

# CORNELL Chronicle

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## Dean visits a real cold spot for the NSF

By Larry Bernard

The most surprising thing about the South Pole is just how darn flat it seems.

"I didn't really know what to expect," said John Hopcroft, the Joseph Silbert Dean of Engineering at Cornell. "You stand at the Pole and look out, and there is this round edge all the way around you as far as your line of sight. It's perfectly flat. Of course, that is the 6,000 feet of snow and ice that has been building for more than 1 million years. The elevation of the pole is just over 9,000 feet, although 6,000 feet of that is ice."

Hopcroft learned a lot about the South Pole and the U.S. activities there recently, visiting the pole and the U.S. supply base at McMurdo Station in Antarctica Jan. 15 to 24. Hopcroft, a member of the National Science Board, chairs the Committee on Programs and Plans that will help determine the future of the scientific research center at the South Pole.

**'There will always be a first-rate science program in the South Pole. The question is, how big of one will it be?'**

— John Hopcroft

The National Science Board is the governing body of the National Science Foundation, which funds much of this country's scientific research. The NSF has asked for \$200 million to reconstruct the infrastructure of the aging research facility at the Amundsen-Scott South Pole Station and expand the facility.

"It was just an incredible trip," Hopcroft said. "The Antarctic is 5 million square miles, about the size of the United States and Mexico, with only 4,500 inhabitants. Since it's summer now, the sun does not set; it was always

daylight and it was a little disorienting."

The trip took him 11,300 miles (one way) from Ithaca, over eight days, flying first to Los Angeles, then to New Zealand and on to McMurdo on Ross Island, and finally another 800 miles, or three hours, in a C-130 transport plane to the South Pole. He spent three days at McMurdo and about six hours at the geographic South Pole, which changes position about 30 feet per year — another surprising tidbit of Antarctic trivia that Hopcroft picked up.

He was joined by Harold Varmus, director of the National Institutes of Health and co-chair of President Clinton's science policy committee, and representatives from the Defense Department and from NASA.

The Antarctic summer climate was not all that different from what Hopcroft has experienced many times in Ithaca's winter climates — a permanent layer of snow and ice, temperatures ranging from 0 to 32 degrees, winds up

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### THE RIGHT WAY TO WRITE

Cornell researchers develop system of verifying signatures at the point of sale.

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### WHO WILL HOLD THE NET?

Professor argues the Internet's future lies with academe, not big business.



John Hopcroft, dean of the College of Engineering, stands at the South Pole.

## College readies celebration of its anniversary

By Darryl Geddes

Faculty, students and staff members in Cornell's College of Architecture, Art and Planning are putting the finishing touches on a year-long calendar of events that will commemorate the college's 125th anniversary.

The School of Architecture, the precursor to the College of Architecture, Art and Planning, opened in 1871 — three years after Cornell University began instruction — as an outgrowth of the College of Civil Engineering.

"Our anniversary celebration will enable us to look back at where we have been as well as look forward to examining the challenges ahead, not only for us as a college, but for us as professionals, no matter whether our chosen field is architecture, art or planning," said the college's dean, William G. McMinn.

The highlight of the spring semester is a Festschrift honoring Colin Rowe, professor emeritus of architecture. Architecture scholars and practitioners — among them many Cornell alumni — from across the country and England will attend the three-day program, which begins April 26.

Four major addresses, a panel discussion and eight major papers will be delivered during the Festschrift. Rowe will address the gathering April 28.

Rowe, who taught at Cornell from 1962 to 1990, received one of architecture's highest honors last year when he was awarded the Royal Gold Medal of Architecture by Queen Elizabeth and the Royal Institute of British Architects (RIBA). The award recognizes Rowe for his influence — as a writer and teacher — on the important architects of the postwar period in North America and Britain.

Anniversary festivities hit full swing



Robert Barker/University Photography

Facilities and Campus Services workers hang a banner on Sibley Hall on Feb. 2 to mark the College of Architecture, Art and Planning's 125th anniversary, to be celebrated throughout the year.

during the fall semester, with the Quasquicentennial Celebration Oct. 4-6. Current program plans call for presentations from prominent architects, including Henry Nichols Cobb of Pei Cobb Freed & Partners Architects; author, philosopher and educator Arthur Coleman Danto; and

Rutgers Professor of Regional Planning Ann Markusen. Also on tap are an alumni exhibition at the Herbert F. Johnson Museum of Art and a career forum.

For more information on anniversary events, contact the Office of Public Affairs at 255-7510.

## Cornell moves to strengthen its sports programs

By Larry Bernard

Cornell is restructuring its intercollegiate sports and physical education programs to strengthen varsity athletic opportunities and to assure the quality of physical education programs for students at a time of fiscal constraint.

As a result of a yearlong review, three varsity sports now supported by the university will become self-funded varsity sports under the new structure that takes effect this fall.



Moore

They are: men's tennis, baseball and lightweight crew. They join seven other sports already operating informally as self-funded: men's and women's squash, men's and women's polo, women's equestrian, men's lightweight football and golf (coed).

"These changes, along with an ongoing process to reallocate resources in the Department of Athletics and Physical Education, will strengthen Cornell's ability to compete in the Ivy League and will assure a quality core program of physical education for our students," said Charles Moore, Cornell's athletics director. "Despite challenging budgetary pressures, our goal — to emphasize quality while maintaining quantity — will make varsity-level competitive opportunities available to the largest possible number of student-athletes."

Cornell's athletics, physical education and enterprise programs, with annual, current spending of \$12.9 million, have been running at a substantial deficit for the past decade. The new structure, coupled with increased giving and a significant reduction in administrative costs, is expected to result in a balanced budget, Moore said.

The three categories for athletics at Cornell are: varsity, self-funded varsity and club. All intercollegiate varsity sports —

*Continued on page 2*

## BRIEFS

**First Aid, CPR classes:** The American Red Cross is offering its on-campus schedule of spring Safety Courses, open to all Cornell faculty and staff members, with supervisory approval. Classes are held in the Robert Purcell Community Center. The safety course schedule continues in February with a two-session Standard First Aid Class (Adult CPR and First Aid) on Wednesday, Feb. 21, and Friday, Feb. 23. The two-session course will be offered again in March and in April. An Adult CPR class will be offered from 8 a.m. to noon, Monday, March 11, and a two-session Community CPR (Adult CPR, Infant and Child CPR) class will be available in March and in April. Watch the *Chronicle* calendar for specific times and dates for all upcoming Red Cross safety courses. Cornell departments will be billed for employees' course registration fees. To register, call the American Red Cross at 273-1900 and obtain a registration card, which must be completed by a supervisor and returned to the Red Cross. Courses can be held at other locations when requested by departments training six or more members.

**Mail scam alert:** Cornell Police have issued a warning to the campus community about an international mail fraud that has been reported in this area. Federal investigators have named this fraud scheme the "Nigerian prince scam." Senior Investigator Scott Hamilton said that two staff persons in Cornell departments have reported receiving mail regarding this scheme, in which a letter allegedly from a Nigerian businessman is sent to a targeted American. The letter asks for the name and number of a bank account into which large sums of money can be transferred; in exchange, the American is promised a large fee. Federal authorities say some victims actually have traveled to Nigeria, where they were in danger of arrest by authorities or of physical injury by the perpetrators of the scam. Anyone receiving this letter is asked to call Scott Hamilton at 255-8950.

**Cabin Fever Festival:** Ithaca Community Childcare Center's fourth annual Cabin Fever Festival – an all-day, indoor festival for children and their families – is returning to the Cornell campus on March 9. There will be more than 80 activities, including performers, rappelling, an obstacle course, a carnival and much more. Once again, the Cabin Fever Festival will be held in Barton Hall from 10 a.m. to 5 p.m. This year's major sponsors are Time Warner Cable and *The Ithaca Journal*, and also making the event possible is the use of Barton Hall and the support of many hundreds of Cornell volunteers. Tickets go on sale in mid-February, and volunteers are needed. For information, call 257-0200.

## CORNELL Chronicle

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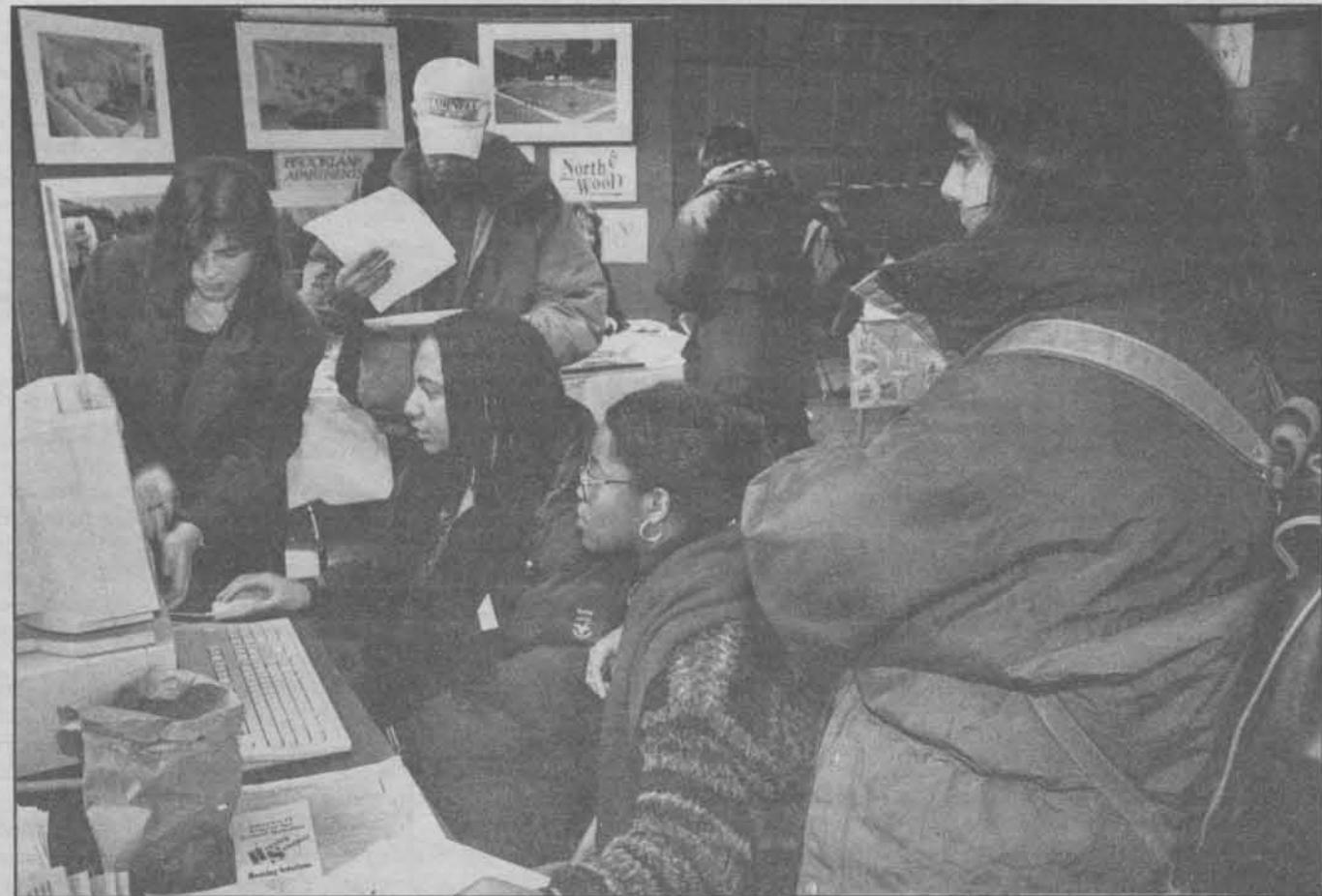
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## Clicking on the right apartment



Adriana Rovers/University Photography

**Christine J. DelVecchio, left, general manager of Housing Solutions, an apartment rental agency, assists Portia Yarborough, a graduate student in chemistry, in matching available options with her housing needs, at the Housing Fair sponsored by Campus Life in the Memorial Room of Willard Straight Hall, Jan. 31. Looking on are Michelle Cooper, a graduate student in Africana studies, and Karen Baker, standing, an administrative assistant in the College of Arts and Sciences.**

## Sports programs *continued from page 1*

university funded and self-funded – will continue to receive administrative and facility support from the university; the self-funded varsity sports will receive little or no direct funding from the university. Sport clubs, which operate under the university's Student Activities office, will continue to receive minimal university funding and compete only at the club level.

The university will make a concerted effort to assist the three newly designated self-funded varsity sports in arranging for outside funding and will provide some financial support during the transition period. Student-athletes should notice no difference during the transition, Moore said. He further noted that other Ivy League institutions have self-funded varsity sports and that some of Cornell's self-funded teams have achieved national rankings.

President Hunter Rawlings affirmed the importance of athletics and physical education to the university. "In pursuing this review, Cornell is absolutely committed to having a strong athletics program," Rawlings said. "Everything we do at Cornell, we want to do well. We're committed to having a first-rate athletics program that complements and underscores our first-rate academic pro-

gram, and I fully support this sensible course of action proposed by the department."

Said Moore: "Our 10 self-funded sports have a sport-specific alumni base of over 4,500, and we are confident that Friends' groups will continue to support their ongoing operations. We are prepared to assist the new self-funded programs through a successful transition. Beyond this, we plan several new alumni-support programs aimed at increasing both donor rate and giving levels."

Cornell will continue to support 36 varsity level programs: 17 men's sports, 18 women's sports and one coed sport involving a total of more than 1,100 student-athletes. In addition, more than 2,000 teams participate in the department's intramural program, which schedules competitions involving students, faculty and staff. The university also has some 40 club teams.

