

CORNELL Chronicle

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GOWN HELPS TOWN

Cornell's economic and social impact on the city is positive, writes Henrik N. Dullea, vice president for university relations.

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GUEST CHEFS

The chef and owner of the Arcadia restaurant in New York City will serve up some special treats this month.

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Fewer foods predicted for crowded future meals

By Roger Segelken

ATLANTA — With twice today's population of 260 million and one-third the per-capita farmland, Sunday dinners in America will be crowded, costly affairs with little meat and a smaller choice of vegetables, Cornell ecologists predict.

"Urbanization and soil erosion will take away much of the land now used to grow crops and feed livestock. Together with diminishing water supplies — especially in the Sunbelt — this will cut the variety of crops now grown in the U.S.," according to David Pimentel, professor

of ecology in Cornell's College of Agriculture and Life Sciences. "The U.S. diet will shift from a mixed plant/animal diet to a more vegetarian diet, and certainly

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one with less choice than we now enjoy."

Pimentel's dietary predictions were delivered Feb. 17 in a session on "Global Population: Environmental, Technological and Economic Factors" at the annual meet-

ing of the American Association for the Advancement of Science (AAAS). The projections are based on a study by Pimentel and Mario Giampietro, a member of Rome's Istituto Nazionale della Nutrizione and a visiting associate professor of entomology at Cornell. Their report, "Food, Land, Population and the U.S. Economy," was commissioned by Carrying Capacity Network, a Washington, D.C.-based, nonprofit population/environmental organization.

The ecologists' report foresees U.S. population doubling by the year 2050 to 520 million, the result of the current 1.1 percent annual rate of growth. Population growth is

mainly fueled by "an unprecedented number of legal and illegal immigrants and their high birth rate," the ecologists reported, adding, "Such a major expansion will drastically decrease per-capita availability of all resources that support human life."

One key resource is arable land available for cultivation — now nearly 470 million acres or about 1.8 acres of cropland per capita — enough to provide Americans with an ample diet of plant and animal products while exporting about \$155 worth of food per capita each year.

While population expansion reduces the

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Earthquake damage



Thomas D. O'Rourke, professor of civil and environmental engineering, took this photo Feb. 3 of a wharf deformed by 2.5 meters of lateral displacement resulting from soil liquefaction at Rokko Island, near Kobe, Japan. The movement caused the pavement to drop 2.5 meters and deformed the steel cranes so they are no longer usable. Members of the National Science Foundation Earthquake Reconnaissance Team are surveying the earthquake damage.

Thomas D. O'Rourke

Gay, lesbian youths found to score well on self-esteem

By Susan Lang

Although gay, lesbian and bisexual youths are at higher risk for behavior problems than heterosexual youths because of chronic stress from verbal and physical abuse from adults and peers, their level of self-esteem as young adults is equal to that of their heterosexual peers, according to a Cornell study.

"The verbal and physical abuse that bisexual, lesbian and gay male youths are subjected to are sources of great stress to them, are detrimental to their mental health and can often lead to school-related problems, substance abuse, criminal activity, prostitution, running away from home and even suicide," said Ritch Savin-Williams, Ph.D., a clinical psychologist and professor of human development and family studies in Cornell's College of Human Ecology.

"Nevertheless, research indicates that there's nothing inherently mentally disturbed or psychologically unhealthy about being gay, lesbian or bisexual and that such youths show no differences from heterosexual youths in self-esteem. If there is a higher rate of social or psychological problems, it is most likely because of the stigma, prejudice and stereotypes concerning same-sex attractions."

In the first review of the scientific literature on the abuse that gay, lesbian and bisexual youth endure from adults and peers and the stress it generates, published in the *Journal of Consulting and Clinical Psychology* (1994, Vol. 62, No. 2), Savin-Williams, an expert on issues concerning gay, lesbian and bisexual youth, found that up to three-quarters of young gay men and lesbians report having been verbally or physically abused because of their sexuality; about 25 percent report threats of physical violence.

Savin-Williams also recently conducted an exploratory study of 83 gay and bisexual male youths (17 to 23 years old), published in *Developmental Psychology* (January 1995). He found that, "gay and bisexual male youths have same-gender sex but they must be secretive about it, which takes a heavy toll. Just like other youths, they struggle with issues of identity and intimacy but they encounter a world that denies their very existence and disbelieves their ability

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Scientists need to communicate better, Sagan says

By Larry Bernard

Scientists should do a better job of popularizing their craft because "great numbers of people grow up on nothing but pseudoscience," Carl Sagan said last week.

"Science arouses a great deal of wonder, but so does pseudoscience," said Sagan, the David Duncan Professor of Astronomy and Space Sciences at Cornell. "Sparse, or poor popularizing of science creates a place for pseudoscience. There are enormous numbers of people who could be fulfilled by science, but are not."

Sagan delivered a lecture, "Science and Pseudo-Science," on Feb. 13 in an overflowing Rockefeller Hall classroom as part of a seminar series sponsored by the Department of Science and Technology Studies. He denounced scores of "new age science" manifestations, from astrology and crystal

powers to ESP, crop circles, channeling and hauntings to palmistry and numerology and the prophecies of Nostradamus.

of pseudoscience, than real science. He used as examples 4 million-year-old footprints, the building blocks of life being found in



'What other human institution gives rewards to those who disprove its deepest findings and its most revered thinkers? Science has an error-correcting mechanism. Can you imagine religion doing that? It's unthinkable.'

— Carl Sagan

Sagan, one of the world's foremost popularizers of science, said that many Americans know more about Atlantis or the Bermuda Triangle, both of which he put in the category

interstellar gas and viruses that subvert hereditary machinery in cells — all of which are just as interesting and have the added bonus,

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OBITUARIES

Lt. Larry Davis, a 20-year member of the Cornell Police, died Feb. 15 in a car accident in the Town of Ulysses.

"He was an outstanding law enforcement officer," said William Boice, acting director of Cornell Police. "He will be missed by all of us."

A graduate of Watkins Glen Central School and Elmira College, Davis, 49, served with the U.S. Air Force for seven years and was a veteran of the Vietnam War.

He is survived by his wife, Nancy Cullen Davis, of Hector; a son, Kristin Davis with the U.S. Air Force; and other family members in Hector and Largo, Fla.

A memorial service for Davis was held Feb. 18 in Watkins Glen. The family requests that contributions in Davis' memory be made to the Valois-Logan-Hector Ambulance Squad, the Schuyler County Ambulance Association, or the charity of one's choice.

James W. Cunningham, who served as director of Cornell Police from 1989 until last year, died of cancer at his home in Montour Falls Feb. 10. He was 51.

A veteran of the U.S. Marine Corps who served during the Vietnam War, Cunningham also was director of public safety at North Carolina State University in Raleigh.

A memorial service will be held in the near future, with details to be announced.

BRIEFS

Kram Award: The Women's Studies program is accepting applications for the Judith Ellen Kram Award for the 1995-96 academic year. The \$3,000 award is given to a student to support research on a topic of concern to women. The research must be done off campus and away from Ithaca, for academic credit and under supervision of a Cornell faculty member. For information call the Women's Studies Program office at 391 Uris Hall, 255-6480. Deadline is March 31.

Flora Rose Prize: Nominations are sought for the 1995 Flora Rose Prize, awarded to a junior or senior who "shall demonstrate the greatest promise for contributing to the growth and self-fulfillment of future generations." Nomination letters should be sent to Eileen Ames Talluto, Office of Student Services, N-101 MVR Hall, by Monday, March 6.

