Imagine an environment where the students and faculty are passionate, creative, and supportive. Cornell’s engineering curriculum stresses professional competency, while its campus community fosters personal growth.

Meredith Kratzer
Major: Chemical Engineering
Minor: International Relations
Hometown: Vienna, VA

accelerating innovation
That’s what it’s like to study engineering at Cornell.

The impact of scientific discovery is exponential. Think how the invention of the silicon chip has changed every aspect of life, from communications to medicine to space exploration. In engineering, one new piece of knowledge can have applications across dozens of fields, and one innovation can lead to breakthroughs in every discipline. There is an interconnectedness that transcends categories.

When hundreds of engineers come together to share their insights and ideas, the pace quickens. New technologies emerge, expand, and evolve, leading to fresh paths of inquiry and exploration. The possibilities—for improving the quality of life for all people, for healing existing environmental ills and preventing new ones, for following our imaginations into the farthest reaches of the universe and into the tiniest components of life itself—are limitless.

It’s exhilarating. It’s absorbing.

engineering.cornell.edu

inovation
Cornell's founder was an inventor whose research in mechanical engineering led to the development of the first technology-based information network—the telegraph. But the greatest of his experiments was the university that bears his name. Ezra Cornell was dedicated to a pair of propositions: that higher education should be accessible to any qualified person and that students should receive instruction in the practical arts as well as in classical subjects. Both were radical notions at the time, but with the industrial revolution shifting into high gear, Cornell saw training the next generation of technicians as essential to the nation's well being. He wanted to send his graduates into the world both “well educated and useful.” From the beginning students were encouraged to combine classes in liberal arts, humanities, and science.

In offering such a variety of opportunities to “any person,” Ezra Cornell inspired a movement that ultimately extended higher education to every qualified applicant, regardless of gender, religion, race, nationality, or economic status. Cornell was the first eastern university to admit women alongside men and the first coeducational Ivy League school. In its continuing dedication to educational reform and to the goal of any person, any study, Cornell has more than earned its reputation as “the first American university.”

“I would found an institution where any person can find instruction in any study.”

—Ezra Cornell, 1865

A History of Inclusion and Innovation

One of the top-ranked engineering colleges

Hod Lipson, Professor of Mechanical and Aerospace Engineering and Computing and Information Science, is part of a team of Cornell researchers who have created a robotic machine that can make copies of itself. Each robot is composed of a set of “molecubes,” each containing identical machinery and the complete computer program for replication. The cubes are divided diagonally so they can twist and bend and have electromagnets on their faces that allow them to selectively attach to and detach from one another. At this point the machine is just a proof of concept, but the basic principle could be extended to create robots that could replicate or at least repair themselves while working in space or in hazardous environments.
Welcome to Cornell University

Founded in 1865, Cornell is an Ivy League research university comprising seven undergraduate colleges and seven graduate and professional schools. With total enrollment of more than 20,000 students from all over the world, and top-rated programs in architecture, business, engineering, hotel administration, human and veterinary medicine, human development, the humanities, law, and life sciences, the university embodies Ezra Cornell’s vision of “an institution where any person can find instruction in any study.”

The university’s commitment to high-quality education is reflected in the number and variety of resources available to its students, faculty, and staff. These include one of the largest academic research libraries in the United States; a first-year program designed to help new students successfully negotiate the transition from high school to college; the Transfer Center, a residence hall where students who come to Cornell after studying elsewhere can find support as they adjust to their new surroundings; and more than 700 student organizations dedicated to interests ranging from politics to professions, religion to recreation. Cornell’s faculty, numbering more than 2,600 worldwide, includes Nobel laureates, Pulitzer Prize winners, and presidents of the leading professional organizations in their fields. There is a vibrant cultural life on campus, with seasonal offerings of theater, music, film, art exhibits, and dance. As New York State’s land-grant institution—and the only Ivy League university with land-grant status—Cornell seeks to instill an interest in public service and community involvement in its students, encouraging them to use their skills and knowledge to benefit others.