In the physical education program, Cornell will eliminate 23 of the existing 76 courses offered and alter some of the fee structures. Among the physical education classes to be eliminated: team handball, large boat sailing and advanced competitive swimming. Students still must fulfill university physical education requirements in

order to graduate.

At the same time, the university is considering the merger of its extensive fitness programs and facilities to better accommodate campus-wide use under one fee structure. No significant changes are planned in the university's Outdoor Education, Intramural or Wellness programs.

Moore emphasized that, even with budget constraints, the changes will continue to strengthen the scope and quality of opportunities for women in athletics and to maintain Cornell's compliance with Title IX of the Civil Rights Code. Since 1993, Cornell has added three women's sports – softball, squash and equestrian; expanded its women's coaching staff; upgraded facilities for ice hockey, fencing and gymnastics; and enhanced resources for recruiting.

"Cornell University is committed to offering broad-based athletics programming for all students," said Robert J. Babcock, chairman of Cornell's faculty advisory committee on athletics and physical education. "We will continue the pursuit of quality, safety and compliance in everything we do, keeping in mind the resources of the university and the interests of our loyal alumni."

## South Pole *continued from page 1*

to 50 mph. But then, he was outfitted with the latest cold-weather gear, and "it was well layered," he said. And while the transport and cargo planes needed skis to take off and land, helicopters did just fine.

In fact, his group was near McMurdo when their chopper lost transmission fluid and could not immediately get them back to base. Not to worry – after a short delay, a new helicopter arrived. Even so, each helicopter is outfitted with enough provisions for five days. "Safety is very much under control," Hopcroft said. "I was never at-risk or concerned. If you want to go on a hike, you file a plan so they always know where you are."

Hopcroft is convinced that the science program will continue at the South Pole, but how much of one remains to be seen.

"They are running out of electrical power to do the research. The infrastructure no

longer supports the science," he said. "Clearly something has to be done. But whether that means rebuilding the whole station is not clear. There will always be a first-rate science program in the South Pole. The question is, how big of one will it be?"

The NSF now spends \$200 million annually to support research there. A new research station for the same amount has to be weighed carefully, the engineering dean said, particularly in light of federal budget uncertainties. Perhaps a scaled-down version that costs less would be appropriate to continue the program.

"It is not clear what the science funding picture in this country will be in three years. If there are no compelling safety issues, I would prefer to wait (on funding a new facility)," Hopcroft said. "We're really in a period of change. We're trying to balance the federal budget and we don't know what

impact that will have on science. With the end of the Cold War, it may change the perspective of what the White House wants to do there. We'll still do science, but will we need an expanded new facility?"

Hopcroft said the visit gave him a better understanding of the logistics involved in maintaining a program there. Supplies to the South Pole – including food and fuel – are flown in once a month. It takes three hours from McMurdo, and it takes at least eight hours to reach McMurdo.

"Just the logistics of maintaining the infrastructure is expensive," Hopcroft said. "It's going to cost no matter what we do."

The NSF funds a variety of research programs in Antarctica, such as: measuring the ozone layer; measuring ultraviolet light; measuring solar neutrinos; astronomy; atmospheric pollution; and geology (four tectonic plates converge there).

# Student is in hospital with severe illness

By Linda Grace-Kobas

A Cornell student is hospitalized with meningococcal disease, a severe bacterial infection in the bloodstream caused by the same type of bacteria that causes meningococcal meningitis.

The student, a 19-year-old female freshman, is listed in guarded condition in the intensive care unit at Strong Memorial Hospital in Rochester.

At this time, no other current cases of meningococcal disease, a serious and sometimes fatal illness, have been diagnosed on campus, and Gannett officials are working with the Tompkins County Health Department to monitor the situation, said Janet Corson-Rikert, M.D., interim director of Gannett.

The student was examined by physicians at Gannett Health Center, where she had gone complaining of flu-like symptoms on Jan. 31, and was admitted that night to Cayuga Medical Center. She was transferred to Strong the next day (Feb. 1).

Health Department staff in cooperation with Gannett Health Center contacted people with whom the student had recently been in direct contact. They evaluated more than 400 cases; 385 people were given preventive doses of the antibiotic ciprofloxacin.

Gannett physicians explained that meningococcal infections are spread by close contact with nose or throat secretions of an infected person. The disease develops within the first two to five days of exposure in most cases. At any given time, up to 10 percent of the population carries the germ without illness, and physicians theorize that variations in individuals' immune response may determine which persons develop serious illness. Meningococcal disease generally is treated with antibiotics and hospitalization.

Symptoms of meningococcal disease include high fever, headache, nausea, vomiting, stiff neck, rash and mental status alterations. People with these symptoms should seek immediate medical care, physicians advise.

Students with concerns about illness should contact Gannett Health Center at 255-5155. For information about meningococcal disease and public health concerns, contact the Tompkins County Health Department at 274-6604.



Adriana Rovers/University Photography

**Henrik N. Dullea, center, Cornell vice president for university relations, presents a check on Jan. 31 to James Byrnes, chairman of the 1995-96 INHS capital campaign, while Lucy Brown, president of the INHS board, and Paul Mazzarella, executive director of INHS, look on in the organization's planned new offices, under construction.**

## CU contributes to local affordable housing agency

Ithaca Neighborhood Housing Services (INHS) is another step closer to meeting its annual and capital campaign goals, thanks to a \$10,000 contribution from Cornell.

The university is a founding member and continuing supporter of INHS, which offers a variety of programs that provide new and rehabilitated affordable housing in Ithaca and Tompkins County.

In a check-presentation ceremony Jan. 31, Vice President for University Relations Henrik N. Dullea said the multi-faceted program operated by INHS is an effective model for other housing organizations across the nation.

INHS, for example, rehabilitates vacant and run-down buildings, helps renters become first-time home buyers through low-interest loans, moves people into clean, affordable and well-managed rental units, and provides a mini-repair

program for the elderly.

"The 'before and after' photographs of INHS projects are testimony to the success of Ithaca Neighborhood Housing Services," Dullea said. "The university has been pleased to have a close working relationship with INHS since it started almost 20 years ago."

In accepting the \$10,000 contribution, Paul Mazzarella, executive director of INHS, said, "Cornell is one of our strongest partners, and our success is based on the continuing support of local institutions."

Mazzarella said this latest gift brings the 1995-96 capital campaign, called "On the Move," to 65 percent of its \$110,000 goal to support renovation of a house that was moved across West Clinton Street to the parking area behind the former Henry St. John elementary school. The two-story structure, which had been slated for

demolition, was purchased by INHS last year for use as new office space. Since then, many volunteers, including Cornell students, have been renovating the house to meet the city's building-code requirements and to make it energy efficient and accessible to the handicapped.

Renovation of the building is to be completed this spring, Mazzarella said, noting that the new headquarters will allow the volunteer-directed organization to expand on-site services and to add staff in the future. INHS provides services to more than 500 households in Tompkins County from its current offices in a house at 520 West Green Street.

Over the years, Cornell has provided operating grants, challenge grants and salvage rights to INHS, bringing total support to more than \$130,000, in addition to the donation of time and expertise by students and staff members.

## Cornell issues statement to County Board on Statler sales tax issue

**Henrik N. Dullea, vice president for university relations, presented the following statement to the Tompkins County Board of Representatives at its meeting Tuesday, Feb. 6. The statement relates to a proposal that would request state legislation to lift the room rental sales tax exemption of the university's Statler Hotel:**

I appreciate this opportunity to summarize the university's position regarding its opposition to the proposed resolution seeking the amendment of Section 1116 of the New York State Tax Law for the purpose of effectively repealing the sales tax exemption on the rental of rooms by the School of Hotel Administration's training and teaching facility on campus, the Statler Hotel.

The exemption from the collection of sales tax on rooms rented at hotels and other lodging facilities operated by educational institutions has been part of the New York State Tax Law since the inception of the sales tax 31 years ago.

This exemption is specifically for the *institution*, not for the individual; all hotels and motels are required to honor a sales tax exemption certificate presented by an individual employed by the state or local governments or other tax-exempt organizations, but the exemption you wish to have repealed was specifically designed to further the educational mission of the institution providing the service.

Cornell opposes the proposed legislation because the operation of the Statler Hotel has been an *essential element* of the educational program offered by the School of Hotel Administration since 1952.

The design of the Statler Hotel and its operating systems reflect its educational mission.

The layout of the Statler Hotel was designed to accommodate this educational function, with additional space

**'The evidence is overwhelming that the single most important factor in the economic life of the local hotel industry is the presence of students and visitors on the Cornell campus. Steps taken by local governments and the state to make it more difficult to attract individuals and groups to Cornell only run counter to this economic imperative.'**

— Henrik N. Dullea

provided in many areas, such as the kitchens, resulting in construction and maintenance costs far beyond that which would ordinarily be required for a comparable 150-room hotel in the private sector.

The staff of the Statler Hotel share in the responsibility for instruction of Hotel School students, and this responsibility is reflected in their compensation at a level substantially in excess of that paid for comparable personnel at surrounding lodging facilities.

The additional educational responsibilities drive up the cost of operation of the Statler Hotel substantially beyond what would otherwise be such costs in non-educational facilities of comparable size.

The hotel industry's "Star Report" indicates that, on average, the room rates charged by the Statler are already substantially higher than those of its "peers" in the local community. We are clearly not competing "unfairly" based on price as a result of the existing exemption.

Our ability to attract conferences to Cornell is affected by the "bottom-line" expense borne by participating organizations. Many of these organizations will look to other university settings around the United States as alternatives, not to other lodging facilities in Tompkins County. Our competition for these groups is with Duke, and Michigan, and Wharton, and Harvard — not with the Sheraton, the Ramada and the Holiday Inn. The attendees at these conferences spend much of their free time off campus. Our local hotels and restaurants will feel the loss of these attendees and their families if an additional 8 percent cost precludes their participation in Cornell's programs, and the county will not gain its intended benefit.

We at Cornell would hope that the County and its component municipalities would concentrate their efforts on expanding further the opportunities in this community for positive economic development, rather than removing long-standing tax exemptions granted by the State of New York to its educational institutions.

A good example of this cooperative spirit occurs this month, when about 300 fishing enthusiasts are expected to attend the "Bass Fishing Techniques" convention here in Tompkins County, with events on and off campus. Some 150 rooms have been blocked at three hotels, the Sheraton, Best Western, and EconoLodge. For the record, the Statler is not one of the housing sites, even though most of the convention presentations will take place in Cornell facilities.

The evidence is overwhelming that the single most important factor in the economic life of the local hotel industry is the presence of students and visitors on the Cornell campus. Steps taken by local governments and the state to make it more difficult to attract individuals and groups to Cornell only run counter to this economic imperative.

# Assembly gets view of federal, state aid picture

By Jonathan Laurence '98

In the wake of a 4.5 percent tuition increase for Cornell's endowed colleges, announced just days after news of the record-setting \$1.5 billion capital campaign, Henrik N. Dullea, vice president for university relations, addressed the Student Assembly in Willard Straight Hall on Feb. 1 to report on another component of the university's financial picture: federal and state aid.

"This last year has been a fairly turbulent one in the political processes affecting higher education," Dullea told the group. As part of the Republican-led effort to balance the federal budget, 1995 saw, for instance, he said, a Congressional assault on the federal direct lending program and attempts to eliminate the interest subsidy for the Stafford loan program and cut such campus-based programs as the Perkins loan program, the Supplemental Opportunity grants and the federal work study program. Most of the proposed cuts, however, were staved off with the help of successful, national lobbying efforts.

"In almost every instance, those proposals have been defeated," Dullea said.

However, Dullea was less sanguine about the prospects for New York state financial aid funding support this year. Dullea told assembly members that the budget submitted by Governor George Pataki has recommended a cutback of \$100 million in the state financial aid budget, which would translate into real losses of more than \$1 million for Cornell students.

Pataki's austerity plans in this area hinge upon changing the method by which students' financial aid needs are assessed. At present, the state's Tuition Assistance Program (TAP) tests a family's means to pay based upon its net taxable income (NTI). For example, if a family's adjusted gross income (AGI) were \$30,000, their NTI would come in at roughly \$25,000, and assistance would be awarded using that figure. Under the governor's new plan, however, TAP awards would be allocated based upon a family's AGI, which would make families appear to have more income, thus reducing, and in some cases eliminating, their assistance.

Joel Seligman, assistant director of government affairs, accompanied Dullea to the Student Assembly meeting and extended an invitation to students to help the university get its message across to state legislators. Seligman announced two days – Feb. 13 and March 5 – when the university will sponsor bus trips to Albany, so students can voice their support for financial aid programs and for fairness for Cornell amid the cuts in the SUNY budget.

After the floor was opened for questions, Dullea addressed an assertion that the university is not exercising the same fiscal responsibility as the state, because it is asking for higher tuitions rather than further cutting administrative budgets. In response, Dullea said: "All of our college and administrative units have absorbed repeated cuts, between 2.5 percent and 3 percent each year for several years, and in the statutory colleges the cuts have been even more severe."

Among other things, he emphasized these cuts have a negative impact on keeping valued faculty at Cornell.

Dullea emphasized that diminished government funding is a serious burden for many areas of the university.

"The fact that we do lose government support is real," he said, "and there is, therefore, tremendous pressure on the university to be able to maintain its financial aid budget."

When asked by an assembly member how much longer the university would be able to stand by its need-blind admissions policy, Dullea was cautiously optimistic.