CORNELL Chronicle

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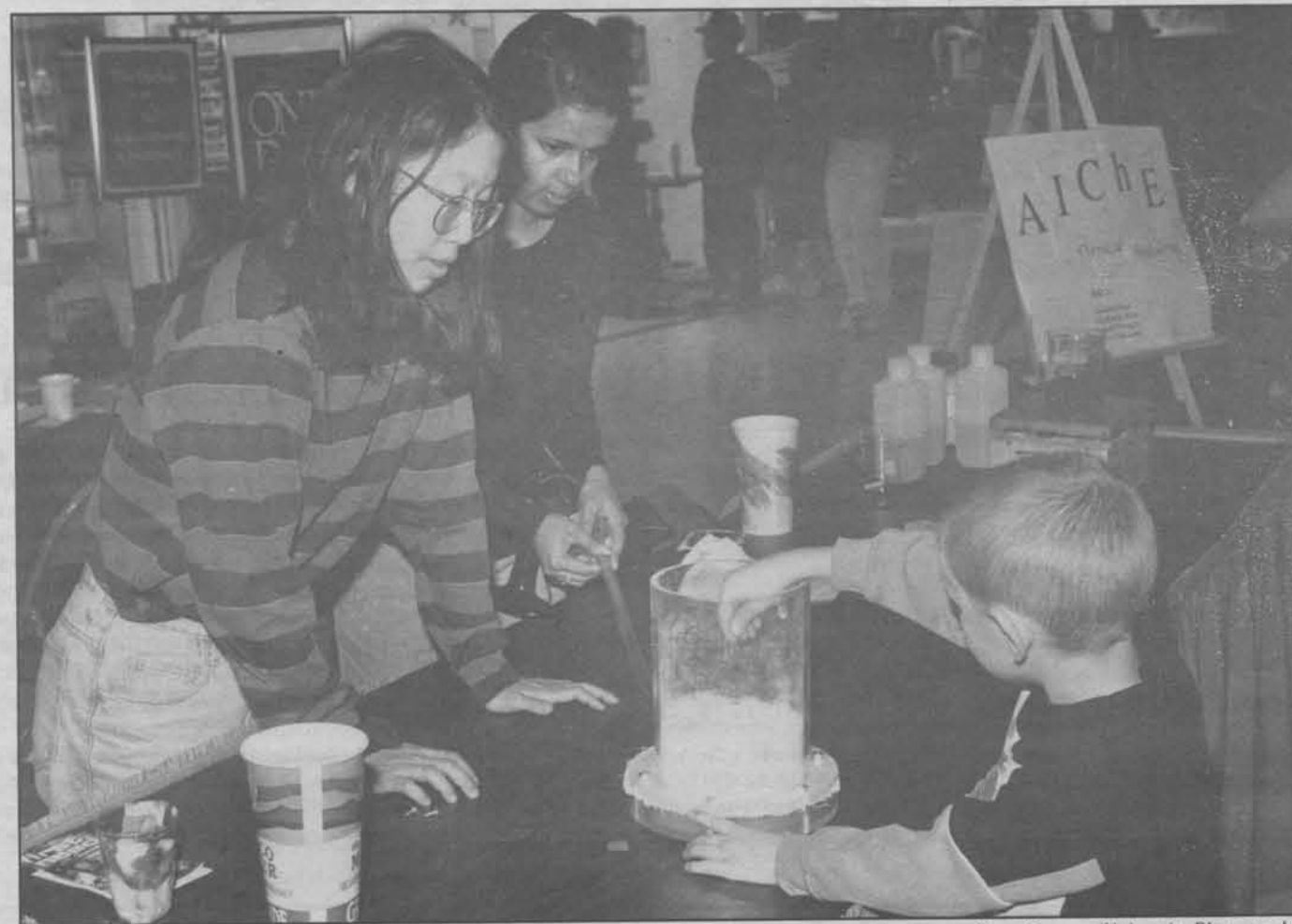
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Cornell University is committed to assisting those persons with disabilities who have special needs. A brochure describing services for persons with disabilities may be obtained by writing to the Office of Equal Opportunity, Cornell University, 234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

Engineering children's interest



Seniors Michelle Ying, left, and Shana Chacko demonstrate a fluidized polymer bed to Donald Krebs, 6, of Interlaken during Engineering Day at Pyramid Mall Feb. 18.

Peter Morenus/University Photography

Roderick Wallace to lecture on public interest issues

Roderick Wallace, technical director of the Public Interest Scientific Consulting Service, will present a series of lectures and seminars March 2 and 3 on such issues as public health, AIDS and segregation.

Since 1978, Wallace has been affiliated with the Public Interest Scientific Consulting Service, a New York City-based non-profit educational, social and welfare foundation that specializes in providing high-level technical consulting to unions, public officials and communities that ordinarily would not be able to afford such a resource.

Much of his research has centered on the effects of crime, AIDS and other health issues on America's inner-cities.

Wallace's schedule for March 2:

- Seminar: "Toward Quantifying the Environment of Community Life: What an

Empirical Analysis of Community Disintegration and its Consequences Say About Community Viability," from 10 to 11:30 a.m. in E405 Van Rensselaer Hall.

- Lecture: "Will AIDS be Contained within Urban Minority or Other Core Group Populations? A Critique of the National Research Council Study on Social Consequence of AIDS," from 12:15 to 1:30 p.m. in E405 Van Rensselaer Hall.

- Lecture: "Realities and Illusions of Segregation in the Age of 'Planned Shrinkage,'" 4:30 p.m., Africana Studies and Research Center, 310 Triphammer Road.

Wallace's schedule for March 3:

- Lecture: "Planning Perversions, 'Planned Shrinkage' and the Collapse of Public Health and Public Order in New York City," 12:15 to 2 p.m. in 115 Tjaden Hall.

- Seminar: "Public Policy and the Struc-

ture of Social Networks: Theoretical Analysis of Policy-Driven Community 'Phase Change' and of the Role of Social Networks in Marginalized Communities as Information Channels for the Transmission of both Infectious Disease and Violence," 3:30 to 5 p.m. in 32 Warren Hall.

Wallace's visit, part of the University Lecture series, is sponsored by Cornell Cooperative Extension, the Department of Human Service Studies, Parent HIV/AIDS Education Project, Africana Studies and Research Center, Program on International Studies in Planning, the Undergraduate Program in Urban and Regional Studies, the Department of City and Regional Planning, Family Life Development Center, Department of Rural Sociology and the Community and Rural Development Institute.

Sagan continued from page 1

Sagan said, "of being true."

Citing statistics that 50 percent of adults "do not know that the Earth revolves around the sun, and it takes a year to do it," and that "nine percent of American adults attest that humans evolved from non-human ancestors," Sagan said, "Something is clearly wrong in the communication of science."

Further, no "new age science" could approach the accuracy of real science, Sagan said. As an example, he pointed to determining the sex of an unborn child.

He said: "One way is to dangle a plumb bob over the abdomen. If it swings left, it's a boy; if it swings right, it's a girl. Your chances are one in two. Not bad. Or, you can have sonograms and amniocentesis, and your chances are 99 out of 100. Now that's really very good. Where in new age science do we have predictions of such accuracy?"

He said solar eclipses can be predicted, through Newtonian dynamics, to within 1 minute 1,000 years into the future, the same accuracy used to get interplanetary spacecraft to meet planets in orbit.

"That is truly stunning," Sagan said. "I claim there is no other area of human endeavor where predictability of this sort is even claimed, no less achieved."