Cornell’s main campus is frequently described as one of the most beautiful in the United States. Spread over 745 acres of gardens, fields, and woods crisscrossed by gorges, waterfalls, and creeks, it includes more than 260 buildings ranging in age from mid-Victorian to early twenty-first century and offers spectacular views of Cayuga Lake and the surrounding countryside.

The College of Engineering at Cornell

Engineering, in the form of “mechanic arts,” was among the first academic offerings at Cornell. The program quickly made its mark by producing the first electric generator in the United States. The College of Engineering has continued that tradition of innovation by engaging in cutting-edge exploration and development, from nanoengineering biomolecular motors to designing earthquake-resistant infrastructure. Its faculty members are leaders in their fields, top-flight researchers, and excellent teachers. Cornell engineering students lead the nation in academic achievement and potential. The college’s network of more than 33,000 alumni work for world-class corporations, universities, research facilities, and government agencies, providing mentorship opportunities, co-op placements, internships, and jobs.

The College of Engineering at a Glance

Majors: 13
Minors: 15
Students may design an academic program tailored to their own interests and career goals.
Faculty: 246
First-year engineering students: 710
Students: 2,900
Women: 28%
Men: 72%
International students: 12%
Students of color: 35%
Engineering-oriented student organizations: 26
Project teams: 20
Co-op placements: 140/year
Classes with <50 students: 75%
Engineering library: 366,000 volumes, 2 million microforms, 100 public computers

Amazing depth. Extraordinary by design.
The College of Engineering has been faithful to Ezra Cornell’s vision, recruiting promising students from every background and continually adjusting the curriculum to keep pace with the needs of a world in a constant state of transformation. The college emphasizes hands-on experience, encouraging all of its students to take advantage of opportunities like the student project teams, undergraduate research, co-op placements, and internships.

Two critical elements contribute to the vitality of Cornell’s research community: the fact that research is considered a participatory process, open to people from across the university; and the university’s tradition of encouraging collaboration between areas that are not traditionally associated with one another, in the belief that integrating various disciplines and the contributions of diverse groups of people will inspire the revolutionary ideas of the next generation.

Undergraduates are invited to participate in research and translate imagination into reality. Examples of current student projects include working on the next generation of planetary spacecraft, probing gene expression control to combat cancer, and designing water systems for underdeveloped nations.

In the coming decade the college will continue to build on its status as a national and world leader in areas such as systems biology and biomedical engineering; nanomaterials, nanoscience, and nanodevices; energy and the environment; information, computation, and communication; advanced materials, which involves structures at the atomic level; and complex systems and networks, involving critical services—such as water, power, and transportation—that are delivered by automated systems in which computers integrate action, sensing, and digital communication and control.

Cornell engineers have helped to change the world in ways that Ezra Cornell could not have foreseen. They are still in the forefront today, shaping the world in ways we can only begin to imagine.

Examples of Student Research Projects:
- Using a 355-nanometer ultraviolet laser to cut piezoelectric substrates, to build tiny, self-powered robots.
- Developing a hyper-elliptic cambered span unconventional wing, which sweeps backward in a curvature similar to a bird’s wing, for the Morphing Aircraft project team.
- Building medical imaging tools for early detection of sudden cardiac death (SCD), by identifying specific features of each heartbeat in an attempt to develop a systematic way of measuring how the heart changes just before SCD.
- Capitalizing on nanotechnology to perfect drug delivery systems to human brain tumors by creating small devices, millimeters in length and micrometers in diameter, that force drugs towards the target tumor site.
- Perfecting artificial intelligence techniques, such as neural networks and a Q-learning algorithm, to enhance the ability of petroleum producers to locate, harvest, and market scarce oil resources with minimum risk and maximum efficiency.

Theresa’s BEE experience prepared her well for her co-op placement with a government agency in Virginia, which required top-secret security clearance and training in Transportation of Dangerous Goods regulations. She worked on a classified database that monitors the effectiveness of detection assays, and gained familiarity with biosensors, assay design, and protocol development. She has also worked in a lab, learning fluorescence spectroscopy and working with shop engineers on a design for a dialysis system for making artificial viruses. Theresa’s leisure hours are spent painting, reading, or playing piano or gu-zheng, a 26-stringed Chinese instrument.
“My co-op was very beneficial. Immersing myself in a workplace for five months allowed me to gain a practical view of engineering in industry.”