"I don't have a crystal ball, but President Rawlings has made that policy a very high priority," he said.



Adriana Rovers/University Photography

The Powell Room in Mann Library has been rearranged as a computer work room, to provide a more quiet space during the planned library-addition construction, scheduled to begin this spring.

## Construction ahead: Mann study areas rearranged

By Blaine P. Friedlander Jr.

Poised for three years of construction work on the Albert R. Mann Library Addition, collections, study areas and computer work zones have been relocated to quieter havens throughout the building.

"Neither the reference collection, nor the second floor microcomputer center are in areas where silence is possible, so we feel that it will be better to have them in a room that will be noisier during the construction," said Susan J. Barnes, assistant to the director of the Mann Library. "Unfortunately, we don't have the luxury to empty everything out of all rooms into the back of the building during construction. In fact, that lack of space is part of why we need the new addition."

With the addition, which will have its groundbreaking this spring, the library will obviously get more room – about 75,000 square feet of usable space – but it also will upgrade its climate control, fire protection and general technical infrastructure.

On the second floor, the library is adding network jacks to the study tables in the Caldwell Room, allowing students to plug in their laptop computers and enjoy library resources, electronic mail and the World Wide Web. Barnes notes this is a conceptually simple idea, which turns out to be rather difficult, technically, because of the wiring involved.

An additional part of the second floor arrangement includes consolidating the library's printed reference collection and uniting the 60 public-access computers

into one room.

Current Periodicals, a collection of 375 high-use titles, moves into the second floor room that faces the Ag Quad. Five years' worth of these journals are kept in a special collection on the library's second floor, where students and faculty can easily find them.

"We feel that room will make a very pleasant reading place," Barnes said. "It will be especially important during the construction of the Mann Library Addition. Had the library not moved it, the Current Periodicals room would have been too noisy during construction," she said.

The Mann Library Addition project is out for bid and construction will begin after the contract is awarded, as weather permits.

## Psychologist critiques human-intelligence myths

By Dennis Shin '96

Yale psychologist Robert Sternberg has a problem with standardized methods of determining human intelligence.

"We need a system that recognizes there's more to intelligence than IQ," Sternberg told a David L. Call Alumni Auditorium audience Feb. 1. "It's not just this one thing; it has multiple aspects."

The lecture, entitled "For Whom the Bell Tolls: Myths, Countermyths and Truths about Intelligence," and the first in a series planned for the spring semester, was co-sponsored by the College of Human Ecology and a multidisciplinary course examining the controversial book on human intelligence, *The Bell Curve*.

During his discussion, Sternberg outlined some popular fallacies that cloud the truths about human intelligence. Pointing to *The Bell Curve* as a contributor to this blurring of myth and reality, Sternberg argued that mainstream methods of judging mental capacity, more often than not, omit vital components of intelligence, leading to distortions in the interpretation of data.

Presenting results of empirical research, Sternberg pointed out the gaps and flaws in such methods of evaluation as IQ tests and standardized exams. In his view, the current

system of measuring human intelligence is far too narrow.

"We misuse the tests; we take them much more seriously than we should," Sternberg said. "I'm not suggesting that we abolish all standardized tests. What I'm saying is that we have to use them more intelligently; and we need tests that measure a broader range of skills than those the IQ tests measure."

Sternberg disputed rigid claims about the determination of intelligence made by Richard Herrnstein and Charles Murray, the authors of *The Bell Curve*. Observing that Herrnstein and Murray would agree that the social order is a natural outcome of the IQ pecking order, Sternberg argued that intelligence is socialized in different ways by different groups.

Using anecdotal examples, Sternberg demonstrated how IQ tests and other popular measurements of intelligence often fail to accurately measure an individual's abilities and often trap people in rigid categories based on those flawed measurements.

Throughout his lecture, Sternberg identified and then criticized various "myths" regarding intelligence, some of which form the basis of arguments in *The Bell Curve*. For instance he said, Herrnstein and Murray promote the idea that society, in general, is becoming less and less intelligent because "stupid" people breed disproportionately more than "smart" people. According to the book's findings, intelligence is inherited and environment does

not alter its development.

Sternberg, however, argued that intelligence is susceptible to environmental factors and it is also modifiable, and he criticized *The Bell Curve* authors for ignoring and often misrepresenting key data, including some of their own, that confirm those facts.

Sternberg's lecture is the first in the series co-sponsored by the course "Psycho-Economic Perspectives on Human Intelligence and Achievement: Did the Bell Curve get it right?" taught by Stephen Ceci, Cornell professor of human development and family studies, and Elizabeth Peters, associate professor of consumer economics and housing.

Other scheduled lectures in the series – some with topics to be announced and all but the last scheduled for 4 to 5:15 p.m. in Call Alumni Auditorium in Kennedy Hall – are by:

- Larry Hedges, University of Chicago professor of education, Feb. 29;
- Eric Hanushek, University of Rochester economist; March 5;
- Linda Gottfredson, University of Delaware sociologist on "The Meaning of Intelligence in Everyday Life," March 25;
- Marvin Harris, University of Florida anthropologist, April 4;
- James R. Flynn, University of Otago (New Zealand) political scientist, April 15; and
- Claude Steele, Stanford psychologist, April 29. This final lecture, scheduled for 7:30 p.m. in Uris Auditorium, is entitled "A Burden of Suspicion: How Stereotypes Shape the Intellectual Identities and Performance of Women and African Americans," and will be the 1995-96 Flemmie Kittrell Lecture.



**Sternberg**

## CORNELL RESEARCH

# Agency links U.S. research with Third World agriculturists

By Blaine P. Friedlander Jr.

One of the world's staples – the potato – has been pounded by disease and pestilence for centuries, but small farms soon may get a reprieve: Scientists from Cornell's International Service for the Acquisition of Agri-biotech Applications (ISAAA) have linked results of U.S. private research with Third World agriculturists to create a more safe, secure and abundant global food supply.

ISAAA brokered a deal that allows Monsanto Agricultural Co. of St. Louis to transfer a gene called a "proprietary coat protein" for virus resistance in Mexican potatoes. At the start of the project in 1991, Monsanto agreed to donate its transgenic potato virus X (PVX) and potato virus Y (PVY) gene biotechnology. The technology – at the seed level – allows small farmers in developing countries to grow certain potato varieties without worry. Growers in the United States use disease-free, certified seed and tolerant varieties. Monsanto researchers worked closely with Mexican agriculturists, who in turn will distribute the improved varieties the country's small farmers.

"The Mexican potato project provided ISAAA the perfect case for demonstrating such a model," said K. V. Raman, director of ISAAA's AmeriCenter, based in Ithaca. He also is Cornell professor of plant breeding. "ISAAA's mission was to demonstrate that partnerships can be built between the private and public sectors of industrial countries and governments in the Third World. These partnerships truly allow the sharing of proprietary agricultural biotechnology applications."

Before the link between Monsanto and the Mexican government, almost 80 percent of the potato seed was not certified, which meant that most of that seed was infected with plant-harming viruses. To combat the problems, farmers used heavy amounts of pesticides.

Despite those efforts, crop losses could be up to 10 percent of the PVX and up to 15 percent for the PVY. Meanwhile, another problem, the potato leaf roll virus, could account for severe crop losses of up to 50 percent. Raman says that agri-biotechnology transfer will alleviate such devastating situations.

With high pesticide use and low crop yields, the partnership became a golden gift.

"Developing countries are acutely concerned about the over-reliance on inputs, such as pesticides and fertil-



**Coffman**



Adriana Rovers/University Photography

**K.V. Raman, director of Cornell's International Service for the Acquisition of Agri-biotech Applications (ISAAA) AmeriCenter, checks potato plants with Anatole Krattiger, executive director of ISAAA.**

izers, particularly for strategic areas like food security," Raman said.

ISAAA is known as an "honest broker," in that they receive no direct financial benefit from bringing the two parties together. ISAAA obtains its funding from a variety of private research foundations, bilateral and multilateral agencies and companies.

For donating biotechnology to developing countries, American private research interests obtain toeholds into new markets without major bureaucratic obstacles. The companies also have a new place to test newer biotechnology, where viral strains may be different from those in North America. Also, other entities, such as seed companies and grower organizations, benefit from sharing new information.

The developing countries learn new ways to feed their people by obtaining already-tried American techniques. They also receive extensive experience in working with

established private companies.

Potato late blight – the disease blamed for the great Irish Potato Famine of the 1840s – remains the number one problem for potato growers around the world. These partnerships provide American research companies more opportunities to seek sensible, environmentally-friendly solutions for late blight.

"ISAAA was formed in recognition of the fact that new partnerships are needed if we are to deal effectively with the problems confronting global food production," said Ronnie Coffmann, a member of ISAAA's board of directors and Cornell professor of plant breeding.

"We've learned that relatively simple projects are an effective means of building mutual trust between traditionally unlikely partners," said Raman. "There were clearly understood responsibilities on both sides, which ultimately benefits the small farmers in developing countries."

## When they sign on the dotted line, this system can pick out forgers

By Bill Steele

With a little practice, almost anyone can learn to imitate a signature. But only the most highly skilled forger can rip it off just the right way, with the same variations in speed, the same order of crossing the t's and dotting the i's.

With that in mind, Cornell engineers have developed a signature-verification system that can reject most forgeries while still allowing for the minor variations in a person's real signature. The system runs on ordinary desktop computers and could be used for point-of-sale applications.

"We collect 49 features of a signature," explained Toby Berger, the J. Preston Levis Professor of Electrical Engineering at Cornell, who developed the system along with graduate students Luan Ling Lee, Erez Aviczer and Yi-Jen Chiu. "Some are static features that you could measure from the end result, like the shape of letters, or the maximum distance between the highest and lowest points. Others are dynamic features that must be measured as the person is signing, like the maximum forward velocity and where

and when in the signature it occurs."

Many signature-verification systems depend on having a person sign at the same speed every time, Berger noted, but this one allows for speed variations. "We noticed in the lab that sometimes people signed fast and sometimes slow," Berger said. "It might depend on whether or not you were wearing your overcoat."

The system requires that the person sign on a graphics pad, or on a piece of paper placed over the pad. The pad reports the position of the pen about once every five to 10 milliseconds.

"We reject a real signature about 1 in 200 to 1 in 500 times, depending on the conditions under which it is signed," Berger said, "while rejecting up to 93 percent of forgeries. That's what you want in a point-of-sale system: You want to accept genuine signatures almost all the time. If you fail to reject a phony signature sometimes, that's not so serious; without a system like this, you have no ability to reject at all."

The rejection rate for false signatures falls to around 50 percent for a "timed forgery" done by a skilled forger. But this requires that the forger watch as you



Adriana Rovers/University Photography

**Toby Berger, professor of electrical engineering, right, signs an electronic pad he developed that validates signatures. Yi-Jen Chiu, left, a Ph.D. student in electrical engineering, also was involved in the project.**

write your signature – perhaps several times – and then imitate the timing as well as the shape.

On the other hand, a perfect tracing won't fool the system at all. "It's easy to reject tracing," Berger said. "You lock up your hand and lose dynamics in your wrist." If this system became common, he

added, people might no longer have to sign the back of their credit cards, and forgers would have nothing to copy.

Berger said the system also could be set up to reject a higher percentage of false signatures at the expense of making it more likely to reject real ones, which is what may

*Continued on page 6*

# Digital library will increase access to computer research

By Larry Bernard

More than 30 academic departments and research laboratories are now participating in the Networked Computer Science Technical Report Library (NCSTRL). The NCSTRL (pronounced "Ancestral") system compiles the technical reports of leading-edge research from computer scientists around the world and provides an efficient, user-friendly method for researchers, students, engineers, and others to access this research over the Internet at <<http://www.ncstrl.org>>.

The NCSTRL project has grown rapidly from the experimental digital library efforts undertaken in the Computer Science Technical Reports (CS-TR) project, sponsored in 1992 by the Advanced Research Projects Agency (ARPA) through the Corporation for National Research Initiatives (CNRI), and in the National Science Foundation (NSF)-sponsored WATERS project. The NCSTRL effort continues to evolve, with the hope that it will indeed become the progenitor of future generations of digital libraries.

