

# CORNELL CHRONICLE

Volume 21 Number 31 May 3, 1990

3

Simulating  
incinerators

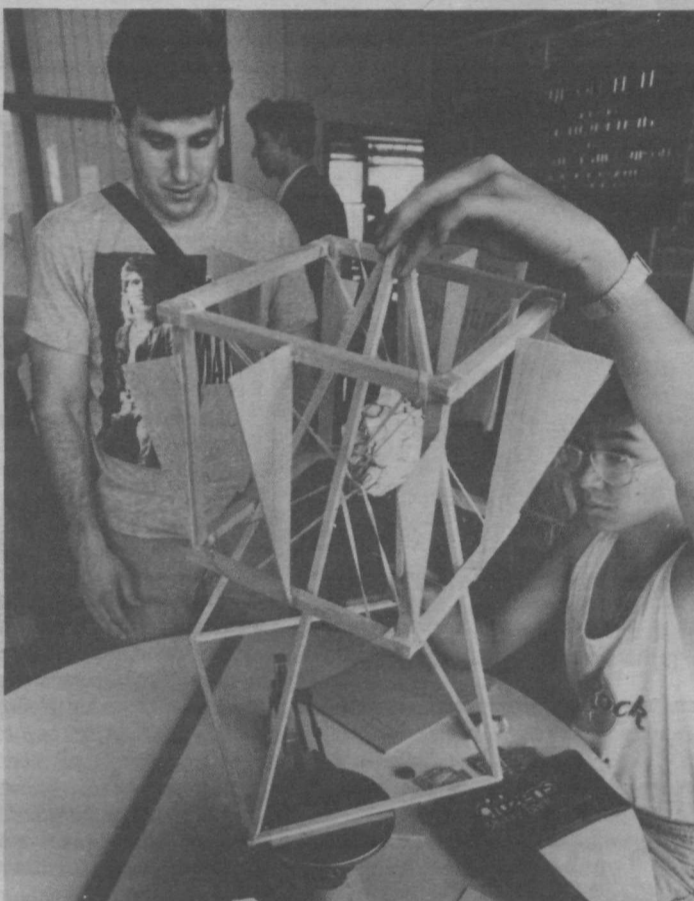
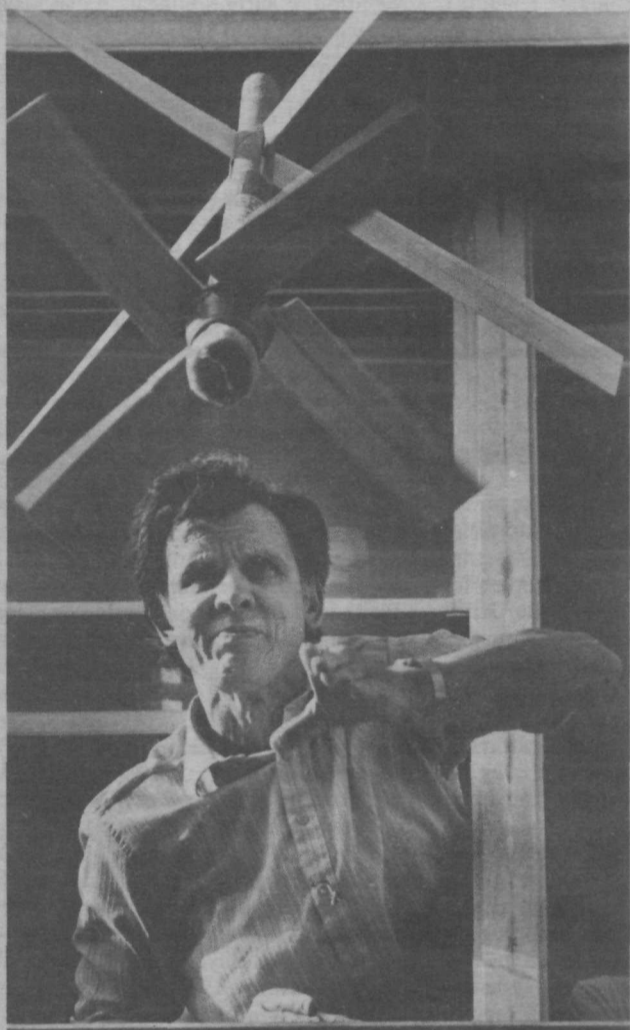


Undergraduate  
research  
supplement

7

Engineering  
via satellite

## Eggs away!



Photos by Tim Moersh

Professor Peter Davies (left) drops a package designed by his son, Kenneth, 10, during the 1990 Egg Drop Contest, sponsored by the Cornell chapter of the American Society of Mechanical Engineers. Ken's entry was sponsored by the Sciencenter in Ithaca; his package won the best-engineered prize. Junior John Hwang (above, right) weighs the package designed by sophomore Matt Hagopian (left).

## Barker urges 10% increase in student to faculty ratio

Senior Provost Robert Barker has called for a 10 percent increase by the 1992-93 academic year in the ratio of undergraduate and professional students to faculty members, preferably by reducing the number of tenured faculty while holding student enrollment steady.

With more than 70 percent of the endowed, general-purpose budget deriving from tuition, it is critical that all Cornell planning take into account the revenue that tuition — and, hence, enrollment — will supply, Barker said.

He emphasized that he is not seeking across-the-board measures. Rather, the 10 percent is an average adjustment needed to bring revenues and costs in balance so as to moderate the rates of increases in tuition while Cornell continues "to develop as one of the world's premier universities," he wrote in a letter to faculty.

"I recognize that many will see the businesslike approach I am recommending as antithetical to the academic enterprise," Barker told the faculty in the letter, which summarizes a 13-page study on enrollment which he prepared for President Frank H.T. Rhodes.

"Yet universities, as with string quartets which must live in a world that is simultaneously artistic and economic, must make their way in a fashion that is both scholarly and fiscally sound," the letter said.

This enrollment-planning paper is the first of five major analyses Barker is developing at Rhodes' request and is the latest and most elaborate Cornell effort to attack tuition increases above inflation while maintaining academic quality.

In his annual State of the University address in October, Rhodes suggested tenure-track-faculty cuts of 3 to 5 percent and incentives to encourage undergraduate teaching. In November, the Faculty Council of Representatives (FCR) endorsed its Financial Policies Committee's recommendations that faculty lines be cut by 4 percent and faculty salaries increased by 20 percent

*continued on page 6*

## Students to be honored for work in community

Seniors and graduate students will be honored on Monday, May 7, for their volunteer activities with community agencies in Tompkins County.

Representatives of nearly 150 campus and community agencies have been invited to join the students at the university's second annual Community Service Recognition Luncheon.

This year's luncheon, at the Sheraton Inn and Conference Center, will include a tribute to CIVITAS (Cornell-Ithaca Volunteers In Training And Service) for encouraging

voluntarism and matching the skills and interests of Cornell volunteers with the needs of the local community.

CIVITAS was established in the mid-1960s to emphasize community service and social responsibility, said David I. Stewart, director of community relations.

The Rev. Jack Lewis, director emeritus of Cornell United Religious Work and founder of CIVITAS, will speak at the 1990 community-service luncheon. He will share recollections of the organization's first 25 years.

The students invited to the luncheon "represent only a fraction of the Cornell students and organizations providing volunteer assistance to community agencies," Stewart said.

"Our students are tackling everything from feeding the homeless to caring for the elderly to helping elementary schools with their after-school programming.

"Voluntarism is a highly valued activity, and we're proud that student community service is making a difference throughout Ithaca and Tompkins County."

Cornell students and staff take many routes to voluntary community service, Stewart explained, citing the university's organized programs such as CIVITAS and the university's Public Service Network, fraternities, sororities, and other groups, as well as individual efforts.

Stewart said that community agencies submitted the names of 750 Cornell seniors and graduate students to the university this spring so that they could be honored at the luncheon. Up to 200 people are expected to attend.

One agency representative, so impressed with the four years of work by one student, wrote to Stewart: "We've been trying in vain to persuade her to forestall her graduation so she could continue to work with us."

Among supporters of the 1990 community-service recognition program are the Tompkins County Chamber of Commerce, Arnold Printing of Ithaca, Citizens Savings Bank, Cornell Federal Credit Union, Norstar Bank and Tompkins County Trust Co.

## Community-service proposals sought

Faculty members have been invited to submit proposals by May 18 for community-service projects that can involve undergraduates and be carried out this summer or next fall.

Funding of up to \$2,000 per project — to cover faculty or student expenses — will be provided through the President's Fund for Educational Initiatives, which has pledged \$120,000 over the next three years for the Public Service Network to carry out the program.

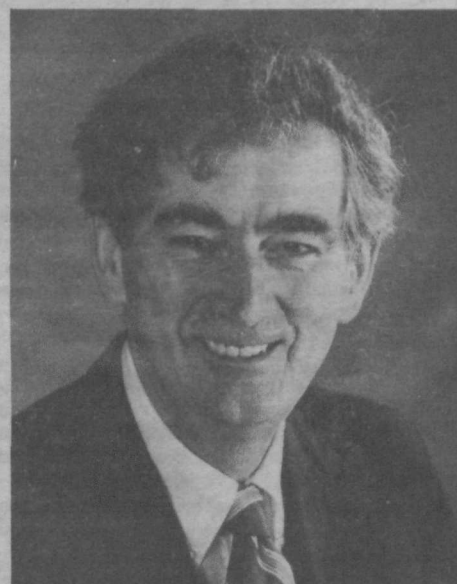
According to the network's description, the new program "provides a vehicle for faculty and students to work together in community service in a mentor-apprentice relationship," with the faculty sponsors agreeing to report

results to the university community.

The President's Fund, which is supported by anonymous gifts, provides \$1 million a year to benefit undergraduate education.

This year, most of the money has been reserved to support long-term studies of how better to balance student interests with available course enrollment; how the faculty reward system values, or fails to value, teaching; and how Cornell can develop a common freshman experience for its seven undergraduate colleges.

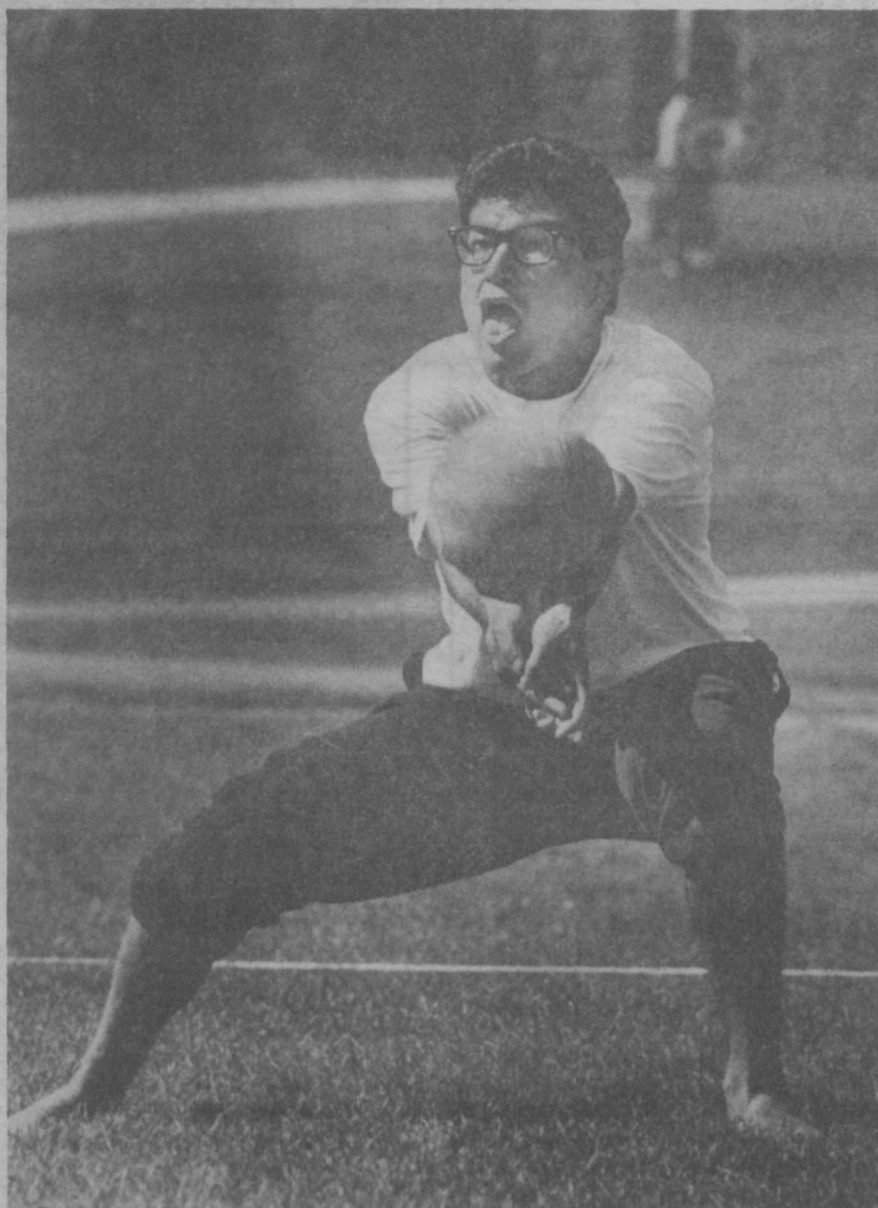
Faculty from any department may submit proposals to the new program at 186 Martha Van Rensselaer Hall, or may call Ruth Bounous at 255-2503.



Chris Hildreth

Robert Barker

## Bump, set, spike



Tim Moersh

Xavier Morales, a master's degree student in city and regional planning, practices his volleyball technique during a game on the Arts Quadrangle.

## CU professor named dean of agriculture at UC Davis

Cornell food scientist John E. Kinsella has been appointed dean of the College of Agricultural and Environmental Sciences at the University of California at Davis. He will assume his position on Sept. 1.

In announcing the appointment, UC-Davis Chancellor Theodore L. Hullar said, "We are very pleased he has accepted our invitation to guide the College of Agricultural and Environmental Sciences into the 21st century. Professor Kinsella is a very distinguished scientist, with an exceptionally strong record of research in both basic and applied science."

As dean, Kinsella also will serve as director of the university's Division of Agriculture and Natural Programs, Hullar said.

Commenting on Kinsella's appointment, David L. Call, dean of the College of Agriculture and Life Sciences here, said, "Dr.

Kinsella is an outstanding scientist, and we are very sorry to lose him. He has played a vital role in our food science program. We wish him the very best as he accepts this very important position."

A member of the faculty in the College of Agriculture and Life Sciences since 1967, Kinsella is the Liberty Hyde Bailey Professor of Food Chemistry and the General Foods Distinguished Professor of Food Science. He served as chairman of Cornell's Department of Food Science from 1977 to 1985 and also as director of the Institute of Food Science at Cornell from 1980 to 1987.

An internationally recognized authority on lipid biochemistry, Kinsella has carried out extensive research on the impact of omega-3 fatty acids in fish oils on nutrition and health.

## NOTABLES

Mathematics Professor Lawrence D. Brown, a specialist in mathematical statistics, is among 60 members and 15 foreign associates elected this year to the National Academy of Sciences in recognition of their distinguished and continuing achievements in original research. Brown, a member of the Cornell faculty since 1966, joins 25 current professors and 17 living Cornell emeriti professors elected to the academy, considered the nation's most prestigious honorary society for scientists.

Atsuo Kuki, assistant professor of chemistry, has been named one of 14 young faculty members nationwide to receive a Camille and Henry Dreyfus Teacher-Scholar Award. Awardees, whose institutions receive \$50,000 for support of their professional activities, are chosen for their promise of continuing excellence in research and teaching as evidenced by accomplishments during the first years of their academic careers. Kuki, a specialist in light-induced electron transfer reactions, joined the Cornell faculty in 1986 and received an NSF Presidential Young Investigator Award in 1988.

Poet Nancy Vieira Couto, a subsidiary rights manager with Cornell University Press, has won the ninth annual Agnes Lynch Starrett Poetry Prize for a group of 20 poems titled "The Face in the Water." Couto's poems, which were selected from

some 700 entries, will be published in the fall by the University of Pittsburgh Press. The press started the competition in 1981 for poets who have not yet published a full-length book of poetry. The prize includes a \$2,000 cash award. Couto received a M.F.A. degree in writing from Cornell in 1987.

Mary Gilliland, a lecturer in the university's John S. Knight Writing Program, has won this year's Honorable Mention in Wayne State University's Judith Siegle Pearson Awards for a work titled "Notes of Home," described as a play, a series of poems, poetry and prose.

Oliver W. Wolters, the Goldwin Smith Professor Emeritus of Southeast Asian History, is the 1990 recipient of the Association of Asian Studies' Distinguished Scholarship Award, considered the association's most prestigious honor. He was cited for doing "more than anyone to ensure the recognition of early Southeast Asian history as an accepted field of academic study in English-speaking universities." The more than 300-word citation also praised his 1982 book, "History, Culture, and Region in Southeast Asian Perspectives," as "a mature work of seminal reflection... [that has] opened new vistas of inquiry that may one day lead to a regional history conceived in terms of cultural communalities and intra-regional relationships."

## BRIEFS

**■ Faculty handbook:** Copies of the newly revised and expanded Cornell University Faculty Handbook were sent to all faculty through campus mail in March; copies for faculty members are available at the Office of the Dean of University Faculty in 315 Day Hall. Also, copies may be consulted in the offices of all deans, chairmen and department heads, as well as at the reference desks of the libraries on campus. In addition to new sections on academic integrity and academic misconduct, the handbook covers new subjects such as computer usage, conflicts of interest and indemnification coverage for emeritus professors. The latest changes are the fifth revision of the handbook, first published in 1965. It contains sections on history, organization and governance of the university; academic appointments; benefits; retirement and separation; academic policies; university policies; and services and facilities.

**■ International students:** International students traveling out of the country this summer must have their Form I-20 signed by the University Registrar. Those international students requiring a new visa to re-enter the United States must obtain a new Form I-20 at the registrar's office in Day Hall.

**■ Interim dean:** Acting Dean of Students Howard C. Kramer will continue to lead

that office through June 15, 1992, as the interim dean of students, while the university continues studying how to more closely integrate student services with academic life. Plans for additional on-campus housing and changes to the residential program that will more closely integrate it with academic life are among the topics being considered in connection with the reorganization of the dean of students office.

**■ Chimes rescheduling:** Weekday chimes concerts will be revised May 10 through 18 during final examinations. The morning concerts will be at 8:45 a.m. instead of 7:45 a.m. The midday concerts will start at 11:45 a.m. instead of 1:10 p.m. The 6 p.m. concert and the weekend concerts will remain the same. The summer schedule will start May 21. Summer concerts will be intermittent, with the midday and evening concerts the most likely to be played. For summer concert details, call the Chimes Office at 255-5350.

**■ Eller appointed:** Abby Eller, employment and training coordinator since 1984 for adult and continuing education at the Cortland BOCES office, has been appointed director of the Cornell Summer College Program for high school students. The college is a unit of the Division of Summer Session, Extramural and Related Programs.

## CORNELL CHRONICLE

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CIRCULATION: Joanne Hanavan

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It is the policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age, or handicap. The university is committed to the maintenance of affirmative-action programs that will assure the continuation of such equality of opportunity. Sexual harassment is an act of discrimination and, as such, will not be tolerated. Inquiries concerning the application of Title IX may be referred to Cornell's Title IX Coordinator (Coordinator of Women's Services) at the Office of Equal Opportunity, Cornell University, 234 Day Hall, Ithaca, N.Y. 14853-2801 (telephone 607-255-3976).

Cornell University is committed to assisting those persons with disabilities who have special needs. A brochure describing services for the handicapped student may be obtained by writing to the Office of Equal Opportunity, Cornell University, 234 Day Hall, Ithaca, N.Y. 14853-2801. Other questions or requests for special assistance may be directed to that office.

## GRADUATE BULLETIN

**Degree deadline:** May 18 is the deadline for completing all requirements for a May degree.

**Registration:** Students receiving summer support from the Graduate School must register by May 21. Students must register if they are receiving financial aid during the summer; wish to use campus facilities during the summer; or are off campus but require credit for summer study.

**Commencement:** A reception will be held for all graduate degree recipients, families and friends at The Henry, Sage Graduate Center, immediately following the May 27 commencement exercises.

**Council:** The Graduate Student Council will meet on Monday, May 7, at 5:15 p.m. in The Henry, Sage Hall.

**Workshop:** Graduate students are invited to help plan next fall's universitywide teaching assistant workshop. An organizational meeting will be held on Monday, May 7, from 4:30 to 6:30 p.m. in B106 Comstock.

## BARTON BLOTTER

A computer and related equipment worth \$5,050 were among 26 thefts on campus with losses of \$8,962 in cash and valuables, according to the morning reports of the Department of Public Safety for April 23 through 29.

There were two thefts of clothing from the laundry room of Clara Dickson Hall, with losses set at \$306. Other thefts included computer software worth \$620 taken from Riley Robb Hall, a gold necklace stolen from Barnes Hall and \$206 in cash and valuables stolen in thefts of four wallets and a purse.

Two persons were referred to the judicial administrator: one on a petit larceny charge and the other on a charge of theft of services.

Computerized copies of the most current safety report may be called up on CUINFO under the title SAFETY. CUINFO terminals are situated in the main lobbies of Day Hall, Gannett Clinic, Willard Straight Hall, Sage Hall (Graduate Student Lounge).

# 'Mathematical fires' help engineers improve incinerator's designs

Without lighting a match or releasing a puff of smoke, combustion engineers at Cornell are building fires with the aim of making municipal incinerators of the future cleaner, safer and more efficient.

Their fires are produced by performing mathematical simulations on a supercomputer. The simulations, which are based on the numerical solution of combustion-model equations, are being developed in the Combustion Simulation Laboratory of the New York State Solid Waste Combustion Institute. The institute, a research and technology-transfer program supported by New York state under contract with Cornell's Waste Management Institute, is a program of the Center for Environmental Research.

The engineers are developing methods for interacting simulated trash, simulated fire and simulated chemical compounds on the Cornell National Supercomputer Facility to help design new incinerators and evaluate the performance of proposed incinerator designs.

Their simulations will help develop a cheaper, safer alternative to actual construction of pilot-scale incinerators for the design and evaluation of unproven incinerators, according to Frederick C. Gouldin, director of the Combustion Simulation Laboratory and a professor of mechanical and aerospace engineering.

"In the 1960s, when environmental problems with incinerators were realized, the U.S. response was to abandon incineration and rely on landfills," the engineer observed. "In the 1970s it became evident that landfilling was not the perfect solution. The generation of incinerators now being installed in the United States relies on European technology, which is vastly improved over earlier designs.

"What modern incinerators can do is a lot better than what incinerators built 10 years ago can do," Gouldin said. "Further improvements are going to be based on a better understanding of the processes involved." Conceding that municipal trash incinerators and their operators have an image problem, that new designs are needed and that the United States has fallen behind Europe and Japan in incinerator technology, Gouldin cited several environmental problems that he and his colleagues are working on:

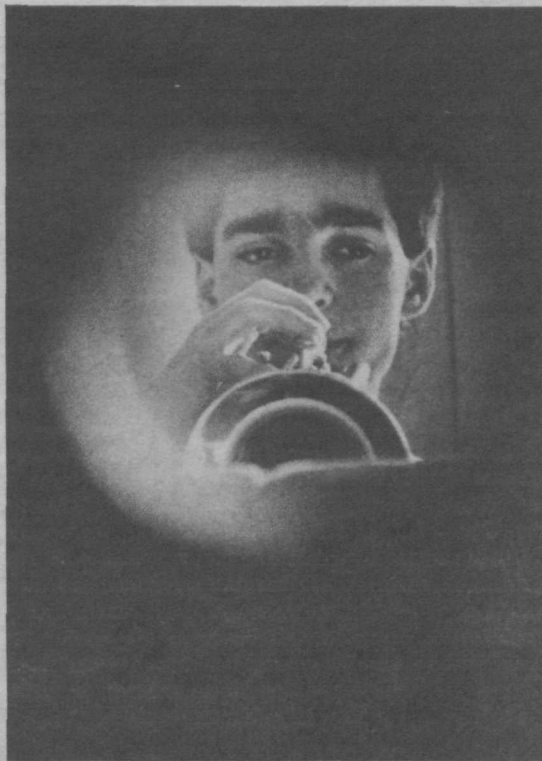
- Trash burning can produce dioxins and furan that can be extremely toxic to humans and other animal life.
- Other toxics — such as the heavy metals mercury, lead, cadmium (from sources such as batteries) and chromium — are not destroyed in even the hottest incinerators and can escape up smokestacks or end up in ash, which must be disposed of.
- Acid gases (oxides of sulfur and nitrogen and hydrogen chloride, all of which contribute to acid rain) are formed during incineration.