Theresa Chan
Major: Biological Engineering
Minor: Biomedical Engineering
Hometown: San Francisco, CA

Engineering Cooperative Education Program
The co-op program supplements coursework with paid jobs in engineering-related enterprises. Recent placements include Johnson and Johnson, the CIA, 3M Corporation, Goldman Sachs, Intel, Microsoft, and Lockheed Martin. Co-op students spend one term and at least one summer at the job site. Co-op students usually spend a summer at Cornell taking the courses they missed during the off-campus term so they can still graduate in four years, with the rest of their class. Students co-op during the fall of their junior year, return to campus for the spring, and rejoin their co-op employer the summer after junior year. About 140 engineering students participate in a co-op experience each year.

engineering.cornell.edu/coop
Experts who question the educational value of computer games should take a close look at GDIAC, a group of students, faculty, alumni, and community members devoted to the establishment of game design as an academic discipline. In addition to training students for careers as game designers, GDIAC’s goals are to develop the theory and practice of game design, promote learning across academic disciplines, foster research into the social and technical aspects of games, and motivate young people to pursue technical studies. The course developed by GDIAC has already resulted in very productive partnerships between students in engineering, art, and music.

cs.cornell.edu/projects/game/

A Wealth of Resources

Cornell has more than 100 interdisciplinary centers, institutes, laboratories, and programs where the university’s scientific communities collaborate on research, teaching, and outreach. Here are a few resources of special interest to the engineering community:

- Center for Radiophysics and Space Research (CRSR)
- Center for the Environment (CfE)
- Cornell Center for Materials Research (CCMR)
- Cornell Fuel Cell Institute
- Cornell High Energy Synchrotron Source (CHESS)
- Cornell Nanoscale Science and Technology Facility (CNF)
- Cornell Theory Center (CTC)
- Institute for Biotechnology and Life Science Technologies
- Institute for the Study of the Continents (INSTOC)
- Multidisciplinary Center for Earthquake Engineering Research
- Nanobiotechnology Center (NBTC)
- Program of Computer Graphics

For a complete list of all Cornell resources: research.cornell.edu/vpr/.

“There are so many things to do here. I wanted to get involved right away.”

Yuri Andrade Sylvester
Major: Undeclared, but plans to major in Materials Science
Hometown: Chillan, Chile

Between a full load of classes and three research projects, Yuri is a busy man; and he wouldn’t have it any other way. By searching the college web site for faculty members whose work reflected his own interests, Yuri began lining up research jobs before he even got to Cornell. He is now absorbed in work aimed at reducing the size of organic transistors from micrometers to nanometers, so they can replace silicon in semiconductors. The result: cheaper, sharper, more energy-efficient computer displays. Yuri spends his free time playing tennis, throwing shot put for the intramural track team, and admiring the view. “The campus is gorgeous,” says Yuri. “It makes you want to go to class every day.”

The Game Design Initiative at Cornell (GDIAC)

Experts who question the educational value of computer games should take a close look at GDIAC, a group of students, faculty, alumni, and community members devoted to the establishment of game design as an academic discipline. In addition to training students for careers as game designers, GDIAC’s goals are to develop the theory and practice of game design, promote learning across academic disciplines, foster research into the social and technical aspects of games, and motivate young people to pursue technical studies. The course developed by GDIAC has already resulted in very productive partnerships between students in engineering, art, and music.

cs.cornell.edu/projects/game/
Computer Science Professor David Schwartz, a specialist in game design education, developed GDIAC as a way to teach students how to create software and apply what they’ve learned in their theory classes.