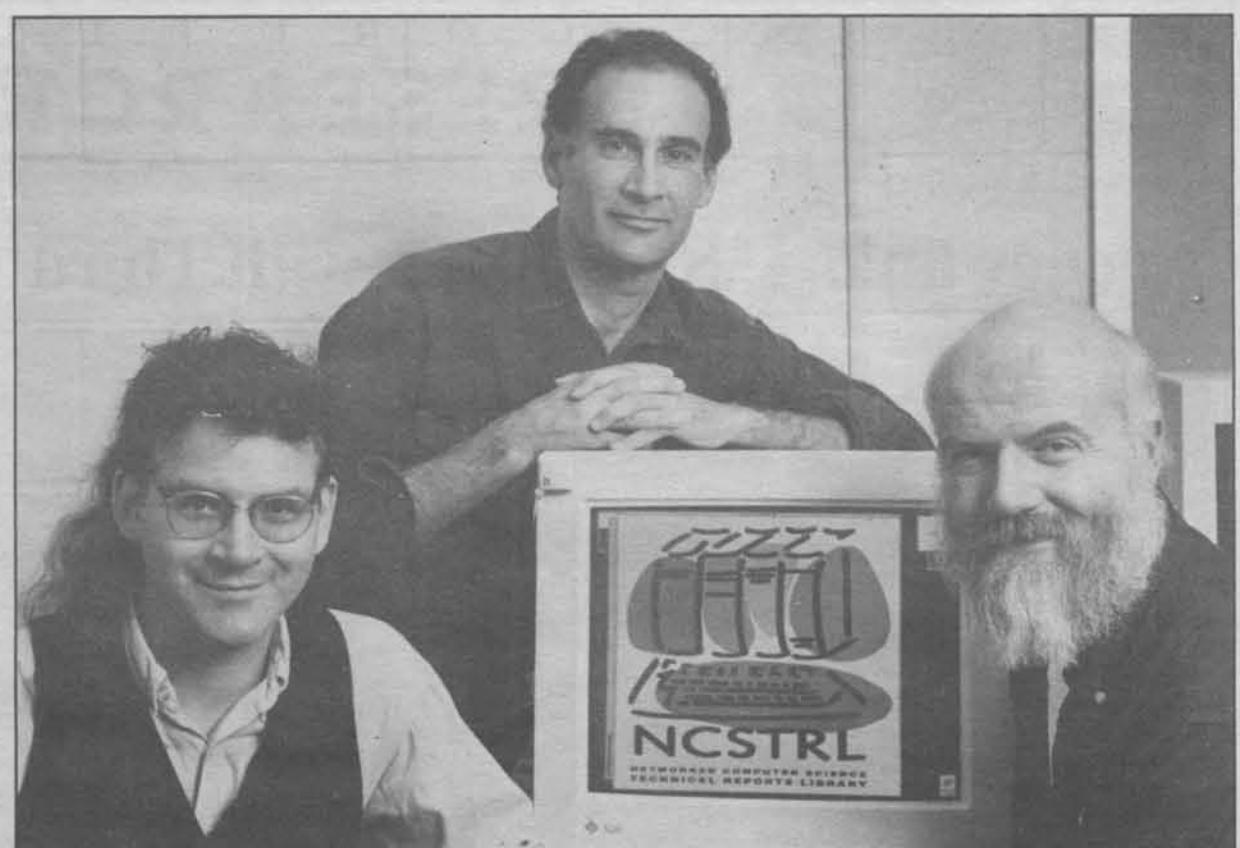
Technical reports often are the first published notice of the hottest research findings in computer science, predating print publication in conference proceedings or journals by up to two years. Previous efforts to make these reports available electronically were largely on a per-institution basis, with no systematic facility for uniformly searching for or accessing the reports at the separate institutions.

The still-evolving NCSTRL project "makes a very large body of breaking computer science research rapidly available to researchers and programmers throughout the world," said Dean B. Krafft, chair of the NCSTRL Working Group and a senior research associate in the Department of Computer Science at Cornell. "It also serves as a test bed for research in digital libraries."

Indeed, "NCSTRL is not primarily about technology," according to Barry Leiner, associate director of ARPA's Information Technology Office and responsible for the CS-TR project. "It's about creating a new capability in this country and building the organizational and policy framework to support it." Thus, NCSTRL is an evolving effort by a number of institutions to create a digital library infrastructure for computer science documents, not merely another Internet-based collection.

This is not to say that NCSTRL ignores the user. The system provides a seamless interface to servers at many different institutions working cooperatively to provide access to the library materials. "It's transparent to the user. All the reports are available from a single source in a uniform manner," said Carl Lagoze, project leader for the Digital Library Research Group at Cornell.

The project can be characterized in three ways. It is an



Adriana Rovers/University Photography

**Displaying a page of the NCSTRL system, which compiles technical research reports from computer scientists around the world, are, from left, Jim Davis, a Xerox researcher in the Design Research Institute at Cornell, Carl Lagoze, project leader of the Digital Library Research group in the computer science department, and Dean Krafft, chair of the NCSTRL Working Group.**

**The still-evolving NCSTRL project makes a very large body of breaking computer science research rapidly available to researchers and programmers throughout the world.'**

— Dean B. Krafft

operational networked library, a vehicle for exploring issues of organization and policy and a framework for incorporating new technology. The NCSTRL collaboration will involve combining the efforts of many partners to develop on-going solutions to the technical, organizational and policy issues raised by this project.

A steering committee, with representatives from a number of computer science related organizations, is currently being formed to provide oversight for NCSTRL. Participation in the networked library is welcomed from all computer science research laboratories and Ph.D.-granting computer science departments.

"NCSTRL is an excellent vehicle for carrying out the efforts begun in the CS-TR project," said Robert E. Kahn, president of CNRI. "The CS-TR project had as one of its goals to enable computer science technical reports

to be more easily accessible via the Internet."

The CS-TR project enabled the development of several components that are key to the current NCSTRL system. Among these is Dienst, a library access system conceived of by Jim Davis, a Xerox researcher in the Design Research Institute at Cornell, and developed and refined by researchers at Cornell's Computer Science Department and Xerox Corp.'s Wilson Center for Research and Technology; the handle system, a location-independent naming service from CNRI; and a format for communicating bibliographic records over the Internet, originally developed by researchers at the Information Sciences Institute of the University of Southern California and refined by researchers at Stanford University.

NCSTRL also draws from the collections and concepts of the WATERS project. Leaders in the WATERS project include researchers at Old Dominion University, the State University of New York at Buffalo, the University of Virginia and Virginia Tech.

As participation in NCSTRL continues to expand, "NCSTRL will provide the widest possible exposure for research results, while computer scientists in government and industry labs as well as graduate students and even undergraduates will be able to call up research results not yet available in printed form," explained Alan Selman, professor and chair of computer science at SUNY Buffalo and one of the founders of the WATERS project.

## Sign on the dotted line *continued from page 5*

be needed for high-security applications.

Over 10,000 signatures, including many deliberate forgeries, were collected in Berger's laboratory at Cornell from about 105 volunteers. It's believed to be the largest database of dynamic signatures collected anywhere so far. "Most people signed about 50 times," Berger recalled. "One person signed 1,000 times."

Some volunteers were asked to write a few signatures as fast as they could. The system has a mode in which the verification decision is made independently of the overall speed of writing. In this mode, it measures the time at which some features occur relative to the overall time taken to sign.

The collected forgeries were of three types: "simple," where the forger knew only how to spell the signature, "statically skilled," where the forger was allowed to view finished genuine signatures and to practice writing copies of them, and "timed," where a statically skilled forger was coached until his signing duration matched that of the genuine signature.

The signature database was used to develop a set of "average features." "A lot of the features we used have been used over the years by people trying to recognize handwriting, such as the developers of the Apple Newton," Berger reported. "Others were ones we chose based on our experience in col-

lecting signatures.

"By knowing what most people do with each of these features, we can figure out which features of someone's signature are particularly unique," he explained. "You could decide that your system is going to look at the same features for everyone, or you could use individualized sets of features. You're not going to store all the features for everyone at the point of sale."

The system, for which Cornell has applied for a patent, is not "computationally intensive" compared to other such systems, Berger said. A laboratory prototype of it running on a desktop computer with a 486 microchip processor returns results in less than one-and-a-half seconds. A commercial system with a custom-designed chip could run considerably faster, he said.

Berger teaches courses in communications, information theory, probability and communication networks in the School of Electrical Engineering. Lee is a professor of electrical engineering at the State University of Campinas in Brazil. Aviczer studied at Cornell on leave from AT&T Bell Laboratories. Chiu is conducting doctoral research on video compression under Berger's direction.

The work was funded in part by the Brazilian Science Agency, the State University of Campinas and the National Science Foundation.

## BRIEFS

**Humboldt visitor:** Manfred Osten, the secretary general of the Alexander von Humboldt Stiftung, Bad Godesberg/Germany, visited Cornell and the local chapter of the Alexander von Humboldt Association, Jan. 15 to 17.

The local Humboldt Association chapter, formed in 1995, organized a dinner at the Statler Hotel on Jan. 16 to honor Osten. The dinner was attended by Bernard Stein, director of the Stiftung liaison office in Washington, D.C.; George Leitmann, president of the Alexander von Humboldt Association of America, in Berkeley, Calif., and about 50 members and spouses from the local chapter.

Cornell Provost Don M. Randel gave an official welcome to Osten, and the after-dinner speaker was Cornell biologist Thomas Eisner. Osten then exhibited his musical talents by playing the viola as the fourth member of a string quartet with Sonja Monosoff Pancaldo, first violin, Katherine K. Gottschalk, second violin, and Graeme Bailey, cello, in Mozart's *Quartet in C-major K465* ("Dissonances").

Alexander von Humboldt was a German scientist and explorer, who lived between 1769 and 1858 and traveled extensively around the world. He contributed greatly to the development of plant sciences and geog-

raphy. To recognize his contribution to science, the German government established the Alexander von Humboldt Stiftung, which awards, yearly, 200 research and 60 senior fellowships worldwide in the humanities and sciences.

The Alexander von Humboldt Association of America is an organization that unites Humboldt awardees in local chapters and at the national level. Cornell has one of the highest number of Humboldt awardees among U.S. universities.

**Engineering Day:** Webster's New World Dictionary defines engineering as "the science concerned with putting scientific knowledge to practical uses." Some of those practical uses will be on display during the annual "Engineering Day at the Mall" Saturday, Feb. 17, at Pyramid Mall in Lansing.

Cornell engineering students and local businesses will exhibit their work from 10 a.m. to 5 p.m. in the mall.

Displays featured last year included lasers, a hybrid electric car and a showcase on fiber optics. The Society of Women Engineers featured an exhibit where visitors built bridges of toothpicks and marshmallows, then tested the strength of their bridges by loading chocolate on top of them.

## Shadow knows: More winter; more research

By Roger Segelken

If winter weather lingers for another six weeks, don't blame Shadow.

The groundhog mascot from the woodchuck breeding colony at the College of Veterinary Medicine calls 'em as she sees 'em, and on Groundhog Day she saw her shadow.

While weather may have been on people's minds, the Feb. 2 event in the atrium of the Veterinary Education Center was staged to draw public attention to the contributions made by woodchucks (as groundhogs are also known) to medical science. At Cornell, site of the world's only disease-free colony of woodchucks in hepatitis research, groundhogs are indispensable animal models for human hepatitis B.

A naturally occurring woodchuck hepatitis virus has nearly identical effects on the animals' livers as human hepatitis B virus has on humans. That allows medical scientists to observe disease courses for three or four years in laboratory animals that take 30 to 40 years in human hepatitis patients.

Bud C. Tennant, D.V.M., the James Law Professor of Comparative Medicine who heads the woodchuck program, began the "Woodchuck vs. Weatherman" news conference by reporting progress in the understanding of how hepatitis virus causes liver cancer and in the testing of new vaccines against the disease.

Then Art DeGaetano, a meteorologist in Cornell's Northeast Regional Climate Center, explained how historic weather data are used to predict the likelihood of future weather conditions (see accompanying story). If past winters in Ithaca are any indication, for example, there is only a 30 percent chance that this winter's heaviest snowfalls will occur in February or March. The snowiest part of winter, DeGaetano said, may be behind us. Maybe.

But the real star of the show was Shadow, a 5-year-old female with a rare,



Adriana Rovers/University Photography

**Shadow retreats from the media spotlight into her portable metal burrow during the "Woodchuck vs. Weatherman" news conference Feb. 2 in the atrium of the Veterinary Education Center.**

fox-like silver coat and a gentle-enough disposition to make public appearances.

Daylight diffused through the atrium's glass roof as Shadow emerged from her portable metal burrow. She peered curiously at the television cameras and the reporters.

If the camera-hogging groundhog had looked down, she would have seen

a faint shadow from the sun, or a pronounced penumbra from all the photo lights and strobes.

She posed for a few more pictures. Having done her thing for meteorological science, the groundhog retired to her burrow.

Minutes later, clouds appeared and the snow began.

## CU climatologists say, statistically, the worst is over

By Blaine P. Friedlander Jr.

As certain clairvoyant groundhogs lead the charge toward spring, Cornell climatologists say that, statistically, the bulk of winter's bad weather already is behind us as of Feb. 2.

Groundhog Day, the folklorist's notation of winter's halftime, is a harbinger of warmer temperatures—and climatologists at the Northeast Regional Climate Center at Cornell can prove it. In Philadelphia and Baltimore, for example, two of the last 10 winters featured the coldest days in either February or March, ac-

cording to Art DeGaetano, a climatologist at the center.

New York City and Washington, D.C., saw but three winters in the last 10 with the year's lowest temperatures occurring during February or March.

For most of the cities in the Northeast and the Middle Atlantic states, between 40 and 60 percent of the years have had their heaviest snows fall in the last two months of the season. DeGaetano attributes such heavy late-winter snows to more moisture in the air, mixing with still-cold atmospheric temperatures.

"Obviously, there is some variability from year to year, but in the long run, the climatological statistics are pretty consistent," DeGaetano said. "The good news this year is that we're in good shape for water, and this is the time of year when reservoirs and groundwater begin filling up. Climatologically, this is the period of recharge."

Last summer's drought was taking shape in the drier-than-normal winter. "If we had back-to-back years like that, it would be terrible news. We saw groundwater levels reach dangerously low levels last year," he said.

## Nomination deadline approaches for Weiss Fellows

The Stephen H. Weiss Presidential Fellows Committee is inviting junior and senior students, faculty members and other members of the academic staff to submit nominees for the Stephen H. Weiss Presidential Fellows program.

