brad Anton has won a College of Engineering teaching award. He received high praise from the undergraduate students for his teaching in Process Control, in the senior design course, and for an elective in semiconductor processing that he developed. He also gave an outstanding performance in the required graduate course in advanced thermodynamics. As many of you know, fast cars are close to Brad’s heart, and he was also acknowledged for his leadership in the Formula SAE team with Prof. Al George (M&AE), including the use of an ethanol blended fuel, and his oversight of the AIChE Chemical Car team. Anton was also selected by the Interfraternity Council and the Pan-Hellenic Association, which represent about 25 percent of the students at Cornell, for the Outstanding Engineering Faculty Award for teaching in 2005–2006.

Abraham Stroock co-taught (with Fernando Escobedo) an innovative core graduate course in kinetics and diffusion that is not only unique but potentially a national model. Its innovation lies in defining kinetics and diffusion by multiple length scales from electronic to macroscale. Stroock has reshaped the undergraduate Heat and Mass Transfer course to consider issues that arise when you scale down, drawing on his research in microfluidics. He also co-leads a required graduate course that helps first-year Ph.D. students transition into their new role as research scholars, including discussions on ethics, professionalism, technical writing, and interacting with the machine shop. For his research work, Stroock was awarded a 2006 3M Non-tenured Faculty Grant to support basic research in the physical and biological sciences and a prestigious 2006 Beckman Foundation grant for the development of “Remodelable Microfluidics for the Study of Vascular Development.”

T. Michael Duncan was awarded the 2006 College of Engineering McCormick Award for outstanding mentoring of freshman undergraduates. This is Duncan’s 13th award in the past 12 years for teaching and mentoring students, including the lifelong designation as a Stephen Weiss Presidential Fellow in 2004. This is an incredible and probably unsurpassable achievement.

Pathfinder LLC, a major design and consulting firm, honored Alfred Center this year as an inductee to its Wall of Fame for “outstanding and significant long-term contributions to the Project Management profession.” Previous winners of this
honor are considered “driving forces behind the technological foundation of this important industry.”

Fernando Escobedo has returned from sabbatical leave and assumed the role of director of graduate studies.

Matthew DeLisa won a 2006 Young Investigator award from the Office of Naval Research to manipulate protein “machinery,” specifically metabolic channels to synthesize key natural products. DeLisa was invited to attend the 2006 Frontiers of Engineering symposium in Dearborn, Mich., held September 21–23. This honor by the National Academy of Engineering recognizes superior engineering achievement by young faculty.

David Putnam, BME and CBE, has been appointed to a three-year term on the editorial advisory board for Pharmaceutical Research, one of the leading pharmaceutical journals. He was invited to serve on the board in the focus area of functional biomaterials.

LaShanda Korley spent a year working with Claude Cohen and Yong Joo as a Cornell Provost’s Academic Diversity Post-Doctoral Fellow on elastomeric materials and fiber electro-spinning. Korley initiated a Graduate Women’s Group in ChE. She will begin a faculty career at Case Western in 2007.

Kelvin Lee was named the Samuel and Nancy Fleming Term Professor of Chemical Engineering. Lee is the director of the Biotechnology Center at Cornell.

Tobias Hanrath, who completed his Ph.D. at the University of Texas at Austin on the “bottom up” creation of novel nanostructured materials, is scheduled to arrive in July 2007 to begin his faculty career at Cornell. Hanrath is currently undertaking a post-doctoral position to learn more about photovoltaic systems. His work will strengthen our research interests in energy-related areas.

James Engstrom, the BP-Amoco/H. Laurance Fuller Professor, was named a fellow of the American Vacuum Society at its November 2005 meeting. AVS fellows are recognized for “sustained and outstanding scientific and technical contributions in areas of interest to AVS.” Engstrom was cited for his “contributions to our understanding of the dynamics of gas-surface reactions and thin film deposition on surfaces using supersonic molecular beam techniques.” He will begin a sabbatical leave in spring 2007.

The Society of Biological Engineering named Michael Shuler, chairman of BME, the first recipient of the James E. Bailey Award for “Outstanding Contributions in Biological Engineering” in 2005.

We will be conducting a search for new faculty members next year. We are looking for outstanding candidates at any level (assistant, associate, or full professor) in any research area. But we are especially encouraging women and those from underrepresented groups to apply; our aim is to diversify the faculty to better reflect the student population.

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Tobias Hanrath, who completed his Ph.D. at the University of Texas at Austin on the “bottom up” creation of novel nanostructured materials, is scheduled to arrive in July 2007 to begin his faculty career at Cornell. Hanrath is currently undertaking a post-doctoral position to learn more about photovoltaic systems. His work will strengthen our research interests in energy-related areas.

LaShanda Korley spent a year working with Claude Cohen and Yong Joo as a Cornell Provost’s Academic Diversity Post-Doctoral Fellow on elastomeric materials and fiber electro-spinning. Korley initiated a Graduate Women’s Group in ChE. She will begin a faculty career at Case Western in 2007.

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Fernando Escobedo has returned from sabbatical leave and assumed the role of director of graduate studies.

Matthew DeLisa won a 2006 Young Investigator award from the Office of Naval Research to manipulate protein “machinery,” specifically metabolic channels to synthesize key natural products. DeLisa was invited to attend the 2006 Frontiers of Engineering symposium in Dearborn, Mich., held September 21–23. This honor by the National Academy of Engineering recognizes superior engineering achievement by young faculty.

David Putnam, BME and CBE, has been appointed to a three-year term on the editorial advisory board for Pharmaceutical Research, one of the leading pharmaceutical journals. He was invited to serve on the board in the focus area of functional biomaterials.

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Check out our new, improved web site at

[www.cheme.cornell.edu](http://www.cheme.cornell.edu)