Duffield Hall, the home for nanotechnology at Cornell, is a large building dedicated to a small science. With state-of-the-art clean rooms accommodating the CNF and the NBTC, a nanocharacterization suite housing three of Cornell’s most powerful electron microscopes, two floors of flexible laboratories supporting research in lasers, microelectromechanical systems, polymer chemistry, and advanced materials, and an atrium for eating, socializing, and studying, Duffield Hall is designed to promote collaboration and community. Next on the schedule: the New Life Sciences Technology Building, which will open in 2007 and house the Department of Biomedical Engineering and the Cornell Institute of Molecular and Cell Biology.
The College of Engineering faculty includes some of the most highly respected teachers and researchers in the world. They earn international recognition, honorary degrees, top young innovator awards, fellowships, educator of the year awards, best-paper awards, distinguished lectureships, international engineering awards, even Academy Awards. Cornell faculty members hold patents on inventions, start their own high-tech businesses, and write textbooks that are used all over the country. They are called in to help at disaster sites around the globe, from the tsunami-swept villages of Asia to the World Trade Center site in the aftermath of 9/11. Many came to Cornell after working in industries where they gained years of practical experience in their fields. They also are energetic, engaged teachers and mentors, alternately inspiring and being inspired by their remarkable students.

“The quality of the students here is fantastic; commensurate with the best in the world.”

Professor Putnam originally planned to be a doctor, but discovered along the way that his real love is science. He got a Ph.D. in pharmaceutical chemistry and founded his own biotech company before coming to Cornell, where he researches the use of polymers to deliver drugs by packaging a gene into a nanocomplex similar to an artificial virus, injecting it into the blood stream, and letting it circulate just like a virus would, delivering the DNA where it needs to go. The goal is to develop new vaccine delivery systems, and possibly reduce multi-drug resistance in cancer patients. Professor Putnam has won a College of Engineering Teaching Award for his undergraduate course in the cellular principles of biomedical engineering.

Computer Science Professor Steve Marschner, Ph.D. ’98, was on the three-man team that won a 2003 Academy Award for technical achievement for providing the technical advances that made the computerized character Gollum as realistic as the live actors in the Lord of the Rings film trilogy.

Professor David Putnam
Chemical Engineering
Biomedical Engineering

“The Lord of the Rings: The Two Towers” Copyright 2002, New Line Productions, Inc. (“TM”) The Saul Zaentz Company d/b/a/ Tolkien Enterprises under license to New Line Productions, Inc. All rights reserved. Photo by Peter Vinet. Photo appears courtesy of New Line Productions, Inc.
Professor Muller, Ph.D. ’96, worked at the Bell Labs division of Lucent Technologies for six years, developing spectroscopy tools to see how changes on the microscopic scale impact the macroscopic properties of materials. He returned to Cornell in 2003 to teach and continue his investigations. “The success or failure of modern devices—be they turbine blades or transistors—depends on bonding changes across just a few atoms,” explains Professor Muller. Atomic-scale spectroscopy makes it possible “to explore how properties of materials are different on the atomic scale, compared to our everyday experiences with bulk materials.” A select few specialists get to pursue such interests in the private sector, but in Professor Muller’s applied physics lab, Cornell undergraduates propose and run their own research projects with advanced equipment that is the envy of the industry.

“The scanning transmission electron microscope (STEM) used by Professor David Muller allows both the imaging and analysis of materials at the nanometer and atomic length scales. The resolution of the instrument in Duffield Hall is demonstrated by the atomic resolution lattice images of an Er cluster in SiC (top left) and the interface between silicon and strontium titanate (lower left).”

“Cornell has one of the best Applied and Engineering Physics programs in the country.”

“Collaboration happens very naturally here. People just form groups around interesting problems.”

One of the great revolutions in contemporary engineering occurred when the telephone industry began replacing copper wire with fiber optic cable. By substituting photons for electrons, more data could be transmitted more efficiently at higher speeds over longer distances, with concomitant improvements in networking technology. Professor Liddell works at the fundamental level of photonics, manipulating the size, shape, and composition of nano- and meso-scale particles to create the three-dimensional structures (crystals) through which light passes. Her research team includes three undergraduates, one of whom discovered a new photonic crystal structure and will be listed as first author on a paper for a peer-reviewed journal.
“We’d like to build systems that utilize the benefits of electronic circuits and the functionality of micro-optics.”

“Geology is not all ancient history. This planet is still changing, right under our feet.”
Our goal is to improve tsunami prediction and warning systems and, ultimately, to help people survive.