The program, funded by a gift from Stephen H. Weiss, chairman of Cornell's Board of Trustees, was established in the fall of 1992 and recognizes sustained contributions of tenured faculty members to undergraduate teaching at Cornell. Weiss fellows receive \$5,000 each year for the first five years and hold the title as long as they remain at Cornell. President Rawlings appointed the members of the Weiss Committee, consisting of Weiss Fellows, emeri-

tus faculty and three senior students from the undergraduate colleges, to solicit and then recommend nominees for his final selection. A substantial case for the nominee should be made in a letter addressing specific contributions and should include examples which demonstrate:

- making distinctive contributions to undergraduate teaching, such as challenging and well-organized presentations of the subject, adaptability to the learning needs of students, innovative approaches to course materials, creation of scholarly materials for student use and availability to students outside of class.

- influencing students beyond the formal role as a teacher, such as advising or

mentoring individual students, advising student organizations or groups, serving on teaching and curriculum committees and informal interacting with students.

- helping students, such as aiding in case of illness or other emergency and advising students confronted with difficult problems.

A faculty nominator should include an additional supporting letter from a faculty member or other member of the academic staff as well as letters of support from three or more undergraduate students. Students should provide two letters of nomination. Nominations, due by Feb. 19, should be sent to the Stephen H. Weiss Presidential Fellows Committee, 315 Day Hall. For information, call 255-4843.

## Biologists argue for widespread nature preserves

By Roger Segelken

At a time when support is dwindling for national parks, two Cornell biologists believe they have found an inexpensive way to put a little wilderness in everyone's backyard.

Every county in the United States should set aside a couple of square miles of land and let it develop—naturally. Thomas A. Gavin and Paul W. Sherman propose: Given enough time and some judicious management, they say, most of the nation's 3,073 counties could have readily accessible living museums of the local habitats that would exist if the land were not plowed, paved or plundered.

"Thanks to frequent media coverage, the American public probably appreciates the structure and diversity of tropical rain forests better than those of the original plant and animal communities where their homes are sited," Gavin and Sherman wrote in "Proposition 80," the lead editorial of the December 1995 journal, *Conservation Biology* (Vol. 9, No. 6). "Our own sixth-grade children accurately and passionately describe the beauty of the native forests of Central and South America," the biologists added, "but they know next to nothing about what the native North American forests or grasslands looked like or what biological treasures they contained."

Sherman, professor of neurobiology and behavior, and Gavin, professor of natural resources, said they got the idea for Proposition 80 while driving cross-country on Interstate 80. The 10-state route they follow each year between Ithaca and Council, Idaho, site of their biology fieldwork, roughly equals the east-west width of South America's Amazon region. As they drove I-80 through housing developments in Ohio, cornfields of Illinois and grazed rangelands of Wyoming, the biologists began to wonder what America looked like "before."

"We never see areas that escaped human influence," Sherman said, and neither have most Americans. Except for the tiny fraction of the United States where wildlife refuges, national parks and wilderness areas are maintained in perpetuity, Sherman and Gavin observe, most of what passes for "natural" is a pale imitation of the native habitats that existed before Europeans settlers arrived.

"With continued degradation of the environment through local extinction of native species, simplification of the physical structure of habitats and introduction of exotic organisms, each generation comes to view any local patch of non-agricultural habitat, however depauperate, as 'natural,'" the Cornell biologists wrote in *Conservation Biology*, describing what they call the "ratcheting-down" of awareness of natural habitats with each generation.

The solution, they suggest, is for every county to set aside an area that local experts predict ultimately might support a representative community of native plants and animals. Some communities already have done so, through donations to local land trusts, the biologists note. And some back-to-the-wild areas might need a little tinkering at first to weed out non-native "exotic" organisms but then can be left alone to develop as a sample of what habitats would become without human intervention.

Taking a small amount of land off the tax rolls should not overstress any county, the biologists figure, and maintaining the areas for visits by citizens, school groups and scientific research should cost next to nothing.

The biologists said they hope every county will aid local biodiversity by adopting Proposition 80. It would serve as an educational resource and a source of inspiration, not to mention a biological "reality check" for local citizenry, they said.

"The only way to recalibrate the ratchet of awareness and to reverse the seeming inevitability of its downward trajectory," they said, "is to have accessible examples of unmanipulated local habitats for each generation to ponder."

# Will it happen at Cornell University?

By Alan G. Merten

Dramatic change is everywhere. We've seen the reinvention of companies and industries. We're seeing the reinvention of health care, welfare and possibly even Medicare. So why do we think that universities are exempt from the same need to change, to do more with less, or at least, to do more with the same?

Frankly, this is a controversial, even painful topic. But we must face these issues if we truly believe in higher education and if we want continued success for Cornell.

The key questions, I think, are: Should Cornell be re-invented? Can Cornell be re-invented? And finally, will Cornell be re-invented? My preliminary answers to these questions are yes; yes; and to the most important question, *frankly, I am not sure.*

There are a variety of ways to embark on a discussion of this sort. I'm going to approach it as follows: Why don't we change? Can we change? Why is change necessary? And what are the necessary conditions for change?

## Why don't we change?

While president of Princeton, Woodrow Wilson reportedly said that "it is easier to move a cemetery than it is to change a curriculum at a university."

Why is change so difficult at universities? I think it is because we lack a clear imperative to change. Large financial losses, an impending takeover, or the looming threat of competition have pushed many businesses to make dramatic and often painful changes. Universities, on the other hand, while often talking about change, lack such clear and pressing needs for change, at least as perceived by their various constituents.

The constituents of the university community – faculty, administrators, and even alumni – have many characteristics which either inhibit change or make major change impossible. Faculty, the major element in the success or failure of any academic institution, are not, by nature, risk-takers; nor are they team-oriented. In fact, faculty members have been successful largely because of their individual ideas, discoveries and achievements. Let me stress that faculty are not unwilling to take risks or be part of teams. However, this is not necessarily part of the nature or training of individuals who decide to get a doctorate and join a research faculty at an institution such as Cornell.

Administrators also often resist change. They fail to use the power of the purse to reward new behavior or innovations that will address broader issues affecting the university, then often use the faculty as their excuse for inaction. Administrators also have a tendency to protect their own. Remember, in most cases, academic administrators were once – and still are – faculty members themselves. And administrators, just like the faculty, like to avoid conflict.

Alumni have a strong, often sentimental, allegiance to what exists. Alumni are often eager to support the university both financially and emotionally. But too often, they are willing either to support what exists, as it exists—or to support something completely new. While that can be helpful, what we often need is financial support to restructure or reposition what we do. That is not as exciting to alumni as it might be, and therefore, it is not only not supported, but resisted.

Finally, we often blame "academic culture," for inaction. Tenure, the guarantee of lifetime employment which allows faculty members to take intellectual risks in their work and helps guarantee the continued vitality of debate and discussion, limits our ability to get people to change their behavior. But tenure need not and should not become an excuse for avoiding necessary action. "Academic freedom," which initially referred to the freedom for an individual faculty member to say whatever she or he wanted without fear of being fired, has in many cases been transformed into the implication that faculty members are free to seek their self-interest so long as a minimum obligation to the institution is met. Again, this often becomes an excuse for resisting the change necessary for the common good.

## COMMENTARY



Merten

### Can Cornell change?

I believe that change can happen at Cornell. Let me use the Johnson School as an example. Not long ago, our view of education was relatively simple. Students took approximately five three-credit courses a semester taught by a tenure-track faculty member in Ithaca.

Now we have the 15-credit Semester in Manufacturing, the only course students take for a semester, led by a team of tenured faculty members and a corporate executive, with learning taking place both on campus and on visits to companies throughout the Northeast. At the other extreme, we have a Managerial Skills Program, offering half- to two-day courses, measured in tenths of a credit, taught primarily by people from outside the university.

This past summer we began a new option which enables individuals with advanced science or engineering degrees to get an MBA in twelve months. We now use videoconferencing to deliver lectures to our students from executives elsewhere in the world. And we have combined the computing services offices at the Johnson School and the School of Industrial and Labor Relations to provide improved services at reduced costs, a recognition of shared needs with shared solutions.

In some cases, the impetus for these new programs has come from students; in others it has come from staff, administrators, faculty and alumni. In all cases, we decided to act before we understood every last implication of the change, and in some cases we have had to fine tune our approach. We embarked on some of these changes even though significant pockets of resistance remained. But I believe even an approach of "ready, fire, aim" is better than the more traditional academic approach of "ready, aim, aim, aim."

There is much more to be done to not only respond to changes in society and business, but to play a leadership role. We will have to change what we teach and change how we teach. We will need to develop truly meaningful partnerships with other colleges at Cornell, with other business schools, and with the corporate world. We have to be reminded constantly that we have customers and competitors, with competition coming from both other academic institutions and the business sector itself.

### Why is change necessary?

In the Johnson School, as in other academic units, there will never be complete agreement on either the proper rate of change or the areas in which change is needed. Nevertheless, we must facilitate meaningful change or we will fail.

Shakespeare wrote, "When the sea was calm, all ships alike showed mastership in floating." The sea for universities is no longer calm. Some of the turbulence is caused by financial pressures, some by the need to respond to the changing needs and desires of our students.

Professional master's programs, for example, are one area where change is being imposed by our students. Such program have been in existence for decades; the Masters of Business Administration is probably the most well-known. But there are many others. Professional master's programs in health care, urban and regional planning, and engineering have existed at Cornell for years. New programs in hospitality management, public policy, real estate, and environmental management have been created recently or are under development now.

While this growth is driven by students' increasing interest in such programs, our existing organizational

structure and financing arrangements are inadequate to allow us to manage them properly. For example, these programs often require courses in managing resources or organizations – accounting, organizational studies, economics, finance and marketing, to name just a few. To offer those courses in an effective and efficient way may require us to bypass traditional boundaries of colleges and schools.

These programs also require significant investments in student recruiting, student placement, and a variety of non-course activities essential to an effective program. We must act as a university to coordinate, rethink, and redesign our policies and procedures if these professional master's programs are to meet Cornell's traditional standards. We can not allow everyone to do their own thing. Business as usual will not work.

### The conditions for change

When CEOs speak of change, they speak of changing one of the following: the people, the structure, the processes and procedures, and the attitudes of the organization. Cornell is no different; to truly re-engineer or re-invent the institution, we must make the commitment to sustained change in each of those areas.

We must review programs and understand more fully the revenues and costs of all of our activities. We must understand which programs can pay for themselves and which need to be subsidized.

Second, and probably most important, we must make decisions. It has been said that a donkey can die of hunger standing between two bales of hay. We can lay out options that can lead to continuing success for Cornell, but we won't be successful unless we choose.

Third, we will need informed pressure from the outside. We neither need nor want our alumni and friends meddling in the day-to-day activities of the university, but we do need and want their advice and encouragement to make the tough and necessary decisions. I doubt that we will change sufficiently if we are left to our own desires.

Finally, we will need a caring attitude as we address the issue of dramatic change. In the past, we believed that if we didn't change, nobody would be hurt. That is a mistake. Unquestioning acceptance of business as usual is not necessarily a caring attitude. A caring attitude will be one in which we recognize what needs to be changed and rationally discuss both the areas and dimension of change. A caring attitude is one that rewards people for making change.

William Estrey, chairman and CEO of Sprint Corporation, once said that "being aggressive is a lot less risky in the end. Are you going to eat your lunch, or have your lunch eaten for you?"

That is the dilemma facing us at Cornell. We will see other institutions change. We have the ability not only to respond aggressively to that change, but to lead the change.

Should Cornell change? Yes. Can Cornell change? Yes. Will Cornell change? Frankly, I am not sure. But I do know that if we combine the talents of our alumni, faculty, administrators and our students, we can not only make Cornell a better place, we can make it the best place.

*Alan G. Merten is the Anne and Elmer Lindseth Dean of the S.C. Johnson Graduate School of Management at Cornell. This commentary resulted from a speech he gave to the Cornell University Real Estate Conference.*

## About Commentary . . .

Members of the Cornell community are invited to submit "Commentary" articles of no more than 800 words for consideration by the *Chronicle*. Topics should be of importance to higher education in general or, specifically, to Cornell faculty, staff and students. "Letters to the Editor" of not more than 400 words also will be considered.

Submissions – typed and double-spaced – should be sent to Chronicle Commentary, Cornell News Service, 840 Hanshaw Road.

# Economist: Internet's future lies with academe, not big business

By Margo Hittleman

An economist at the Johnson Graduate School of Management says the engine carrying the world into the information age could stall if the for-profit sector takes too tight control of the Internet.



McAdams

"If the for-profit sector takes tight control of the Internet, charging fees for every transmission and transaction, the Internet will not continue its impressive evolution and rapid growth," said Alan McAdams, associate professor of managerial economics and an expert on the national information superhighway. "It could well stumble and stall."

"Microsoft did not invent the Internet. Neither did anybody else in the for-profit sector," he said. "Nor could they have done

so. In fact, by their own admission, the industry powerhouses were blindsided by its development and growth. The Internet owes its birth to universities, that largely paid for it, and its success to the university's imperative to share knowledge freely under the 'publish or perish' incentive structure."

McAdams adds that media, telephone and cable companies also have had a go at constructing the information superhighway. But they failed miserably, in part because

they did not understand the principles of pricing different types of goods. "They didn't recognize the power of information made freely available – though they are beginning to catch on," McAdams said.

McAdams' comments come at a time when discussion about the future of the Internet is reaching a fevered pitch: access to the information superhighway recently surpassed 25 million people worldwide, with

*Continued on page 10*

# Lab of Ornithology's 'Project PigeonWatch' goes continentwide

By Roger Segelken

Inner city schoolchildren all over North America soon will be learning from the pigeons under their feet. Project PigeonWatch, the youth science-education experiment that teaches professional scientists the evolutionary advantage of birds' color morphs, is hitting the streets.