"Any model of incinerator processes that we can solve — even with the best supercomputers — is still an approximate representation of what's actually happening," Gouldin acknowledged. "Our big challenge is to develop reasonable models, test these models by comparing simulation results with experimental data, and then use the simulations for design and evaluation. Our laboratory also conducts small-scale physical experiments to help verify and test the results of our simulations."

The research is part of a \$5-million program established by an act of the New York State Legislature.

—Roger Segelken

## Peek



Tim Moersh

Freshman Jeff Schurgin practices his trumpet in Lincoln Hall. The photograph was taken through a door-knob hole.

# Kunstler calls Supreme Court 'enemy of the people'

When one walks up the steps of the Supreme Court and reads the principle engraved there in marble — "Equal Rights Under Law" — what one really sees is "probably the greatest living lie of our country," activist attorney William Kunstler told an overflow audience in the Law School's Moot Court Room on April 26.

The court's conservative majority, whom Kunstler called "The Gang of Five," is not only applying rights unequally, they are destroying the fundamental laws of the nation, Kunstler said.

"They are authorizing legal lynching, in essence, of the entire [Bill of Rights]. . . We've got to approach the 'Gang of Five' who wear black robes in the manner we used to approach those who wore white sheets, because they are no different," Kunstler said. The conservative majority includes Justices Sandra Day O'Connor, Anthony M. Kennedy, Antonin Scalia, Byron White and Chief Justice William H. Rehnquist.

"Whether by picketing, letter-writing, editorials, letters to the editor, fighting cases, lecturing, by any means necessary, we have to stop this — not drift, but — pell-mell rush over the cliffs . . . into the constitutional morass of no Bill of Rights at all," he said, adding that the court is indeed responsive to political pressure.

Kunstler, whom in the early 1970s The New York Times dubbed "the country's most controversial and, perhaps, its best-known lawyer," defended the right to burn the U.S. flag before the Supreme Court in 1989. In 1988, he represented Larry Davis, a Bronx man, against charges that he murdered four drug dealers and later tried to kill nine police

officers in a shootout. He also defended the Chicago 8 against charges of general conspiracy and crossing state lines with the intent of fomenting a riot in the 1960s and was counsel to the late Martin Luther King Jr.

His talk, entitled "The Rise and Fall of the Bill of Rights," highlighted more than a dozen recent Supreme Court decisions that he said restricted civil rights. He also called the court's application of rights unjust, dependent upon an individual's characteristics, such as nationality, sexual preference and economic class.

"Justice may be wholly equal for a favored few. But it is systematically withheld from all of our seasonal and perennial pariahs," he said, listing "outlaw classes" that included Native Americans, blacks, Puerto Rican nationalists, gays and lesbians, homeless people and prisoners.

Among the Supreme Court decisions handed down last term that Kunstler criticized were these:

- Permitting the destruction or loss of evidence that might exonerate a defendant unless the defense can show it was done in bad faith, "something that is virtually impossible to do," he said.
- Granting prosecutors the right to admit as evidence what was acquired by mistake. Through this "good faith exception" to exclusionary search and seizure rights, for example, evidence a defendant used cocaine in his home could be admitted even if the police entered the home only because they misread the address on a warrant.
- Allowing random drug testing of federal employees.
- Restricting equal rights on the job by finding that the Civil Rights Act protects against racial harassment in hiring

but not during employment.

• Deciding not to overturn state death-penalty laws where it was proven a person found guilty of killing a white victim was four times more likely to be sentenced to the electric chair than one who killed a black victim.

The majority's decisions may not seem to have an effect now, "but they are destroying . . . that which a lot of people have gone down in the dust for over the centuries," Kunstler said. "It is now the enemy of the people."

The appointment of future justices bodes no better than do these five, all named during former President Reagan's tenure, he added.

"The present president is using the same litmus test as Reagan, that you must be an anti-libertarian to become a Supreme Court justice, district court judge or circuit court judge," he said.

Kunstler encouraged the audience, largely made up of law students, to fight back against the system, as he said he learned to do during the Chicago 8 trial.

"The point is you have to fight and use your First Amendment rights," he said. "Fight, you have to fight. But you have to do it carefully. Pick your spots, and when they come, exploit them because the entire process is unfair."

His film treatment of the story of Leonard Peltier, an American Indian Movement leader Kunstler defended on charges stemming from a shootout that resulted in the deaths of one Native American and two FBI agents, is the subject of the upcoming movie, "In the Spirit of Crazy Horse," by Oliver Stone.

—Lisa Bennett

## Bridge building



Tim Moersh

Civil engineering students from Assistant Professor Mary Sansalone's class construct a bicycle bridge across Cascadilla Creek. The bridge-build-

ing team included members of the student chapter of the American Society of Civil Engineers and the Ithaca City Department of Public Works.

# Leaders to confer on productivity

Labor leaders, industrial managers and public educators will meet in Gov. Mario M. Cuomo's labor-management conference in May to discuss how they can improve New York state's production and its global competitiveness.

The conference on "Labor-Management Committees: Growth Through Cooperation" will be held in Albany on Tuesday and Wednesday, May 15 and 16. It was organized by the School of Industrial and Labor Relations and the New York State Department of Labor.

"New York state is experiencing significant changes in its economy and work force," said David Lipsky, dean of the School of Industrial and Labor Relations. "Within the last decade, we have seen a significant loss of manufacturing jobs, increased international competition, an aging work force, increased cultural diversity, and an increased need for family services within the work place."

Discussions will center on the work of labor-management committees in the public and private sectors "to ensure stability and growth for the economy, the retention and expansion of jobs for the work force, and to provide quality education and training for the present and future work force," Lipsky said.

A primary goal of the conference will be to determine how to strengthen New York state's competitive edge, Lipsky said in a letter to conference participants signed jointly with Lt. Gov. Stan Lundine and Thomas F. Hartnett, New York's state commissioner of labor.

In addition, Lundine will visit campus on Tuesday, May 8, to address a group of industrial relations professionals attending a two-day workshop on changes and new strategies in labor-management relations.

—Albert E. Kaff

# CALENDAR

All items for the calendar should be submitted (typewritten, double spaced) by campus mail, U.S. mail or in person to Joanne Hanavan, Chronicle Calendar, Cornell News Service, Village Green, 840 Hanshaw Road, Ithaca, NY 14850.

Notices should be sent to arrive 10 days prior to publication and should include the name and telephone number of a person who can be called if there are questions.

Notices should also include the subheading of the calendar in which the item should appear.

## DANCE

### Cornell International Folkdancers

All events are open to the Cornell community and general public. Admission is free, unless stated otherwise. For further information, call 257-3156.

Review of dances taught in March and requests, 7:30 to 10 p.m., May 6, Senior Citizens Center, 213 S. Geneva St.

Global Dance, co-sponsored by the Cornell International Folkdancers and the Cornell Wellness Program, Jitterbug, 7:30 p.m. to 10 p.m., May 8, Dance Studio, Helen Newman Hall. Partners not necessary. For information, call 273-0707.

### Israeli Folkdancing

Israeli Folkdancing, Thursdays, 8:30 p.m., Edwards Room, Anabel Taylor Hall.

## EXHIBITS

### Johnson Art Museum

The Herbert F. Johnson Museum of Art, on the corner of University and Central avenues, is open Tuesday through Sunday from 10 a.m. to 5 p.m. Admission is free. Phone: 255-6464.

"Estilo Latino: 20th Century Latin American Art," the second annual intern exhibition concentrating on works by contemporary Latin American artists and organized by the student interns at the museum, through May 6.

"Wu Guanzhong, A Contemporary Chinese Artist," the works of Wu Guanzhong, contemporary Beijing artist, will be on exhibit through May 27. Included are Chinese ink paintings, oil paintings, drawings and sketch books.

"Paintings and Drawings by J.O. Mahoney," a retrospective exhibition of 56 paintings and drawings by the late Ithaca painter J.O. Mahoney, on view May 6 through June 24. The exhibit includes work from the museum's collection, Mahoney's colleagues and friends, and the artist's estate.

### Olin Library

"The Book in Southeast Asia," early Southeast Asian manuscripts and books, fabricated from palm leaves or the bark of mulberry trees and written in exotic scripts, along with colonial and modern books, Monday through Friday, 8 a.m. to 5 p.m., through June 12.

### University Library

"Human Sexuality: A Selection of Library Resources," an exhibit in Uris and Olin libraries, manuscripts and archives, through June. The exhibition covers topics such as witchcraft, AIDS, heterosexual relationships, the evolution of lesbian and gay writing, lesbian and gay liberation, reproductive rights and directions of current research.

## FILMS

Films listed below are sponsored by Cornell Cinema unless otherwise noted. Most Cinema films cost \$3, except for weekend films in Uris and Statler, which are \$4, and are open to the public unless otherwise stated. An (\*) means admission is charged.

### Thursday, 5/3

"La Guerre Est Finie" (1966), directed by Alain Resnais, with Yves Montand, Ingrid Thulin and Genevieve Bujold, 7:30 p.m., Film Forum, Center for Performing Arts.

"The Celluloid Closet," with guest speaker Vito Russo, co-sponsored by Lesbian, Bisexual & Gay Coalition, CCPA and the Rose Goldsen Fund, 8 p.m., Willard Straight.\*

"Stella" (1989), directed by John Erman, with Bette Midler and John Goodman, 9:30 p.m., Uris.\*

### Friday, 5/4

"Letter to the Next Generation" (1990), directed by James Klein, 7:30 p.m., Anabel Taylor.\*

"Rocky and Bullwinkle Night," with Boris and Natasha, 9:30 p.m., Anabel Taylor.\*

"Split" (1989), directed by Chris Shaw, with Timothy Dwight, Joan Bechtel and John Flynn, 10 p.m., Uris.\*

### Saturday, 5/5

"Guddi," directed by Hrishikesh Mukherjee, with Jaya Bhaduri, Ashaok Kumar, 3:15 p.m., 302 Uris Library.

"Letter to the Next Generation," 7:10 p.m., Willard Straight.\*

"Tom Jones" (1963), directed by Tony Richardson, with Albert Finney and Susannah York, 7:30 p.m., Uris.\*

"Glory" (1989), directed by Edward Zwick, with Matthew Broderick and Denzel Washington, 9:15 p.m., Willard Straight.\*

"Rocky and Bullwinkle Night," midnight, Willard Straight.\*

### Sunday, 5/6

Whitney Biennial Video 7: "Joyride TM," Constance DeJong/Tony Oursler; "Hitchcock Trilogy: Vertigo, Psycho, Tom Curtain," Rea Tajiri; "Peggy and Fred in Kansas," Leslie Thornton; "Peggy and Fred and Pete," Leslie Thornton, co-sponsored by CCPA, 2 p.m., Johnson Museum.

"Stella," 4:30 p.m., Willard Straight.\*

"The Birds" (1963), directed by Alfred Hitchcock, with Rod Taylor and Tippi Hedren, 7:30 p.m., Willard Straight.\*

IFMAC Annual Show, co-sponsored by independent film makers at Cornell, 10:15 p.m., Willard Straight.

### Monday, 5/7

"Working Girl" (1988), directed by Mike Nichols, with Melanie Griffith, Harrison Ford and Sigourney Weaver, 7 p.m., Willard Straight.\*

"Glory," 9:30 p.m., Willard Straight.\*

### Tuesday, 5/8

"Airplane!" directed by Jim Abrahams, with Lloyd Bridges, Julie Hagerty and Robert Stack, 7 p.m., Willard Straight.\*

"Glory," 9:15 p.m., Willard Straight.\*

### Wednesday, 5/9

"The Last Picture Show" (1971), directed by Peter Bogdanovich, with Timothy Bottoms, Jeff Bridges and Cloris Leachman, 6:45 p.m., Willard Straight.\*

"Glory," 9:30 p.m., Willard Straight.\*

### Thursday, 5/10

"Roger and Me" (1989), directed by Michael Moore, 7:15 p.m., Willard Straight.\*

"Born on the Fourth of July" (1989), directed by Oliver Stone, with Tom Cruise and Kyra Sedgwick, 9:30 p.m., Willard Straight.\*

## LECTURES

### Biochemistry, Molecular & Cell Biology

"Mechanisms of Cooperativity and Allosteric Regulation in Proteins," Max Perutz, Medical Research Council Laboratory of Molecular Biology, Cambridge, England and The Class of 1942 James B. Sumner Lecturer, May 3, 4:30 p.m., Conference Room, Biotechnology Building.

The Class of 1942 James B. Sumner Lecture, "Determining the Atomic Structure of Living Matter: What Use to Medicine?" Max Perutz, May 4, 4 p.m., Conference Room, Biotechnology Building.

### Southeast Asia Program

"Implications of Illiteracy for Southeast Asian Societies," Kristina Lindell, Lund University, Sweden, May 3, 12:20 p.m., 102 West Ave. Extension.

## MUSIC

### Department of Music

Flutist James Galway and the Tokyo String Quartet will share the stage for the last concert of the Great Soloist and Orchestra Series today at 8:15 p.m. in Bailey Hall. The program will include three flute quartets by Mozart: K.285b,

K.298 and K.285; Beethoven's "String Quartet, Op. 135"; and Anton Reicha's "Quintet for Flute and String Quartet, Op. 105." Tickets for tonight's concert are on sale at the Lincoln Hall ticket office from Monday through Friday, 9 a.m. to 1 p.m., telephone 255-5144; and at the Center Ithaca Box Office from Tuesday through Saturday, 11:45 a.m. to 4:30 p.m., telephone 273-4497. Prices are \$19 to \$30 for the general public and \$16 to \$25 for students.

"The Joy of Song," a masterclass/recital held by Susan Davenney Wyner and her students on May 4 at 8:15 p.m. in Barnes Hall. Featured music will be art songs and operas, a variety of duets, trios and quartets with piano, harpsichord or fortepiano accompaniment, according to the style of music of the work.

Chamber music will be performed by students of Sonya Monosoff on May 5 at 8:15 p.m. in Barnes Hall. Bruce Anderson and Marek Mistry, violins; Karen Mohlke, viola and Graeme Bailey, cello, will perform Maurice Ravel's "String Quartet." Antonin Dvorak's "Dumky Trio, op. 90" will be played by Melissa Robbins, violin; Yona Brown, cello, and Yumi Asaoka, piano.

"A Program of Twentieth-Century Works set for Wind Band" will be presented by the Cornell Wind Ensemble, under the direction of Mark Scatterday, on May 6 at 4 p.m. in Bailey Hall. The program includes Shostakovich's "Festive Overture"; Thorne's "Adagio Music"; Holsinger's "Benedicamus Socii Dominio"; Barber's "Commando March"; Husa's "Smetana Fanfare"; Hanson's "Dies Natalis"; and Roger Nixon's "Fiesta Del Pacifico." The Cornell Contemporary Chamber Players will perform Edgar Varese's "Hyperprism."

MIDI Madness V (Musical Instrumental Digital Interface), with students of David Borden, will give a demonstration of their new computer compositions on May 7 and May 8 at 8:15 p.m. in Barnes Hall.

Spring Gamelan XVIII, under the direction of Martin Hatch, will perform on May 8 and 9, 5 to 6:30 p.m. on the Arts Quad (101 Lincoln Hall in case of rain). Though probably best known for their percussion instruments, hanging gongs, gong-chimes, or drums found throughout Southeast Asia, the strong vocal tradition of Central Java has been important in the development of most of gamelan music. Director Hatch invited Sumarsam to accompany the ensemble on those two dates.

### Bound for Glory

Jan Marra, singer and writer, will perform in three live sets in the Commons Coffeehouse in Anabel Taylor Hall on May 6. Bound for Glory can be heard Sundays from 8 to 11 p.m. on WVBR-FM, 93.5.

## READINGS

### Africana Studies/ English

The postponed reading by Trinidadian novelist Earl Lovelace on April 30 has been rescheduled for May 7, 4:30 p.m., 122 Rockefeller Hall.

## RELIGION

### Sage Chapel

Joseph H. Holland, A.B. '78, M.A. '79, attorney, New York City, will deliver the sermon at Sage Chapel on May 6. The service will begin at 11 a.m. Music will be provided by the Sage Chapel Choir. Sage is a non-sectarian chapel that fosters dialogue and exploration with and among the major faith traditions.

### Baha'i

Weekly meetings on campus. Call 257-7971 for information.

### Catholic

Mass: Saturdays, 5 p.m., Anabel Taylor Auditorium.

Mass: Sundays, 9:30 a.m., 11 a.m., 5 p.m., Anabel Taylor Auditorium.

Daily Masses, Monday through Friday, 12:20 p.m., Anabel Taylor Chapel.



Harvey Ferdtschneider

"Sunday Afternoon," one of the works on display in "Paintings and Drawings by J.O. Mahoney," a retrospective exhibition of 56 paintings and drawings by the late Ithaca painter J.O. Mahoney, on view May 6 through June 24 at the Johnson Museum of Art.



Cornell Gamelan (above) will perform in Spring Gamelan XVIII, under the direction of Martin Hatch, on May 8 and 9 from 5 to 6:30 p.m. on the Arts Quad. (Rain location: Room 101 Lincoln Hall.)

**Christian Science**  
Testimony Meeting: Thursdays, 7 p.m., Anabel Taylor Founders Room.

**Catholic (Anglican)**  
Sundays, worship and Eucharist, 9:30 a.m., Anabel Taylor Chapel. Rev. Gordon Brewster, chaplain, Anabel Taylor Chapel.

**Friends (Quakers)**  
Sundays, 10 a.m., adult discussion; 11 a.m., meeting for worship, Edwards Room, Anabel Taylor Hall. Call 272-8755 for information.

**Jewish**  
Shabbat Services: Friday, Reform, 6 p.m., Anabel Taylor Chapel; Conservative, 6 p.m., Founders Room; Orthodox, Young Israel (call 272-5810 for times). Saturday, Orthodox, 9:45 a.m., Edwards Room; Conservative/Egalitarian, 9:45 a.m., Founders Room. Morning Minyan at Young Israel, 106 West 11th St. Call 272-5810.

**Korean Church**  
Sundays, 1 p.m., Anabel Taylor Chapel.

**Lutheran**  
Bible Study and Communion, Fridays 12:20 p.m., G-3A Anabel Taylor Hall.

**Muslim**  
Fridays, 1 p.m., Anabel Taylor Edwards Room.

**Protestant**  
Protestant Cooperative Ministry: Bible Study, Sundays, 10 a.m., G-7 Anabel Taylor; Sunday worship, 11 a.m., Anabel Taylor Chapel.

**Zen Buddhism**  
Zen practice Tuesdays at 7 p.m. and Thursdays at 5:10 p.m. in the chapel, Anabel Taylor Hall. For more information or to arrange beginner's instruction, telephone Jon Windland at 272-0235.

## SEMINARS

**Applied Mathematics**  
"A Physiologically Structured Population Model for a Size-Dependent Predator-Prey Interaction," Andre M. De Roos, University of California, May 4, 4 p.m., 322 Sage Hall.

**Astronomy**  
"Systematics of Galaxy Properties: Hints About Their Formation," George Djorgovski, California Institute of Technology, May 3, 4:30 p.m., 105 Space Science Building.

**Biochemistry**  
"Histone Function in Yeast," Michael Grunstein, University of California, May 4, 12:20 p.m., Large Conference Room, Biotechnology Building.  
"snRNPs and Splicing in Yeast: Genetic Approaches," Christine Guthrie, University of

California Medical School, May 11, 4 p.m., Large Conference Room, Biotechnology Building.

**Chemistry**  
General Chemistry Colloquium, "Building a Metal, Atom by Atom," Robert Whetten, UCLA, May 3, 4:40 p.m., 119 Baker Laboratory.  
Organic Chemistry Seminar, "Applications of Lowvalent Metals in Organic Synthesis," Steve Pederson, UC, Berkeley, May 7, 4:40 p.m., 119 Baker Laboratory.

**CISER**  
"Data Quality in Mail, Telephone and Face-to-Face Surveys: A Mode Comparison in the Netherlands," Edith De Leeuw, Netherlands Organization for the Advancement of Science, May 8, 11 a.m., 250 Caldwell Hall.  
"Rasch and Mokken Models for Social Measurement," Joop Hox, NOAS, May 8, 1 p.m., 250 Caldwell Hall.

**Communication**  
Title to be announced, Stephanie Denmark and Linda Callahan, May 4, 2:45 p.m., 213 Academic I.

**Electrical Engineering**  
"Nonequilibrium Phase Transition and Chaos in Semiconductors," Eckehard Scholl, Institute of Theoretical Physics, Technical University of Berlin, West Germany, co-sponsored by electrical, and mechanical and aerospace engineering, May 3, 4:30 p.m., 219 Phillips Hall.

**Environmental Toxicology**  
"Release of a Genetically Engineered Virus," H. Alan Wood, Boyce Thompson Institute, May 4, 12:20 p.m., 304 Femow Hall.  
Title to be announced, Nancy Ostig, Cornell, May 11, 12:20 p.m., 304 Femow Hall.

**Epidemiology**  
"Iron Supplementation in Rural Pregnant Women in Thailand," Pattanee Winichagoon, Cornell, May 4, 12:20 p.m., 260 Warren Hall.  
"Measure of Performance of Indicators of Health or Nutritional Status," Fushing Hsieh, Cornell, May 11, 12:20 p.m., 260 Warren Hall.

**Floriculture & Ornamental Horticulture**  
"Phenolic Differences Among Etiolated and Light-Grown Carpinus," John Englert, Cornell, May 3, 12:15 p.m., 404 Plant Science.

**Global Environment Program**  
"Oak Ridge National Laboratory: An Overview of Global Climate Change Research," presenters from Oak Ridge National Laboratory, Tennessee, May 7, 9 to 10:30 a.m.

**Immunology**  
"The Role of Antibody in Mucus Entrapment and Rapid Expulsion of *Trichinella spiralis* Larvae," Melissa Carlisle, Cornell, May 4, 12:15 p.m., G-3 Vet Research Tower.

**International Development & Women**  
"Engendering the Environmental Debate: Lessons From the Indian Experience," Bina Agarwal, Radcliffe/Harvard University, and Institute of Economic Growth, Delhi, May 3, 4:30 p.m., 102 West Sibley Hall. "Political Economy of the Environmental Crisis in India," May 4, 12:15 p.m., 115 Tjaden Hall.

**International Nutrition**  
"Community, Nutrition and Health Issues in Bangladesh," Florence McCarthy, Cornell, May 3, 12:15 p.m., 200 Savage Hall.

**International Studies in Planning**  
"The Political Economy of the Environmental Crisis in India," Bina Agarwal, University of Delhi, co-sponsored by Program on International Development and Women, Rural Development Committee and Natural Resources, May 4, 12:15 p.m., 115 Tjaden Hall.

**Jugatae**  
"Development and its Possible Effects of the Progeny Allocation Strategies of Polyembryonic Wasps," Michael Strand, University of Wisconsin, Madison, co-sponsored by Department of Entomology, May 7, 4 p.m., Morison Seminar Room.

**Natural Resources**  
"Agrarian Structure in Relation to the Destruction of Ecuador's Tropical Rain Forests," Jorge Uquillas R., University of Kentucky, May 3, 12:20 p.m., 304 Femow Hall.  
"The Political Economy of the Environmental Crisis in India," Bina Agarwal, Institute of Economic Growth, University of Delhi, co-sponsored by International Studies in Planning, May 4, 12:15 p.m., 115 Tjaden Hall.

**Neurobiology & Behavior**  
"Multimodal Cue Redundancy: Pheromones and Ultrasound in the Courtship of an Arctiid Moth," William Conner, Wake Forest University, May 3, 12:30 p.m., Morison Seminar Room, Corson/Mudd Hall.  
"Neural Regulation of Degradation of Nicotinic Acetylcholine Receptor in Mouse Skeletal Muscle," Show-Ling Shyng, Cornell, May 10, 12:30 p.m., Morison Seminar Room, Corson/Mudd Hall.

**Operations Research & Industrial Engineering**  
"Wrap Up," Robin Roundy, Cornell, May 3, 4:30 p.m., B-14 Hollister Hall.

**Ornithology**  
"The Secret Life of the Barn Owl," Ray Blaskiewicz, May 7, 7:45 p.m., Laboratory of Ornithology, 159 Sapsucker Woods Road.

**Peace Studies Program**  
"Political Theory of Strategic Arms Control," Franklyn Griffiths, University of Toronto, May 3, 12:15 p.m., G-08 Uris Hall.

**Pharmacology**  
"Molecular Biology of the Glutamate Receptors: Structure and Function," Steve Heinemann, Salk Institute, May 7, 4:30 p.m., G-3 Vet Research Tower.