Few who haven’t lived through a tsunami can imagine the power of those terrible waves, which start with seismic events on the sea floor. Professor Liu “experiences” tsunamis every time he and his students simulate them with real water (in the university’s wave tank) and with virtual water (as modeled on the Cornell supercomputers). When an actual tsunami strikes, Professor Liu is among the first outsiders to reach the scene, as part of his research sponsored by the National Science Foundation. Most recently, he led a team of U.S. scientists to investigate the impact of the December 2004 tsunami on coastal Sri Lanka, returning with new ideas about suitable building materials and methods in vulnerable areas. Students who want to benefit from those insights can start by taking Professor Liu’s class CEE 435 Coastal Engineering.

“We design mathematical models for making informed decisions, whether the application is scheduling machine processes or breeding tomato plants.”

An engineer whose raw materials are numbers rather than chemicals or steel, Professor Shmoys focuses on the design of algorithms for optimization problems. One very practical application of his research can be experienced during finals week at Cornell, when the registrar’s office uses his algorithms to avoid scheduling students for back-to-back exams, or three exams within twenty-four hours. Another example can be found in Cornell’s plant sciences program, where he is working with a group of scientists to optimize plant breeding and minimize the number of plants that need to be bred, making their experiments more economical. Professor Shmoys was instrumental in developing one of the college’s newest majors, Information Science, Systems, and Technology.
There is no typical Cornell engineering student. The college is a community distinguished by its differences: students, faculty, and staff from every part of the world and every possible background. There are so many fields of study, and so many ways to go about learning, that it’s unlikely any two students will have the same experience.

All engineering students take a prescribed number of engineering courses. That still leaves room for choice among electives, liberal arts studies, and physical education. About 4,000 undergraduate courses are offered at Cornell each year, and all students are encouraged to take classes outside their own school or college. There’s plenty of time and opportunity to indulge personal tastes and interests, from astronomy to French literature to wine tasting.

**Learning Outside the Classroom**

Course work is just one aspect of life in the college. Students put what they’ve learned to use in dozens of ways: They join project teams like RoboCup, do research with faculty, write for publications like *SciTech*, and share their love of science with children from the Ithaca schools through student organizations like EYES (Encourage Young Engineers) and events like Engineering Day at the Mall. They can select from about two dozen student organizations at Cornell devoted to engineering.
Likewise, engineering is just one aspect of life at Cornell. There are more than 700 student organizations that are not related to engineering, including clubs dedicated to politics, sports, religion, the performing arts, and other interests like animé, investing, or vegetarian cuisine. There is an active fraternity and sorority system, with more than 60 chapters, many with houses just off campus.

“Cornell gave me a broad perspective, allowing me to supplement core course work with studies in economics, policy, and urban planning to better understand issues surrounding energy and the environment.”

Rob’s leadership skills have served him well as president of the Engineering Student Council, an umbrella organization that facilitates collaboration between student engineering organizations, alumni, and the administration. An athlete, he’s co-captain of the Club Ski Team, has run the Philadelphia Marathon, and is now training for triathlons. A summer internship at a small engineering firm involved in designing and producing medical devices, including a topical hyperbaric oxygen chamber for burn wound treatment. He also put in a stint at General Motors’ fuel cell research lab. Rob has taken courses in science and technology, Asian-American studies, and, after he got interested in renewable energy systems and the environment, a planning course called Green Cities and a graduate level course in environmental management and policy.

Robert Young
Major: Mechanical Engineering
Hometown: Ann Arbor, MI
There are opportunities for athletics and recreation at every level, from NCAA Division I teams to intramural sports; an acclaimed outdoor education program; five fully equipped fitness centers; two indoor swimming pools; an indoor track; and a bowling alley. Cornell Cinema, considered one of the best college film programs in the nation, shows almost 400 movies a year right on campus, from first-run Hollywood fare to foreign documentaries. Hundreds of students find volunteer opportunities through Cornell’s Public Service Center each semester, working in environments from the local schools to Central America.