Pilot tests by the Cornell Laboratory of Ornithology showed that the concept can fly: Inner city schoolchildren can collect scientifically valuable data in New York City, Chicago, Denver and Washington, D.C. Now the project, which is supported by National Science Foundation (NSF) and participants' fees, is seeking thousands more data points to answer a question that has long puzzled ornithologists: How come pigeons come in so many colors?

"In the wild, all individuals of a particular species look pretty much the same. Robins have grey backs and red-orange breasts, and crows are all black," said Martha Fischer, an educator at the ornithology lab. "But a funny thing happened to *Columba livia*, as common city pigeon is known in scientific terms, on the way to the city."

The ancestors of all city pigeons are wild rock doves from the cliffs and rocky ledges of Africa, Asia, Europe and the Middle East, Fischer explained. On the cliffs of the old country, rock doves were (and still are) a single color type or morph: a sort of blue-black and gray that pigeon fanciers call blue-bar.

"Over the centuries, rock doves were selectively bred by humans for their colors, their homing instincts or their racing abilities," Fischer said. "They were still *Columba livia*, but they showed remarkable color variation, just like cats and dogs. Some captive rock doves escaped to form the feral pigeon flocks we see today. They survive very well in the city, where predators are few and food is plentiful. What we don't understand is why, now that common pigeons are no longer selectively bred, do they continue to exist in so many color morphs?"

To answer that question, hundreds of professional ornithologists could count colored pigeons in every city in North America, documenting the birds' feeding and courtship behavior. Instead, scientists are calling



Charles Harrington/University Photography  
Touring Cornell's Laboratory of Ornithology, PigeonWatchers from New York City's Urban Park Rangers learn about pigeon-racing from Bill Thomson of Trumansburg.

on schoolchildren in an innovative, mutual effort to educate one another.

"Project PigeonWatch is an ideal activity for children in grades four through eight in after-school programs, urban 4-H clubs, Boy Scouts and Girl Scouts, weekend museum programs, science clubs and similar programs," said John Fitzpatrick, the Louis Agassiz Fuertes Director of the Cornell Laboratory of Ornithology. "The children will build their powers of observation, learn careful note-taking, practice mathematics and writing skills, and most importantly, learn more about the process of science."

"We'll finally get the answers to this color morph puzzle," Fitzpatrick added, "and we'll certainly learn a lot about relationships between people and pigeons."

Two other National Science Experiments done by the Cornell laboratory for the NSF clearly demonstrate that volunteer-based programs can collect large amounts of bird information, Fitzpatrick noted. More than 8,000 people contributed observations to the Seed Preference Test. Data collected by 1,500 participants in Project Tanager, which shed light on the habitat requirements of four tanager species in North America, would have cost millions of dollars if they were gathered by traditional methods.

Participants in Project PigeonWatch receive a research packet, including straightforward instructions, a mini-poster showing seven pigeon color morphs, a tally sheet and data forms to return to the Laboratory of

Ornithology. They also receive a one-year subscription to *Birdscope*, the lab's newsletter, which reports results of Project PigeonWatch and other volunteer-based programs. Participation fees ranging from \$7 to \$15 help cover costs of the project.

"The study of urban pigeons is sure to raise new questions," Fischer said. "For example, will other birds that live in close association with humans become as variable in their appearance as pigeons? Will the introduction of peregrine falcons in cities reduce color variation in pigeons? Will global climate changes affect the pigeons?"

"We need lots of data from lots of different places, in the United States, in Canada and in Mexico," she said. "Maybe then we'll be able to put this puzzle together."

## State Department's green card lottery begins Feb. 12

The U.S. State Department has released information on how to apply for its annual diversity green card lottery, which takes place between Feb. 12 and March 12 this year. Some 55,000 people each year immigrate to the United States through this special program.

Stephen Yale-Loehr, an adjunct professor who teaches immigration law at Cornell Law School and who also practices the specialty at the Ithaca law firm of True, Walsh & Miller, says Congress created the program in 1990 as a way to increase diversity among immigrants.

"More than one-half of all immigrants were coming from just eight countries," said Yale-Loehr, "so Congress wanted to help people from other countries get a better chance."

As a service to people in Ithaca and in the Cornell community who may be interested in applying, or who know someone who may want to apply, Yale-Loehr has provided information about the green card lottery in a question-and-answer format, below.

Further details about the program are available from the State Department's visa lottery hotline (202-663-1600), or by calling True, Walsh & Miller at 273-4200. The Cornell International Students and Scholars Office's on-line Web page – at <http://www.sas.cornell.edu/issos/> – also describes the government procedures for the green card lottery, under What's New @ ISSO.

### What is the diversity green card lottery?

The United States has a program to give out 55,000 permanent resident visas ("green cards") each year to "natives" of certain countries. All countries of the world can

apply except the following: Canada, China (both mainland and Taiwan), Colombia, Dominican Republic, El Salvador, India, Jamaica, Mexico, Philippines, South Korea, United Kingdom and Vietnam. If you win, you may get a permanent resident visa ("green card"), which allows you to live and work permanently in the U.S.

### Do I qualify to enter?

You qualify to enter the visa lottery if:

- You were born in one of the lottery countries; or
- Your husband or wife was born in a lottery country; or
- In some circumstances, your mother or father was born in a lottery country.

### How does the diversity green card lottery work?

To get a green card, a certain application must be completed and mailed to a specific post office box listed by the State Department. Only one application per applicant will be allowed. The application must be received between Feb. 12 and March 12, 1996. The State Department will then select 55,000 "winners" by chance. Entries that do not have all required information will be rejected. Winners will then submit immigrant visa applications and have a brief interview at a U.S. embassy or consulate.

### Residence and other requirements

You are eligible wherever you are living. You can even be in the United States illegally. You must have a high school diploma (or equivalent) or have worked at two years in an occupation that requires two or more years of work experience and/or training.

You do not have to speak English. You do not need U.S. relatives.

You can enter the diversity green card lottery even if you have other visa petitions pending.

### How about my family?

If you receive a green card through the diversity visa lottery, your spouse and unmarried children under 21 will also get green cards at the same time as you. The spouse or child does not have to be born in one of the qualifying countries. All children over 21 years of age must file separate applications.

### How do I enter?

The State Department has publicized all the information you need to enter the diversity green card lottery and the registration period. The actual application consists of a plain sheet of paper, upon which you must include the following information: name(s), date(s) and place(s) of birth for you and your family members, and a current mailing address. The envelope must be within certain size ranges (most business-sized envelopes meet the criteria). You must also write the name of your home country above your return address on the front of the envelope.

### Do I need to pay someone to assist me in applying?

No. The application procedures are simple. Moreover, this is a true lottery. Beware of people who claim to have "inside information" or who "guarantee success" in this process. There is no reason to pay hundreds of dollars to have someone prepare an application that is just one sheet of paper and that can be filed for just 32 cents.

## Black History Month events set for campus

In celebration of Black History Month, the Cornell campus will be the site of a variety of cultural and educational programs honoring the contributions of African Americans.

As in the past, the capstone event will be the Annual Festival of Black Gospel, beginning Feb. 16 (See story on Page 12).

• Friday, Feb. 16: Party sponsored by the Africana and Latino Greek Letter Council, with the theme "Fade to Black," 10 p.m., location TBA; contact Vaughan Lowery at 273-5043 for information.

• Friday, Feb. 16 – Tuesday, Feb. 20 and Friday, Feb. 23: Cornell Cinema presents Spike Lee's "Clockers," based on the novel by Richard Price, in Willard Straight Theater; \$4 with a Cornell student ID, \$4.50 all others. Times are: Feb. 16 at 10 p.m.; Feb. 17 at 7 p.m.; Feb. 18 at 7 p.m.; Feb. 19 at 9:20 p.m.; Feb. 20 at 9:30 p.m.; and on Feb. 23, at 10:15 p.m., following a talk by author and co-producer Richard Price.

• Saturday, Feb. 24: "The Evolution of Health Care: Changing to Fit the Needs of Our Communities," a conference sponsored by the Black Bio-Medical and Technical Association and the Collegiate Science and Technology Entry Program, 9 a.m. to 5 p.m. in Room 700 of Clark Hall; contact Lisa Blackwood at 256-4834 for further information.

# CALENDAR

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## lectures

### Art History

"Look Who's Laughing at Sex: Images for Women and Men in the Suburban Baths at Pompeii," John Clarke, University of Texas at Austin, Feb. 9, 3 p.m., Johnson Museum.

### English

On Feb. 12 at 2:55 p.m. in Hollis Cornell Auditorium of Goldwin Smith Hall, artist Victor Kord will speak as part of the "Mind and Memory" lecture series.

### European Studies

"Women and the Intelligentsia Tradition, 1920-1970," Konstantin Polivanov, visiting scholar, Feb. 9, 12:15 p.m., 153 Urs Hall.

"The Development of SMB's in the Transitional Economy of Croatia," Maja Vehovec, University of Rijeka, Croatia, Feb. 12, 12:15 p.m., 153 Urs Hall.

### Joint Ethnic Studies Colloquium

"Rising Bigotry and the New Republican Agenda," with Don Barr, human service studies; Jose Barreiro, American Indian Program; and Anna Marie Smith, government, Feb. 12, 4:30 p.m., A.D. White House.

### Professors-at-Large Program

Raphael Levine, the Max Born Professor of Natural Philosophy and chairman of the Fritz Haber Research Center for Molecular Dynamics at The Hebrew University in Jerusalem, will give the following lecture: "Dynamics in Several Electronic States," Feb. 8, 11:15 a.m., 119 Baker.

### Society for the Humanities

"Incest, Trauma and Literary Transmission: Mary Shelley's Unreadability," Mary Jacobus, English, Feb. 13, 4:30 p.m., Hollis Cornell Auditorium, Goldwin Smith Hall.

### Southeast Asia Program

"The Cultivation System: A Perspective From Economics," Siddharth Chandra, SEAP graduate student, Feb. 8, 12:15 p.m., Kahin Center, 640 Stewart Ave.

"The 1927 Communist Uprising in Sumatra," Audrey Kahin, former managing editor, Southeast Asia Program Publications, Feb. 15, 12:15 p.m., Kahin Center, 640 Stewart Ave.

### Theory Center

"Simulating Dynamo and Magnetic Field Line Chaos: New Ways," Samuel Vainshtein, University of Chicago, Feb. 13, 2:30 p.m., 456 Rhodes Hall.

## MUSIC

### Music Department

\* Feb. 10, 8:15 p.m., Barnes Hall: Gregory Hostetler and Blaise Bryski once again join together to present three works for voice and piano by Beethoven, Berlioz and Schumann. Featured will be Beethoven's *An die ferne Geliebte*, Op. 98; Berlioz' *Les nuits d'ete*, Op. 7 and Schumann's

### Dichterliebe, Op. 48.

\* Feb. 11, 8:15 p.m., Barnes Hall: Cornell Musica Nova and the Ithaca Opera Association will present two masterpieces by Darius Milhaud, *The Poor Sailor* and *La Creation du Monde*, which represent Milhaud's imaginative transformation of popular dance rhythms. Tickets, at \$5, are available at the ticket center at the Clinton House (273-4497), Hickey's Music Center (272-8262) and the Lincoln Hall ticket office (255-5144, Monday through Friday, 9 a.m. to 1 p.m.).

### Johnson Museum

The Cornell Jazz Ensemble will perform at the museum Feb. 11 from 3 to 5 p.m.

### Statler Concert Series

Flutist Paula Robison and guitarist Eliot Fisk return to Statler Auditorium on Friday, Feb. 9, at 8:15 p.m. for a joint recital that will include a performance of Robert Beaser's *Mountain Songs*. The duo's last performance sold out, so patrons are urged to purchase tickets quickly. Tickets, at \$11-\$19 for students and \$13-\$22 for the general public, are on sale at the Lincoln Hall ticket office, Monday through Friday, 9 a.m. to 1 p.m., telephone 255-5144.

### Bound for Glory

Feb. 11: Michael Smith will perform in three live sets at 8:30, 9:30 and 10:30 p.m. Admission in the live audience at the Cafe at Anabel Taylor Hall is free and is open to the public. Kids are welcome, and refreshments are available. For further information, call Phil Shapiro at 844-4535. Bound-for Glory is broadcast Sundays on WVBR-FM, 93.5 and 105.5 from 8 to 11 p.m.

## readings

### Creative Writing

The Department of English Program in Creative Writing and the Council for the Arts at Cornell will present a fiction reading by Micah Perks on Thursday, Feb. 8, at 4:30 p.m. in the A.D. White House. Perks is an assistant professor of English at Hobart and William Smith Colleges. Her first novel, *We Are Gathered Here*, recently has been released from St. Martin's Press.

## religion

### Sage Chapel

Janet Shortall, assistant director of Cornell United Religious Work, will give the sermon Feb. 11 at 11 a.m. in Sage Chapel.

### African-American

Sundays, 5:30 p.m., Robert Purcell Union.

### Baha'i Faith

Fridays, 7 p.m., firesides with speakers, open discussion and refreshments. Meet at the Balch Archway; held in Unit 4 lounge at Balch Hall. Sunday morning prayers and breakfast, 7 a.m.

### Catholic

Weekend Masses: Saturday, 5 p.m.; Sunday, 10 a.m., noon and 5 p.m., Anabel Taylor Auditorium. Daily Masses: Monday-Friday, 12:20 p.m., Anabel Taylor Chapel. Sacrament of Reconciliation, Saturday, 3:30 p.m., G-22 Anabel Taylor Hall.

## Internet's future

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no slowdown in sight.