**Physiology**  
"Mechanism of Action of Vitamin D: Osteocalcin Gene Regulation," J.W. Pike, Baylor College of Medicine, May 8, 4:30 p.m., G-3 Vet Research Tower.

**Plant Biology**  
"Light and the Regulation of Stem Elongation," Fred Behringer, Cornell, May 4, 11:15 a.m., 404 Plant Science Building.

**Plant Breeding & Biometry**  
"Genetic Impact of the Virus Eradication Program on the National Pisum Collection," Barbara Recchio-Demmin, NYSAES, Geneva, May 8, 12:20 p.m., 135 Emerson Hall.

**Population Development Program**  
"International Contract Labor Migration from the Philippines: The Case of Filipino Nurses," Rochelle Ball, University of Sydney, May 4, 3:30 p.m., 32 Warren Hall.

**Psychology**  
"Fetal and Newborn Movement: Clocks, Chaos or Noise?" Steve Robertson, Cornell, May 4, 3:30 p.m., 202 Uris Hall.

**Stability, Transition & Turbulence**  
"Three-Dimensional Vortex Dynamics Simulations of Free Shear Flows," E. Meiburg, Brown University, May 8, 12:30 p.m., Grumman Conference Room.

**Statistics**  
"Applications of Estimating Function Theory to Proportional Hazards Models," Chao A. Hsiung, Central University, May 9, 3:30 p.m., 100 Caldwell Hall.

**Vegetable Crops**  
"Assessing Compensatory Growth Following Defoliation in Potato," Gay Nicholson, Cornell, May 3, 4:30 p.m., 404 Plant Science Building.

**Western Societies**  
"France and Decolonization," Andre Nouschi,

University of Nice, May 3, 12:15 p.m. 153 Uris Hall.

"Representing Events: Writing History in Postwar France," Steven Unger, University of Iowa, May 3, 4:30 p.m., 277 Goldwin Smith Hall.

## SYMPOSIA

### Western Societies/German Studies

"Heidegger and Holderlin: Philosophy, Literature and Politics," May 5, 9:30 a.m. to 5:30 p.m., 177 Goldwin Smith Hall. For further information, call 255-7592.

## MISC.

### Aerobics Classes

Employee aerobics will be given by Amy Brill on Mondays, Wednesdays and Fridays, June 11 through Aug. 17, 12:10 to 1:10 p.m., in Helen Newman Gymnasium. Fee is \$2 per class. For more information, call Debbie Gatch at 255-5133.

### Alcoholics Anonymous

Meetings are open to the public and will be held Monday through Friday at 12:15 p.m. and Thursdays at 9:30 p.m. in Anabel Taylor Hall. For more information, call 273-1541.

### Biotechnology

"Strategies in Protein Characterization," a three-hour interactive teleconference, May 9, noon to 3 p.m., conference room, Biotechnology Building. Participants include Csaba Horvath, Yale University, William Hancock, Genentech Inc. and Rodney Levine, National Institutes of Health. To register, contact Ted Thannhauser, 254-4848.

### Comedian in Concert

Comedian Dennis Miller will perform on May 6 at 9 p.m. in Barton Hall. Tickets are on sale at the Willard Straight Hall Box Office, Rebo Records and Ithaca CD. Admission is \$10 with Cornell ID and \$12 without. Miller is the anchor of "Saturday Night Live's" Weekend Update.

### Committee on U.S.-Latin American Relations (CUSLAR)

Meetings are held Mondays at 5 p.m., in the Common Coffeehouse, Anabel Taylor. For more information call 255-7293.

### Cornell Badminton Club

The club meets Wednesdays and Sundays at the Henry St. John gym. For more information, call Bill at 272-3594 or Tom or Lisa at 533-7384.

### Cornell World Tae Kwon Do Assoc.

The club meets Mondays, Tuesdays, Wednesdays and Fridays from 7 to 8 p.m. in Barton Hall. For more information, call Sandy at 255-7923 or 273-7826.

### Hebrew Conversation Club

Hebrew Conversation Club meets Thursdays, 11:45 a.m. to 12:15 p.m., 374 Rockefeller Hall.

### Lesbian/Bisexual Women's Support

Group for all interested women meets Wednesdays from 7 to 9 p.m., 103 Barnes Hall. For more information, call 255-3608.

### Cornell Garden Plots

Distribution of garden plots will be Saturday, May 12, auditorium, Martha Van Rensselaer Hall. Those who have not yet signed up should come at 11:30 a.m. for remaining plots.

### Macintosh Users' Group

MUGWUMP, the Macintosh Users' Group for Writers and Users of Mac Programs, meets on the first Thursday of each month. Meetings are free and beginners are welcome. For more information, call 272-4158.

### Narcotics Anonymous

A group of recovering addicts who live without the use of drugs, including alcohol. Membership requirement is a desire to stop using. Meetings are held weekly at 6 p.m., G-18 Anabel Taylor Hall.

# New student insurance plan offers more for less

The student health insurance program for 1990-91 not only will be improved, but will cost most students less than this year's coverage despite continuing health-cost inflation of more than 15 percent, according to university officials.

For individual graduate or undergraduate students, the annual cost for the policy will drop 4 percent, from this year's \$409 to approximately \$390. Of some 7,100 student policy-holders this year, about 96 percent took individual coverage only.

"We started early and made an exhaustive search of the market," said Allan Lentini, assistant to Senior Vice President James E. Morley Jr. "We only ended up with two bids but, fortunately, both had enhanced benefits and one had considerably lower costs, especially if you consider inflation."

In September, Morley named Lentini along with Leonard Nissenson, administrator of University Health Services, and George H. Meeker, director of risk management and insurance, to find a policy for 1990-91.

They wrote to 12 insurance brokers, interviewed seven and assigned four to seek

bids from nine companies. The current company, Gerber Life Insurance Co., asked increases of about 15 percent; the lower-priced offer came from the American Medical and Life Insurance Co. of Hicksville, N.Y.

The cost of a prepaid policy that provides a student's spouse with the same Gannett Health Center services as students receive will drop more than 12 percent, from this year's \$840 to \$736, Lentini said. The cost of a non-prepayment plan — where spouses get services anywhere and submit bills — will rise 5.5 percent, from \$1,109 to \$1,170. Sixty-three percent of the students whose policies cover their spouse have the lower-priced prepaid plan.

To include coverage of one or more children, the cost will rise by about 7 percent, from this year's \$416 to \$446.

Even at the generally lower price, the new coverage is better than the current coverage in several ways, Nissenson said. For basic accident and sickness medical expenses, the deductible paid by the student will drop from \$50 to \$25, and the combined maximum benefit will increase from \$52,000 to \$152,000. Some of the other

enhanced benefits that Nissenson noted will be:

- Outpatient coverage will be 100 percent, up to \$1,500 — with no limit on X-ray or laboratory costs — while this year's was 80 percent, up to \$500 — with a \$200 maximum for X-ray/lab costs.

- Miscellaneous hospital costs and emergency medical costs will be paid at 100 percent to a maximum of \$1,500 instead of at 80 percent.

- In-hospital physicians' fees will be paid at 100 percent, up to a maximum of \$35 a visit, as compared to this year's 80 percent, up to \$25.

- Psychiatric in-patient care will be covered up to \$15,000, compared to this year's limit of \$10,000.

Full details on the new plan may be obtained at the Student Insurance Office in the Gannett Center, telephone 255-6363. The plan will be described in the July bursar's bill sent to all students, along with waiver forms for those students who do not want to be covered.

While waivers were due in late August this year, they may be sent in as late as Sept. 28 for next year, Nissenson said.

Without a waiver, coverage is automatically provided. Next year, however, there will be revised procedures for those who fail to submit the waiver by the deadline. They will be covered just for the first month, be charged a \$40 penalty, and be required to release the insurance company from any liability for medical expenses after that month, rather than be required to pay the full year's cost.

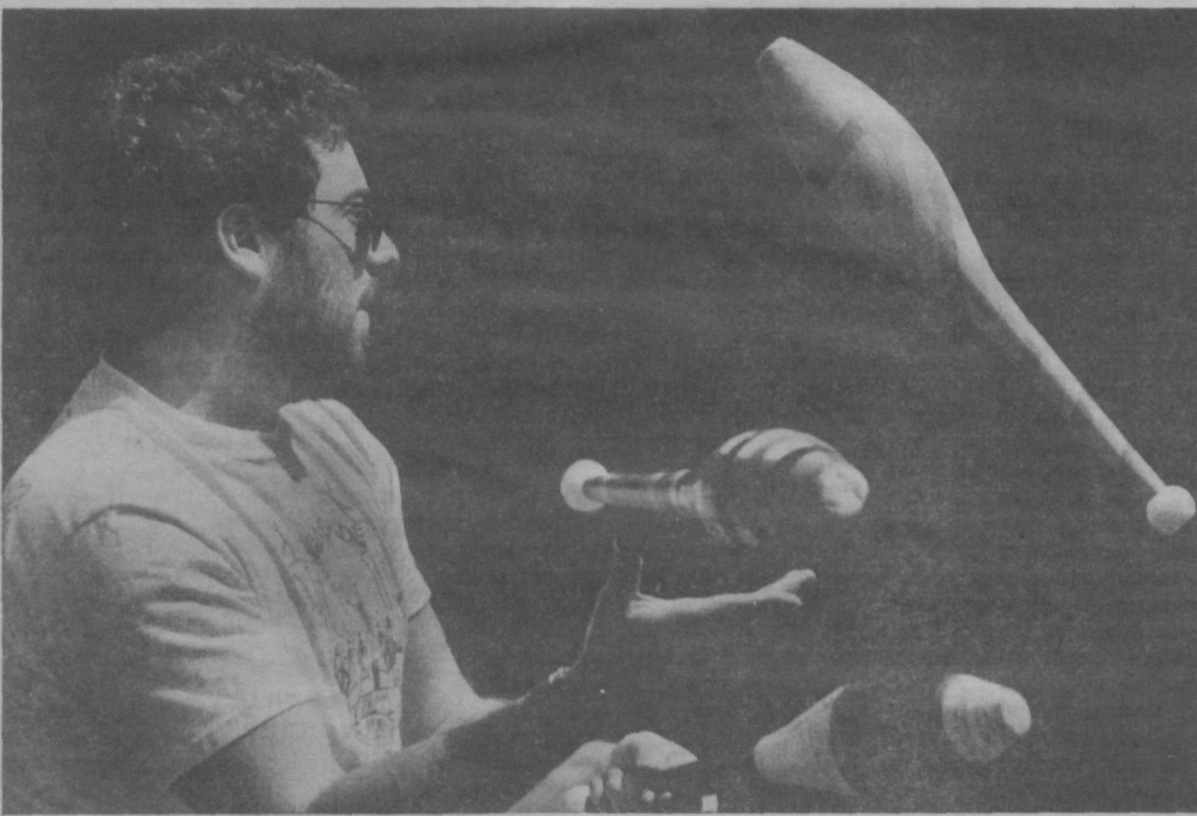
The benefits of the new policy were worked out by the Lentini-Nissenson-Meeker committee after receiving recommendations from faculty, student and administrative groups.

The current policy cost an average of 61 percent more than in 1988-89. However, published reviews of campus insurance nationwide last fall indicated that increases ranged from 60 to 150 percent.

Next year's brighter picture was aided a little by luck, Lentini said, noting that only about a dozen insurers are even qualified to write student insurance in New York state, where restrictive laws tend to make them wary at any price. That is why Cornell drew only two bids, he said.

— Sam Segal

## Stress Reduction 101



Tim Moersh

Josh Tauber, a computer science and government major, finds time to juggle more than his studies.

## Three students win 2-week trip to Jordan

Three students have won two-week trips to the Royal Hashemite Kingdom of Jordan for developing marketing plans to increase tourism to that Middle East nation.

The all-expense-paid trips are sponsored by the Jordan Hotels Association, Royal Jordanian Airlines and Jordan's Ministry of Tourism.

The winners are Barbara-Jean Ross, Darnestown, Md., a graduate student in the School of Hotel Administration; Stephanie Traugott, Massapequa, N.Y., a Hotel School senior; and Steven Gray, Honolulu, an engineering student who completed credits for graduation by taking a Hotel School course.

The prizes resulted from a challenge issued in January 1989 by Fakhri Twal, general manager of the Jordan Hotels Association, when he spoke to the Hotel School's class on international marketing in the hospitality industry.

He challenged the 22 members of the class to develop a marketing plan to increase tourism to his nation.

Rich in Roman, Greek, Moslem and Christian cultural sites and serving as a trade route through the Middle East for thousands of years, Jordan offers a number of tourist attractions that the students considered, including desert castles, deep-sea diving, and Mt. Nebo, from which Moses is said to have viewed the Promised Land.

"Educating those in a position to promote traffic to Jordan has to be one of the first steps," Traugott said in commenting on her prize-winning marketing plan.

"Seminars and other information programs can go a long way to forming favorable impressions, creating goodwill and dispelling misinformation about that region," Traugott added.

— Albert E. Kaff

## Enrollment *continued from page 1*

over two years. The FCR proposal also favored annual 10 percent increases in graduate-student stipends and the continuation of financial-aid policies that keep Cornell accessible to academically competitive students regardless of family income.

In discussions with faculty and deans, Barker has said that he is not positing a definition of productivity or that Cornell faculty are not productive. Judging by virtually any qualitative index, Cornell's faculty are remarkably able and productive. But using economic models enables the university to assess the efficiency of its work in new and important ways. If Cornell does not achieve the end result of higher ratios, future tuition levels will keep exceeding the rise in inflation.

"With inflation at 5 percent and national productivity at 2 percent, tuition will be \$30,000 in 10 years if we cannot adjust our basic efficiency from . . . nine undergraduate students per FTE [full-time-equivalent] faculty member," Barker said.

Barker's paper — "Enrollments: On the Business of Being a University" — sets universitywide targets but emphasizes that individual colleges, departments and graduate fields have to seek their own means of reaching those, numerical targets while working in harmony with the rest of the university.

"Our challenge, then, is to increase efficiency within the framework of present resources, to contain tuition increases and, in a carefully coordinated way, to optimize the use of all our resources while keeping a

firm fix on our goal to prosper as one of the world's premier universities," Barker wrote to Rhodes.

In discussions with faculty, Barker has noted his use of "optimize" rather than maximize. He says language teaching or disciplines such as architecture that have extensive studio teaching will have lower optimal student/faculty ratios than some other disciplines.

The paper deals principally with the endowed, general-purpose budget, which supports the undergraduate College of Architecture, Art and Planning; College of Arts and Sciences; and College of Engineering, as well as universitywide services such as libraries, student services, utilities and maintenance.

The paper notes, however, that in Cornell's state-supported colleges, too, "increasingly academic support services and financial aid derive from tuition and fees."

Barker made clear that he does not see increasing productivity as strictly a faculty concern. "Parallel increases in the productivity of administrative staff must occur also, and I will address these more directly in my second paper," he advised Rhodes.

While this paper concerns enrollment, Barker has told faculty groups he is less concerned with seeking some ideal enrollment level than with urging people to plan expenses in relation to levels of enrollment that will supply the revenue. This includes the difference between undergraduates and professional students, who add revenue, as against other graduate students, who,

though vital to the university, on the average constitute an expense.

The paper introduced a new element into Cornell's discussion of cost management — the role of national productivity. As tuition has risen faster than inflation at a time when family income has stayed the same or dropped, universities have been challenged to explain why. Barker cited specific economies, such as more than \$12 million in base-budget cuts since 1987, and also extraordinary cost increases, particularly due to reductions in the federal government's funding for facilities and financial aid. But those points have not ended skepticism as to whether tough management decisions are being made to hold costs down, or why tuition increases steadily exceed inflation by about 2 percentage points.

Barker's notion, for which he gives credit to a recent paper by W.F. Massy — a Stanford University vice president for finance and professor of education and business administration — is that productivity is the key. If Cornell can match outside productivity (all other factors being equal), it need not raise tuition; but if its own productivity merely stays level against rising outside productivity, the difference must be added to Cornell's tuition, Barker says.

This is the reason tuition would reach \$30,000 in 10 years unless Cornell intervenes decisively with productivity increases of its own, he said. Yet, blind determination to match national productivity by continually raising the student-faculty ratio would, at some point, harm quality, so

changes must be measured, Barker said.

An anticipated \$1 billion-plus capital campaign will not eliminate the need for intervention, as economics Professor Richard Schuler, chairman of the FCR's Financial Policies Committee, has cautioned.

Cornell's endowment is now a little more than \$800 million, and the contemplated campaign would do extremely well if it increased the funds available to support the general purpose budget from unrestricted endowment funds by \$60 million a year. Yet, to obviate the need for productivity increases by faculty and staff, the endowment actually would have to expand by \$100 million to \$250 million per year, Barker said.

He asserted the intervention that would work would be adjusting university numbers so that on the average 400 undergraduate credit-hours be taught per full-time-equivalent faculty member. He said that this could be achieved using a mix of faculty and instructional staff and described an average department in which each faculty member taught 270 undergraduate credit-hours a year while each lecturer or instructor taught 480 — 30 credit-hours being the average load for a full-time student.

Currently, the faculty average ranges from 761 undergraduate credit-hours a year in the School of Hotel Administration to 409 in Arts and Sciences and 195 in Engineering. When other instructional staff are included, these numbers decrease to 475, 299 and 183, respectively.

— Sam Segal

# College of Engineering offers courses by satellite

Peter Jackson's operations research class and David Gries' computer science class are much like the usual courses taught by the two professors — except for a trio of television cameras trained on the professors and their students, banks of lights and a director huddled in a nearby projection booth.

The two classes mark the beginning of a new Cornell effort to offer televised courses via satellite to students at off-campus sites such as corporate facilities.

Now in its first semester, the Continuing Education Program is still very much in its formative stages, according to director Robert Sample.

The two courses, "Economic Analysis of Engineering Systems" and "The Science of Programming," are taped and later beamed via Cornell's satellite uplink truck to five nearby corporate sites. The students are employees at three New York state facilities of International Business Machines Corp., at Eastman Kodak Co. in Rochester, N.Y., and at Xerox Corp. in Webster, N.Y.

"At this point, it's too early to tell how large the program will get," Sample said. "Although the first courses are in engineering, there's no reason the rest of the university cannot become involved." Plans are to expand the offerings to four courses next term, with perhaps 100 off-campus students.

Sample explained that the Engineering College's eventual goal is to incorporate the program into its highly successful Master of Engineering Program (see accompanying story), allowing corporate employees to earn the degree mostly through off-campus study. The Engineering College faculty is reviewing existing academic policies to determine what issues need to be addressed, Sample said.

While the first two courses are being taught in an auditorium in Hollister Hall and with the help of Cornell's Media Services using current video technology, new state-of-the-art classroom broadcasting facilities will be needed as the program expands, Sample said. He added that architects are designing renovations for lecture rooms in Olin Hall that would allow high-quality television production.

"It's particularly fortunate that these same renovations will make the facilities more useful for students at Cornell who take courses in the lecture halls," Sample said. He also noted that the satellite courses benefit on-campus students by allowing them to review the taped lectures in the Carpenter Hall engineering library.

Cornell's satellite uplink, which transmits live or taped television images to a communications satellite, is not necessary for the initial courses, because videotapes could be shipped to the five corporate sites. But Sample said it will be critical to the success of an expanded program, because such a satellite feed is the only effective way to reach numerous corporate sites scattered throughout the country.

While the remote courses have required some adjustments by himself and his students, they appear to be working well, according to Gries. "My teaching style has not changed that much; what's changed is the amount of preparation," he said. "I want the people out there to feel that they're a part of things, so I'm making up transparencies ahead of time and sending them to students."

Student response to his course has been highly favorable, Gries said. When asked for comments on the course, students replied with "very challenging" and "it has given me a new and different outlook on programming."

With the new continuing education effort, Cornell joins many other institutions that already are distributing televised courses, including Stanford University, the Rochester Institute of Technology and Rensselaer Polytechnic Institute.

Like those universities, Cornell will discover that the outreach effort pays off, not just in attracting more students, according to Sample. It also will forge stronger ties between the university and corporations that could pay off in the long run — for example, by encouraging joint research projects.

—Dennis Meredith



Doug Hicks

Master's of engineering interns Martin Tomasz (left) and Annemarie Colino (right) consult with operator

Edmund Bellamah in the printed-circuit-board area of Ithaca's NCR plant.

## Master's program is largest in the nation

For 25 years, Cornell's Master of Engineering Program has given young engineers a versatile set of professional education options. In its new effort to create off-campus satellite video courses (see accompanying story), the program is exploring the possibility of extending these options beyond the university's walls.

The largest and broadest such program in the country, the M.Eng. on-campus degree, offered in 13 disciplines, requires a minimum of 30 credits of graduate courses, including an independent engineering research project. The program grants the largest number of graduate engineering degrees at the university — about 250 per year — constituting more than half of all advanced degrees given by the College of Engineering.

The program's aim is to offer baccalaureate-level engineers a year of professional training that bridges the gap between their basic studies, undergraduate work and the professionally oriented world of industry, said Thor Rhodin, a professor of applied and engineering physics and chairman of the program.

"Students with a master of engineering develop a practical specialty — say in microelectronics or in computer-control of engineering systems — that makes it easier for corporations to find a place for them," Rhodin said.

M.Eng. graduates start out at significantly higher salaries, an average of about \$5,000 more per year in 1988, he said. Students' recognition of the degree's value is attested to by the steadily rising enrollments, averaging 5 percent a year over the past 10 years. According to engineering Dean William Streett, current national demands for trained engineers will justify expanding enrollment in the program by 30 to 40 percent over the next several years.

"It's time has come," Streett said. "Over the last 25 years, Cornell was unique in advocating a broad five-year professional engineering program over many fields. But now such prestigious groups as the M.I.T. Commission on

Industrial Productivity and the American Society for Engineering Education strongly support broadening the undergraduate engineering curriculum and expanding programs offering professional master's degrees."

The Engineering College continues to build on its success by offering joint programs with industry leading to the M.Eng. degree. For example, the college now offers a Corporate Master of Engineering plan for employees of corporations that are members of the Semiconductor Research Corp., a partnership with Cornell in electronic research. The college also offers an internship program that allows students to combine on-the-job experience with study at Cornell.

Engineers who wish to add management skills can take the Program in Manufacturing Management, a joint program of the Johnson Graduate School of Management and the Engineering College. The program enables engineers who have special preparation including work experience to obtain both an M.B.A. and an M.Eng.

Several new directions for the M.Eng. programs are now being planned, said Rhodin. For example, Cornell might offer concentrations in international engineering to train students in global aspects of their profession.

Leigh Phoenix, associate dean for research and graduate education, and Rhodin are working toward an M.Eng. option that could bridge the transition between undergraduate and Ph.D. studies, especially for women and minority engineers.

"These groups often have the greatest difficulty in going on to graduate study," they said. "Their financial requirements and limited resources mean that they are under the most pressure to immediately go to work after the bachelor's degree. Such an M.Eng. program could provide subsidies, counselling and personalized study options to encourage these students to explore more advanced study."

—Dennis Meredith

## Professor, high school students win supercomputing prizes

Steven Pope, a professor of mechanical and aerospace engineering, and his colleagues won a \$25,000 first prize in the first IBM Supercomputing Competition, sponsored by International Business Machines Corp.

The prizes for research papers also included an additional award of \$10,000 to Cornell for providing the resources, including supercomputing facilities, for the scientists' work.

In a separate competition, high school students who created supercomputer programs to simulate how snowflakes grow and to help improve eye surgery were named winners of the SuperQuest 1989 Best Paper Competition. The competition was open to the members of high school teams that won last year's SuperQuest 1989 competition, the only supercomputing contest for high school students.

The papers entered by researchers in the IBM-sponsored competition involved use of IBM supercomputers around the country and were judged for "innovative

uses, creativity, clarity and numerically intensive features," IBM representatives said. Prizes were given in physical sciences and mathematics, in engineering, in life and health sciences, and in social sciences, humanities and fine arts. Pope won in the engineering category.

More than half of the prizes in the competition were won by users of the Cornell National Supercomputer Facility (CNSF) computers, according to the CNSF. Besides the Cornell winners, other CNSF users from around the country performed winning supercomputing studies on electrical conduction in the heart, star formation in merging galaxies and genetic evaluation of dairy cattle.

Pope and his co-authors — former graduate students Pui-Kuen Yeung and Sharath Grimaldi — won the prize for their paper, "Stretching and Bending of Material Surfaces in Turbulence."

Other Cornell researchers won honorable mentions in the IBM competition. They are:

• Stuart Shapiro, professor of astron-

omy, and Saul Teukolsky, professor of physics, for their paper, "Creating Black Holes and Gravitational Waves."