Sagan also argued that the increase in life expectancy — "the best single index of quality of life" — had been at 20 to 30 years since

hunter-gatherers roamed the Earth, until 1870, when it increased to about age 40, then age 50 in 1915 until about age 80 for an infant born today. "That is stunning," he commented. "We can readily trace that it is due to medical technology and public health measures that were driven by science."

Sagan also said that the prevalence of pseudoscience is dangerous, "not just for science, but for democracy. The only conceivable solution is for scientists to do a better job of popularizing science," he said.

"What other human institution gives rewards to those who disprove its deepest findings and its most revered thinkers? Science has an error-correcting mechanism. Can you imagine religion doing that? It's unthinkable."

He continued, "To me, science involves a delicate balance between skepticism and wonder. The idea is to have a prudent mix of the two." He compared science to a democracy, where experiments are welcome and even the most outrageous opinions are permitted.

"We've arranged it so people don't understand science and technology, but sooner or later it's going to blow up in our faces," Sagan said. "The public understanding of science is a matter of urgent economical well-being."

"Scientists should do a great deal more to convey it."

Gay Youths continued from page 1

to develop same-sex romantic relationships." As a result, some are under great stress which may impair their coping abilities. They do not, however, interpret their stress as negativity toward themselves.

"They may feel condemned but don't feel they are doing anything wrong. Many persevere and cope with their hostile world and end up leading happy, productive lives with a healthy sense of self," Savin-Williams said.

However, for this to occur, they must have a "successful" adolescence, which includes resolving issues of same-sex intimacy.

"Our culture and the professionals who work with sexual minorities need to realize that the experiences of gay, lesbian and bisexual youths are part of a normal existence. Nevertheless, these youths often need special or extra attention because of the added stress they are under," he said.

Savin-Williams, who teaches courses on sexual minorities and human development, estimates that about 5 or 6 percent of the population considers themselves gay, lesbian or bisexual.

"We need to end the invisibility of romantic relationships among gay male, lesbian and bisexual youth and validate and support their existence. If our culture and those who work with youths would do this, the well-being of millions of youths would be enhanced," Savin-Williams concluded.

Lectures panel seeks nominees

The University Lectures Committee is seeking nominations for the Messenger Lecture Series and the University Lectureship.

The Messenger Lecture Series brings to campus some of the world's foremost scholars and public figures. The first opening for a Messenger Lecturer is spring 1996.

The University Lectureship is the most prestigious forum that Cornell can offer a visitor invited to deliver a single lecture. Approximately 12 University Lecturers are selected each year. The first openings are for fall 1995 and beyond.

Both lectureships should address issues that speak to the concerns of many fields of study. The following criteria must be met:

- Nominating letters must include the lecture title, the desired date, a capsule biography of the speaker and evidence of interdisciplinary appeal.

- The proposal must contain two or more seconding letters of nomination from faculty members in other departments describing the appeal of the topic in their area.

The committee encourages applications for lectures by women and members of minority groups.

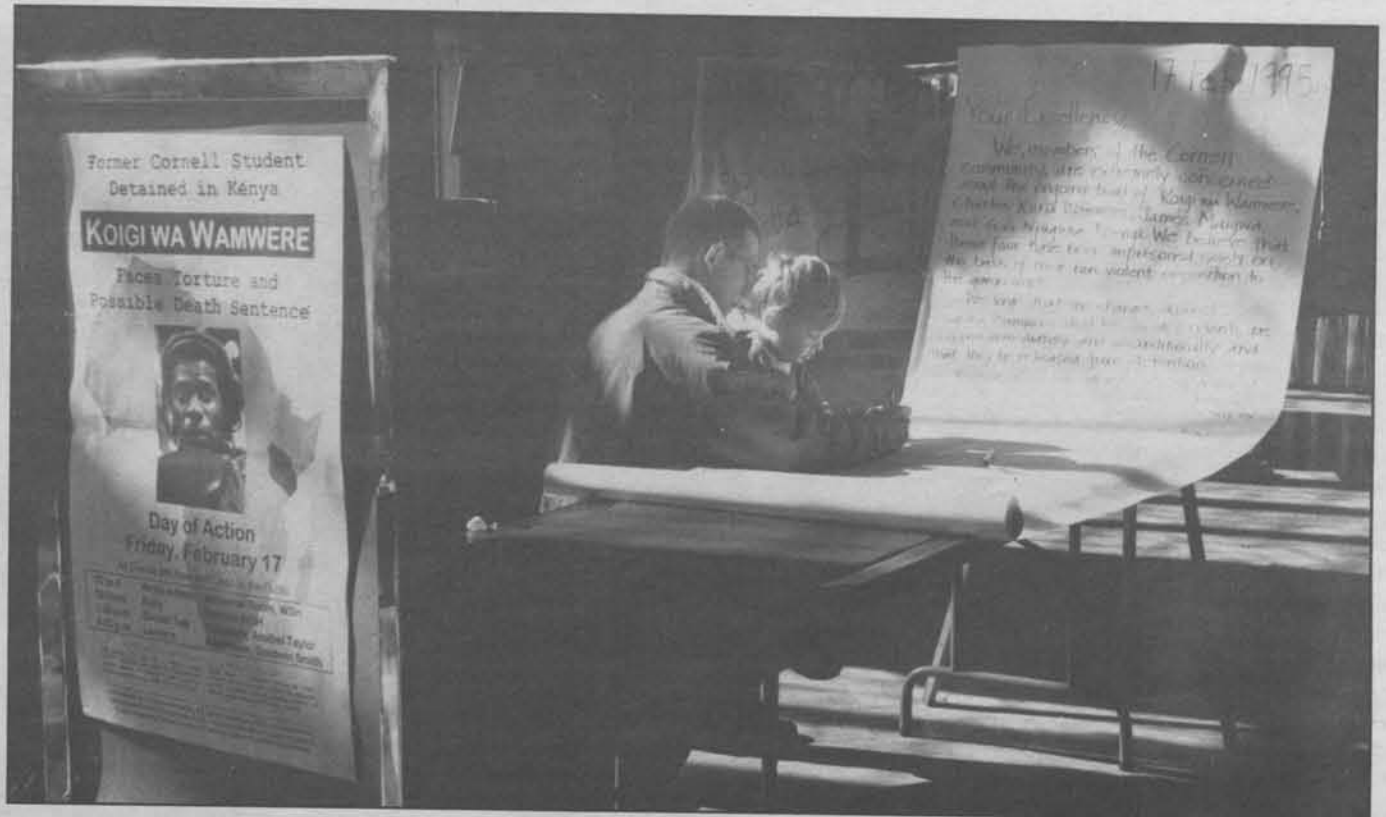
All University and Messenger Lecturers receive standard funding. When a group seeks joint sponsorship or a contribution toward expenses for a conference or symposium, the committee will consider contributing only when it appears its funding is indispensable. The following criteria must be met:

- Nominating letters must include the title, desired date, capsule biographies of speakers, expense estimate, a complete budget and the amount requested from the committee.

- The proposal must contain two or more seconding letters from faculty members in other departments.

Address nominations and inquiries should to Judy Bower, University Lectures Committee, 315 Day Hall (5-4843). Deadline is Sept. 1, 1995.

Trying to save a friend



Michael Koplinka-Loehr, a development consultant to CRESO, and his son Sam, 3, sign a petition Feb. 17 in the Willard Straight Memorial Room to be sent to the prime minister of Kenya. The petition seeks the release of political prisoner Koigi wa Wamwere, a former Cornell student.