At the same time that industry leaders vie to harness the cyber-road and mold it in their own image, McAdams finds the most common alternative proposal – government participation and subsidy as the road to realizing the Internet's full potential in the new information society – to be "highly unlikely."

His scenario: "Formalize the not-for-profit consortium of universities and other knowledge-creating institutions that currently 'run' the Internet, with the goals of continuing the explosive pace of innovation, keeping access costs low to the end users and open access for all service providers."

Such a consortium of institutional users would support the Internet's core operations much as universities currently do – by aggregating resources sufficient to permit new knowledge and innovation to be made freely available.

McAdams has no complaints with those

who would make money through virtual stores or catalogs or by charging for special services; he simply believes that for the Internet's basic functions – sharing information, facilitating fundamental governmental and social services, and supporting R&D – that the service must be available at low or no direct cost to end users and that access be open to all service providers.

"We need not turn over the core of the Internet to the private sector, so it can charge fees for every transmission and transaction," he said. "We should oppose

### Christian Science

Testimony meetings sharing healing through prayer and discussion every Thursday at 7 p.m., Founders Room, Anabel Taylor Hall. For more information see <<http://www.msc.cornell.edu/~bretz/cso.html>>.

### Episcopal (Anglican)

Sundays, worship and Eucharist, 9:30 a.m., Anabel Taylor Chapel.

### Friends (Quakers)

Sundays, 11 a.m., meeting for worship in the Edwards Room of Anabel Taylor Hall. Discussions most weeks at 9:50 a.m., 314 Anabel Taylor Hall.

### Jewish

Morning Minyan at Young Israel, 106 West Ave., call 272-5810.

Friday Services: Conservative, 5:30 p.m., Founders Room, Anabel Taylor Hall; Reform, 5:30 p.m., ATH Chapel; Orthodox, Young Israel, call for time, 272-5810.

Saturday Services: Orthodox, 9:15 a.m., One World Room, ATH; Egalitarian Minyan, 9:45 a.m., Founders Room, ATH.

### Korean Church

Sundays, 1 p.m., chapel, Anabel Taylor Hall.

### Latter-day Saints (Mormon)

Sunday services: Cornell Student Branch, 9 a.m., Ithaca ward, 1 p.m. For directions or transportation, call 272-4520, 257-6835 or 257-1334.

### Muslim

Friday Juma' prayer, 1:15 p.m., One World Room, Anabel Taylor Hall. Daily Zuhra, Asr, Maghreb and Isha' prayers at 218 Anabel Taylor Hall.

### Orthodox

Divine Liturgy: Sundays, 10 a.m., St. Catherine Greek Orthodox Church, 120 W. Seneca St.

### Protestant Cooperative Ministry

Sundays, 11 a.m., chapel, Anabel Taylor Hall.

### Sri Satya Sai Baba

Sundays, 10:30 a.m., 319 N. Tioga St. For details call 273-4261 or 533-7172.

### Zen Buddhist

Tuesdays, 5 p.m.; Thursdays, 6:45 p.m., chapel, Anabel Taylor Hall.

## seminars

### Agricultural, Resource & Managerial Economics

"The Implications of Trade Liberalization for Federal Milk Marketing Orders," Phillip Bishop, Ph.D. student, ARME, Feb. 9, 1 p.m., 401 Warren Hall.

### African Development, Institute for

"Role of NGOs in Promoting Sustainable Development: Experiences of World Vision/Ghana," Victor Addom, MPS student in human service studies, Feb. 12, 12:15 p.m., 208 W. Sibley Hall.

### Animal Science

"Energy Metabolism in the Donkey: Getting Something for Nothing?" Pam Mueller, animal science grad student, Feb. 13, 12:20 p.m., 348 Morrison Hall.

### Applied Mathematics

"Structure and Efficient Jacobian Calculation Using Automatic Differentiation OR How to Solve Large Systems of Nonlinear Equations Without

Pain," Thomas Coleman, computer science, Feb. 9, 3 p.m., 310 Rhodes Hall.

### Astronomy & Space Sciences

"Observing the Unobservable: The Submillimeter Wave Astronomy Satellite Views Molecular Clouds With Aspirations of Stardom," Gary Melnick, Harvard University, Feb. 8, 4:30 p.m., 105 Space Sciences.

### Biochemistry

"Bud Emergence and the Control of Signaling/Morphogenesis Complexes in Yeast," Alan Bender, Indiana University, Feb. 9, call 255-5700 for time and location.

### Biogeochemistry

"Biogeochemistry and the Ribosome: Towards a Unified View of Cellular and Ecosystem Processes," Feb. 9, 4 p.m., A106 Corson Hall.

### Biophysics

"Membrane Structure and Dynamics by Spin Label Saturation ESR," Derek Marsh, Max Planck Institute at Gottingen, Feb. 14, 4:30 p.m., 700 Clark Hall.

### Chemical Engineering

"Bone Tissue Engineering Using Biodegradable Polymer Scaffolds," Anthony Mikos, Rice University, Feb. 13, 3:45 p.m., 255 Olin Hall.

### Chemistry

TBA, Geoffrey Bodenhausen, Florida State University, Feb. 15, 11:15 a.m., 119 Baker.

### Cognitive Studies/Computer Science

"Deictic Codes for the Embodiment of Cognition," Dana Ballard, University of Rochester, Feb. 9, 3:30 p.m., 202 Urs Hall.

### Ecology & Systematics

"Maintenance of a Floral Polymorphism in Morning Glories," Mark Rausher, Duke University, Feb. 14, 4 p.m., A106 Corson Hall.

### Electrical Engineering

"Digital Electronic Still Imaging: A System Analysis and Simulation," Michael Kriss, University of Rochester, Feb. 13, 4:30 p.m., 219 Phillips Hall.

### Environmental Health & Safety

"Adventures in Environmental Health," director, Tompkins County Environmental Health Division, Feb. 14, 11:45 a.m., 118 Humphreys Service Building.

### Floriculture & Ornamental Horticulture

"Developing a Market Strategy for Floriculture Products to Meet Hispanic Demand," Enrique Figueroa, agricultural, resource & managerial economics, Feb. 12, 12:20 p.m., 404 Plant Science Building.

### Food Science

"The Popcorn Experience: Wine and Food Pairings," Barbara Lang, Hotel School, Feb. 13, 4:15 p.m., 204 Stocking Hall.

### Fruit & Vegetable Science

"Apple Breeding Programs in Japan," Hideo Bessho, visiting scientist, Feb. 8, 4 p.m., 404 Plant Sciences Building.

"Taking a Horticultural Approach to Enhance Dietary Iron From a Green Leafy Vegetable," Anu Rajanarayanan, vegetable crops candidate, Feb. 13, 4 p.m., 404 Plant Science Building.

"Seed Production and Genetic Variation in Garlic," Phil Simon, University of Wisconsin at Madison, Feb. 15, 4 p.m., 404 Plant Science Building.

### Genetics & Development

"Analysis of PAR-2 in *C. elegans* Embryos."

**Continued on page 11**

another from doing so, nor does it reduce their value to others. In fact, often information becomes more valuable as more people have access to it.

"TV shows have the same economic characteristics," he continued. "And we see this same model is [properly] used: While producers must be paid enough to produce the show economically, efficient pricing and allocation for public goods implies that the show be given away – and that's what happens when it's broadcast."

McAdams served as a senior staff economist with the President's Council of Economic Advisors and as chief economic consultant and expert witness for the government in United States vs. IBM. He is the principal author of a number of reports on the national information infrastructure for the Committee on Communications and Information Policy (Institute of Electrical and Electronics Engineers).

**'The Internet owes its birth to universities, that largely paid for it, and its success to the university's imperative to share knowledge freely under the "publish or perish" incentive structure.'**

– Alan McAdams

# CALENDAR

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Lynn Boyd, Feb. 14, 12:20 p.m., small seminar room, Biotechnology Building.

#### Geological Sciences

"Theories of Landforms and Drainage Networks," Don Turcotte, Feb. 8, 4:30 p.m., 1120 Snee Hall.

"The African Superswell," Andy Nyblade, Pennsylvania State University, Feb. 13, 4:30 p.m., 1120 Snee Hall.

#### International Studies in Planning

"Social Movements and Mobilization in South Asian Cities," Smitu Kothari, visiting lecturer, Feb. 9, 12:15 p.m., 115 Tjaden Hall.

#### Microbiology

"Walleye Dermal Sarcoma Virus: A New Twist on an Old Disease," Kathy Ernest-Koontz, microbiology & immunology, Feb. 9, 12:15 p.m., Boyce Thompson Auditorium.

Barton Laboratory, Geneva.

"Virus Resistant Transgenic Crops: Do Risks Outweigh Benefits?" Marc Fuchs, plant pathology, Geneva, Feb. 14, 12:20 p.m., 404 Plant Science Building.

#### Psychology

"Brain Organization for Language in Children and Adults: Why Language Cannot Be a Mental Organ," Elizabeth Bates, University of California at San Diego, Feb. 13, 4:15 p.m., 202 Uris Hall.

#### South Asia Program

"Hear the Tale of the Famine Year: Colonialism, 'Custom' and Poetic Critiques of 'Tradition' and the State in 19th Century India," Gloria Goodwin Raheja, University of Minnesota, Feb. 9, 3:30 p.m., 215 McGraw Hall.

"Conserving Trees, Protecting Tribes: The Future of the Tribal Communities in the Central Provinces," Archana Prasad, visiting scholar, Feb. 12, 12:15 p.m., G-08 Uris Hall.

#### Textiles & Apparel

"Limiting Dermal Exposure of Workers to Pesticides From Contaminated Clothing," Laurie Wormser, Feb. 8, 12:20 p.m., 317 Martha Van Rensselaer Hall.

The musical *Working*, based on the book by Studs Terkel, takes a look into the everyday lives of American workers. The first musical in five years staged by the Theatre Arts Department, it will play Feb. 15 through 18 and Feb. 21 through 24 at 8 p.m., and Feb. 18 and 24 at 2 p.m. in the Class of '56 Flexible Theatre. Tickets are \$8 for the public and \$6 for students and seniors. For more information, call the CTA box office at 254-ARTS.

# miscellany

#### Alcoholics Anonymous

Meetings are open to the public and will be held Monday through Friday at 12:15 p.m. and Saturday evenings at 5 p.m. in Anabel Taylor Hall. For more information call 273-1541.

#### Benefit

Border Fund 7th Annual Fiesta Grande: Mexican dinner and music to benefit refugee shelters in

# sports

Home games are in ALL CAPS.  
Records are as of Monday.

#### Men's Basketball (6-11, 2-4 Ivy)

Feb. 9, YALE, 7:30 p.m.

Feb. 10, BROWN, 7:30 p.m.

The Cornell men's basketball team is coming off what would have to be considered an encouraging weekend, despite losses on the road to traditional Ivy League powerhouses Penn (77-63) and Princeton (57-54).

#### Women's Basketball (9-9, 4-2 Ivy)

Feb. 9, at Yale

Feb. 10, at Brown

The Big Red went 1-1 last week, beating Pennsylvania 74-50 and losing to Princeton 82-76. Senior guard Mary LaMacchia (Cincinnati, Ohio), who was named the Ivy League's Co-Player of the Week on Monday, poured in a game-high 25 points to lead the women cagers to a victory over visiting Penn, Friday, at the Newman Arena, and became the seventh player in Cornell women's basketball history to reach the 1,000-point plateau.

#### Women's Fencing (5-9, 0-6 Ivy)

Feb. 24-25, at NIWFA Championships.

The women's fencing team traveled to Brandeis last weekend to take on MIT, Boston College, Wellesley and Ivy League opponent Brown. Overall, the Big Red defeated Boston College 17-15 and defeated M.I.T. on touches, 126-123. Cornell's fencers lost to Brown 18-14 and to Wellesley 17-15.

#### Women's Gymnastics (1-5)

Feb. 7, at Ithaca College

Feb. 10, HOWARD JOHNSON/BIG RED INVITATIONAL, 1 p.m.

The women's gymnastics team enjoyed a slight increase in its team scores, but came up empty-handed last week with a pair of losses, falling to Pittsburgh (188.4-168.7) and Indiana University of Pennsylvania (178.15-170.40).

#### Men's Hockey (11-7-3, 8-3-3 ECAC)

Feb. 9, DARTMOUTH, 7:30 p.m.

Feb. 10, VERMONT, 7 p.m.

The men skaters picked up four points on the road this past weekend for the first time this season. Last Saturday night, the Red defeated Yale 6-4 after beating Princeton 3-2 in overtime the previous evening.

#### Women's Hockey

Feb. 10, DARTMOUTH, 2 p.m.

Feb. 11, BOSTON COLLEGE, 2 p.m.

#### Men's Polo

Feb. 10, HARVARD, 8:15 p.m.

#### Women's Polo (7-3)

Feb. 9, HARVARD, 7:30 p.m.

The women's polo team kicked off the spring season with an exciting 14-14 tie game against the Ithaca Polo Club at the Equestrian Center Saturday night.

#### Squash (6-13, 0-6 Ivy)

Feb. 10, HAMILTON, NAVY, 10 a.m.

The squash team went 2-1 last weekend, beating Denison (6-3) and Hobart (6-3), while losing to Bowdoin (5-4).

#### Men's Swimming (5-5, 4-4 EISL)

Feb. 6, COLGATE, 4 p.m.

Feb. 10, HARVARD, 12 p.m.

The men's swim team fought its way back to a .500 record with a 130-96 win over Brown last Saturday.

#### Women's Swimming (6-4, 3-3 Ivy)

Feb. 6, COLGATE, 4 p.m.