• Evelyn Goldfield, the CNSF computational research associate in chemistry, and John Wiesenfeld, vice president for planning and professor of chemistry, for their paper, "Trajectory Studies of OH Vibrational Excitation Propensities in the Reaction of O(1D) with H<sub>2</sub>."

• Christine Shoemaker, professor of civil and environmental engineering, CNSF technical staff member Hugh Caffey, and graduate students Li-Zhi Liao and Liang-Cheng Chang for their paper, "Optimal Control of Large-Scale Non-linear Engineering Systems."

SuperQuest, sponsored by Cornell and the National Science Foundation, invites high schools throughout the country to enter teams of three or four students and their teacher/coaches, who submit proposals for science projects that require supercomputing for their solution. Winners for SuperQuest 1990 will be announced next week.

Winning SuperQuest teams are brought to Cornell for training in supercomputing, and they carry out their projects back at their home schools, remotely accessing the Cornell supercomputers using equipment donated by IBM.

The Best Paper Competition pitted against one another the projects that the winners ultimately carried out.

Award certificates were presented on April 25 to the winners by Malvin Kalos, director of the Cornell Theory Center, at the SUPER! conference in Gainesville, Fla. SUPER! stands for Supercomputing by University People for Education and Research.

First place went Robert Pless of Montgomery Blair High School in Silver Spring, Md., for his project, "A Random Walk Model of Snowflake Growth."

Second place went to Kristen Jaax of Clear Lake High School in Houston for her paper on "Developing a Mathematical Model of Human Eye Movements to Optimize Strabismus Surgery."

—Dennis Meredith

## COMMENTARY

## Science education is important for a happy future

by Yervant Terzian

Reprinted with permission from the May 1990 issue of *Astronomy*.

According to current theory, matter was created from energy at the time of the big bang. As the hot early universe expanded and cooled, it separated into pieces that later formed the hundreds of millions of galaxies we now see. One such galaxy was the Milky Way, which in turn spawned some 200 billion stars, of which the sun is one. Around the sun, a small planet was formed on which biological evolution has progressed during the last few billion years. You and I are part of the result.

Now here we are, atoms from the big bang, an intelligent and technological civilization of more than 5 billion, fast-multiplying, and largely unhappy human beings. This long evolution has now given us the wisdom to ask what is it that we want. We all want survival, of course, but survival on our own terms, for ourselves and generations to come. I, and probably you, would want those terms to be happy and demo-

cratic.

If our most fundamental wish is a happy and democratic survival, this can be achieved only by an informed society. To be informed we must be educated, and in today's world no one ignorant of science can be considered educated. Hence, science education appears fundamentally important to a happy and democratic future.

Alas, we now find that while science and technology have advanced very fast, most people's understanding of them has not. Many have been very slow in keeping up with science developments and their implications for society. Science education is severely lacking when the vast majority of the population believes in such ideas as astrology and aliens in UFOs. Only a minority of the populace has much understanding of the greenhouse effect, nuclear winter, genetic engineering, or nuclear fusion, to name a few subjects that need intelligent response from the public. Recent nationwide surveys have shown that most educated people have no idea why there are seasons on Earth, and about 94 million U.S. citizens do not know the Earth revolves

around the sun once a year.

Recent reports on the status of education are shocking and point to a rapid decline of interest in the sciences by young students and the general public. How can we hope for a happy and democratic future when the people who must make decisions are becoming more ignorant of science?

What should we do? It is clear to me that we need to instill a sense of joy in learning science. When I was a boy I studied astronomy because I was curious about the universe and the ultimate puzzle of existence. Astronomy is a majestic observational science and to the general public is perhaps the most interesting and stimulating of all the sciences. Astronomy is also one of the most motivating, imagination-stirring, and exciting subjects that can trigger a love of science in the mind of a young person.

I suggest that all of us embrace the idea of introducing the study of the universe in every elementary and high school. This would help foster students' critical and analytical thinking and a creative involvement with the scientific method. I also propose

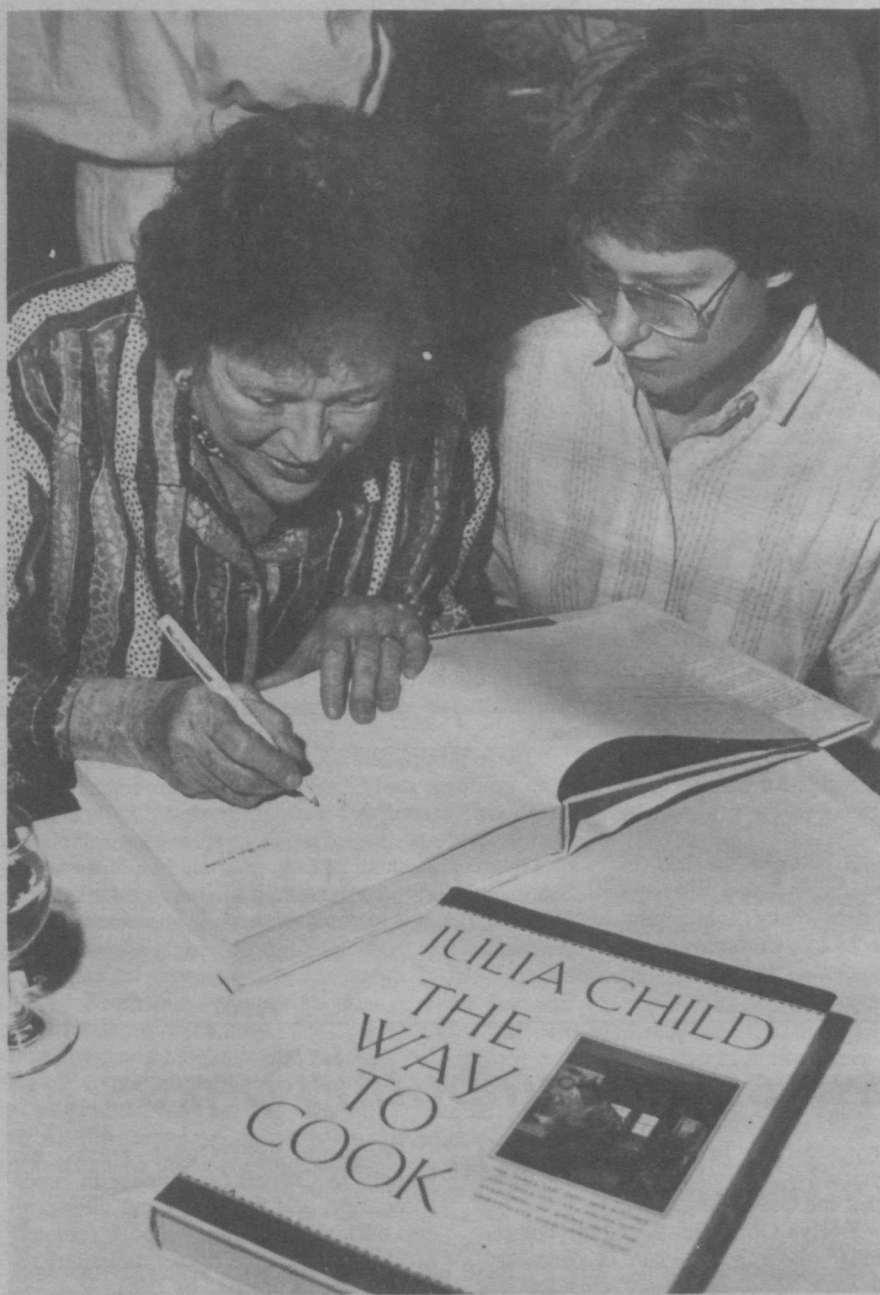
that every school have a telescope. Who hasn't been thrilled by a view of Saturn's rings or the intricate stellar jewelry of a star cluster? I think we should all get involved at local and state levels and urge the use of astronomy in the schools as a way of teaching science to young people.

For me, any happy survival will also include the joy of poetry and music. It would be a great mistake to divorce the sciences from the humanities. However, unless we use the benefits of science and technology intelligently, I see little hope of achieving a happy and democratic human civilization. And without that, we will not be able to appreciate the arts and humanities.

Astronomers of all kinds — professional and amateur — are in an enviable position. We are "possessors" of a uniquely popular science and therefore can contribute significantly to a national and worldwide effort in science education.

*Yervant Terzian is the James A. Weeks Professor of Physical Sciences and chairman of the Astronomy Department.*

## Bon appetit



Charles Harrington

Julia Child autographs a copy of her book, "The Way to Cook," which has sold more than 300,000 copies, for Beth Oltz, restaurant service coordinator in the Statler Hotel, during her April 30 visit to campus. Child, 77, is honorary chairwoman and co-founder of the American Institute of Wine & Food, organized in 1981 to "advance the understanding, appreciation and quality of wine and food." Proceeds from the sale of her book went to the institute, including the institute's chapter that is being organized here.

## Film compares students of 1960s, 1970s

Cornell Cinema will present the Ithaca premiere of "Letter to the Next Generation" on Friday, May 4, at 7:30 p.m. in Anabel Taylor Hall and on Saturday, May 5, at 7:10 p.m. in Willard Straight Theater.

The movie looks at Kent State University 20 years after four students were killed there by the Ohio National Guard during an

anti-war demonstration on May 4, 1970.

Film maker Jim Klein returns to the school to examine the attitudes of today's students and their professors. Klein compares the generation that came of age in the 1960s and the generation of the 1970s. He explores tensions between the legacy of the past and present day American college life.

## CU goes to court to protect its Wisconsin mineral rights

In 1866, Ezra Cornell went to northern Wisconsin to assemble the half-million acres that would help endow the new university bearing his name.

This spring, Cornell University went to court in Ladysmith, Wis., to defend what it says are basic constitutional rights concerning mineral interests that it still holds in some of that land.

When Ezra Cornell bought the land, at about 60 cents an acre, wolves still howled at night around his forest camp. Ezra Cornell went to Wisconsin to identify the land that made up New York's "land grant" as part of the federal program to fund new colleges.

Eventually, the entrepreneur was vindicated in his belief that the land would rise in value; in 1897, the university sold the land for \$6 million and the Cornell Endowment Fund was launched. It ultimately became part of a total endowment now worth more than \$800 million.

The university retained mineral rights to the land in Wisconsin as an investment but has made no profit on those rights. It has not had to pay taxes on those rights, either. And therein lies the reason it has gone to court in what promises to be a precedent-setting case.

In a complaint filed in Wisconsin, Cornell is seeking assurance that it will retain its mineral interests in a 160-acre parcel even if the county takes over the surface

land from its tax-delinquent owner.

But if the court rules that, under state law, the county takeover does extinguish Cornell's mineral rights, the university is asking that the pertinent state statutes be declared unconstitutional "because they amount to a deprivation of property without due process."

In this case, a Wisconsin farmer owns one-half of the 320-acre parcel in which Cornell owns mineral rights. The farmer had failed to pay property taxes for four years. Rusk County, after successfully bidding for the property at a tax sale, is seeking a tax deed, which could effectively eliminate Cornell's mineral rights.

"According to opinions of the Wisconsin state attorney general, Rusk County's taking of a tax deed to the land would extinguish Cornell's mineral rights," said Jeffrey L. Abraham, the partner in charge of the Cornell case for the law firm of Michael Best & Friedrich of Milwaukee, Madison and Chicago.

"If we are successful, there could be a substantial impact in a state that has not yet dealt with the problem," Abraham continued.

The nub of Cornell's constitutional claim is that, while it was never asked to pay taxes for its mineral interests, it could lose those interests for the tax delinquency of the surface owner.

— Sam Segal

## Johnson School alums help classmate who lost job in Drexel bankruptcy

Alumni from the Johnson Graduate School of Management went into action when one of their classmates lost his job in February's bankruptcy of Drexel Burnham Lambert Inc., the junk-bond specialists.

"Less than 48 hours after Drexel announced its bankruptcy, our classmate had received more than 20 calls from members of the Class of '89 offering to line up interviews with their respective employers," reported George F. Munro III, who graduated from the Johnson School last year into a job with Bankers Trust Co. in New York City.

The telephone calls developed more than 12 employment interviews for Timothy Yanoti. "Virtually everyone I knew telephoned me or left a message on my answering machine," Yanoti said.

The M.B.A. graduate sent out his resume to the Johnson School contacts. "Within a few days, I landed a new job through a Drexel contact," Yanoti said. "Although the suggestions from my classmates did not include the company that hired me, I was overwhelmed by their support. Their calls really piled up on my answering machine."

On March 7, less than a month after Drexel folded, Yanoti started work at The Transportation Group, a New York City firm that arranges financing to lease commercial aircraft. He was so relaxed after the Wall Street bankruptcy and obtaining a new position that he took a few days off for a vacation in Florida.

School ties rather than personal friendships inspired his Cornell classmates.

"I would say that the 20 or so classmates who telephoned Tim were not his close friends," Munro said. "They were merely classmates. I've mentioned this story to graduates from other business schools, and they all were amazed at how tightly knit the Johnson alumni really are."

In another case, Daniel J. Mansoor, the Johnson School's capital campaign director, said that several Johnson School graduates who live in the San Francisco area telephoned the school after the 1989 earthquake to report that they were safe.

"Those alumni felt as close to our school and faculty as to their families," Mansoor said.

— Albert E. Kaff

# CORNELL EMPLOYMENT NEWS

May 3, 1990

Including Job Opportunities

Volume 2, Number 19

## Statler Hotel Says "Welcome" to Persons with Disabilities

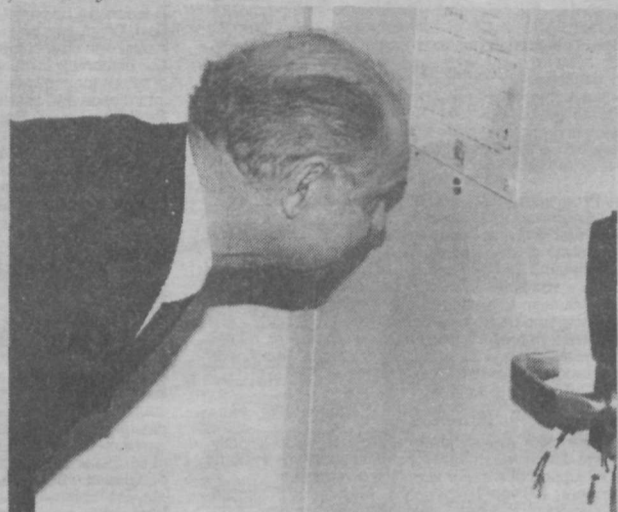
by Joan B. Fisher, coordinator of Disability Services

The first thing I noticed as I approached one of the seven handicapped accessible rooms at the Statler Hotel is that there were two peepholes in the door. One is at standard height, the second is at just the right height for viewing from a wheelchair. My first response was to joke that it would be difficult to identify a visitor when you could only see legs. However, much to my surprise and delight, the 180-degree lens provided clear identification of a visitor.

The second peephole was installed at the suggestion of Terry Osika, a senior in the School of Hotel Administration who recently completed an internship at the hotel. She combined her interest in handicapped accessibility with the observations of staff members who had toured the hotel using wheelchairs, to complete an accessibility audit of all areas of the hotel.

According to hotel manager, Hans P. Weishaupt, the hotel, as a new building, met code specifications. However, his goal was total guest satisfaction. He challenged Osika to make suggestions based on this premise.

As I walked into one of the large handicapped guest rooms overlooking East Avenue and directly across from the elevator, Osika's "special touches with guest comfort in mind" are readily visible. On the door I found that the safety message typical to hotel doors



Hans Weishaupt tries the wheelchair level viewing hole.



Hans Weishaupt and Terry Osika point out special features of the handicapped accessible rooms at the Statler Hotel.

Weishaupt explains his philosophy. "We hope that we can show the way to persons who build hotels in the future." He added that hotels have come a long way from the time when managers tried to keep guests with disabilities out of sight so they wouldn't "disturb the ambience."

The emphasis on guest comfort is being extended to the renovation of the Statler auditorium which will begin this summer. Persons with hearing impairments will be provided with earphones,

enabling them to enjoy clear sound in any part of the auditorium thanks to the installation of infrared sound emitters. Persons using wheelchairs will have a choice of sitting in fixed viewing areas or in an area equipped with removable seats.

A recent guest told Weishaupt that 15 years ago he had been president of his country club at a time when major renovations were being made. As a cost saver he cancelled all handicapped accessibility features, justifying his decision by stating "handicapped people don't golf anyway." The guest continued by saying that little did he know that 15 years later he would depend on a wheelchair for mobility. He concluded by telling Hans, "I'm certainly glad that you didn't follow my line of reasoning here and cancel these handicapped accessibility features. It's such a joy to come to a place where I really feel welcome."

had been placed low enough so a person in a wheelchair could read it without eye strain. A special hanger bar within convenient wheelchair reach spans half of the closet. Even the TV schedule and controls are carefully placed where they can be reached with maximum ease.

All handicapped accessible bathrooms are noted for the support bars around the tub and commode and the one at the Statler is no exception. But again, it's the special touches that caught my attention. A shaving/make-up mirror is adjusted to swing out at wheelchair viewing height. Bath articles are carefully arranged toward the front of the counter by the sink. A stack of fluffy towels is neatly folded on a low stool next to the tub. There's even a telephone in the bathroom so a person can call for help in an emergency.

In addition, lever door handles are found on all doors. Strobe (visual) and audible fire alarms are found in each room.

## 128 Eligible for Long Service Recognition This Year

One hundred and twenty-eight employees are eligible for recognition for long service to the university this year including 1 forty-five year awardee; 5 forty year; 10 thirty-five; 48 thirty; and 64 twenty-five.

In addition to the 128 awardees, 287 other employees with more than 25 years of service (26 years, 27 years, etc.) will be special guests at the 35th annual awards banquet which will be held in Barton Hall on Tuesday, June 5.

Ann R. Churey of Graphic Arts will be honored this year for 45 years of service. Benjamin D. Hilton of Biochemistry, R.J. Melenbacher of Geneva's Food Science Department, Fleet Morse of Statler Hotel, Elissa Olevano of International Student Office, and Douglas W. Stone, Jr. of PPO Shops will all be recognized for 40 years.



Congratulations to all!

Invitations will be mailed to those eligible to attend by May 15. Please call the Office of Human Resources at 5-6890 if you have over 25 years of service but have not received an invitation by May 15.

## 1990 Commencement Ceremony Compensation Guidelines Outlined

*Commencement is a time of pageantry and the most important day of the year for Cornell University!*

On Sunday, May 27, 350 commencement ushers will be at strategic points on campus to assure a smooth and orderly 122nd Cornell commencement.

Members of the Cornell community are invited to volunteer to be one of the 350 and to help contribute to the success of a very important and memorable day for over 5,600 graduates and 30,000 guests.

The personnel policy established for this contribution is:

All employees who *volunteer* to work during the university's commencement ceremonies will be granted compensatory time off equivalent to their standard work day.

*Exempt* employees who are *required* to work on commencement day will be granted compensatory time off equivalent to time worked.

*Nonexempt* employees who are *required* to work on commencement day will be paid at their regular rate of pay for the hours worked and will be eligible for overtime premium pay for those hours in excess of 40 hours within the standard work week.

Compensatory time off resulting from work on commencement day must be used by the end of the calendar year (December 31, 1990). When using the compensatory time off, mark on the time card "Compensatory time off, Commencement Ceremonies" on the day it is used.

All commencement volunteers will attend one rehearsal during the normal work day. On Wednesday, May 23, ushers for the crescent, mobility impaired, information booths, programs, usher registration, and west stands groups will meet. On Thursday, May 24 there will be a second rehearsal for the Arts Quad and field seating ushers. On both days the meetings will be held in the Robison Hall of Fame Room, Schoellkopf Memorial Hall at 3 pm.

To express his thanks, President Rhodes will host a reception for ushers and other volunteers on Wednesday, May 30, 4:30 - 6:00 p.m. where each individual will be given a Commencement commemorative mug.

Those wishing to help with ushering or related duties should stop by the Commencement Office, B-25 Day Hall, or call Connie Mabry at 255-9541.

### Breakfast with SVP Jay Morley Monday, May 14

Employees may sign up for a May 14 breakfast with Senior Vice President James E. Morley, Jr. by calling the Office of Human Resources at 255-3621.

### Weight Watchers at Work Program Begins Wednesday, May 8

A new eight-week *Weight Watchers at Work* program will begin this coming Wednesday, May 8 from 12:00 noon to 1:00pm at Anabel Taylor Hall Auditorium. Come to the first meeting for more information or call Weight Watchers toll-free number at 1-800/234-8080.

# JOB OPPORTUNITIES

Staffing Services, 160 Day Hall, Cornell University, Ithaca NY 14853-2801  
Day Hall: (607) 255-5226 East Hill Plaza: (607) 255-7422

- Employees may apply for any posted position with an Employee Transfer Application. A resume and cover letter, specifying the job title, department and job number, is recommended. Career counseling interviews are available by appointment.
- Requests for referral and/or cover letters are not accepted from external candidates unless specified in the ad. Candidates should submit a completed and signed employment application which will remain active 4 months. Interviews are conducted by appointment only.

- Staffing Services will acknowledge receipt of all material by mail. Hiring supervisors will contact those individuals selected for interview by phone; please include two or more numbers if possible. When the position is filled, candidates should receive notification from the hiring supervisor.
- Cornell University is an Affirmative Action/Equal Opportunity Employer.
- Job Opportunities can be found on CUINFO

## Professional

Nonacademic professional positions encompass a wide variety of fields including management, research support, computing, development, finance and accounting, dining services and health care.

All external candidates must have a completed signed employment application on file with Staffing before they can be interviewed for a position.

Submit a resume and cover letter for each position, specifying the job title, department & job number. Employees should include an Employee Transfer Application.

### Assistant Dean, Business and Administration (PA1702) HRIII

**School of Hotel Administration-Endowed**  
Assistant Dean for Business and Administration is responsible for the financial, business, non-academic personnel, computer and facilities support functions of the School of Hotel Administration. Participates in major planning and policy decisions for the School and the Statler Hotel.

**Requirements:** Master's/MBA with hospitality or business education and at least 5 years management experience preferred. 10 years wide-ranging experience in business and human resources administration. Knowledge and experience with computer network, mainframe and applications, facilities operations, and academic administration. Send cover letter and resume to Cynthia Smithbower.

### Computer Technical Administrator (PT1712) HRIII

**Diagnostic Laboratory-Statutory**  
Improve the efficiency of the lab's automation by systems and applications management and analysis. Continue to design, develop, implement, test, and document enhancements. Working with staff, identify needs, define solutions, and supervise programming and implementation of computer automation projects. Take responsibility for applications and systems including debugging, modifications, and user training.

**Requirements:** Bachelor's or equivalent. 3 years related work experience. Knowledge of a variety of IBM PC based hardware and software. Strong background in C and assembly programming required. At least 2 years work with MS DOS and UNIX at the user and system levels. 1 year network management in UNIX and MS DOS environments. Work with Rbase for DOS, Lotus, Word Perfect, Dbase III, and Procom. Familiarity with hardware interface techniques. Some early work hours required. Send cover letter and resume to Sam Weeks.

### Director of Marketing (PA1602) HRIII

**Continuing Education Program-Endowed**  
Promote the Continuing Education Program of the College of Engineering. Responsible for corporate stewardship, identifying and penetrating new markets, market research and analysis, and customer service. In conjunction with the Program Director, represent the Continuing Education Program to corporations, faculty, staff, students (professional engineers).

**Requirements:** Master's; preferably in Education or Business Administration. At least five years experience in corporate Relations, education, and/or marketing; Excellent communications skills. Send cover letter and resume to Cynthia Smithbower.

### Administrative Manager II (PA1002) HRIII

**Materials Science and Engineering-Endowed**  
Manage the finances, personnel administration, facilities and equipment, administrative data systems, and institutional analyses and act for the chairman in his absence. Will coordinate the teaching, research and development programs associated with the department.

**Requirements:** Bachelor's required (preferably in science or engineering) or equivalent combination of education and experience. 3-5 years experience with budgeting, accounting, personnel management, facilities, and institutional analysis required. Experience with corporate development and stewardship highly desirable. Send cover letter and resume to Cynthia Smithbower.

### Computer Systems and Network Manager (PT1509) HRIII

**Mann Library-Statutory**  
Manage multi-user computer systems and telecommunications networks for a large science library. Install and maintain software; configure and monitor networks; maintain data files; work with programmers and systems analysts in the development of electronic information systems. Provide guidance and consultation to staff and patrons.