Peter Morenus/University Photography

Hatfield Fund proposals are due by late April

The Hatfield Fund to Enhance Undergraduate Economics Education is seeking proposals for the 1995-96 academic year.

The fund offers "financial support to faculty members who propose innovative ways of strengthening the teaching of economics to undergraduate students."

This year there is about \$40,000 to distribute. The Hatfield Review Committee

is willing to fund one or two proposals in the \$10,000 range as well as several smaller projects. If a project merits, the committee will approve multi-year funding. The committee is particularly interested in proposals that stretch across the university, creating connections among the many avenues through which economics education is offered. Guidelines have been broadened to leave flexibility for innovative proposals

that would enhance traditional classroom instruction in economics education for undergraduate students.

Proposals should be limited to three or four pages and include a detailed projection of expenses. Deadline is April 28 to Susan H. Murphy, vice president for student and academic services, 311 Day Hall.

The committee will award grants by the end of May.

Cornell's economic, social impact on the city is positive, Dullea says

By Henrik N. Dullea

There has been much discussion recently regarding the relationship between the city of Ithaca and Cornell.

In particular, Mayor Nichols claims that Cornell should annually pay the city as much as \$2.5 million to offset "the burden" Cornell's tax-exempt property places on city services and infrastructure. Similarly, the city attorney has described such a payment as a "favor," in return for which the Common Council would more likely consider amending its zoning ordinance related to parking—a local law that presently has no provision for a university campus environment.

Let there be no mistake about it, Cornell is not asking the city for any "favors." We do expect, however, that ordinances will not be applied arbitrarily and capriciously as leverage to force additional voluntary contributions.

Let's take a close look at this alleged burden.

The mayor has requested \$1 million annually for the burden on the city of providing fire-protection services to Cornell. And yet, former Ithaca Fire Chief Ed Olmstead, in his 1990 presentation to the mayor's Cornell-City Relations Study Commission, reported that no special equipment or staffing needs are imposed on the Ithaca Fire Department by the presence of Cornell and Ithaca College. He further stated that even if there were no calls to either campus, city equipment and personnel costs would remain essentially the same.

Nevertheless, because the university believes the community should sustain high-quality fire protection services, it has made an annual voluntary contribution to the city for fire protection—over \$2 million since 1967. We also donated land on West Hill for the construction of its new fire station and subsidized the cost of a sewer extension to the facility.

Our most recent five-year pledge of support, which was warmly welcomed by municipal officials, generates approximately \$145,000 this year toward the cost of fire protection services. We have said repeatedly that we are prepared to discuss another multi-year arrangement, but President Rhodes directly informed the mayor last summer that a seven-fold increase was out of the question.

Cornell maintains the second-largest law enforcement agency in Tompkins County, thereby relieving other overlapping police jurisdictions, including the city, of a major burden and allowing them to concentrate their energies elsewhere on high-priority prevention and enforcement. We believe this makes sense for both the community and the university.

Cornell's property tax exemption places no burden on

local water and sewer infrastructure, as Cornell operates its own water system. In fact, it serves as a backup to the city and Bolton Point systems. Cornell pays for sewer services just like everyone else—\$942,000 last year. The university collects its own garbage and pays the going tipping-fee charges at the landfill, as well as the county annual recycling fee—\$362,000 and \$262,000 respectively, last year.

The mayor has stated that Cornell employees and visitors cause wear and tear on city streets and bridges. Six of the top 10 employers in Tompkins County, including the city itself, are tax-exempt. Is the mayor suggesting that schools, churches, hospitals, government and other tax-exempt entities make payments to the city for the jobs they create? Cornell does provide and maintain its own streets, bridges, parking, storm

impact on construction jobs and purchases.

Recognizing its responsibility, Cornell presently makes an annual voluntary contribution of \$150,000—more than \$2.5 million since 1976—to the Ithaca City School District for the children of Cornell student families who live in the university's tax-exempt family housing and who attend Ithaca schools. This is in addition to repeated donations of equipment to our local school districts.

While Cornell is one of the larger tax-exempt entities in the county, it is also true, and little known, that Cornell is one of the largest property-tax payers as well. Nearly \$1 million (\$955,052) in property tax payments to local municipalities and school districts were made last year for university land that is not part of its educational mission.

Cornell does pay its fair share. And, the information provided here does not include the university's voluntary contributions to local affordable housing, child care, arts and economic development organizations.

Finally, on the matter of tax burden, data provided by the State Comptroller's Office of Municipal Affairs, show that the city of Ithaca's 1993 equalized real property tax rate was the ninth-lowest of 11 small cities with populations in the 25,000-35,000 range, such as Auburn, Elmira and Jamestown. 10 communities has substantially less tax-exempt property than the city of Ithaca. At the same time, Ithaca's sales tax revenue was the third-highest in the group, exceeded only by Saratoga Springs and Watertown. Clearly, the tourism, economic development and additional local spending generated by the presence of Cornell and Ithaca College are having an extraordinarily positive effect on the local tax base.

No, I do not agree with Mayor Nichols that Cornell places a burden on the city's infrastructure or its services. The overall economic, civic, social and cultural impact of the university on the surrounding communities has been extraordinarily positive. Cornell and the greater Ithaca community it calls home form a network of relationships that have developed and matured for over a century-and-a-quarter. Our heritage is one and the same.

Town and gown here strengthen each other in ways that create a vitality and stability rarely matched elsewhere in the nation. As the city and the university face the uncertainties of state and federal cutbacks, working together can keep it so.

Henrik N. Dullea is vice president for university relations.

commentary

sewers, snow removal and other services, spending over \$9.7 million annually in the process—services often provided by the municipality to universities in other communities.

Cornell donated land to the city for the construction of a parking garage in Collegetown, as well as cash for street improvements in that area. And Cornell provides its own public-transit system, operates Tompkins County's public transit system, makes cash subsidies to the city and other public transit systems and provided 50 percent of the local match—twice the city share—for construction of the multi-million dollar Ithaca-Tompkins County Transportation Center. The construction subsidy was over \$823,000, and annual operating subsidies for the transit program exceed \$550,000.

Construction activities, small and large, on the endowed campus place no burden on the city building department as the university pays building permit fees for these projects just like everyone else. The fee for the S. T. Olin/Baker Laboratory project building permit that the city has denied was \$40,050, and the city permit fee for the proposed Sage Hall project would be nearly \$125,000. With almost \$100 million in projects planned by the university in the near future, the city's denial of building permits will have a severe impact on its own revenues, as well as a devastating

New student-run espresso bar opens at Statler

By Darryl Geddes

Americans have rediscovered the taste of coffee, said Ernesto Illy, one of the most respected elders of the coffee industry. Illy, president and managing director of illycaffè of Trieste, Italy, said Americans are discovering what many Europeans, especially the Italians, have known for centuries: that a perfectly brewed cup of coffee is a taste experience with few equals.

To prove his point, Illy traveled to Cornell last week to be the guest of honor at the Feb. 9 grand opening of Latte Letterate, a new student-run espresso bar located in the Statler Hotel's Regent Lounge.

The overflow crowd in the Regent Lounge sampled illycaffè's special blends of espresso as a coming attraction of what will be served regularly at the espresso bar Mondays, Wednesdays and Fridays from 8:15 to 10:15 a.m. Among the nine varieties of coffee served is a pungent, rich-tasting concoction of espresso, steamed milk and raspberry syrup called Big Red.