Feb. 9, HARVARD, 4 p.m.

After a strong showing at home against Buffalo on Wednesday, Jan. 31, the women's swim team hit the road and lost a tough meet against Brown 169-128 on Saturday.

#### Men's Indoor Track (4-6)

Feb. 9-10, PENN STATE, TORONTO, WATERLOO, WESTERN ONTARIO and PENNSYLVANIA

The Big Red placed third at Bucknell last week with a score of 51 points. Bucknell finished first with 64 points, while Yale was second with 64 points.

#### Women's Indoor Track (8-2)

Feb. 9-10, PENNSYLVANIA, TORONTO, WATERLOO and WESTERN ONTARIO

The Big Red took first place in a triangular meet at Bucknell last Saturday with a score of 86 points. Bucknell placed second with 45 points and Yale had a third-place showing with 39 points.

#### Wrestling (11-3, 2-1 Ivy)

Feb. 9, BROWN, 9 p.m.

Feb. 10, HARVARD, 1 p.m.

The 15th-ranked Cornell wrestling team won a 28-10 win over visiting Columbia at the Newman Arena Saturday afternoon, and over Ithaca College 38-3 at IC's Ben Light Gymnasium Saturday evening.

# symposia

#### Sexual Health Awareness Week

Sexual Health Awareness Week will be held Feb. 12 through 16 and will include several events:

- Student volunteers in the Gannett Health Center Contraception, Gynecology and Sexuality Services unit and the Glamour/Hanes Hosiery Hand in Hand national breast-health education program will address breast cancer with a special workshop Tuesday, Feb. 13, beginning at 7:30 p.m. in David L. Call Alumni Auditorium of Kennedy Hall. Saralyn Mark, medical adviser to the Office on Women's Health in the U.S. Department of Health and Human Services, will give a presentation.
- Health information tables will be staffed by student volunteers throughout the week in various campus buildings.

- Student peer educators from the Sexuality and AIDS Facts, Education and Responsibility (SAFER) program are sponsoring a game night of "Sexual Jeopardy," scheduled for Monday, Feb. 12, at 7:30 p.m., in Noyes Center.

Texas and California, Feb. 9, 6:30 p.m., St. John's Episcopal Church, 210 N. Cayuga St. Adults, \$15, kids under 12, free. For information, call 272-2262.

#### Book Signings

On Feb. 8 from noon to 1:30 p.m., local cookbook author and former restauranteur Jay Solomon will be at the Campus Store signing copies of his newest cookbook, *Vegetarian Soup Cuisine*. A recipe from the book will be available for tasting. The Campus Store is offering a 20 percent discount on his book the day of the signing.

#### Emotions Anonymous

This 12-step group that helps people deal with emotional problems meets for a discussion meeting on Sundays at 7:30 p.m. and a step meeting on Tuesdays at 8 p.m. at the St. Luke Lutheran Church, 109 Oak Ave., Collegetown. For more information call 387-0587.

#### Internet Workshops

The following workshops will be presented by the reference staff of Olin/Uris libraries from 2:30 to 4:30 p.m. in the Uris Library Computer Lab:

- Introduction to the Internet, Feb. 12.
- Advanced Internet, Feb. 19.

#### Lunchtime Meditation

For beginner through experienced meditators, health educator Nanci Rose will give instruction in various techniques Wednesdays from 12:15 to 1 p.m. in the North Room of Willard Straight Hall. Open to all faculty and staff and sponsored by the ALERT Peer Education Program. For information, call Gannett at 255-4782.

#### Writing Workshop's Walk-in Service

Free tutorial instruction in writing.

- 178 Rockefeller Hall, Sunday, 2 to 8 p.m., Monday through Thursday, 3:30 to 5:30 p.m. and 7 to 10 p.m.

- RPCC, Conference Room 3, Sunday through Thursday, 8 to 11 p.m.

- 320 Noyes Center, Sunday through Thursday, 8 to 11 p.m.

# theater

#### Theatre Arts Department

David Mamet's *Oleanna* will be staged by the Theatre Arts Department Feb. 8-10 at 8 p.m. and Feb. 10 at 2 p.m. in the Center for Theatre Arts' Film Forum. Tickets are \$6 and \$8. Call 254-ARTS for information.



February 8  
through  
February 15

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

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

Open to the Cornell community and the general public. All events are free unless noted. Beginners are welcome. No partner necessary. For information, contact Edilia at 387-6547.

Feb. 11, North Room, Willard Straight Hall: 6:30 p.m., monthly planning meeting; 7:30 p.m., easy Hungarian dances taught by Leon Harkleroad; 8:30 p.m., request dancing.

### Israeli Folkdancing

Thursdays, 8 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. Telephone: 255-6464.

- "Barbara Kasten: Buried," through March 10.
- "The City That Never Sleeps: 20th Century Prints of New York City," through March 10.
- "Renaissance Prints and Drawings: Power and Glory," through March 17.
- "Matisse: The Jazz Series," through March 24.
- "Transformers," through March 24.
- "The Tempo of the City: New York Photography in the 20th Century," Feb. 10 through March 24.
- A public reception will be held Feb. 10 from 5 to 7 p.m. at the museum to celebrate the new exhibitions.
- Art for Lunch gallery talks: "Renaissance Masters" with Carolyn Peter, Mellon print room assistant, Feb. 8, noon.

Sunday Afternoon Artbreaks: "19th Century American Art," Sandra Klinge, senior docent, Feb. 11, 2 p.m.

• Rescheduled: The gallery talk with artist Barbara Kasten originally scheduled for Thursday, Feb. 8, at 5 p.m. has been postponed until Thursday, Feb. 29, at 5 p.m. A panel discussion with Kasten scheduled for this Saturday, Feb. 10, has been canceled.

### Hartell Gallery (M-F, 8 a.m. to 5 p.m.)

Work by architecture students of Sophia Gruzdys, through Feb. 10.

Work by B.F.A. candidates, Feb. 11 through 17.

### Kroch Library

The Carl A. Kroch Library is exhibiting the work in wood of Elfriede Abbe, highlighting the artist's private press books, wood-block prints and wood

sculpture from 1950 to 1994. The exhibit is open Monday through Friday, 8 a.m. to 5 p.m. and Saturday, noon to 5 p.m. in the Division of Rare and Manuscript Collections, 2B Kroch Library.

### Tjaden Gallery (M-F, 8 a.m. to 5 p.m.)

Exchange with Elmira College, through Feb. 16.

## films

Films listed are sponsored by Cornell Cinema unless otherwise noted and are open to the public. All films are \$4.50 (\$4 for students and children under 12), except for Tuesday night Cinema Off-Center at the Center for Theatre Arts (\$2) and Saturday or Sunday matinees (\$3.50). Films are held in Willard Straight Theatre except where noted.

### Thursday, 2/8

"Nostalghia" (1983), directed by Andrei Tarkovsky, with Erland Josephson, 7 p.m.  
"I Can't Sleep" (1994), directed by Claire Denis, with Katerina Golubeva, Richard Courcet and Alex Descas, 9:30 p.m.

### Friday, 2/9

"Living in Oblivion" (1995), directed by Tom DiCillo, with Steve Buscemi, James Le Gros and Catherine Keener, 7:10 p.m., Uris.  
"I Can't Sleep," 7:20 p.m.  
"Dead Presidents" (1995), directed by Allen and Albert Hughes, with Larenz Tate, 9:20 p.m., Uris.  
"Devil in the Flesh" (1987), directed by Marco Bellocchio, with Maruschka Detmers and Federico Pitzalis, 9:45 p.m.  
"Roujin-Z" (1995), directed by Katsuhiro Otomo, midnight, Uris.

### Saturday, 2/10

"The Emperor's Nightingale" (1951), directed by Jiri Trnka, narrated by Boris Karloff, Ithakid Film Fest, 2 p.m., \$2/\$1.50 kids 12 and under.  
"Dead Presidents," 7:10 p.m., Uris.  
"Devil in the Flesh," 7:20 p.m.  
"I Can't Sleep," 9:45 p.m.  
"Living in Oblivion," 9:45 p.m., Uris.  
"Roujin-Z," midnight, Uris.

### Sunday, 2/11

"Living in Oblivion," 4:30 p.m.  
"Dead Presidents," 7 p.m.

### Monday, 2/12

"Amphytrion - Happiness From the Clouds" (1935), directed by Reinhold Schunzel, 5 p.m., free.  
"Romance in a Minor Key" (1943), directed by Heinz Kautner, with Marianne Hoppe, 7:15 p.m.  
"Dead Presidents," 9:30 p.m.

### Tuesday, 2/13

"The Lady Eve" (1941), directed by Preston Sturges, with Barbara Stanwyck and Henry Fonda, 7 p.m.  
"New Video Japan II," directed by various, 7:30 p.m., Center for Theatre Arts Film Forum.  
"Strange Days" (1995), directed by Kathryn Bigelow, with Ralph Fiennes, Angela Bassett and Juliette Lewis, 9:15 p.m.

### Wednesday, 2/14

"Dr. Jekyll and Mr. Hyde" (1941), directed by Victor Fleming, with Spencer Tracy, Ingrid Bergman and Lana Turner, 7 p.m.  
"Vampires in Havana" (1985), directed by Juan Padron, Spanish with English subtitles, presented by CUSLAR and LASP, 8 p.m.  
"Strange Days," 9:30 p.m.

### Thursday, 2/15

"Law of Desire" (1987), directed by Pedro Almodovar, with Eusebio Poncela and Carmen Maura, 7:15 p.m.  
"Strange Days," 9:30 p.m.

## graduate bulletin

**Reduced tuition:** An application form for reduced tuition must be filed with the Graduate School when applying for reduced tuition for the first time. To receive reduced tuition for this semester, the form must be received by Feb. 9.

**Dissertation/thesis seminars:** will be held in the Morison Seminar Room, Corson/Mudd Hall: master's on Monday, Feb. 12, 2 p.m.; doctoral on Tuesday, Feb. 13, 2 p.m. The thesis adviser will discuss preparing and filing theses and dissertations; students, faculty and typists are encouraged to attend.

**Income tax:** International students with Cornell fellowships from which Cornell withheld tax will receive their Form 1042-S by March 15. You must use the form 1042-S along with the form W-2 "Wage and Tax Statement" (if you were also an employee) when filing your 1995 personal income tax return.

**Commencement:** is Sunday, May 26. To receive a May degree, the deadline for completing all



**Yolanda Adams will perform at the 20th annual Festival of Black Gospel Feb. 16 at 7 p.m. in Bailey Hall.**

## Grammy nominee Yolanda Adams will headline Black Gospel Festival

By Darryl Geddes

Yolanda Adams, a 1996 Grammy nominee whose award-winning albums have been mainstays of *Billboard* magazine's gospel charts, will headline the 20th Annual Festival of Black Gospel at Feb. 16 to 18. The festival is the centerpiece of the university's celebration of Black History Month.

Adams will perform Friday, Feb. 16, at 7 p.m. in Bailey Hall. Also performing will be David Frazier and Shekinah. Tickets are \$10; \$7 with Cornell student ID; and are available at Logos Bookstore on the Ithaca Commons and the Willard Straight Hall ticket office. Group rates also are available.

Adams' debut album for Tribute Records, *Through the Storm* (1991), catapulted her to the forefront of gospel music as she picked up Stellar, Dove and Excellence awards, recognizing her as the year's best female gospel vocalist. Her follow-up album, *Save the World* (1993), held firm on *Billboard* charts for more than 60 weeks and garnered her a Grammy Award nomination as Best Contemporary Soul Gospel Album and three Stellar Awards: Album of the Year, Song of the Year and Best Female Solo Performance.

The Houston native captured her second Grammy Award nomination with her new-

est offering, *More Than a Melody* (1995). The 1996 Grammy Awards presentation is Feb. 28.

Frequently compared to Whitney Houston and Anita Baker, Adams, a former schoolteacher, is a singer who moves effortlessly and comfortably between gospel, pop, jazz, soul, funk and hip hop.

One of the most anticipated events of the Cornell festival is the free performance of the Mass Choir, Saturday, Feb. 17, at 7 p.m. in Bailey Hall. The Mass Choir is an opportunity for anyone in the community to participate in the singing of gospel music. Interested individuals must attend rehearsals that begin at 9 a.m. that day in Bailey Hall. In addition to the Mass Choir, gospel choirs from across the northeastern United States will perform.

The Mass Choir is directed this year by James Hall, a writer, singer and director of gospel choirs since childhood. The Worship and Praise choir, created by Hall as a gospel choir for his Brooklyn high school, received national recognition for its first recording, *God Is in Control*.

The Festival of Black Gospel concludes with a worship service Feb. 18 at 4 p.m. in Robert Purcell Community Center on North Campus. Elder Frank Anton White of Hempstead, N.Y., is the featured speaker.

requirements is May 17. Deadlines are earlier to have a diploma available for pickup following the commencement exercises (March 15) or to have one's name appear in the commencement program (March 29). A ceremony to individually recognize Ph.D. candidates will be at Barton Hall, Saturday, May 25, 5 p.m.; family, friends and faculty are invited. A reception follows the ceremony. Information will be in commencement packets available in March at the Graduate School.

**Degree requirement:** To receive a graduate

degree, students must have their final undergraduate transcript on file with the Graduate School showing the conferral date of their undergraduate degree. If your graduate application for admission was made before the conferral of your undergraduate degree and you have not had a later transcript sent, contact your undergraduate institution to have a final transcript sent to the Graduate Records Office, Sage Graduate Center.

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