**Requirements:** Bachelor's required, with course work in computer science or information science. At least 2-3 years experience in a technical capacity. Knowledge of minicomputers and telecommunications required. Knowledge of Unix and microcomputer software desirable. Send cover letter and resume to Sam Weeks.

### Research Support Specialist III (PT1501) HRIII

**Division of Nutritional Sciences-Statutory**  
Oversee day-to-day operations of gas stable isotope ratio mass spectrometry laboratory. Operate and maintain two Finnigan mass spectrometers; construct and maintain preparatory lines; educate and oversee lab personnel and demonstrate equipment to visitors.

**Requirements:** Bachelor's or equivalent in Physics, Chemistry, Engineering, or related discipline; Master's or equivalent preferred. Mechanical aptitude is essential. Some electrical skills required and willingness to learn. Literacy in at least one common programming language, including BASIC and FORTRAN. Willingness to learn Pascal is a must. Send cover letter and resume to Sam Weeks.

### Director of Graduate Records (PC1304) HRIII

**The Graduate School-Endowed**  
Responsible for all aspects of management of the Graduate Records Office. Interpret Graduate and University legislation regarding student status, degree requirements; oversee maintenance, accuracy and security of the permanent records of all students enrolled in the Graduate School; monitor and verify graduate students' status and progress toward the satisfaction of requirements of the specific advanced degree programs; the distribution of information regarding fields of study and programs available in the Graduate School to faculty and students and coordinate policies with other offices; the development of the Graduate School Information System; and supervision of a permanent staff of four (the Degree Coordinator, the Information Secretary, and two Records Assistants).

**Requirements:** Bachelor's minimum. Graduate degree preferred. Be knowledgeable on all aspects of graduate programs and able to interact with sensitivity to students and faculty. Must be flexible and innovative in developing solutions for particular problems, and be capable of designing procedures to improve effectiveness within the office. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

### Senior Systems Analyst (PT0705) HRIII

**Mann Library-Statutory**  
Work with researchers and librarians to define requirements for, coordinate the implementation of, and evaluate and revise systems for the electronic delivery of scholarly information. Also provide programming and technical support in the development of such systems. During the first year, manage a major system development effort in the delivery of electronic full-text for chemical literature.

**Requirements:** Bachelor's with significant coursework in computer or information science. Master's desirable. 3-5 years experience in programming, systems analysis, or related fields, including 1-2 years in technical or project management. Knowledge of at least 2 high-level programming languages. Knowledge of microcomputers, workstations, and UNIX operating

systems highly desirable. Send cover letter and resume to Sam Weeks.

### Senior Research Support Specialist (PT0315) HRIII

**Materials Science Center-Endowed**  
Manage and extend a state-of-the-art Electron Microscopy Facility for the support of the research program of the Materials Science Center.

**Requirements:** Master's in material science or physics or equivalent required. PhD preferred. Minimum 2 years experience as a postdoc in relevant electron microscopy user field. Send cover letter and resume to Sam Weeks.

### Project Leader III (PT1707) Level 37

**CIT/IR-Endowed**  
Plan, coordinate, and supervise the development and maintenance of major information systems. Support an on-line library automation system. Develop system extensions that work with workstation interface software and a request server that handles hard copy information requests. Provide planning for a system that can deliver full images to workstations.

**Requirements:** Master's (preferably in computer science, library science, mathematics, statistics, business administration, or engineering) or equivalent experience. Minimum 9 years related work, at least 2 years as a project leader with supervisory responsibility. Prior programming required. Written and oral communication and interpersonal skills are essential. Experience which are preferred include: system design, database design and management, work with library systems and MARC records, and knowledge of mini/micro computers and workstations. Send cover letter and resume to Sam Weeks.

### Area Manager II (PT1706) Level 36

**Plasma Studies-Endowed**  
Responsible for all aspects of the Laboratory of Plasma Studies computer system (purchase and install hardware, manage operations, assist users, etc.). Supervise undergraduate or part time employee assistants who carry out computer system jobs. Function as "senior" technician in Ion Beam Lab.

**Requirements:** Bachelor's in EE or computer science or equivalent. Formal training in operating computer systems, networking, programming, etc. 3-5 years related experience with DEC computer systems and with the UNIX operating system, or an equivalent combination is necessary. Strong interpersonal skills are necessary. Send cover letter and resume to Sam Weeks.

### Technical Specialist I (PT1703) Level 36

**CIT/Systems-Endowed**  
Design, implement, install, document and maintain systems software and significant subsystems for the AIX/370 Operating Systems (IBM's version of UNIX for 370 architecture machines). Provide technical leadership in designing and adapting functional enhancements to AIX/370 and its subsystems. Some night, weekend and "on call" duties.

**Requirements:** Bachelor's in computer science or equivalent experience with computer courses in operating system fundamentals. 3-5 years experience with UNIX Operating Systems and significant subsystems preferred. Knowledge of "C" programming language, UNIX utilities and system calls is essential. Work with IBM 370 assembler language, the VM operating system and large systems is a plus. Send cover letter and resume to Sam Weeks.

### Project Leader I (PT1710) Level 35

**CIT/IR-Endowed**  
Oversee the user area and insure that the system is performing to specifications agreed to by the user department. Organize, schedule and supervise workflow of subordinate programmers working on user area applications. Maintain close communication with personnel from various user offices. Coordinate among the user offices so that each of their separate needs will be satisfied.

**Requirements:** Bachelor's or equivalent combination of education and 3-5 years experience is necessary. Extensive computer and systems experience including considerable experience in the design of major systems is necessary. A thorough technical knowledge of COBOL, PLI, IMS, ADABAS, Natural and Cornell operating systems is required. Send cover letter and resume to Sam Weeks.

### Senior Technical Consultant (PT1701) Level 35

**Financial Systems-Endowed**  
Provide technical support. Serve as liaison to Financial Systems administrative technical consultant and Information Technologies staff. Write, maintain, and analyze system programs where normally used programming languages are unsuitable. Supervision of programmer analyst team as assigned.

**Requirements:** Bachelor's or equivalent. 5-10 years experience in application and system programming with ADABAS and BATCH, and VM/CMS interaction. Knowledge of commonly used programming languages such as Basic and assembler for mainframe to micro systems. Strong communication skills required. Send cover letter and resume to Sam Weeks.

### Systems Software Engineer (PT1716) Level 34

**Computer Science-Endowed**  
Assist in the development of research software by providing system support (software installation and maintenance, and benchmarking) and C and Lisp programming (graphics, networking, and Lisp development). Some research work possible, depending on interest and qualifications.

**Requirements:** Bachelor's in computer science or mathematics or equivalent combination of education and experience. Work with UNIX required. Knowledge of Lisp and/or experience with complex Lisp systems advantageous. Send cover letter and resume to Sam Weeks.

### Applications Programmer/Analyst III (PT1715) Level 34

**Computer Science-Endowed**  
Working with staff and graduate students, develop and implement the Synthesizer Generator, a system that generates language based software environments from formal specifications. Maintain the system and provide documentation.

**Requirements:** Bachelor's in computer science (Master's preferred) or equivalent combination of education and experience. Familiarity with C and UNIX, window systems, formal languages, and compilers. Send cover letter and resume to Sam Weeks.

### Software Engineer (PT1704) Level 34

**Computer Science-Endowed**  
Specify, design, implement, document and maintain reliable distributed systems software and applications for a large research project. Work closely with staff and students and serve as liaison with external users of the software in academia and industry.

**Requirements:** Bachelor's in computer science, math, or equivalent combination of education and experience. 3 years programming work including large systems with emphasis on distributed systems and/or communications. Programming in C preferred. Send cover letter and resume to Sam Weeks.

### Systems Programmer/Analyst III (PT0401) Level 34

**CIT/Research and Analysis-Endowed**  
Design, implement, install, document and maintain system software, complex software programs in packages for DEC Vaxen running VMS, and other systems running UNIX. Assess performance and make recommendations related to the general operation of the various systems.

**Requirements:** Bachelor's or equivalent with computer related courses. 3-5 years programming and machine architecture experience, sound knowledge of VMS and/or UNIX operating systems. Knowledge of VAX cluster environment desirable. Several major programming languages, eg., C, Pascal, Fortran, working knowledge of TCP/IP Protocols. Good interpersonal skills. Send cover letter and resume to Sam Weeks.

### Applications Programmer/Analyst II (PT1708) Level 33

**V.P. for Campus Affairs-Endowed**  
Design, develop, install, modify, maintain and document approved applications as needed for the Division of Campus Life departments. Set up hardware; diagnose problems; repair or arrange for repair of equipment; and apply fixes and upgrades.

**Requirements:** Bachelor's or equivalent with computer-related courses. 1-3 years of related experience. Working knowledge of applications for batch and/or interactive systems; VM/CMS; system utility programs; operating systems and software packages for PC and Macintosh computers (i.e., Wordperfect, Lotus, Filemaker, Excel, DOS, Dbase); and networks (Novell and/or Appletalk). Hardware experience on IBM mainframes and micros required. 2 programming languages-PL/1, Natural, Cobol, Pascal, Basic. Send cover letter and resume to Sam Weeks.

### Systems Programmer/Analyst II (PT1406) Level 33

**Electrical Engineering-Endowed**  
Assist computer manager in day-to-day operation of a general purpose system including VAX, Sun, HP, and AT&T computers. Design, maintain, and document application software for administrative computer systems, including Macintosh and IBM PCs. Maintain operating systems, make backups, and provide training and consulting for users.

**Requirements:** Bachelor's in computer science or related fields. 2-3 years experience with UNIX systems. Send cover letter and resume to Sam Weeks.

### Applications Programmer/Analyst II (PT9605) Level 33

**CIT-Endowed**  
As a member of a project team, design, develop, modify, maintain and document straight forward applications systems software in support of a major administrative system.

**Requirements:** 2-3 years experience. Knowledge of applications for interactive and batch administrative systems, database management systems, machine architecture, system utility programs, VM/CMS. Knowledge of at least 2 languages: PL/1, Natural or COBOL. Send cover letter and resume to Sam Weeks.

### Accounting and Billing System Supervisor (PT1105) Level 33

**Information Technologies/Services-Endowed**  
Provide direct support services to CIT clients concerning the availability and appropriate use of multi-user computer systems. Assist with design and development for system billing statement. Supervise 2 accounts assistants.

**Requirements:** Bachelor's or equivalent experience. Coursework in information technology, business management or accounting. 2-3 years of computer related service delivery, functional knowledge of Cornell computing systems, experience using ADABAS or similar database with accounting/billing emphasis. Send cover letter and resume to Sam Weeks.

### Technical Consultant II (PT6301) Level 33/HRI

**HDFS/Family Life Development Center-Statutory**  
Provide technical support, training and orientation to staff of approximately 30 on the effective use of microcomputers in a complex local area network and electronic publishing environment.

**Requirements:** Bachelor's or equivalent in education. Minimum 2-3 years experience with micro computers. Macintosh experience required. IBM PC familiarity desirable. Working skills must include a fifth generation language, strong system diagnostic and telecommunications. Some experience in PASCAL, C or BASIC desired. Send cover letter and resume to Sam Weeks.

### Systems Programmer/Analyst II (PT9608) Level 33

**Engineering College Educ. Computing-Endowed**  
Provide system management for a network of UNIX-based graphics workstations; install and maintain system software and utilities; keep hardware operational and assist and consult with staff and users.

**Requirements:** Bachelor's in computer science or equivalent. 2-3 years programming; 2 years system management, familiarity with UNIX (prefer several versions), C, HOOPS and interactive graphics; excellent communication and interpersonal skills. Send cover letter and resume to Sam Weeks.

### Technical Consultant I (PT1506) Level 32

**Johnson Graduate School of Management-Endowed**  
Provide end user computing support and applications consulting to the faculty, staff and students of the Johnson School community. Do one-on-one training and consulting; and workshops, presentations, user satisfaction surveys, management of student consultants and user documentation.

**Requirements:** Bachelor's or equivalent experience. Completed work in the application of computing technology preferred. Minimum of two years experience with significant client contact and exposure to office automation systems. Demonstrated knowledge in at least one of JGSM supported hardware and software (Vax/VMS, DOS, Mac), and a proven ability to develop consulting expertise in the full spectrum of supported systems. Send cover letter and resume to Sam Weeks.

### Assistant Director/Engineering Placement (PA1701) HRI

**Career Center/Engineering Placement-Endowed**  
Assist the Director in the operation of all aspects of the office with emphasis on coordination and staff supervision for a large-scale corporate recruiting program. Counsel students and conduct career/placement workshops; develop/revise publications; maintain library collection; generate statistical reports; work with computerized scheduling program; interact daily with students, employers, faculty and staff.

**Requirements:** Bachelor's required; Master's in counseling, education, psychology, or related fields preferred. 2-4 years experience in college student services or corporate recruiting functions with emphasis on counseling and detailed administrative functions. Requires excellent interpersonal, organizational, and communications skills. Detail-oriented with ability to see the big picture. Interest and curiosity in technical areas is more important than engineering-related experience. Send cover letter and resume to Cynthia Smithbower. Application materials will be accepted until May 26 or until an appropriate candidate is found.

### Teaching Support Specialist II (PT1714) HRI

**Biochemistry, Molecular and Cell Biology-Statutory**  
Supervise a lab and teach 3 lab courses for undergraduate and graduate students covering cell biology and intermediate and advanced biochemical methods. Design, test, and document protocols of new experimental methods to be taught. Provide everything essential to the smooth running of a teaching lab: planning; timely material procurement and preparation; equipment maintenance; and lab set-up. Supervise graduate teaching assistants and preparators. Read and grade student notebooks. Maintain computerized grade records and chemical inventories.

**Requirements:** Bachelor's in biochemistry (or closely related field) or equivalent experience. 3 years of related work. Experience with various types of electrophoresis, chromatography, ultracentrifugation, protein purification, bacterial cell culture, and liquid scintillation counting is desirable. Previous teaching experience helpful. Send cover letter and resume to Sam Weeks.

### Coordinator, Cornell Young Scholars Program (PA1601) HRI

**Engineering Minority Programs Office-Endowed**  
Plan, direct and coordinate the summer residential and the academic year activities for the Cornell Young Scholars Program. Coordinate the fundraising activities for EMPO's Special Programs with primary responsibility for raising funds for the Cornell Young Scholars Program.

**Requirements:** Bachelor's degree or equivalent experience. 2-3 years of administrative/managerial experience in program

development, student development or related area. Experience working with student populations (prefer experience with middle and high school students). Excellent oral and written communication skills. Send cover letter and resume to Cynthia Smithbower.

### Research Support Aide (PT1512) HRI

**Soil, Crop, Atmospheric Sciences-Statutory**  
Assist with data compilation and analysis, writing and production of monthly climate publications. Use computer to prepare graphics for publication. Respond to requests for climate data information and assist with research projects.

**Requirements:** Bachelor's preferred, with coursework in Meteorology/Climatology. Minimum 1-2 years related experience. Excellent oral and written communication skills. Familiarity with the use Macintosh computer for word processing and other applications required. Experience with mini or mainframe computer systems desirable. Send cover letter and resume to Sam Weeks.

### Budget Analyst II (PC1515) HRI

**Office for Research/CALS-Statutory**  
Provide administrative assistance to directors in preparing budget, administration of funds, accounting system design, preparation of reports, analysis of financial trends and provide forecasts and assessment of new funding opportunities. Supervise accounts management staff.

**Requirements:** Bachelor's in business management or accounting or equivalent experience; Master's or equivalent desirable. Experience in managing research accounts, familiarity with Cornell Statutory accounting procedures, knowledge of computers and management systems and electronic office equipment. Supervisory experience desirable. Cornell employees only. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

### Manager Lab Services and Safety (PT1503) HRI

**Chemistry-Endowed**  
Supervise the provision of chemicals, equipment, instrumentation, and other support services for labs enrolling 3000 students. Design, implement and manage department safety program addressing safety issues affecting faculty, staff, and students.

**Requirements:** Bachelor's required; Master's in chemistry or biochemistry (or equivalent experience) preferred. Knowledge or relevant experience in lab safety field and supervisory work desirable. Excellent interpersonal and communication skills. Ability to work effectively with faculty, staff and students. Send cover letter and resume to Sam Weeks.

### Research Support Specialist II (PT1410) HRI

**Chemical Engineering-Endowed**  
Provide technological support to faculty and students for research/teaching programs in the School of Chemical Engineering, including troubleshooting and fabricating sophisticated mechanical and electronic equipment. Responsible for facilities maintenance and safety enforcement.

**Requirements:** Bachelor's in mechanical/chemical field or equivalent combination of education and experience required. Applicant must be well versed in modern mechanical design, electronics and computer interfacing. 2-3 years experience in research/chemical engineering environment desirable. Ability to work independently essential. Some machine shop work helpful. Send cover letter and resume to Sam Weeks.

### Assistant to the Director (PA1406) HRI

**Dean's Office/Architecture, Art and Planning-Endowed**  
Under general supervision, assist the Director of Administrative Operations in directing and managing the fiscal, personnel and plant operations for the College of Architecture, Art and Planning.

**Requirements:** Bachelor's or equivalent. 3-4 years experience, preferably at Cornell to include at least 2 years in budgeting and fiscal administration and personnel processes. 1 year PC/Macintosh experience. Excellent verbal and written communication skills; ability to maintain highest degree of confidentiality. Ability to use advanced spreadsheet and graphics software. Send cover letter and resume to Cynthia Smithbower.

### Fiscal Officer (PC9204) HRI

**Computer Science-Endowed**  
Under general direction from the Director of Administration manage fiscal operation in a 150 member computer science department with an academic budget of \$3M and an annual research volume of \$5M. Respond to faculty, staff and students by assisting in implementing new or revised policies to improve the environment for teaching and research within the department. Develop and prepare annual operating budget and research budgets. Develop and implement policies and procedures for all accounting functions as required. Supervise accounts assistant. Design and implement financial management systems.

**Requirements:** Bachelor's or equivalent combination of education and experience. 4 years financial analysis/management experience preferably in academic setting. Experience and aptitude with microcomputers and software for institutional analysis and database management systems. Excellent communication, interpersonal, analytical and problem solving skills. Ability to prioritize and work effectively with diverse groups. Demonstrated experience in planning, organizing and implementing new initiatives. Cornell employees send employee transfer application to Esther Smith, Staffing Services, East Hill Plaza.

### Applications Programmer I (PT1403) HRI

**Finance and Business Services-Statutory**  
Coordinate the maintenance and upgrades of PC hardware and software. Develop and maintain documentation. Develop, install, maintain, and modify software for administrative systems from PC to mainframe computers. Assist with computer operation and maintenance of ADABAS security systems.

**Requirements:** Bachelor's in computer science or equivalent. 1-2 years related experience. Work with PC's, IBM System 36, and Cornell mainframe desirable. Knowledge of JCL, CMS, MVS, and ADABAS. Some experience with machine architecture, production procedures and systems utility programs. Send cover letter and resume to Sam Weeks.

### Research Support Specialist II (PT1308) HRI

**Soil, Crop and Atmospheric Sciences-Statutory**  
Support a research program aimed at isolating and identifying natural plant compounds which are physiologically active on other species. Maintain and operate complex analytical equipment; independently conduct aspects of the research program; develop and evaluate methodology; statistically analyze results and survey literature. Until 9/30/90 with possible extension contingent upon funding.

**Requirements:** Bachelor's or Master's in biology, plant physiology, or biochemistry preferred. Work related experience including pesticide residue analysis and biochemical techniques preferred. Valid NYS driver's license helpful. Send cover letter and resume to Sam Weeks.

### Research Support Specialist I (PT1306) HRI

**Neurobiology and Behavior-Statutory**  
Research assistant with ability to work independently. Collect data, perform experiments, do library research, prepare publications, take part in field work and perform general lab chores. **Requirements:** Bachelor's in entomology or other branch of biological sciences or equivalent and 2-3 years experience required with high recommendation or Master's in lieu of experience. Send cover letter and resume to Sam Weeks.

### Research Support Specialist I (PT1204) HRI

**Agronomy-Statutory**  
Conduct field and lab experiments on soil and water manage-

ment. Implement field trials throughout New York dealing with tillage, soil compaction, and drainage/irrigation. Do lab measurements on soil permeability and moisture retention. Compile, arrange and summarize data. Manipulate data using computers. Supervise summer field assistants. Construct equipment and instrumentation to be used in field and lab.  
**Requirements:** Bachelor's in Agronomy or related field, Master's preferred. Understanding of soil and water management and related processes. Experience with farm and lab equipment and procedures. Ability in computer programming preferred. Send cover letter and resume to Sam Weeks.

**Research Support Specialist I (PT0902) HRI Clinical Sciences-Statutory**  
Provide technical support for the woodchuck hepatitis project. Assume primary responsibility for chemical carcinogenic study. Develop histochemical and immunochemical techniques and instruct others in their use. Perform necropsies. Some work with live animals possible.  
**Requirements:** Bachelor's in biology with emphasis on histology, pathology or similar field. 2-3 years experience in histology laboratory. Send cover letter and resume to Sam Weeks.

**Research Support Specialist (PT0306) HRI Equine Drug Testing-Statutory**  
Operate and maintain Mass Spectrometer, Gas Chromatograph and HPLC. Isolate and purify drugs and their metabolites for analytical analysis.  
**Requirements:** Bachelor's in organic chemistry or equivalent experience. 2-3 years work with thin layer chromatography and basic knowledge of drug metabolism. Send cover letter and resume to Sam Weeks.

**Research Support Specialist I (PT0212) HRI Animal Science-Statutory**  
Provide supervisory and technical support for research programs involving the design and analysis of Dairy Management Systems utilizing the NY Dairy Herd Improvement database. Analyze and develop dairy herd performance measures that will predict economic returns to the dairy enterprise. Develop and program software to assist with dairy herd management.  
**Requirements:** Bachelor's or equivalent in animal science or agricultural economics. High level language, e.g., "C" programming experience, ability to use SAS, understanding of advanced computing techniques such as expert systems. Dairy farm background or experience helpful. Send cover letter and resume to Sam Weeks.

Professional Part-time

**Research Support Specialist I (PT1709) HRI Division of Nutritional Sciences-Statutory**  
Provide support in the planning, administration and evaluation of the New York State Nutrition Surveillance Program. Travel within and outside New York State collecting state-wide data analysis. Prepare oral and written reports, including those for state agencies and various journal articles. Monday-Friday, 20-30 hours per week until 3/31/91. Flexible work hours.  
**Requirements:** Bachelor's or equivalent in nutrition and epidemiology. Master's preferred. 2-3 years experience working with nutrition, health and social science data on micro and mainframe computers. Good organizational and interpersonal skills. Send cover letter and resume to Sam Weeks.

**Accountant I (PC1411) HRI Electrical Engineering-Endowed**  
Administer sponsored research accounts; manage accounting office, and supervise staff of 2. Job sharing position. Hours to be arranged.  
**Requirements:** Associate's or equivalent in business or accounting. Bachelor's preferred. 2-3 years related experience. Ability to use IBM PC and database software and to work under pressure. Good interpersonal skills. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants send cover letter, resume and salary requirements to Esther Smith, Staffing Services, 160 Day Hall.

**Executive Director Student Management Corporation (SMC)**  
SMC is a not-for-profit purchasing and management association for fraternities and sororities located at Cornell University. Soon to celebrate it's 20th anniversary, the cooperative's annual sales exceed \$2 million. Responsibilities include; manage annual plan, sales, and personnel; oversee operations of Purchasing, Financial, and Alumni Services departments.  
**Requirements:** Bachelor's or equivalent combination of education and experience required. Ability to work with students, knowledge of fundraising, financial accounting and computer skills a plus. Send cover letter and resume to Susan Call, 209 Willard Straight Hall. Please note: SMC is not a department of Cornell University and therefore does not provide the Cornell benefit plan.

Professional Temporary

**Applications Programmer (PT1602) Division of Nutritional Sciences**  
Design, develop and document state-wide reporting system in consultation with program staff. 4 months, Monday - Friday, 20 hours per week.  
**Requirements:** Associate's or equivalent with computer experience. 2-3 years programming experience preferred. Experience with database design & programming, preferably with dBASE. Excellent oral and written communications skills. Send cover letter and resume to Sam Weeks.

**Computer Consultants (T8212) Information Technologies**  
Information Technologies is seeking applicants for part-time positions in customer (user) support. Successful applicants will have experience with a broad range of technologies (micro and mainframe) with general knowledge of major application software (wordprocessing, DBMS, operating systems etc.). Excellent communication skills and positive customer service orientation are essential. Knowledge of the Cornell computing environment preferred. Interested parties may submit a resume to Stephan Knapp, Cornell University, CIT Resource Services, CCC Bldg. Room 121, Ithaca, NY 14850.