Cornell guarantees students on-campus housing for their first two years, and most students live on campus for at least their first year. There’s a residential community specifically designed to welcome newcomers to Cornell, with its own community center, resource center (where the College of Engineering holds nighttime review courses), and faculty fellows who live in apartments in the residence halls. First-year students may also live in one of the program houses, where activities center on a specific interest like music, culture, or theater.

The engineering college’s reputation for excellence has been enhanced by generations of student project teams that win national and global championships for the performance and ingenuity of their entries. Here are a few examples from a long list:

**The Cornell Formula SAE** team designs, builds, and races a formula-style racecar in an annual competition against 140 schools from 12 countries. The event tests acceleration, handling, and endurance; teams are evaluated on their design, its cost, and their business presentation skills. The Cornell team has placed in the top ten almost every year it has competed, winning the world championship nine times, including three of the last four contests.

fsae.mae.cornell.edu

**The Solar Decathlon** team, a joint project of the College of Engineering, the Johnson Graduate School of Management, and the College of Architecture, Art, and Planning, is designing and building a fully functional and architecturally sound house running completely on solar power. The finished house will be transported to Washington, DC, where the team will be evaluated on ten criteria ranging from power acquisition and storage to performance in everyday usage scenarios.

cusd.cornell.edu

**The RoboCup** team designs and builds a squad of five small, autonomous, soccer-playing robots. Success requires a robust mechanical platform, an electronics package capable of quick processing of complex visual data, and a sophisticated artificial intelligence infrastructure representing an effective robotic soccer team strategy. Cornell has won the international contest in four of the last seven years.

robocup.mae.cornell.edu

—the engineering.cornell.edu/teams
Matthew considered other engineering schools, but one visit put Cornell over the top. "I loved the campus, and really liked the engineering program. I realized this was the place for me." The opportunity to play lacrosse for the Big Red was another plus. Playing varsity sports while studying engineering requires serious time management skills, says Matthew. "You can have a social life and enjoy yourself, but you have to be very careful about what you spend your time on, so you can excel on the field and in the classroom." He finds that it's worth it: "It's been a great experience for me. I've had the time of my life."

Matthew Robbins  
Major: Electrical and Computer Engineering  
Hometown: Evanston, IL

"The chance to play a varsity sport, on an Ivy League Division I team, is an incredible honor."

"The public image of an engineer is making widgets and crunching numbers, and not interacting with people. I think we have to change that image."

Engineers for a Sustainable World  
For a real-life experience that exemplifies the Cornell emphasis on service and hands-on learning, look no further than Engineers for a Sustainable World (ESW). The group was founded at Cornell in 2001 by engineering alumnus Regina Clewlow '01, M.Eng. '02. ESW now operates on 30 campuses nationwide, linking undergraduates to engineering projects that help to reduce poverty and improve environmental, social, and economic sustainability throughout the world. The Cornell chapter of ESW collaborates with the School of Civil and Environmental Engineering (CEE) to present a course—also called Engineers for a Sustainable World—through which students have already worked on projects like building a safe drinking water system in Honduras.

rso.cornell.edu/esw/

ESW director Regina Clewlow, '01, M.Eng. '02 (left) and Jo Pak '05 were among the students and alumni from the College of Engineering who spent a recent spring break in Umuahia, Nigeria, setting up a project to turn biomass waste into energy.

ESW adviser Rachel Davidson, Professor of Civil and Environmental Engineering
Cornell and the College of Engineering are committed to providing the resources their students need to be successful, as undergraduates and as they launch their careers.

**Advising**
Each Cornell student is assigned a faculty adviser to assist in the process of selecting a major, meeting requirements, and choosing other courses. The college also has a professional advising staff, which supplements faculty advisers by orienting first-year engineering students to the college. In addition, freshmen are paired with peer advisers—sophomores, juniors, and seniors who have volunteered to help new students understand the course selection process, meet other engineering students, and adjust to life at Cornell.

**Academic Excellence Workshops**
Academic Excellence Workshops (AEW) are small-group, active-learning sessions that complement the core engineering courses. The workshops offer a cooperative environment where students work together on concepts, problems, and projects to enhance understanding of course material.

**Tutors-On-Call**
Tutors-On-Call is a free one-to-one peer tutoring program offered to engineering students in many first- and second-year core courses. Peer tutors have successfully completed the course material and can help students better understand key concepts and review and prepare for tests.