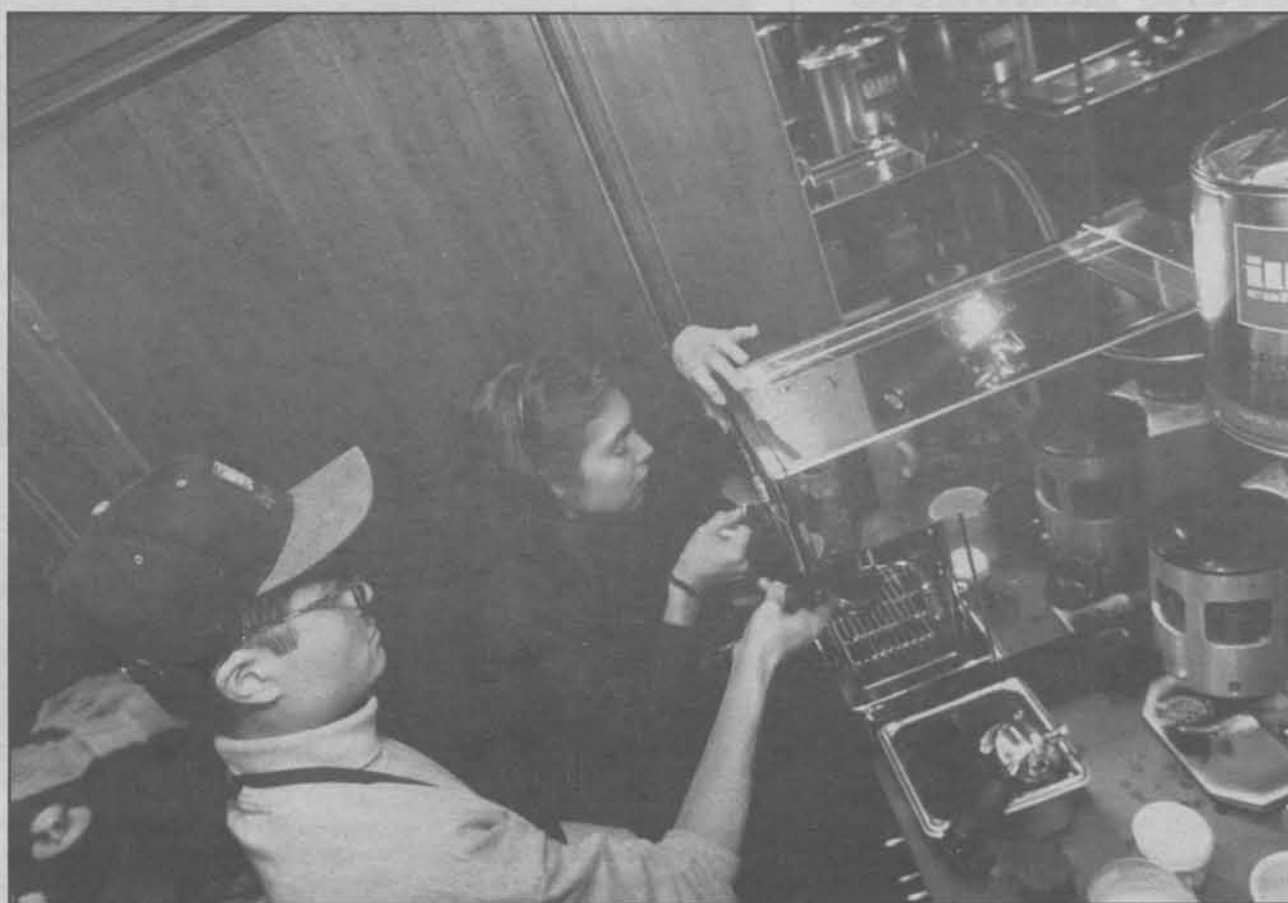
"We are extremely grateful for illycaffè's support," said Barbara Lang, a food and beverage management lecturer in the School of Hotel Administration. Illycaffè has provided the espresso bar with the machinery, coffee and serving cups and also has installed espresso machines in the Statler's Banfi's and Terrace restaurants.

"The espresso bar will enable students to have experience in the ownership and operation of a small business," Lang said, noting that some of the profits will be used to support a field trip for students.

Students also will learn how to operate and maintain the espresso machine.

"A solid understanding of the equipment and the coffee is necessary in order to produce a high-quality beverage with exceptional service," Lang noted.

The popularity of coffee today, said Lang, is creating a more demanding consumer. "Growing and brewing coffee is just as scientific as growing grapes and making wine," she said. "If the beans are good, but the process used to grind the beans and brew the coffee is faulty, the



Robert Wong, left, and Kathy Kostival whip up some espresso Feb. 9 at the new student-run espresso bar in the Statler Hotel's Regent Lounge.

Peter Morenus/University Photography

product will not be successful."

Espresso coffee is made in a special coffee maker that grinds the bean to a powdery substance and heats the water to over 190 degrees. The perfect espresso, according to Illy, is hazel brown in color with a reddish-tinged dappled cream

appearance. Steam-heated milk is added to create cappuccino.

Illy said Cornell was a perfect place for him to pitch his product. "These [Hotel School] students will be the future of the industry," he said. "It's important for them to know about the beverage and how it's prepared."

AAAS Meeting in Atlanta

Pimentel: Lighten global pesticide use

By Blaine P. Friedlander Jr.

ATLANTA — Reining in the world's heavy use of pesticides not only will save the pocketbooks and health of farmers and growers, but will ease the strain placed on the environment, a Cornell researcher said.

"I think we can use pesticides more judiciously. If we could use 50 percent less, the economics of farming and the environment would improve," said David Pimentel, Cornell professor of entomology, addressing a session on pesticide use Feb. 19 at the annual meeting of the American Association for the Advancement of Science.

"Reducing our use of pesticide is not a fantasy, it has already been achieved in other countries, such as Sweden and Denmark," Pimentel said. "We could do it in five years. But, legislation and research are needed and we need extension money for implementation. If we don't reduce our pesticide use problems, we'll continue to have over \$8 billion in fish kills, bird kills and public health expenditures."

About 67,000 non-fatal pesticide poisonings are reported in the United States annually, according to the American Association of Poison Control Centers. Worldwide, there are more than 1 million such poisonings each year, resulting in about 20,000 deaths, according to the World Health Organization and the United Nations Environmental Program.

Pimentel has found that from 1945 to 1989, insecticide use increased tenfold, yet the annual crop losses to insects almost doubled in the same time period — from 7 percent to 13 percent. The rise in crop losses, he said, generally can be attributed to the lack of crop rotation and other non-chemical controls.

Natural, beneficial predators are harmed by pesticide and fungicide use as well. "Fungicides can also contribute to pest outbreaks when they reduce fungal pathogens that are naturally parasitic on many insects," Pimentel said.

"Increased pesticide use in pest populations frequently results in the need for several additional applications of commonly used and different pesticides to maintain expected crop yields," he said.

The annual cost of pesticide application is more than \$4 billion. For each dollar invested in pesticide control, about \$4 in crops is saved — or about \$16 billion in U.S. crops. If no pesticides were used at all and depending on the crop grown, Pimentel said the losses could range between all and none.

Aside from the direct cost of using pesticides, a tangential \$8 billion goes to solving environmental and public health costs, Pimentel said. The money also includes funds for solving problems arising from pesticide resistance and destruction of a pest's natural enemies.

Fatalities from pesticides in this country are rare, but Pimentel said the exposure to pesticides is known to cause nausea and headaches. For farmers and lawn-maintenance employees — people who use pesticides all the time — those products may cause cancer, sterility, neurological damage and immunological suppression.