Technical

As a prominent research institution, Cornell University has a diverse need for laboratory, electro/mechanical and computer support. Individuals with backgrounds in computer science, biology, microbiology, chemistry, animal husbandry, plant science and medical laboratory techniques are encouraged to apply; applicants with ASCP or AHT licenses are in particular demand.  
All external candidates must have a completed signed employment application on file with Staffing before they can be interviewed for a position.  
Submit a resume and cover letter for each position, specifying the job title, department and job number, to Sam Weeks, 160 Day Hall. Skill assessment check lists, available at the Day Hall office, are a valuable aid when applying for computer or laboratory related positions.

**Animal Technician, GR18 (T1203) Physiology-Statutory Minimum Biweekly Salary: \$529.35**  
Participate in long-term animal experiments with pregnant animals. Perform all aspects of general animal maintenance and maintain experimental records. Sample blood and prepare infusions. Perform general laboratory duties. Follow strict protocols for sterile or disease control environments and regulations for animal welfare.  
**Requirements:** Associate's or equivalent biological sciences or equivalent. Bachelor's desirable. Pre-employment physical and immunizations required. Previous experience with sheep preferred. Send cover letter and resume to Sam Weeks.

**Technician, GR19 (T1507) Plant Pathology-Statutory Minimum Biweekly Salary: \$551.86**  
Conduct pathogen testing in potato plants, screen populations for disease resistance and maintain potato tissue and pathogen culture collections. Prepare clones for shipment. Work in the lab, greenhouse and field. Train graduate students.  
**Requirements:** Associate's in biological science or chemistry or training in biology, biochemistry or chemistry. 1 year lab experience with knowledge of tissue culture and testing procedures.

Drivers license essential. Send cover letter and resume to Sam Weeks.

**Facilities Inventory Drafter, GR19 (T1409) Facilities Engineering-Endowed Minimum Biweekly Salary: \$551.86**  
Responsible for maintaining and updating the drawings and floor plans of all Cornell buildings for the Facilities Inventory section. Create or revise plans from field sketches or construction drawings. Calculate and verify field data on space usage and gross and net square footage. Do field inspections. Maintain work log. Assist in training and supervision of student drafters.  
**Requirements:** High School diploma or equivalent. Associate's preferred. 2 years drafting experience, strong communication and interpersonal skills. Experience with microcomputers and CADD desirable. Send cover letter to Sam Weeks.

**Technician, GR20 (T1404) Clinical Sciences-Statutory Minimum Biweekly Salary: \$575.30**  
Provide technical support for an immunological lab research staff. Prepare tissue culture, bacteriological media, buffers and other formulated reagents. Collect blood and milk samples from cows. Work with other common lab animals. Clean lab and glassware. Do literature searches.  
**Requirements:** Bachelor's in biology or equivalent experience in microbiological techniques. 1-2 years experience handling lab animals and knowledge of lab procedures. Send cover letter and resume to Sam Weeks.

**Animal Health Technician, GR20 (T1405) Veterinary Medical Teaching Hospital-Statutory Minimum Biweekly Salary: \$575.30**  
Responsible for maintenance of aseptic conditions and coordination of surgery team in the operating room during a surgical procedure. Cleaning and sterilization of surgical and hospital equipment. Must be available when on-call for emergency duty. Some weekends and holidays required.  
**Requirements:** Associate's in animal health technology. Licensed or eligible for licensure in NYS. 2 years operating room experience preferred. Send cover letter and resume to Sam Weeks.

**Histology Technician, GR20 (T0115) Veterinary Pathology-Statutory Minimum Biweekly Salary: \$575.30**  
Prepare high quality microscopic slides for interpretation by Pathologist. Primary duties include embedding, sectioning and staining of animal tissue sections.  
**Requirements:** Associate's or equivalent in medical laboratory technology with coursework in histological techniques. HT (ASCP) certification or eligible preferred. 1-2 years experience as a histology technician in a hospital or research laboratory preferred. Send cover letter and resume to Sam Weeks.

**Technician, GR20 (T0706) Floriculture and Ornamental Horticulture-Statutory Minimum Biweekly Salary: \$575.30**  
Conduct field, greenhouse and lab experiments designed to evaluate the effects of weeds and weed control agents (including herbicides and biological control agents) on plant growth. Apply and evaluate herbicides and biological control responses to herbicides and weeds, data analysis and summary. Supervise 2 student employees, interact with Graduate students, other faculty, and department support staff. Some travel within New York State will be required.  
**Requirements:** Bachelor's in horticulture, agronomy, plant science or related field or equivalent. 1 or more years of the following experience: weed identification and control, microcomputers, macro-computers, pesticide application, physiology laboratory skills, culture and maintenance of turfgrass and ornamentals. NYS driver's license is required. Must have (or be capable of obtaining) an NY Commercial Pesticide Applicator's certification in categories 3A and 10. Send cover letter and resume to Sam Weeks.

**Technician, GR21 (T1711) Veterinary Pathology-Statutory Minimum Biweekly Salary: \$599.73**  
Prepare high quality microscope slides for interpretation by the pathologist. Maintain equipment, keep records, and maintain order and cleanliness of lab.  
**Requirements:** Associate's or equivalent in medical laboratory technology (Histology) or related field, with coursework in histological techniques HT(ASCP) certified or eligible. 2-4 years experience as a histology technician in a hospital or research laboratory desired. Or Bachelor's or equivalent with 1-2 years experience. Pre-exposure rabies vaccine required subsequent to hire. Must be able to work independently without constant supervision. Send cover letter and resume to Sam Weeks.

**Laboratory Technician, GR21 (T1606) Equine Drug Testing-Statutory Minimum Biweekly Salary: \$599.73**  
Perform advanced analysis under the direction of a senior chemist. Operate, maintain, and trouble shoot HPLC apparatus. Analyze samples for drugs and drug metabolites using TLC and associated extraction techniques.  
**Requirements:** BS in chemistry with 2-3 years experience in HPLC. Send cover letter and resume to Sam Weeks.

**Technician, GR21 (T1607) Floriculture & Ornamental Horticulture-Statutory Minimum Biweekly Salary: \$599.73**  
Design, establish, and maintain research plots. Conduct field, greenhouse, and lab experiments evaluating the efficacy and safety of herbicides and biological control agents on turf and ornamentals. Responsibilities include measurement of plant responses; soil tests; application and evaluation of herbicides; analysis and summary of data; preparation and presentation of reports; and some staff supervision.  
**Requirements:** Bachelor's in Horticulture, Agronomy or Plant Science. Master's preferred; with 2 years of related experience in plant science research. Must have or be able to obtain a NYS Commercial Pesticide Applicators certification. NYS drivers license required. Knowledge of one or more of the following: weed identification and control; pesticide application and evaluation; measurement of plant responses to environmental or xenobiotic stimuli; culture and maintenance of turfgrass and ornamentals; and computers. Send cover letter and resume to Sam Weeks.

**Technician, GR21 (T0904) Diagnostic Laboratory-Statutory Minimum Biweekly Salary: \$599.73**  
Provide technical support for service, research, and teaching projects in diagnostic toxicology. Conduct analysis of toxicants and drug related compounds as requested. Maintain integrity of samples and chain of custody, prepare reagents, order supplies, and miscellaneous tasks related to good lab practices and safety.  
**Requirements:** Bachelor's in science or equivalent experience. 1-2 years lab experience. Typing and computer skills. Send cover letter and resume to Sam Weeks.

**Electronics Technician II, GR22 (T1401) CIT/Network Resources-Endowed Minimum Biweekly Salary: \$625.24**  
Provide support for the Network Management Center, its campus clients and Cornell's connections to external networks. Monitor network, diagnose problems. coordinate and document service requests, and provide network access preventative maintenance.  
**Requirements:** Associate's or equivalent. 1-3 years data communications experience. Understanding of data communications networks and hardware highly desirable. Experience diagnosing network problems (especially TCP/IP) helpful. Strong interpersonal skills. Send cover letter and resume to Sam Weeks.

**Technician, GR22 (T1307) Pharmacology-Statutory Minimum Biweekly Salary: \$625.24**  
Conduct experiments and analyze results in research on vertebrate phototransduction and epidermal growth factor receptor system. Participate in design and interpretation of results. Work with cell cultures, purify membrane proteins, and perform radioligand binding assays. Calculate, analyze and present data. Use computer for graphing and statistical analysis.  
**Requirements:** Bachelor's in biochemistry or related field. 2 years lab experience required. Protein purification in cell culture work helpful. Send cover letter and resume to Sam Weeks.

**Technician, GR22 (T1108) Pharmacology-Statutory Minimum Biweekly Salary: \$625.24**  
Conduct experiments and analyze results on biochemical research relating to calcium channels. Calculation and analysis of data-statistical and graphical. Perform independently, to

some extent, in the design and interpretation of results.  
**Requirements:** Bachelor's or equivalent in biochemistry, neurobiology or similar field. 2-4 years laboratory experience in a related field. Familiarity with balances, pH meters, centrifuges, gamma and scintillation counters, spectrophotometer, light microscope, and tissue culture equipment. Send cover letter and resume to Sam Weeks.

**Research Equipment Technician, GR22 (T0406) Nuclear Science and Engineering-Endowed Minimum Biweekly Salary: \$625.24**  
Build research laboratory apparatus using standard machine shop equipment; use and maintain research laboratory equipment; operate low power nuclear reactors; operate gamma irradiation facility; use radiation safety equipment.  
**Requirements:** Associate's in mechanical and/or electrical technology or equivalent experience. 3 years related experience. Nuclear reactor operator license or certification highly desirable. Knowledge of use of machine shop tools and research laboratory test equipment. Willingness and ability to learn procedures and methods of radiation safety and reactor operations and to pass US operator license examination (after training). Send cover letter and resume to Sam Weeks.

**Research Equipment Technician, GR23 (T1713) Pomology-Statutory Minimum Biweekly Salary: \$651.82**  
Responsible for an on-going applied research and extension program in the biology and technology of fruit storage, including repairs to electronic equipment, computers, gas analyzers and CA control equipment. Operate and maintain 2 labs and controlled atmosphere storage rooms. Purchase materials and equipment. Some staff supervision.  
**Requirements:** Bachelor's or equivalent. 2-4 years experience with carpentry, plumbing, electrical wiring, electronics, Orsat and chromatographic gas analysis. Driver's license required. Send cover letter and resume to Sam Weeks.

**Mac-CHESS Operator, GR24 (T1609) Biochemistry Molecular and Cell Biology/CHESS-Statutory Minimum Biweekly Salary: \$682.77**  
Give user groups supervision and instruction in the operations, safety procedures, and equipment usage for their biological diffraction experiments. Assist in some experiments. Repair diffraction apparatus and assist in design, modification, and development of beam lines. Do some computer programming when necessary. Help with data reduction using the storage phosphor detector system. some evenings and weekend hours are required.  
**Requirements:** Bachelor's or equivalent in engineering, physics, chemistry or biology. Good mechanical and lab skills. Several years related experience preferred. Computer programming skills desirable. Send cover letter and resume to Sam Weeks.

**Coordinator of Workstation Facilities, GR24 (T0903) Information Technologies-Endowed Minimum Biweekly Salary: \$682.77**  
Act as primary information source in facility. Provide complex computer support to users. Operate and maintain all main-frame and micro-computer equipment. Maintain databases, networks and hard drives. Monday-Friday, 7:30 a.m.-4 p.m.  
**Requirements:** Associate's with related computer coursework or background. 3-5 years related experience (Cornell systems preferred). Extensive knowledge of overall operation of mainframes, microcomputers and networks. Excellent interpersonal, communication and organizational skills. Knowledge of CMS, VMS, Unix and Macintosh operating systems is essential. Send cover letter and resume to Sam Weeks.

Technical Part-time

**Technician, GR18 (T1201) Plant Pathology-Statutory Minimum full-time equivalent: \$529.35**  
Provide technical support in a cytology lab. Acquire, manipulate and plot data from videotapes using IBMXT. Update reference database, maintain fungal cultures, prepare solutions, also photographic printing and general lab maintenance. Possible full time after 6 months contingent on additional funding.  
**Requirements:** Associate's or equivalent in biology or related field. Knowledge of IBM-compatible computers. Minimum 1 year research experience desirable. Send cover letter and resume to Sam Weeks.

**Technician, GR20 (T1006) Biochemistry-Statutory Minimum full-time equivalent: \$575.30**  
Assist with culturing bacteria; enzyme purification, and assay. General lab duties. 25 hours per week.  
**Requirements:** Bachelor's or equivalent; courses in biochemistry or microbiology. 1-2 years practical lab experience in biochemical/microbiological lab, including chromatography, spectrophotometer, and gel electrophoresis. Send cover letter and resume to Sam Weeks.

**Technician, GR21 (T1702) Biotechnology Program-Endowed Minimum full-time equivalent: \$599.73**  
Assist in the operation of scientific instruments, including a computer and perform general lab activities in a service facility. Operate a flow cytometer and spectrophluorometer; maintain lab apparatus and supplies. Monday-Friday, 20 hours per week.  
**Requirements:** Bachelor's or equivalent in physical or biological sciences preferred. Minimum 2 years lab experience involving the use of some instrumentation. Some programming experience is desirable. Send cover letter and resume to Sam Weeks.

**Technician, GR21 (T1608) Floriculture & Ornamental Horticulture-Statutory Minimum full-time equivalent: \$599.73**  
Design, establish, and maintain research plots. Conduct field, greenhouse, and lab experiments evaluating the efficacy and safety of herbicides and biological control agents on turf and ornamentals. Responsibilities include measurement of plant responses; soil tests; application and evaluation of herbicides; analysis and summary of data; preparation and presentation of reports; and some staff supervision. Flexible hours, 20 hours per week.  
**Requirements:** Bachelor's in Horticulture, Agronomy or Plant Science. Master's preferred; with 2 years of related experience in plant science research. Must have or be able to obtain a NYS Commercial Pesticide Applicators certification. NYS drivers license required. Knowledge of one or more of the following: weed identification and control; pesticide application and evaluation; measurement of plant responses to environmental or xenobiotic stimuli; culture and maintenance of turfgrass and ornamentals; and computers. Send cover letter and resume to Sam Weeks.

Technical Temporary

**Laboratory Assistant (T1603) Plant Breeding**  
Work on RFLP mapping project of barley. Assist in running gels, blotting, and DNA extractions. Help with data entry. Until 6/1/90, 4 to 5 hours per day.  
**Requirements:** Applicants with lab experience highly desirable. Must be able to follow directions exactly and work with care. Send cover letter and resume to Sam Weeks.

**Technician (T1604) Clinical Sciences**  
Laboratory assistant to complete biochemical assays used as clinical diagnostic tests in veterinary patients. 2 to 3 half days per week.  
**Requirements:** Understand basic laboratory techniques including quantitative pipetting, centrifugating, preparing reagents and operating a spectrophotometer. Cataloging samples and reporting test results by computer entry. Assist in projects that may include handling of dogs and cats. Send cover letter and resume to Sam Weeks.

**Animal Technician (T1505) Laboratory Animal Services**  
Feed, water, clean and monitor research animals following strict protocols for sterile or disease control environments and regulations for animal welfare. Maintain animal records including health observations. May include assisting Vets in treating and vaccinating animals. 6 months.  
**Requirements:** High School diploma or equivalent. Associate's in animal science desired. Assistant animal certificate helpful. Knowledge of a variety of lab animals and animal breeding required. 1 year animal experience. Pre-employment physical and all necessary immunizations required. Able to lift 50

pounds. Must have a valid NYS driver's license. Some weekend work required. Send cover letter and resume to Sam Weeks.

Office Professionals

Approximately half of all University openings are for Office Professionals. Individuals with secretarial, word processing (IBM PC, MacIntosh, Wang, Micom), data entry, technical typing, or medium to heavy typing (45-60+ wpm) are encouraged to apply.

All external candidates must have a completed signed employment application on file with Staffing before they can be interviewed for a position. Employee candidates should submit an employee transfer application and cover letter, if requested, for each position in which they are interested.

Submit a signed employment application and resume which will remain active for a period of four months. During this time, you will be considered for any appropriate openings for which you are competitively qualified. Requests for referral and/or cover letters are not accepted from external candidates unless specified in the ad. Qualified applicants will be invited for a preliminary interview at our East Hill Plaza office. If you are currently available for employment, you may want to consider temporary opportunities at the University. Please contact Karen Raponi at 255-2192 for details.

**Office Assistant, GR17 (C1707) CIT/Network Resources-Endowed Minimum Biweekly Salary: \$517.65**  
Function as receptionist, building coordinator, and provide general office support for department professionals.  
**Requirements:** High School diploma or equivalent. 6 months-1 year office experience. Good interpersonal and telephone skills required. Experience with personal computer desirable. Light typing.

**Secretary, GR18 (C1711) Vice President Public Affairs-Endowed Minimum Biweekly Salary: \$529.35**  
Provide general secretarial and office support for the Day Hall offices of Public Affairs, including the Vice President's Office, the Directors of Business Operations, College and Unit Public Affairs and University Events as well as the 125th Anniversary Celebration.  
**Requirements:** High School diploma required. Some college coursework preferred. Minimum 1 year related experience. Knowledge of Apple Macintosh computer including use of MS Word and Excel. Good interpersonal skills. Ability to proofread, and deal with confidential material. Medium typing.

**Secretary, GR18 (C1713) ILR-Personnel and Human Resource Studies-Statutory Minimum Biweekly Salary: \$529.35**  
Provide secretarial support for department faculty. Use computerized hardware and software to prepare correspondence, training materials, administrative memoranda, budget, vouchers, etc.; make travel arrangements; process correspondence; handle mail; telephone contacts; appointments. Other duties as assigned.  
**Requirements:** High School diploma or equivalent. Some college coursework preferred. 1-2 years office experience. PC experience familiar with word processing software, graphics software and spreadsheets. Medium typing.

**Accounts Assistant, GR18 (C1705) Controller's/Accounting-Endowed Minimum Biweekly Salary: \$529.35**  
Provide assistance in maintaining account records and generating payments; responsible for financial data entry into the accounting system; accurate input of large, continuous volume of data from a variety of input forms. Other duties as assigned.  
**Requirements:** High School diploma or equivalent. 1-2 years data entry experience. Experience with CU accounting procedures preferred. Able to work well with a variety of individuals. Attention to detail and accuracy while meeting a variety of deadlines. Heavy typing.

**Secretary, GR18 (C1601) National Nanofabrication Facility-Endowed Minimum Biweekly Salary: \$529.35**  
Provide general secretarial support to the Corporate Liaison Officer, administrative and technical staff. Maintain schedules; sort mail; word processing papers, proposals, and reports. Maintain records of NNF's corporate outreach program, coordinate annual technical review. Other duties as assigned.  
**Requirements:** High School Diploma or equivalent. Some college coursework preferred. 1-2 years Cornell experience desirable. Excellent communications, interpersonal, and organizational skills. Close attention to detail a must. Computer experience helpful. MacIntosh, pagemaker experience helpful. Medium typing.

**Reserve Assistant, GR18 (C1607) Reserve/Uris Library, CUL-Endowed Minimum Biweekly Salary: \$529.35**  
Under the direction of the Reserve Supervisor processes all photocopied and personal copy reserve materials; work all the Circulation/Reserve desks; specific duties include: pulling journals from Uris and Olin Libraries and act as liaison with Olin photocopy service; incharge of circulation/reserve desk in absence of evening supervisor; assist with reserve processing; compile statistical reports. Monday - Thursday, 1:00 p.m. - 10:00 p.m., Friday, 1:00 p.m. - 9:00 p.m.  
**Requirements:** High School diploma or equivalent. Some college coursework preferred. 1 year related experience. Aptitude for detailed work. Excellent organizational skills. Ability to work with a variety of people in a public service setting and work under pressure. Light typing. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

**Secretary, GR18 (C1605) School of Hotel Administration-Endowed Minimum Biweekly Salary: \$529.35**  
Provide data processing and clerical support to the director of alumni affairs and the administrative aide. On-going updating alumni data base, frequent contact with students and faculty. Other duties as assigned.  
**Requirements:** High School diploma or equivalent. 1 year related experience. Knowledge of computers. Good written and verbal skills. Accuracy and attention to detail. Ability to work independently, handle pressure, meet deadlines, and maintain a high level of confidentiality. Medium typing.

**Office Assistant, GR18 (C1414) Campus Store-Endowed Minimum Biweekly Salary: \$529.35**  
Record all incoming books for Tradebook department, into a computerized inventory control system; process related paperwork (invoices, purchase orders, etc.); prepare merchandise for sales floor presentation or mailing; maintain inventory through data entry; take periodic physical inventory of stock. Occasional weekends.  
**Requirements:** High School Diploma or Equivalent. Some college coursework preferred. 1 year related retail experience, preferably with books required. Data entry experience essential. Excellent communication, interpersonal and organizational skills. Light typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall. Minorities are particularly encouraged to apply.

**Accounts Assistant, GR18 (C1006) Administrative Operations/CUL-Endowed Minimum Biweekly Salary: \$529.35**  
Under the direction of the Accounting Manager, process and pay vendor invoices/credits for library materials for the 10 endowed libraries and some statutory units. Audit and process for payment, approval on library automated system; correspondence with vendors; review and update fine and replacement charges/credits with the Bursar's Office; maintain vendor fines (automated and manual); process orders for library supplies; process and monitor typewriter leases. Other duties as assigned.  
**Requirements:** High School diploma or equivalent. Some college coursework preferred. Minimum of 1 year previous accounting/bookkeeping experience and familiarity with standard office machines. High degree of accuracy. Attention to detail; experience with microcomputers, IBM preferred, (data entry, word processing, spreadsheet management). Strong organizational, communication (written and verbal) and interpersonal skills. Familiarity with Cornell accounting system desirable. Light typing.

**Administrative Aide, GR19 (C0622) Summer Session-Endowed Minimum Biweekly Salary: \$551.86**

# Jobs

Continued from page 3e

Provide secretarial and accounting support including the typing of department course status letters, faculty contract letters, appointment forms, accounts payable, journal vouchers, and miscellaneous correspondence; update and maintain faculty and accounting databases; file and record keeping.

**Requirements:** High School diploma or equivalent. Some college coursework preferred. 2 years experience required. Excellent typing skills necessary. Must be detail-oriented and highly accurate. Able to use IBM PC with Wordperfect and Lotus 123 required. Knowledge of DBase helpful. Heavy typing. Send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Office Assistant, GR19 (C1506)**  
**JGSM-Endowed**  
**Minimum Biweekly Salary: \$551.86**  
 Provide secretarial and administrative support to the Director of Business Operations and the School's Business Manager.

**Requirements:** High School diploma or equivalent. Some college coursework preferred. 2 years of general office experience preferred. Familiar with the MAC. Heavy typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Office Assistant, GR19 (C1609)**  
**Academic Programs, College of Agriculture and Life Science-Statutory**  
**Minimum Biweekly Salary: \$551.86**  
 Provide assistance to the Registrar in the maintenance of student records and classroom scheduling, including all course, room, and time data input on the computer; compile and edit the information for the Course/Time/Room Rosters; assist with the pre-registration of students during peak periods.

**Requirements:** High School diploma or equivalent. Some college coursework preferred. 2 years experience, preferably in a related college environment. Data processing skills necessary. Knowledge of Macintosh computer helpful. Medium typing. Cornell employees send transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Accounts Assistant, GR19 (C1606)**  
**Purchasing-Endowed**  
**Minimum Biweekly Salary: \$551.86**  
 Process vendor invoices for payment by sorting, examining, matching and auditing invoices to corresponding purchase order records; create the vouchers for payment and recording payments against purchase order records; resolve vendor payment problems as they occur. Assign purchase order numbers; separate and distribute forms.

**Requirements:** High School diploma or equivalent. Some college coursework preferred. 2 years related experience. Knowledge of Cornell accounting system helpful. Good organizational skills. Experience in data entry skills preferred. Medium typing. Cornell employees send transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Secretary, GR20 (C1710)**  
**Consumer Economics and Housing-Statutory**  
**Minimum Biweekly Salary: \$575.30**  
 Primarily secretary to Chairperson as well as receptionist for department. Also, undergraduate and graduate secretary. Responsible for organizing, maintaining, keeping statistics for 300+ undergraduate folders; follow through on graduate folders; handle projects as assigned.

**Requirements:** Associate's or equivalent combination of education and experience. 2-3 years of related experience. Strong organizational, interpersonal and communication (oral and written) skills. Discretion in handling confidential information. Able to prioritize assignments and work under pressure. Knowledge of IBM-PC/Macintosh desirable. Heavy typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Administrative Aide, GR20 (C1712)**  
**Ethics and Public Life/Science, Technology and Society-Endowed**  
**Minimum Biweekly Salary: \$575.30**  
 Type and edit letters, reports, etc. Arrange meetings, appointments; handle course activities; maintain student records via computer. EPL/STS seminar series; locate and collect research materials. Other projects as assigned.