**Career Services**
Engineering students have full access to the services and facilities of two career offices: Engineering Cooperative Education and Career Services, and Cornell Career Services. The engineering career office coordinates an on-campus recruiting program, workshops, and individual career and job search assistance. Every year, the office brings more than 150 companies to campus to interview students for co-ops, internships, and jobs.

Cornell Career Services, located in Barnes Hall, provides career guidance, including specific information for students interested in careers in medicine or law. The office has one of the nation’s largest university career resource libraries, containing information on careers, employers, graduate schools, internships, international employment, and specific geographic locales.

**Diversity Programs in Engineering**
The Office of Diversity Programs provides advising, tutoring, networking opportunities, and social activities designed to meet the needs of the college’s increasingly diverse community.

**International Students and Scholars Office**
This office assists international students and scholars and their families with housing, immigration concerns, financial matters, and overall adjustment to life in the United States. All international students must visit the office as soon as possible after arriving on campus to verify their legal status in the United States. See the web site at isso.cornell.edu.

**Study Abroad**
Engineers in every field are increasingly likely to work on an international level at some point in their careers, so students are encouraged to take advantage of Cornell’s excellent study abroad resources. The Engineering Advising Office can help students balance time outside the country with the requirements of an engineering curriculum. The Cornell Abroad Office (cuabroad.cornell.edu) has information on specific countries and programs.
“College is different from high school. I had to learn to study all over again; just taking notes in class wasn’t enough. Support from the Diversity Office was a big help.”

The Engineering 150 Seminar Program

Held during the fall semester, Engineering 150 (ENGRG 150) is a one-credit course that provides first-year students with an opportunity to get to know their faculty advisers on a more personal level. It also helps advisers learn about each student, so they can assist in resolving problems as they arise and help new students adjust to the demands of the engineering curriculum. Topics covered include engineering careers, research opportunities in the college and engineering in general, and study and exam skills useful to engineering students. Practicing engineers, advising staff, and faculty members from different disciplines may join the group from time to time to describe their own experiences and areas of expertise.

Sade’s dream is to obtain her doctorate and do biomedical research. Right now she’s busy with a full engineering schedule and her duties as president of the Cornell chapter of the National Society of Black Engineers. The very active chapter has hosted a conference at Cornell, offered SAT prep courses, worked with the local daily newspaper on a children’s section, and produced a miniature math and science lab in a local elementary school. Plans are afoot to develop a similar program at a local high school. Sade also served as a program assistant for the prefreshman program, and hopes to do an internship at Pfizer.

Sade Nurudeen
Major: Chemical Engineering
Hometown: Jackson, NJ
Sent to Cornell by his government, Chenchow will eventually return to Malaysia, where he expects to become a policy planner, working with local and foreign investors, politicians, and business people.

Chenchow lives in the International Living Center, which he says is “very cozy, very relaxed,” and where there are frequent events and celebrations. Chenchow spent three weeks in China on a China Synergy Program, and attended a World Youth Congress in Scotland. “When we apply for these things through Cornell, the chances are much better we’ll be selected,” he explains. Chenchow has met distinguished visitors to Cornell, including former president Bill Clinton, Microsoft head Bill Gates, and astronaut Ed Lu ’84, a Cornell alum who also majored in Electrical Engineering.

“A lot of things I have experienced, I wouldn’t have imagined before I came here.”

Student Organizations

There are more than 700 student organizations at Cornell. About two dozen of them focus on engineering, including:

- American Indian Science and Engineering Society
- American Institute of Chemical Engineering at Cornell University
- American Society of Civil Engineers at Cornell
- Cornell Biomedical Engineering Society
- Engineering Management Association of Cornell
- Engineering Student Council
- Engineers for a Sustainable World
- Institute of Biological Engineering
- International Council on Systems Engineering
- Materials Science and Engineering Club
- National Society of Black Engineers
- Society of Applied and Engineering Physics Students
- Society of Hispanic Professional Engineers
- Society of Women Engineers
Each year close to 6,000 students from all over the world apply for about 700 openings in the College of Engineering freshman class. The admissions committee doesn’t use a formula to select students from this large pool; rather, they review every student’s application carefully, focusing on:

- completion of prerequisite coursework in calculus, physics, and chemistry;
- rigorousness of course selection and demonstrated grade success;
- engineering engagement and extracurricular involvement;
- writing ability; and
- performance on the SAT or ACT (with writing) and on two SAT Subject Tests, one in math and one in science.