Pimentel said the use of large amounts of pesticides is the greatest hazard to farmers, their neighbors and even golfers who play on heavily treated courses.

Further, consumers want pesticide-free food. "The public opinion is out there and the problem is a concern to 97 percent of the food-buying American public," he said.

CU scientists seek new ways to reduce pesticide dependency

By Blaine P. Friedlander Jr.

ATLANTA — Although there is little hope of completely eliminating pesticide use, Cornell and other scientists are developing new ways of reducing farmers' and growers' chemical dependency.

"Displacing conventional pesticide use with environmentally-sensitive tactics like biological control will result in economic, ecological and sociological benefits," said Michael P. Hoffmann, Cornell assistant professor of entomology, addressing a AAAS session on pesticide use Feb. 19.

Biological control is the reduction of insect pest populations by using beneficial predators, parasitoids and pathogens. "It is unlikely that biological control will completely replace the use of chemical insecticides," Hoffmann said. "However, if used in concert with other IPM (integrated pest management) tactics, insecticide use can be significantly reduced."

Integrated pest management is a holistic, ecologically based strategy that promotes the use of non-chemical pest control tactics, Hoffmann said. It includes using pest-resistant crops, as well as cultural or biological control. In IPM strategies, chemicals are used only when needed, he said.

For example, Hoffmann explained that the best way to fight onion thrips, a major pest of cabbage, is through the use of pest-resistant varieties developed by major seed companies in cooperation with researchers at Cornell's Agricultural Experiment Station in Geneva.

Cultural controls such as crop rotation, planting trap crops and site selection also can help reduce pests, according to Hoffmann.

"It cannot be overemphasized that biological control tactics will be most effective when used in conjunction with other IPM tactics," he said.

Hoffmann explained the progress with three types of biological insect controls: con-

servation, introduction and augmentation.

"Natural enemies occur almost everywhere," he said, unless the system is heavily treated with insecticides. "They are important and need to be conserved and considered when making pest management decisions." For example, Hoffmann and others have learned that microscopic *Trichogramma* wasps are very important in controlling the major insect pest of processing tomatoes in California.

Growers incorporating the control provided by these wasps into their pest management program can reduce insecticide use. This new knowledge has the potential to improve the management of this pest on 100,000 acres of tomatoes.

Solutions like introducing *Trichogramma* wasps are effective, said Hoffmann, because they beneficially seek and destroy their pesky enemies, and perish once their enemy is gone — they work themselves out of a job.

For almost 80 years, corn farmers have been battling the European corn borer, a pest that accidentally was introduced into the U.S. It is a serious pest considering that New York is the second-largest producer of fresh market sweet corn in the country.

One potential means of fighting the European corn borer using biocontrol is through the release of *Trichogramma ostrinae*, another parasitoid wasp. It has been distributed by the U.S. Department of Agriculture and provided to researchers at Cornell, and at the universities of Massachusetts and Delaware. Hoffmann said the beneficial insect possibly could, permanently establish itself in New York and help control the European corn borer.

There are many examples of successfully establishing natural enemies to help control accidentally introduced pests. For example, millions of dollars in crop losses and pest control costs have been saved by introducing natural enemies to combat new pests of citrus.

AAAS Meeting in Atlanta

Future food *continued from page 1*

per-capita amount of a finite resource, arable land, other forces will be at work, too, the ecologists observed. Erosion, soil salinization and water-logging are taking away about 2 million acres of this country's farmland each year. And urbanization, transportation corridors and industries annually cover up another 1 million acres. By 2050, the Cornell ecologists figure, only about 290 million acres of arable land (or 0.6 acres per capita) will be left to raise crops for 520 million Americans – and little or no land will be available to raise export crops.

Water will become more precious and less available for agriculture as the nation's once-reliable "fossil" aquifers, such as the Ogalla aquifer beneath Texas, Nebraska and Oklahoma, are pumped nearly dry of the water that took thousands of years to accumulate.

Energy for agriculture will become more limited, too. Only 15 to 20 years' of oil reserves and 20 to 30 years' of natural gas reserves remain in this country (plus an estimated 30 to 50 years of petroleum in the Middle East and elsewhere). Meanwhile, U.S. energy use for agriculture has increased four-fold since 1945 with only a three-fold increase in crop yields. As farmers try to meet food demands by planting marginal land, energy inputs are expected to rise even higher.

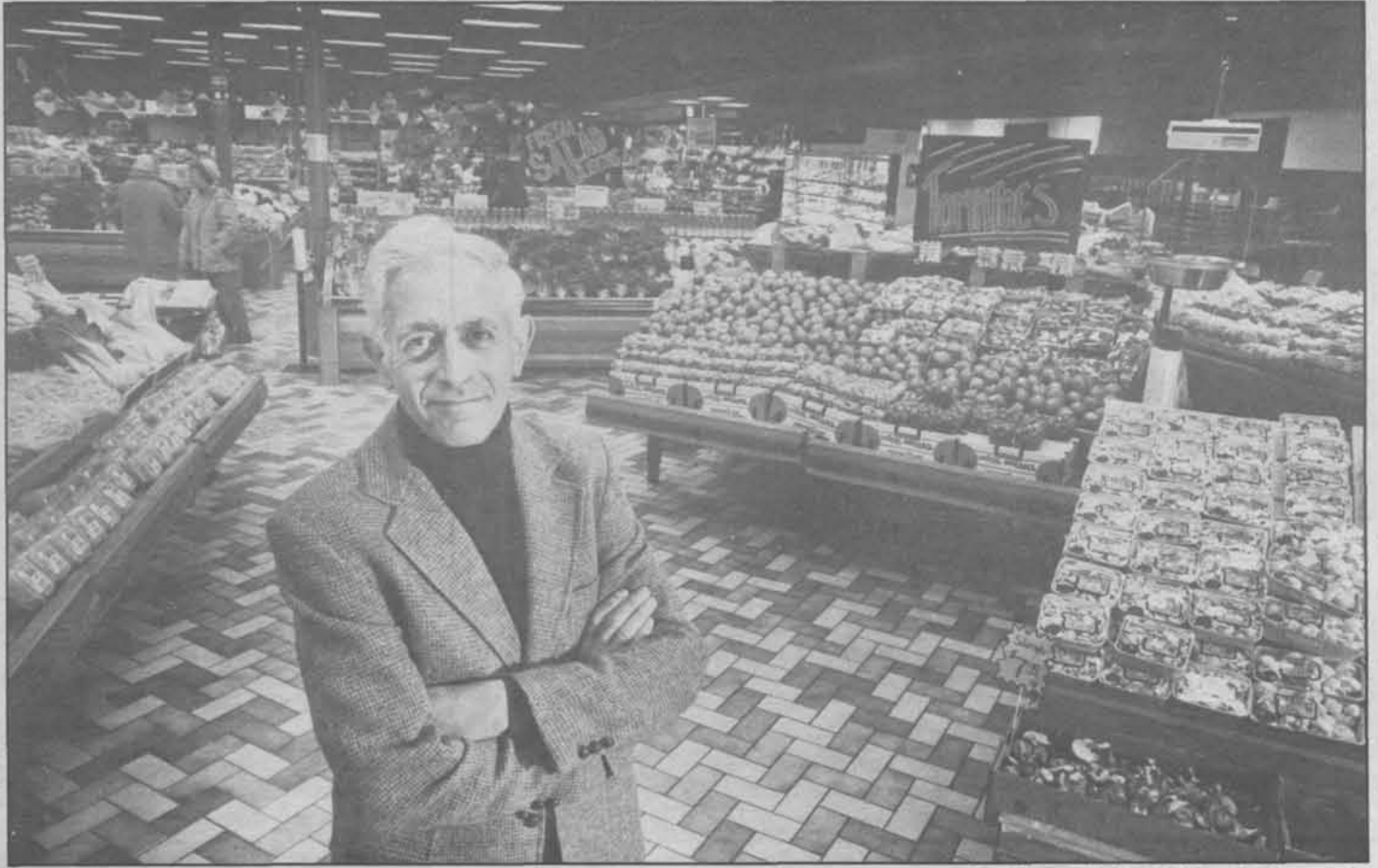
Without sufficient water to irrigate farmland in the U.S., production will have to shift to regions of the Midwest and Northeast where rainfall is relatively abundant. They add: "Such a major reallocation of production will impose other constraints on U.S. food production as a whole and on the variety of foods available in the consumer market."