**Requirements:** Associate's or equivalent. 2 years related experience. Computer skills essential. Wordperfect and Nota Bene helpful. Library knowledge helpful. Excellent organizational, interpersonal and communication (written and oral) skills. Medium typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Accounts Assistant, GR20 (C1504)**  
**Electrical Engineering-Endowed**  
**Minimum Biweekly Salary: \$575.30**  
 Responsible for processing the school's payroll; prepare transactions, monitor activity, and report on status of school accounts; maintain inventory listing for school and research; provide assistance for the Accountant.

**Requirements:** Associate's in business or related area or equivalent. 2 years experience at Cornell. Extensive experience working with Cornell payroll system. Ability to work under pressure. Cornell employees only. Send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Editorial Assistant, GR20 (C1305)**  
**C.U. Press-Endowed**  
**Minimum Biweekly Salary: \$575.30**  
 Assist the Acquisitions Editor/Coordinator in acquiring manuscripts; draft letters and memos to Press advisers and authors; maintain some department records; assist in preparation of contracts and annual reports; major responsibilities for coordinating workflow in department and with other departments; some training of new assistants and temporary employees.

**Requirements:** Associate's or equivalent. Excellent typing. Strong communication skills. Some publishing experience desirable. Heavy typing. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall. Employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Administrative Aide, GR21 (C1514)**  
**Psychology-Endowed**  
**Minimum Biweekly Salary: \$599.73**  
 Responsible for grant preparation, administration, and personnel and budgetary supervision required by 2 professors for running of 3 laboratories at Cornell. Provide scientific and library assistance for research. Act as liaison for off-campus studies. Assist in manuscript preparation, data analysis and statistical work.

**Requirements:** Associate's or equivalent required. 2-3 years experience in administrative support work, preferably at Cornell. Excellent organizational and interpersonal skills. 2 or more years experience using word processing, and other computer programs. Ability to work independently. Regular Cornell employees only. Send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza.

**Administrative Aide, GR21 (C1502)**  
**Philosophy-Endowed**  
**Minimum Biweekly Salary: \$599.73**  
 Maintain computerized circulation records for 3200 subscribers. Specific duties include processing subscriptions, writing to subscribers regarding queries and problems, and planning circulation procedures related to a quarterly scholarly journal. Proofreading and assisting managing editor are important aspects of the job.

**Requirements:** Associate's or equivalent. 2 years related experience demonstrated by strong attention to detail, strong organizational and writing skills. Familiar with publishing, circulation and with philosophical terms. Data processing skills for IBM PC desired. Light typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

**Accounts/Personnel Coordinator, GR21 (C1311)**  
**Modern Languages and Linguistics-Endowed**  
**Minimum Biweekly Salary: \$599.73**

Provide administrative support for Chair and Administrative Manager of large academic department. Under general supervision assist with fiscal and personnel management services; responsible for processing of academic and non-academic appointment forms and handling day-to-day financial activities including purchasing, inventory, preparation of payments and monitoring of departmental accounts; assist with word processing and general office duties.

**Requirements:** Associate's in business/accounting or equivalent; 2-3 years experience in office setting. Administrative experience and knowledge of bookkeeping/accounting, preferably at Cornell. Computer experience with use of database programs, spreadsheets and wordprocessing essential. Able to work independently in a busy work environment and to organize data and maintain confidentiality. Knowledge of foreign languages/cultures helpful. Medium typing. Send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza, Ithaca, NY 14850.

**Marketing Assistant, GR22 (C1704)**  
**University Press-Endowed**  
**Minimum Biweekly Salary: \$625.24**  
 Assist 4 members of the Promotion Department in executing seasonal advertising, publicity, direct mail, and exhibit plans for Cornell University Press books. Marketing Assistant is also responsible for preparing copy for new paperbacks.

**Requirements:** Bachelor's or equivalent. Strong writing and proofreading skills essential. Prior experience in publishing helpful. Familiarity with Macintosh and basic knowledge of wordprocessing and page maker programs are desirable. Medium typing. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

**Office Systems Specialist, GR23 (C1702)**  
**ILR Resident Division-Statutory**  
**Minimum Biweekly Salary: \$651.82**  
 Trouble shoot questions about hardware and software. Be the first person called when computer problems arise; provide word processing support for staff, faculty and grad students. Consult with secretarial staff about special features of word processing such as mass mailings, envelope addressing, etc.; encourage communications among users by activities such as user group, newsletter. Set up machines and install security devices; assist users preparing graphs, etc.; send out memos for Computer Support Offices.

**Requirements:** Associate's or equivalent. Minimum 3-5 years word processing experience. Ability to work well with people. Good follow through on questions and commitments. Medium typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

## Office Professionals Part-Time

**Office Assistant, GR15 (C1405)**  
**Veterinary Medical Teaching Hospital-Statutory**  
**Minimum full-time equivalent: \$486.92**  
 Work with weekend hospital census package and other medical record computer programs; check in records from the Small Animal Clinic on a daily basis; file laboratory reports and records on a daily basis; pull medical charts for research; assist doctors in finding records and prepare records for microfilm. Some holiday work required. Monday-Friday, 2 p.m.-6 p.m.; Saturday 8 a.m.-12 noon.

**Requirements:** High School diploma or equivalent. Some experience preferred. Must be dependable. Good organizational, interpersonal and communication skills desirable. Light typing. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

**Conservation Technician, GR18 (C1701)**  
**Mann Library-Statutory**  
**Minimum full-time equivalent: \$529.35**  
 Under the direction of the Coordinator of Preservation, perform a variety of tasks relating to microfilm/filming of brittle materials as part of the Cornell/NYS Library Coordinated Preservation Grant. Duties include preparing materials for reformatting, collation, target preparation and quality control; may also participate in other conservation activities including minor repair and making protective enclosures in damaged books. Monday-Friday, 20 hours per week. Until 3/31/93.

**Requirements:** High School diploma or equivalent combination of education and experience required. Associate's preferred. Microcomputer and previous library experience desirable. Experience with microforms, bibliographic searching and book conservation desirable. Good interpersonal, organizational, and communication (oral) skills required to effectively work with filmings agent and other library departments. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

**Secretary, GR18 (C1608)**  
**Community and Rural Development Institute-Statutory**  
**Minimum full-time equivalent: \$529.35**  
 Provide secretarial support for Associate Director of Institute. Heavy typing for research and extension activities. Process expense reports; conference organization; newsletter preparation. Other duties as assigned. Flexible, half days preferred.

**Requirements:** High School diploma or equivalent. Some college coursework in Secretarial Science desirable. 1-2 years professional secretarial experience required. Experience with computer, word processor essential. Excellent communication and organizational skills. Heavy typing. Send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

**Administrative Aide, GR19 (C1709)**  
**SRC Microsciences and Technology Program-Endowed**  
**Minimum full-time equivalent: \$551.86**  
 Handle daily operations of the SRC Microscience and Technology Program. Prepare quarterly and annual reports; draft correspondence; prepare and pay purchase requisitions and vouchers; maintain accounting files; handle daily activities of the Director. Mon-Friday 8 a.m.-12 noon.

**Requirements:** High School diploma or equivalent. Some college coursework preferred. 2 years related experience. Computer experience necessary. Knowledge of Excel, Wordperfect helpful. Familiar with Cornell accounting system also helpful. Medium typing.

**Senior Night Supervisor, GR20 (C1708)**  
**Circulation/Engineering Library/CUL-Endowed**  
**Minimum full-time equivalent: \$575.30**  
 Under the general direction of the Administrative Supervisor oversee evening and/or weekend circulation and reserve functions. Responsible for building security at these times. Train and supervise student staff. Monitor usage of reserve items and other library material. Hours to be announced.

**Requirements:** Minimum of 2 years college coursework successfully completed. Bachelor's preferred. Strong interpersonal skills. Supervisory and public service experience. Library background strongly desired. Familiarity with personal computers. Ability to function well under pressure. Strong organizational skills. Light typing. Send cover letter and resume to Esther Smith, Staffing Services.

**Transportation Service Representative, GR21 (C1602)**  
**Office of Transportation Services-Endowed**  
**Minimum full-time equivalent: \$599.73**  
 To act as university representative in disseminating information concerning parking and traffic to the university community and

visitors. Provide services and conduct transactions that insure the effective and efficient implementation of university policies related to parking, traffic and circulation on the Ithaca campus. Monday - Friday. Hours variable.

**Requirements:** High School diploma or equivalent. Valid NYS driver's license. Excellent interpersonal and communication skills. Knowledge of data entry, ability to work with mainframe and micro-computer applications and programs. Light typing. Cornell employees send transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

## Office Professionals Temporary

In addition to posted positions, temporary opportunities occur in many occupational areas, including secretarial, word processing, accounting, and office administration. All individuals are encouraged to apply; experienced applicants with a typing speed of 45-60 wpm, knowledge of IBM-PC Word Perfect software and Macintosh word processing are in particular demand. Call Karen Raponi at (607) 255-2192 or 255-7422 for more information.

**Service Clerk (S1301)**  
**Laboratory of Ornithology**  
 Assist with sales of the Crow's Nest Birding Shop on weekends and holidays. Cashiering, answer phones, respond to basic bird questions, feed birds. Open and close Laboratory. Hours negotiable. 12 hours every other weekend.

**Requirements:** High School diploma or equivalent. Cash register experience helpful. Contact Karen Raponi, Staffing Services, East Hill Plaza, 255-2192.

**Office Assistant (S1107)**  
**Physiology**  
 Provide support in the areas of data entry and word processing utilizing IBM Wordperfect. Answer phones, copy, file. Attention to detail and accuracy is a must. Library searches for journal articles. Part-time flexible hours, 15-20 hours per week. Send cover letter and resume to Karen Raponi, Staffing Services, 160 Day Hall.

**Secretary (S1500)**  
**Division of Nutritional Sciences/CFNPP**  
 Provide back-up support to administrative staff and 2 researchers. Copy, word processing (Wordperfect); provide student/visitor assistance; prepare standard vouchers; provide telephone coverage for 10-12 people. Make on-campus deliveries. Make/arrange for off-campus deliveries. Order program supplies. Fill publication requests. Replenish publication inventory. Other duties as assigned. Until 9/5/90.

**Requirements:** High School diploma plus secretarial training or equivalent work experience. Experience with word processing (Wordperfect preferred); able to coordinate a variety of activities; good interpersonal and communication skills. Familiarity with Cornell procedures is helpful. Send cover letter and resume to Karen Raponi, Staffing Services, 160 Day Hall.

**Data Entry Operator (S1402)**  
**Summer Session**  
 Data entry of all summer student registration information. Perform general clerical duties. Until 8/90, full-time.

**Requirements:** High School diploma or equivalent. Ability to use IBM PC with Wordperfect desirable. Send cover letter and resume to Karen Raponi, Staffing Services, 160 Day Hall.

## General Service

Submit a signed employment application which will remain active for a period of four months. During this time, you will be considered for any appropriate openings for which you are competitively qualified. Requests for referral and/or cover letters are not accepted from external candidates unless specified in the ad. Qualified applicants will be invited for a preliminary interview at our East Hill Plaza office. If you are currently available for employment, you may want to consider temporary opportunities at the University. Please contact Karen Raponi at 255-2192 for details.

All external candidates must have a completed signed employment application on file with Staffing before they can be interviewed for a position.

**Chief Dispatcher, SO06 (G1505)**  
**Maintenance and Service Operations-Endowed**  
**Hiring Rate: \$7.20**  
 Assist Operations Manager in coordinating the university's customer service center. The customer service center is the focal point of requests for repairs, maintenance and alterations, and information about the physical plant.

**Requirements:** High School diploma or equivalent. 1-2 years experience in the customer service field. Excellent interpersonal skills. Ability to work under pressure, strong decision-making, problem solving, priority setting and time management skills. Must be detail-oriented. Experience with mainframe and personal computers desirable. Training and/or experience in public relations, sales, or service preferred. Medium typing. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall.

## General Service Off-Campus

**Utility Plant Operator, GR19 (G1403)**  
**Safety Division/Geneva-Statutory**  
**Minimum Biweekly Salary: \$551.86**  
 Secure and patrol buildings, farms, greenhouses and grounds; monitor controlled temperature chambers and building mechanical rooms; operate gas and oil fired, 150 lb. pressure steam boilers and related equipment.

**Requirements:** High School diploma or equivalent. Valid NYS driver's license. 2 years experience in security or related work. Able to operate high pressure steam boilers and related equipment. Considerable amount of walking/standing. There is a 50 lb. lifting requirement. Cornell employees send employee transfer application, cover letter and resume to Esther Smith, Staffing Services, East Hill Plaza. External applicants, send cover letter and resume to Esther Smith, Staffing Services, 160 Day Hall. Women and minorities encouraged to apply.

## General Service Temporary

In addition to posted positions, temporary opportunities frequently occur in custodial, food service, dish machine operation, material handling and other service areas. All individuals are encouraged to apply. Call Karen Raponi at (607) 255-2192 or 255-7422 for more information.

**Drivers, Bartenders, and Waitstaff (S1502)**  
**Cornell Catering**  
 Cornell Catering needs bartenders, waitstaff, and drivers for May 26, and June 7-10. Interested? Information meeting May 6, 1990, 2 p.m., 3rd floor Robert Purcell Union. Bring photo identification, social security card, and working papers. Questions call Diana or Allison at 255-5555.

**Custodian**  
**Building Care-Endowed/Statutory**  
**Temporary Rate: \$5.00**  
 Continuous recruitment will be done in the department of Building Care for temporary custodians. Provide general custodial care of buildings and grounds in immediate vicinity of assigned area. Monday-Thursday 6:00am-2:30pm, Friday 6:00am-1:30pm. Periodically 2nd and 3rd shift hours are available.

**Requirements:** Basic reading and writing skills. Able to operate a variety of heavy power equipment, lift 50 pounds and climb a 6 foot ladder. Contact Karen Raponi, Staffing Services, East Hill Plaza, 255-2192 for an interview.

## Please submit materials for the following positions to 160 Day Hall.

**Physical Therapist Assistant, GR20 (B1601)**  
**University Health Services-Endowed**  
**Minimum Biweekly Salary: \$575.30**  
 Carry out treatments as directed and supervised by the department's Physical Therapist.

**Requirements:** Associate's degree in Physical Therapy Assistantship or equivalent. Athletic training preferred. Experience in orthopedic/sports medicine setting desirable. 2-3 years experience in related setting with advanced degree considered. Send cover letter and resume to Cynthia Smithbower.

**Temporary Field Assistant (B1701)**  
**Soil Crop and Atmosphere**  
**Hiring Rate: \$6.00**  
 Perform general farm labor at Mr. Pleasant Farm. Drive tractor and perform routine maintenance. Monday-Friday, 8 a.m.-4:30 p.m. 6 months.

**Requirements:** Some related experience working on a farm. Some mechanical skills. Ability to lift 80 pounds (fertilizer bags). Send application materials to Cynthia Smithbower, Staffing Services, 160 Day Hall.

**Temporary Field Assistant (B1301)**  
**Plant Breeding**  
**Hiring Rate: \$5.75**  
 Work on forage breeding project. Help plant harvest and care for forage plots both in the field and in the greenhouse. May 1 through November 10, 1990.

**Requirements:** Must have NYS driver's license. Able to work independently, and be familiar with operating farm equipment. Send application materials to Cynthia Smithbower.

**Temporary Groundsworker (B0902)**  
**Cornell Golf Course**  
**Hiring Rate: \$6.00**  
 Knowledge of tools, methods, and materials used in golf maintenance and construction. Ability to operate motorized equipment. Valid NYS driver's license required. Pesticide applicators license preferred or willing to obtain upon employment. 6 months; possible extension. Send cover letter, resume and copy of pesticide license to Cynthia Smithbower, 160 Day Hall.

## Academic

**Extension Associate III**  
**Human Development and Family Studies**  
 Serve as Senior Trainer of a project to develop and deliver training courses for social workers and administrators in rural areas of New York State. Conduct needs assessment to identify training needs in rural counties. Research existing materials and update curricula for courses. Organize and conduct training, utilizing outside consultants when appropriate. Organize Statewide Conference.

**Requirements:** Master's related to human services. 2 years experience in rural family and child welfare work, or Bachelor's plus 4 years work experience. 2 years experience in participatory training or professional education, including conference organization. Demonstrated ability in writing for professional purposes. Clear understanding of rural issues and practices in human services. One year appointment beginning May 1, 1990, with possibility of renewal, depending on performance and continuation of State fundings. Send a cover letter, resume, recent references and a short history of human services experience to Madeline B. Dean, Human Development and Family Studies, NYS College of Human Ecology, E200 Martha Van Rensselaer Hall, Ithaca, NY 14853-7794.

**Instruction Coordinator**  
**Public Services, Mann Library (expected rank Associate Librarian)**  
 Responsible for the overall coordination of Mann Library's instruction Program including teaching, planning, scheduling, serving as a contact with faculty, organizing staff development sessions, and evaluating audiovisual and computer equipment. Will participate in providing reference and database search services, and developing and managing special projects relating to electronic libraries and information technology. Will have opportunity to expand the instruction program to include the social sciences as served by the land grant mission. Will also be responsible for developing, conducting and evaluating instruction for subject areas such as sociology, international development, population studies, human development, family studies, economics and business.

**Requirements:** ALA accredited MLS; excellent communication skills, and strong interpersonal skills required; 6 years experience, including at least 3 providing instruction in an academic library setting desired; experience in teaching the use of computing, telecommunications and information management technologies highly desirable; excellent presentation skills; strong interest in professional development; participation in professional organizations, and enthusiasm for innovative programs are highly desirable. Subject background or demonstrated interest in the social sciences, reference experience and knowledge of BRS, DIALOG and RLIN are also highly desirable. Closing date: Applications requested by June 15, 1990, but will be accepted until position is filled. Send resume, cover letter and 3 references to Ann Dyckman, Personnel Director, 201 Olin Library, Cornell University, Ithaca, NY 14853-5301.

## Cornell Employment News

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Telephone: Office of Equal Opportunity (607) 255-3976





# UNDERGRADUATE RESEARCH

Cornell Chronicle supplement May 3, 1990

## A SENSE OF DISCOVERY

### Student projects range from polymers to iguana



Biology major Kristy Richards looks at algal colonies in the Plant Science Center.

Judith Kent wanted to understand whether the high-pitched, soothing voice mothers use to talk to their babies was learned or innate. Her ingenious solution: find out whether deaf mothers, who couldn't have learned the habit, use "motherese." They do.

Anh Tran wanted to do something about the long lines outside of women's restrooms, when there were no lines outside men's facilities. As part of a summer job at the Washington State Department of Transportation, she timed how long women took to go to the bathroom at highway rest stops (an average of 79 seconds); a male colleague timed the men (45 seconds). Her study has been cited around the country as a basis for new regulations on public facilities that correct the inequity.

Then there's Paul Hinkle, who synthesized polymers; Maceo Cleaver, who spent a summer constructing a laboratory in Kenya; Douglas Brust, who studied iguana in Venezuela; Eric Cheng, who explored global warming; Luisa Trujillo, who researched the sources of ethnic conflict in urban America...

Are they professors? Laboratory technicians? Graduate students? No. They are undergraduate students engaged in research at Cornell University.

Each year, thousands of Cornell undergraduates embark on sophisticated research projects as part of their education at one of the world's premier research universities. With an annual research budget of over \$270 million, Cornell ranks among the largest research universities in the country, along with such institutions as Stanford and the Massachusetts Institute of Technology.

Amidst this profusion of opportunity, nobody is sure exactly how many students do research — which shows just how deeply undergraduate research is ingrained in the fabric of the university.

The popular conception of undergraduate university life may be one of students dutifully scribbling notes in class, cramming for exams in the library or doing lab experiments following "cookbook" instructions.

But this image is woefully outdated, particularly at research universities such as Cornell, for it does not take into account student involvement in a stunning array of research projects.

From Cornell's unique twin supercomputers to its 5-million-volume libraries, the panoply of the university's research facilities is at the disposal of undergraduates in their independent studies, just as it is for professors and graduate students.

"A lot of the research connections between student and professor are almost serendipitous," said Larry Palmer, vice president for academic affairs. "A bright student gets together with a bright faculty member, and they're off." The result invariably opens the student up to a new world of intellectual adventure, Palmer said.

For students, research may come in the form of independent study courses that they take as juniors or seniors, through formal undergraduate research programs or through paid work as research assistants.

Cornell also has helped many of its students find their research opportunities off campus, at institutions such as the Cornell Medical College, Argonne National Labora-

tories and the Smithsonian Institution.

Regardless of how the possibility presents itself, "Research provides faculty members with an opportunity to work with students in a mentoring relationship, rather than as an adviser or teacher," Palmer explained.

"The professor and the student are not just thinking about courses, but about what ideas mean to them. Students can learn things about ideas that they can't learn in the usual teacher-student relationship," he said, adding that, for one thing, the student can learn how to discover.

"What we try to give students at a research university is an internal sense of what the process of discovery is like," Palmer stressed. "We're trying to help the students find their own internal light switch that gives them this sense of control, this ability to turn on the process of discovery for themselves."

"Whether the student becomes a scientist or an investment banker or a high school teacher, this sense of discovery is a foundation for a lifetime of learning."

Cornell's commitment to undergraduate research extends beyond its own students.

The university also runs programs that bring students from other colleges and universities to Ithaca to conduct research. For example, the Cornell Theory Center operates a Supercomputing Program for Undergraduate Research that brings students from around the country to Cornell to learn supercomputing.

Cornell also is in the midst of a three-year Science Program in Undergraduate Education sponsored by the Pew Charitable Trusts. This program includes support for undergraduate research at Cornell by students at liberal arts colleges that have allied with Cornell under the program.

Paying for undergraduate research means relying on a variety of resources. Often, a professor's research grant can cover expenses for studies connected with the faculty member's own research program. However, such coverage can only cover student participation in ongoing research studies.

Federal funds targeted for undergraduate research may come from the National Science Foundation's Research Experience for Undergraduates Program or NASA's Space Grant Program — a nationwide program to encourage careers in space.

Private foundations such as the Ford Foundation, the Pew Charitable Trusts and the Howard Hughes Medical Foundation have supported programs at Cornell that include undergraduate research for Cornell students.

Alumni also have provided funds for undergraduate research. For example, 1962 electrical engineering graduate James Moore has contributed \$50,000 per year for five years to support more than 50 undergraduates annually in the College of Engineering.

Faculty have even become personally involved in supporting undergraduate research, beyond their donations of time and effort. For example, government Professor Theodore Lowi and history Professor Walter LaFeber have donated the royalties from their books to an undergraduate research fund.

Despite such generosity, the university is constantly seeking funds to expand undergraduate research, said Marilyn Williams, director of the undergraduate research program for the College of Arts and Sciences.

In particular, she said, the university is seeking funds to pay students stipends that would allow them to continue their research during the summer.

In creating Cornell 125 years ago, Ezra Cornell declared, "I would found an institution where any person can find instruction in any study."

Says Palmer, "Given Cornell's commitment to undergraduate research, we could legitimately add, 'I would found an institution where any student who wants to do research in any subject can find a professor to do it with.'"

Just like Heidi Weinroth, who is studying metabolism and weight loss (Page 9); John Varoli, who won a National Endowment for the Humanities award for his studies of Soviet-American relations (Page 8); and Denise Smith, who has been studying black cultural values and racial discrimination (Page 9)...

—Dennis Meredith

When Liz Altman was trying to decide where to go to college, she remembers being told Cornell was a research university. "I said, 'Oh, that's very interesting. But I didn't understand how it would impact me,'" Altman said. She does now. Altman, 23, an advanced engineer in research and development of electronic imaging for Polaroid Corp. in Boston, said she is more at ease and more adept in her work because of her research experience while an engineering student at Cornell. Professors taught not only text material, but conveyed the information and enthusiasm stemming from their research into state-of-the-art techniques, she said. One professor also incorporated her research into his own — a boost to her confidence, she recalled. Now Altman said she frequently taps into her Cornell experience.

Dan Weil said he came to Cornell a cynic and he left more of one, which he considers all the better for his work as a journalist today. "It reinforced my cynicism in terms of research methods — not believing the first thing you hear," said Weil, who reports on the economy and financial markets for Reuters Information Services in New York City. But teachers such as Walter LaFeber, the Marie Underhill Noll Professor of American History, also demonstrated how one can develop truly significant research, said Weil, a 1983 alum and former student of history. "The depth of research of someone like LaFeber, the obvious thoroughness of it, had an impact on me. It made me aspire to the same thing," Weil said. He still relies on the respect for reliable research that he developed at Cornell.