The committee uses this information to evaluate each applicant’s intellectual potential, strength of character, and love of learning.

All students who are interested in attending Cornell are encouraged to start working on an application. Applications must be postmarked by November 1 for early decision (which is binding) or January 1 for regular decision for freshman applicants, and March 15 for transfer applicants. To apply for freshman admission, submit the Common Application and the Cornell Supplement, which includes Cornell-specific information and essays, and the Cornell Financial Aid Application. Applicants for fall transfer admission—who must have earned at least 12 (post high school) college credits—submit Cornell’s Transfer Application.

For detailed instructions on how to apply, or to view, complete online, or download the freshman and transfer applications, visit the web site at admissions.cornell.edu.

For further information regarding admission or the College of Engineering, contact:

Engineering Admissions
Swanson Center
102 Hollister Hall
Ithaca, NY 14853-3501

e-mail engr_admissions@cornell.edu

607 255-5008
Financing a Cornell Education
Cornell practices “need-blind” admissions: students are admitted based solely on academic performance and potential, without regard for ability to pay. Cornell also makes every effort to ensure that all admitted students can afford to attend by meeting 100 percent of each family’s demonstrated need. All applicants who think they need aid should apply.

The process for applying for financial aid is concurrent with the process for applying for admission. Students should complete and submit the following:

■ The Cornell Financial Aid Application
■ Federal income tax returns for themselves or their family (previous year and/or current year)
■ The College Scholarship Service (CSS) Profile
■ The Free Application for Federal Student Aid (FAFSA)

The Office of Financial Aid and Student Employment will carefully determine eligibility for need-based aid and design an individualized aid package for each student. For more information about the financial aid application process and/or about campus employment, send e-mail to cornellu_fin_aid@cornell.edu or visit the web site at finaid.cornell.edu.

Visiting the Cornell Campus
The College of Engineering offers year-round information sessions and student-led tours of the Engineering Quad, and provides prospective students with opportunities to sit in on classes. Visitors are encouraged to call 607 255-5008 in advance to reserve dates and times. There are also guided tours of the Cornell campus and the north campus residence area, where most first-year students live. High school students are encouraged to contact the Red Carpet Society (607 255-3447; admissions.cornell.edu/redcarpet/) to find out how they can stay overnight with a current student and experience campus life.
About Ithaca

Ithaca, New York, is a small city with a big-city outlook. With about 29,000 year-round residents, Ithaca is remarkable for the diversity and erudition of its population, its commitment to the arts and civic life, and the natural beauty of its environment. Located in the heart of the Finger Lakes region, the city is spread over rolling hills at the southern tip of Cayuga Lake and offers a pleasing study in contrasts between pastoral countryside and urban living, well-preserved nineteenth-century buildings and modern amenities, tree-lined residential neighborhoods and a small but lively downtown, traditional sensibilities and cutting-edge experimentation.

Ithaca has much to offer in the form of entertainment and leisure activities. There are restaurants to suit every taste, occasion, and budget: fast food and French bistro fare, sushi and submarine sandwiches, tapas and tacos, as well as Greek gyros, Middle Eastern pitas, and pizza in every shape and size. Shoppers can choose from among the weekend farmers market on the waterfront, specialty stores on the downtown commons, “big box” outlets in the south end of town, or the malls in the northeast. Outdoor enthusiasts can hike miles of state and local park trails, bike the hilly terrain, sail or paddle on the lake, and go skiing, snowboarding, and tubing at the Greek Peak resort in nearby Virgil. Wine connoisseurs will appreciate the Finger Lakes wine trails, which provide access to one of the great wine-making regions in the United States.

For more information about visiting and staying in Ithaca, see visitithaca.com.