Besides less grain to feed animals, there will be less pasture land to go around (an estimated 1.1 acres per capita in 2050 compared to 2.3 acres now), so consumption of animal products will decrease. Whereas the average American diet now includes about 31 percent animal products and 69 percent plant products, the proportion in 2050 will change to 15 and 85 percent, the ecologists expect.

Noting that every 1 percent increase in demand for food raises prices about 4.5 percent, the ecologists predict a three- to five-fold increase in grocery bills (in 1994 dollars) by 2050. "Americans may be spending from 30 to 50 percent of their income for food (up from the current 15 percent), which is more typical at present in Europe and other developed nations," they report.

However, there will be some things to be thankful for in 2050, the Cornell ecologists observe:

- For one, the plant-based diet will be lower in fats and more healthful than our current diet, which is rich in animal products. And the U.S. agriculture system will, by necessity, be somewhat closer to sustainability.
- There should be enough water to go



David Pimentel in the produce section of Wegman's, which is expected to look different in the year 2050.

David Lynch-Benjamin/University Photography

around. Provided that water management is substantially improved, Americans should have the 700 gallons a day that hydrologists consider minimal for human needs and food production. At present, the per-capita water consumption for all purposes is 1,300 gallons a day.

• Energy will have to come from renewable, solar-based sources. New technologies to make solar energy more efficient, together with conservation measures, will bring U.S. energy consumption more in line with the rest of the world, the ecologists predict. "Fortunately, U.S. coal reserves, projected to last about 100 years, give some time in which to develop renewable energy systems," the ecologists' report observed.

If these drastic changes in the food system are to be averted, the Cornell ecologists recommended, Americans must act on the one factor over which they have some control – population.

"Given the fact that the supply of natural resources is finite and that the ability of technology to replace many of these resources is limited, we are left with the necessity of controlling population numbers," they concluded. "Individual responsibility on the part of men and women to control family size is vital to control population numbers and maintain a high standard of living. Otherwise the harsh realities of nature will impose control on our population."

Here are a few food facts to chew on

- More than 99 percent of U.S. food comes from arable land, the fragile top 6 inches of fertile soil. Of the 2.3 billion acres of land, only 20 percent is sufficiently fertile for crop production.

- Nearly 400 million acres of arable land are now in cultivation in the U.S. to produce food (and another 70 million acres are held in reserve). Some 215 million acres are planted in grains – 68 million acres for grains directly consumed by Americans, 68 million for livestock feed and nearly 80 million for export.

- Exported grains are worth about \$40 billion a year to the U.S. economy.

- Each year more than 2 million acres of prime cropland are lost to erosion, salinization and water-logging. In addition, more than 1 million acres are lost as urbanization and industries.

- The natural replacement of fertile soil is infinitesimally slow, taking about 500 years to replace just one inch of soil. Iowa lost half its topsoil after farming in the last 100 years. Nationwide, croplands are losing topsoil 17 times faster than the formation rate.

- The estimated 4 billion tons of soil and 130 billion tons of water lost each

year from U.S. cropland translates to an on-site economic loss of \$27 billion.

- Agriculture uses about 85 percent of all U.S. fresh water pumped from storage sources. Groundwater provides 31 percent of water used in agriculture, and is being mined up to 160 percent faster than its recharge rate.

- To produce 1 pound of corn grain requires about 1,400 pounds (175 gallons) of water.

- About 15 percent of U.S. income is spent on food. In most developing countries the amount spent on food ranges from 50 to 60 percent.

- The average American consumes about 2,175 pounds of food a year in a diet that provides about 3,600 calories of food energy per day. The worldwide average is 2,700 calories a day.

- Animal products (including dairy products) make up about 800 pounds per year and about one-third the calories in the average American diet. The fat intake of the average American is about 40 percent of calories consumed.

From *Food, Land, Population and the U.S. Economy*.

Managed care must balance individuals and society, expert says

By Susan Lang

ATLANTA—Aggressive competition in managed health care may save some people money but may be creating a "grossly inequitable" and inefficient health-care system overall because of the incentives insurers and providers have in the current unstructured marketplace, a Cornell health economist warned.

As the historic frameworks in health-care delivery unravel, "there is every reason to fear that medical decision-making in the emerging system will not be efficient from either the individual's or the social perspective," said John M. Kuder, associate professor of health economics and finance in the Sloan Graduate Program at Cornell. Kuder made his remarks Feb. 17 at the annual meeting of the American Association for the Advancement of Science at a session on medical decision-making.

Traditionally, the economic view of medical decision-making considers two

perspectives: the individual's, which assumes that each person retains autonomy to pursue what he or she wants or needs medically, and the social perspective, in which health services are viewed as a socially meritorious product that is guaranteed, at least to some extent, to everyone.

To a great extent, Kuder pointed out, efficiency criteria and medical decision-making are different for both perspectives and seemingly in conflict when social programs and private consumption compete for the same scarce resources.

"The growth of aggressively competitive managed-care firms, mostly for-profit, however, is dramatically influencing the way health care is delivered and how and why medical decisions are made. These developments and the subsequent alterations in medical decisions that are the inevitable result of these changes must be evaluated against the dual efficiency criteria," said Kuder, who teaches in Health Services Administration, a unit of the Department of

Human Service Studies in Cornell's College of Human Ecology.

With managed-care companies having a very strong financial motive to change health-related decisions about uses of health resources, patient and physicians' medical decisions will continue to be the target of drastic change, he said.

Aggressive case management and economic incentives on physicians are two of the most powerful tools managed-care firms use to influence physician decisions. Kuder posed the question: What is the likelihood that these changes will improve medical-care decisions based upon our two complementary criteria of social and individual efficiency?

Kuder called for an institutional framework that creates an environment where a balance between the dual efficiencies is rewarded.

"Aggressively managed-care markets are neither good nor bad necessarily. The framework within which the competition operates must encourage the development of both a

social obligation and an obligation to individual autonomy and diversity," Kuder said.

He called for major insurance reforms that ensure universal coverage and significant changes in employer incentives regarding their role in the health insurance markets. He also stressed the need for clear and precise performance standards for both patient autonomy issues and for social merit issues and clear market incentives for providers to meet those criteria. "Such incentives would unleash the entrepreneurship and imagination necessary to find better ways to meet the dual efficiency standards," he said.

Finally, Kuder stressed that debates on reform continue to better resolve differences between individual expectations for the health-care system and the social necessity for slower growth rates in health spending.

"Until a better balance occurs, physician decisions about patient care will increasingly become adversarial and contentious, something that is not in anyone's best interest," he said.

CALENDAR

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quirements is May 19. 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 31). A ceremony to individually recognize Ph.D. candidates will be at Barton Hall, Sat., May 27, 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.