Warren Hehre recalls that when he was a freshman chemistry student at Cornell, he had "unfocused interests." But soon he met Roald Hoffmann — then an associate professor, now a Nobel Prize winner in chemistry — and the experience determined his future. "I'd been through 12 years of sitting down and reading information — ho-hum," Hehre said. "This was something entirely different, the chance to join a research group led by Hoffmann, to be given the 'interest and care and time' of a dedicated researcher and teacher, and to learn about making one's own discoveries. That has a marvelous impact and puts one way ahead of the crowd in figuring out what the next step should be," Hehre said. The 1968 alum is now a professor of chemistry at the University of California at Irvine.



In all fairness, John Varoli knew he loved history long before he came to Cornell. He still remembers a book about the Crusades that he read at age 12. And as a teenager, he was fascinated with the city of Brussels, his home for two years during high school.

Still, he had not done historical research until he came to school here. Now, as a senior with a double major in history and Russian studies, he has written one 60-page research paper, is about to finish a second, and is the winner of a research award from the National Endowment for the Humanities.

Varoli grew up in New Jersey, but his father's work as an aerospace engineer took the family to Belgium.

## HISTORIAN'S KEY ROLES

*Adviser, mentor to young scholar*

"In Europe you're surrounded by history every day. You live among buildings that are 400 years old. You wonder who built them and why," he said. "Waterloo was 20 minutes from my house."

As a Cornell freshman Varoli was angry he had to take introductory courses in history: He wanted to take 300-level seminars right away. Indeed, there are not many undergraduates as enthusiastic about history.

"Many people don't appreciate why we study history," said Varoli, now 22. "To them it's just a collection of facts about things that happened long ago. But past events and ideas are alive in contemporary society. We constantly refer to the past when making decisions today. History is a great source of knowledge and experience."

As a sophomore, Varoli enrolled in a course on American diplomatic history taught by Walter LaFeber, Cornell's best-known historian and an internationally renowned scholar.

He "did very well" on a paper and asked LaFeber to be his adviser.

"He just said, 'Sure, I'll do it,' " Varoli recalled.

LaFeber is the author of six books about American foreign policy, including the award-winning "The New Empire: An Interpretation of American Expansion," a member of the editorial board of several scholarly journals, a former adviser to the State Department, a member of the American Academy of Arts and Sciences and a frequent contributor to the op-ed pages of numerous newspapers.

Last summer, LaFeber sponsored Varoli's proposal to study Russian-American relations from 1890-1905 on a \$1,800 research grant from the National Endowment for the Humanities under its Younger Scholar Program.

Varoli won the grant, becoming one of three undergraduates at Cornell to do NEH-sponsored research during the summer.

He spent his time in the library reading primary sources: newspapers, journals, diplomatic correspondence, the papers of Presidents McKinley and Theodore Roosevelt and Secretary of State John Hay, Soviet historical journals and American diplomatic reports. He and LaFeber met once a week to discuss his findings.

"LaFeber was crucial. He really taught me how to write a 60-page paper, how to organize the thoughts, set up an argument and present it. He treated me as a mature adult; he knew I could do the research and make my own conclusions. He didn't mind that I called him at home quite often, either," Varoli said.

"And the nice thing about doing it during the summer is that there were no other distractions."

"I was satisfied and so was he," Varoli asserted of the paper, "The Great Turn: Russian-American Relations in Manchuria, 1890-1905."

"And now there's an important topic I know thoroughly. I can sit down with any scholar of the subject and discuss it. And I know for myself, too, what happened and why."

This year, Varoli is writing an honors thesis in history on American reaction to the Russian Revolution, March 1917 to January 1918, a topic suggested by LaFeber.

"Now that I've done a thesis already, last summer, this year's a lot easier," he said.

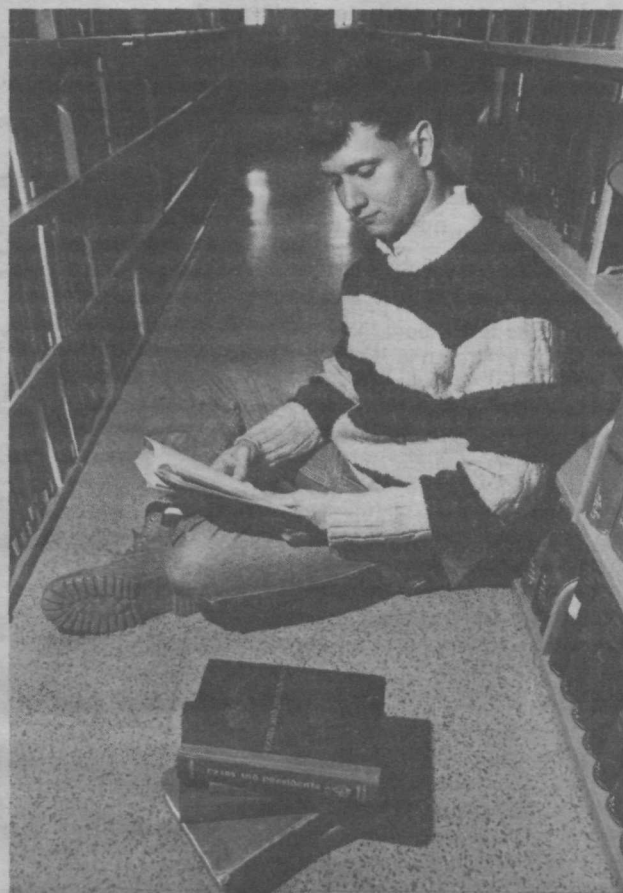
It's so much easier that he's writing it even with LaFeber off campus this semester.

"He set me on track at the beginning of the semester," Varoli said. "I called him at home as often as I needed to bounce ideas off him, sometimes several times a week. But I haven't needed as much help now because I went through it once last summer."

The relative ease this year of his honors thesis allows Varoli to put in as much as 30 hours a week as editor-in-chief of the Cornell Political Forum, a quarterly political

## UNDERGRADUATE RESEARCH

Cornell Chronicle supplement May 3, 1990



Charles Harrington

Research award winner John Varoli, a Cornell senior who has a double major: history and Russian studies.

magazine that he helped establish three years ago. He is now shipping it around the world to campuses in Krakow, London, Moscow, Stockholm, Taipei and Tokyo.

He also is planning for the coming year. Although his family calls him impractical and would like to see him take a bank job, he has a mind to team up with a Hungarian-American friend and another friend from the Political Forum and go to Hungary to offer writing and publishing skills to fledgling democratic parties.

But "wherever I go, I want to continue doing research to stay on top of things," he said. "I may not have a library like Cornell's nearby, but I have several hundred books of my own. That's a few years' worth of reading I have to do."

—Carole Stone

## THE DESIRE TO CREATE

*Engineering students get guidance, tools*

No one knows better than an engineer that Cornell engineering students aren't at the university just to fill their heads with four years' worth of textbook facts and formulas. Cornell's engineering faculty understand that engineers-to-be are driven by the desire to create something that didn't exist before.

So, beginning in their undergraduate years, Cornell engineering students receive the encouragement, the tools and facilities, and the expert guidance to launch their professional careers. As a result, they make significant discoveries about topics as diverse as weight optimization in race cars, acoustical designs for recording studios, fluidized beds in furnaces and how living cells behave in cultures.

"Our undergrads share in all the difficulties of planning and executing research, and in the sheer excitement of discovery," said Christopher Pottle, a professor of electrical engineering who serves as the associate dean for undergraduate programs in the Cornell University College of Engineering. "They learn to organize themselves for the real world of imperfect answers to somewhat fuzzy questions and to realize that research is not necessarily an esoteric, mysterious process to be undertaken only by 'geniuses.'"

Most importantly, the undergraduates learn that "successful research comes from team efforts, efforts that synthesize the initiatives and talents of many individuals," Pottle noted.

To ensure that engineering undergraduates have the financial support they need to conduct their research, the college has developed many funding sources for their research. For example, the James Moore Fund, named for a 1962 Cornell graduate who now works in research and electrical instrument development, provides support of up to \$1,000 per student, which may be used for equipment, supplies and computer time. Students also may receive either a stipend or academic credit for their work.

Other research efforts utilize undergraduates as paid as-

sistants — working side by side with faculty researchers and graduate students — in projects sponsored by the National Science Foundation and other government agencies and industrial sponsors. Cornell engineering students also are eligible for participation in the universitywide program, Cornell Research Apprenticeships.

An ever-expanding number of undergraduates do research during the summers in programs such as the National Science Foundation Research Experience for Undergraduates programs in the School of Civil and Environmental Engineering and at the Cornell National Supercomputer Facility. These programs also involve follow-up research during the academic year.

Combine this kind of support with the students' innate curiosity, and it's not surprising that they accomplish far more than building balsa-wood bridges. Here's what some engineering undergraduates have been up to:

- Electrical engineering students Ivan Bachelder, Michael Bracken, Scott Casavant and Doug Nortz designed and built a maze-learning robot called Micro Mouse.

- Mechanical engineering students Paula Katsoulis, Matthew Monaghan, Jerry Zygmuntowicz, Albert Yan and Antoine Pharamond prescribed the frame structural stiffness and weight optimization specs for a Formula SAE race car that the college built and raced.

- Civil engineering students Antonia Del Rosso and Jeffrey Wouters figured out how to use the impact-echo method for detecting voids in prestressing ducts for concrete structures.

- Materials science and engineering student Jeff Lawlis grew superconducting oxide films with a technique called laser ablation, and Adrienne Alton made protective coatings from clay colloids.

- Chemical engineering student Adam Starry devised a model to predict the shape of cell surface membranes when they adhere to surfaces in bioreactors, and agricultural engi-



David Price

Saul Fine studied bicycles' transmission efficiency.

neering student Philip Wasserman designed an air supply and measurement apparatus for automotive testing.

- Operations research and engineering student Marie Tai performed an analysis of error patterns in the self-recording of trip destinations, and engineering physics student Mike Elko built a laser source for a sensitive spectroscopic system that is capable of 0.1-trillionth-of-a-second resolution.

"The faculty and administration of Cornell's College of Engineering are convinced of the many advantages of involving undergraduates in research," Pottle said. "They're an exceptionally capable group with the talent, curiosity and enthusiasm for any research endeavor."

"Learning takes place in many different ways," the professor continued. "In the university of the future, research and teaching and learning will tend to merge into one continuous effort. That's happening right now at the Cornell College of Engineering."



## UNDERGRADUATE RESEARCH

Cornell Chronicle supplement May 3, 1990

# LEARNING, ADDING TO KNOWLEDGE

## Senior's study pinpoints dangers of appetite suppressant

Cornell senior Heidi Weinroth did more than learn while at Cornell; she contributed to human knowledge.

In an 18-month study, she found that an appetite-suppressing drug called fenfluramine may be dangerous for people trying to take inches off their waists. Her faculty adviser, nutritionist David A. Levitsky, called the finding significant, and he is considering submitting her work to a professional journal for publication.

Levitsky, who supervised Weinroth's research, is a professor of nutritional sciences and a specialist in weight control in Cornell's Division of Nutritional Sciences, a joint unit of the College of Human Ecology and the College of Agriculture and Life Sciences. He also is a faculty member of the Department of Psychology in the College of Arts and Sciences.

In experiments involving laboratory animals, Weinroth found that the fenfluramine reduced the weight of the ani-

mals by decreasing muscle proteins, as well as fat.

"The finding surprised us, because we didn't expect that the drug would reduce the muscle protein," Levitsky said. "Any medically acceptable means of getting people to lose weight ideally should reduce only the fat, not the protein."

Students benefit greatly from conducting rigorous scientific inquiries such as Weinroth's study, because it provides them with an opportunity to "see what research is all about first hand, and there is no better way to learn than by doing it," Levitsky said. "They learn how to think like a researcher."

Levitsky has one dozen students working in his laboratory at any given time, and hundreds of students have done projects under his direction. Working with students is mutually beneficial. "For one thing, I get many aspects of my overall research projects done," Levitsky said. "Also, they keep me in shape by asking all kinds of sharp questions,

because being naive they always probe the fundamentals and the importance of my work."

For Weinroth, her research project gave her a chance to work with a leading expert one-on-one.

"My professor was very supportive, encouraging and enthusiastic about my work," she commented. "He is one of those dedicated professors who really extend themselves to students, making students feel really at home."

Weinroth said that her research experience played a pivotal role in setting her career sights. Already accepted by several medical schools, she is faced with a delightful problem of choosing which one to go to. For now, she is leaning toward becoming a surgeon.

"The research project I did here gave me a chance to try out what it would be like to be working as a doctor before making my final career decision," she said.

—Yong H. Kim



Photos by Charles Harrington

Heidi Weinroth, story above, conducted a study that may be submitted to a professional journal.

Denise Smith, story below, did research underwritten by a foundation.

## WHEN THE SYSTEM REALLY WORKS

### First college student in family now aims for advanced degree

For Denise Smith, 20, of the Bronx, N.Y., the system worked. Among her parents, siblings, aunts, uncles and cousins, Smith was the first to enroll in college. From her freshman class at Cornell, she leaped into independent research for a professor who was writing a book and updating his lecture notes.

And by the end of her first year at Cornell, she was selected by a professor of industrial and labor relations to help him conduct research for his classroom lectures and a book he is writing.

Now Smith hopes to work for a magazine for a year or so after she graduates in 1991 from Cornell's School of Industrial and Labor Relations and then resume university studies for an advanced degree.

Smith's research was funded by the Teagle Foundation. Based in New York City, the foundation awards summer scholarships in colleges throughout the nation to enable undergraduate minority students to do research work for faculty members. The goal of Teagle Scholarships is to encourage minorities to go on to graduate school; the number of blacks and Hispanics who study for advanced degrees is far below their percentage in the population.

"When I was accepted as a freshman by Cornell, I thought that I had achieved the ultimate academic level for my family," she explained. "I did not see graduate school as an option. After all, I was the first in my family just to get

into college. But my professor has encouraged me to continue on into graduate school."

James A. Gross, a professor whose specialties include labor law, labor arbitration and black labor history, tapped Smith to conduct research on black cultural values and racial discrimination. Gross teaches a course entitled "Values in Economics, Law and Industrial Relations," and one of his topics is discrimination against minorities.

For the professor, research is an art that he had honed in earning his Ph.D. degree in industrial relations and law. But for Smith, research was an adventure into the unknown.

She conducted her research into black culture by reading fiction and poetry written by blacks. "I did not want to refer to research that had been conducted on blacks, because in being interviewed by research scholars, blacks might be cautious of what they said and edit their own remarks," Smith explained. "In this study, I believed that fiction would be closer to the truth than academic research. Black writers actually know what is going on in black communities."

Smith, not her professor, selected the readings from which she distilled her research. She read works by a number of black authors and poets, including Langston Hughes, Richard Wright, Alice Walker, Ntozake Shange, Gloria Naylor and Toni Morrison.

"I found that cultural values tend to be the same for blacks and other racial groups," Smith said. "They all want

their children to be educated and their families to be taken care of, and they have the same prohibitions against lying and stealing. But unlike whites, blacks, Asians and Hispanics tend to live in extended families."

Justice can be harsh on blacks. "In one of my readings, a black man was killed for having sex with a white woman, but the author wrote that the same might happen to a black man who hit a white man," she said.

During her research, the student met with her professor once or twice a week to report on her findings. "I was responsible for selecting the books and reporting the cultural values that I found," she said. "My professor never treated me as a student, and he listened carefully to what I said even if he disagreed with my findings."

Gross said that, because Smith had done so well in his class as a freshman, he recruited her for one summer of research, "and I was so pleased with her work that I asked her to continue for a semester."

"Denise is an independent thinker," he added. "On some issues, we had substantial disagreements, but she came up with ideas and insights into readings that I had not recognized in my own reading of the same books. She is an extraordinarily bright young woman, very articulate and she writes well. I've encouraged her to earn a Ph.D. and become a professor."

—Albert E. Kaff



# UNDERGRADUATE RESEARCH

Cornell Chronicle supplement May 3, 1990

Einar Knudsen, a 21-year-old undergraduate at Cornell, knew that his research into financial markets had hit the target when his findings were published in The Wall Street Journal.

The Nov. 7, 1989, headline read: "Program Stocks Volatile? Not So, New Study Says."

Digging through a data base that listed 100 factors on 2,000 U.S. corporations, Knudsen discovered that stocks most often traded in the controversial art of program trading — those shares listed on the Standard & Poor's 500 and the Major Market Index — displayed smaller price fluctuations than did other stocks. He studied stock performances over a 52-week period that included the Oct. 13, 1989, minicrash on Wall Street. His findings were contrary to conventional thinking on Wall Street, and The Wall Street Journal quoted professional traders who disagreed.

Knudsen came to Cornell for one reason: to study financial markets on a \$1 million International Business Machine Corp. research computer in Cornell's School of Hotel Administration with finance Professors Avner Arbel and Gene Swanson.

Knudsen visited the Ivy League university from the California Polytechnical State University, San Luis Obispo, on a one-semester exchange program in 1989. The opportunity to conduct real-life research as an undergraduate so overwhelmed him that he transferred to Cornell even though the move has delayed his graduation by one year until 1991. But he has no regrets.

"It was exciting to see that The Wall Street Journal printed the preliminary results of my market volatility research that was conducted under the guidance of Professor Arbel," Knudsen said. "Some analysts blame the 1987 stock market crash on program trading, and our research has surprised many professional analysts."

IBM provided the computer to the Hotel School under a company program to give research tools to the university most prominent in a specific discipline, in this case Cor-

nell's leadership since 1922 in education for the hospitality industry.

Wall Street is not the only target. Hotel School students tap into the computer and university libraries in a number of research projects linked to industry:

- Elizabeth Ronayne, 20, a junior majoring in properties development, used the computer to provide more offices and classrooms on the fifth floor of the Hotel School building. On a display screen, she moved walls here and there until she achieved a plan acceptable to school administrators.

- Cynthia Potter, 22, who will graduate from the Hotel School in May, already has landed a job with Hospitality

Valuation Services in Mineola, N.Y., a leading firm in appraising hotel properties for their owners. Her research assignment was to determine how much water is consumed by specific brands of toilets, wash basins, showers, dishwashers, air conditioners and other commercial products used in the hospitality industry. Her findings in this little-researched area will be published by the American Hotel and Motel Association. She searched through volumes of commercial catalogs in the College of Engineering and telephoned

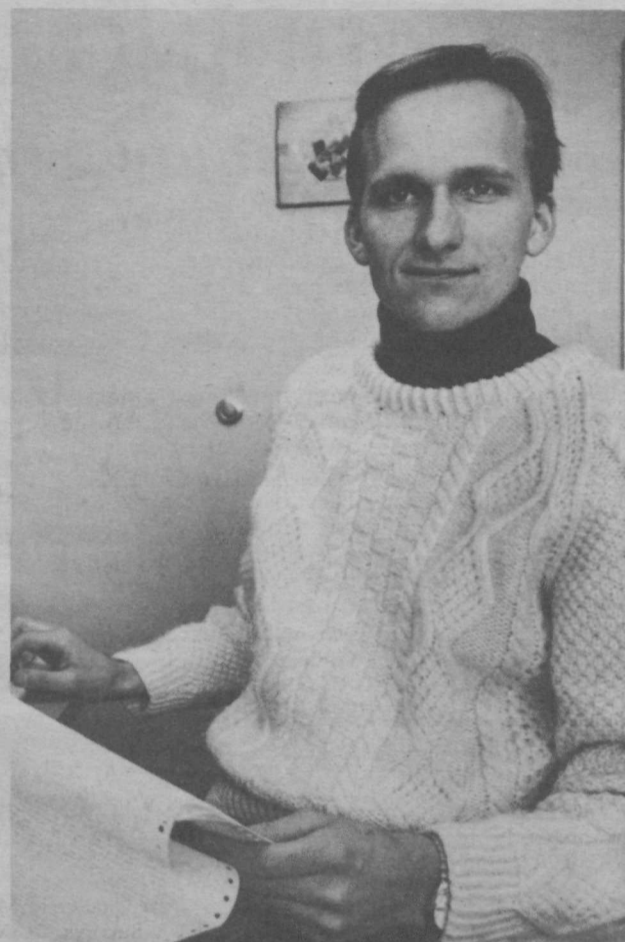
manufacturers around the country to compile her facts. Their professor, Jan De Roos, commented: "I don't want my students to handle make-work projects. I want real clients for their research."

For Knudsen, the challenge put him in the real world of high finance. "When I graduate, I want to work in the financial industry on Wall Street," he said. "In California, financial studies were out of the book, but here at Cornell I not only acquire book knowledge, but I'm learning how to apply that knowledge to industry. I have teachers who are sincere and who are doing practical research. Professor Arbel is integrated into the industry. His work is really alive."

Knudsen is enrolled in Cornell's College of Agriculture and Life Sciences, where agricultural economics is one of the offered majors. But Cornell encourages its undergradu-

## FINDINGS PUBLISHED

### Wall Street Journal reports on study



Charles Harrington

CALS undergraduate Einar Knudsen.

ate students to take courses in more than one department, and that is what led him to the Hotel School, which functions in many ways as an undergraduate business school.

After taking his first course under Arbel, Knudsen volunteered to work as a research teaching assistant. He received no pay and no academic credits for his research, but landing in The Wall Street Journal was reward enough, he said.

—Albert E. Kaff

*The audience hardly needed to be sold on the joys of doing research: They were undergraduates who had spent the summer at Cornell working on research projects.*

*But if there were any flagging spirits, those spirits were roused by a pep talk from Cornell's L. Pearce Williams, the John Stambaugh Professor of the History of Science, who addressed the Undergraduate Research Forum last summer. Williams titled his talk, which appears below, "The Research Imperative."*

There's an old myth, propagated mainly by scientists, that human beings are naturally curious, that if left to themselves they will always do research, look for new things.

Well, ancient Egypt was creative for 1,000 years; then it ossified. China before 1700 was far ahead of the West; then it fell behind because the Chinese would not take advantage of the technological developments of the West.

Islamic civilization in the Middle Ages was superior to European civilization. At a time when Europeans were smelly barbarians, the Arabs had sophisticated medicine, mathematics, astronomy. Then in the 12th century, they hit a wall, came to a standstill. New ideas became dangerous politically, and society was brought to a halt.

There's a lesson in this: Don't become complacent.

We're in a crisis in America, a crisis in our ability to recruit bright young people like yourselves to go into research.

Computer science, for example, has almost collapsed, as most of the hard sciences have fallen off since 1985. We are not filling positions in computer science, and this tool, the most revolutionary since movable type, is in danger.

Don't become complacent by saying to yourself, "I'm just doing what comes naturally to all human beings."

You live in a culture that has made research and scholarship an important value but which is losing respect for that

value.

You ask yourself: "Why do it? What's to attract me? Why do I keep coming back? What's so attractive about a career as a research scholar?"

For one thing, we live in a puzzling world. In the sciences, it's increasingly hard to get even to the frontier where new knowledge is discovered: It means 12 years of intensive intellectual effort to understand, for instance, what high-energy physicists are doing.

Most people in the world when faced with a problem will go around it. But if you like research and have already shown a liking for research then you know there are a lot of problems out there. And it's very satisfying to see something you don't understand come clearer through your own efforts to understand it.

For another, you add skills to your intellectual armory. You will read a book differently when you have in mind a problem you need an answer to. You read with an eye toward what's in that book that's relevant to the problem you're trying to solve. And this sharpens your critical faculties. You learn to discard some things as only superficially relevant. And

you'll learn to do the same in your own research.

For a third, you gain an appreciation for the thrill of intellectual discovery. It's the only high that has no hangover, the only high that can be kept up there, to near mania, and it's one of the highest pleasures a human being can experience. The idea that you get paid for doing it is almost ridiculous. It should rule out any other career.

Leaving out the pursuit of truth, because that would take us through the next two days, there are moral values involved in doing science. The old myth is that science is amoral. But be conscious that all scholarship is a community effort. You and your colleagues depend on each others' integrity. Be rigorously honest. The thought of cheating, of committing fraud, should not be even a temptation to you.

You can learn to be considerate. Learn that you do not

## A LESSON OF HISTORY

### Avoid complacency, students implored



Jill Peltzman

L. Pearce Williams: a pep talk for undergraduates.

have to trample on others.

And remember as you become the world's leading expert in whatever your field, remember that yours is one pebble in a vast field. Keep in mind that no matter how much you know, it is an infinitesimal amount of what there is to know in our field and infinitesimal compared to how much there is "out there" to know. You are still nibbling at the edges. You should give you a sense of humility.