Elections: Voting on March 1 and 2 for Student-Elected Trustee on the Board of Trustees; sites are the Big Red Barn, 11 a.m.-2 p.m.; Willard Straight, 10 a.m.-7 p.m.; Trillium, 10 a.m.-2:30 p.m.; and RPU and Noyes Dining, 5-8 p.m.

lectures

Campus Club

"A World of Light—Robert Irwin, James Turrell and Dan Flavin," Matthew Armstrong, Johnson Museum, March 2, 10 a.m., Johnson Art Museum.

Johnson Museum

"Art and Capitalism in Antwerp: The Rise of Markets for Painting and Prints, 1430-1570," Dan Ewing, Hobart and William Smith Colleges, March 2, 4:30 p.m., Johnson Museum of Art.

Medieval Studies

"Interpreting *Spolia*," Dale Kinney, Bryn Mawr College, Feb. 24, 4:30 p.m., A.D. White House.

Medieval Studies Students Colloquium: Graduate students will be giving papers on a wide range of medieval topics pertaining to "*Medieval Spolia*: The Reuse of the Past," Feb. 25, 11 a.m.-4 p.m., A.D. White House.

music

Music Department

All events are open to the Cornell Community and the general public and are free unless otherwise noted. For more information call 255-4760.

Feb. 24: Flute-Piano duo: Jennifer Mellits and Steven Kent Murphy; works by Maurice Ravel, Claude Debussy, Scott Joplin and Jacques Ilbert; 8:15 p.m., Barnes Hall.

March 1: "LiveOak and Company," a Spanish renaissance ensemble featuring "Lanterns of Fire: Love and the Mystic in 16th-Century Spain," 8:15 p.m., Barnes Hall.

March 2: Kiri Te Kanawa, soprano; 8:15 p.m., Barnes Hall. tickets and information: 255-5144, 9 a.m.-1 p.m.

Bound for Glory

Feb. 26: Joan Crane plays ragtime and blues at the Commons Coffeehouse, Anabel Taylor Hall; three sets at 8:30, 9:30 and 10:30 p.m.; free and open; kids welcome, refreshments available. Can also be heard from 8-11 p.m. on WVBR-FM, 93.5.

readings

English Program in Creative Writing

Poetry reading by Alfred Arteaga, Feb. 28, 4:30 p.m., Guerlac Room, A.D. White House.

religion

Sage Chapel

Robert L. Johnson, director of University Ministries, will give the sermon Feb. 26 at 11 a.m. Music is by the Sage Chapel choir, under the direction of William Cowdery. Sage is a non-sectarian chapel that fosters dialogue and exploration with and among the major faith traditions. Festival of Black Gospel, Feb. 26, 1 p.m.

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: Sat., 5 p.m.; Sun., 10 a.m., noon and 5 p.m., Anabel Taylor Auditorium.

Daily Masses: Mon.-Fri. at 12:20 p.m. in Anabel Taylor Chapel. Sacrament of Reconciliation, Saturday, 3:30 p.m., G-22 Anabel Taylor Hall.

Christian Science

Testimony and discussion every Thursday at 7 p.m., Founders Room, Anabel Taylor Hall.

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.

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

Saturday Services — Orthodox, 9:15 a.m.,

Edwards Room, ATH; Conservative/Egalitarian, 9:45, Founders Room, ATH.

Meetings—Hillel meeting: Mondays, 4:45 p.m., G-34 ATH.; Torah study with Jessica: Tuesdays, 9 a.m., Commons Coffeehouse, ATH; Talmud Study with the Rabbi: Wednesdays and Thursdays, 9 a.m., Commons Coffeehouse, ATH; Interfaith relationship discussion group: Wednesdays, 4:30 p.m., G-34 ATH; Basic Judaism: Wednesdays, 7 p.m., G-34 ATH.

Feb. 25 Sports Night includes Penn/CU B-ball, party at Alberding and ice time at Lynah; call 255-4227 for details.

Korean Church

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

Latter-day Saints (Mormon)

Discussions on the Book of Mormon: Wednesdays, 7:30 p.m., 314 Anabel Taylor Hall. All are invited to come and discover the religious writings of ancient American cultures.

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

Muslim

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

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

Africana Studies & Research

"Africana Studies and the Literatures of the Black World," Anne Adams, Africana studies, March 1, noon, Hoyt Fuller Lounge, 310 Tripphammer Road.

Animal Science

"A Forage Specialist's Research and Extension Experiences with Grazing Systems," Keith Johnson, Purdue University, March 1, 12:20 p.m., K.L. Turk Seminar Room, 348 Morrison Hall.

Applied Mathematics

"Fluctuations in an Overlapping Generations Economy," Christian Ghiglino, University of Geneva, Feb. 28, 12:15 p.m., 657 Theory Center.

Astronomy & Space Sciences

"Circumstellar Disks in Orion," Tom Hayward, March 2, 4:30 p.m., 105 Space Sciences.

Biochemistry

"New Paradigms of Energy Coupling in Bacterial Transport," Simon Silver, University of Illinois, Feb. 24, 4 p.m., large conference room, Biotechnology Building.

Biophysics

"Chorismate Mutase: Lessons for Structure-Based Drug Design," Jon Clardy, March 1, 4:30 p.m., 700 Clark Hall.

Center for the Environment

"New York's Water Program: Past Success and Future Directions," N.G. Kaul, Water Division of NYS's Dept. of Environmental Conservation, Feb. 23, 12:15 p.m., 401 Warren Hall.

Chemistry

"NMR Transition Metal Polyhydrides: Rotational Tunneling and Quantum Exchange," Kurt Zilm, Yale, Feb. 23, 4:40 p.m., 119 Baker.

"Photochemical Inactivation of HIV in Human Platelet Concentrates," Matthew Platz, Ohio State University, Feb. 27, 4:40 p.m., 119 Baker.

TBA, Kevin Lehmann, Princeton University, March 2, 4:40 p.m., 119 Baker.

Chemical Engineering

"Environmental Mixing Problems," Gerhard Jirka, civil & environmental engineering, Feb. 28, 3:45 p.m., 165 Olin Hall.

Ecology & Systematics

"Serendipity in Science: My Random Walk Through the Field of Ecology," Eville Gorham, University of Minnesota, March 1, 4 p.m., A106 Corson Hall.

Electrical Engineering

"The Future of Semiconductors: Where May We Be Headed?" William Lynch, Semiconductor Research Corp., Feb. 28, 4:30 p.m., 219 Phillips Hall.

Environmental Toxicology

"Consumer Perceptions of Health Risks Asso-

ciated with the Food Supply," Carole Bisogni, nutritional sciences, Feb. 24, 12:20 p.m., 135 Emerson.

European Studies

"Is Fascism Coming to Russia?" Yuri and Sidney Orlov, Feb. 24, 12:15 p.m., 153 Uris Hall.

"The Prince, the Library and the Dedica in the Sixteenth and Seventeenth Centuries," Roger Chartier, EHESS, Feb. 27, 4:30 p.m., 165 McGraw Hall.

"Du codex a L'ecran. Les Strategies de L'ecrit," Roger Chartier, EHESS, Feb. 28, 4:45 p.m., 110 A.D. White House.

Fishery Biology

"Fisheries Resource Management in Eastern Lake Erie," Don Einhouse, NY Dept. Environmental Conservation — Lake Erie unit, Feb. 23, 3:35 p.m., 304 Fernow Hall.

"Predator/Prey Interactions in Pelagic Food Webs of Great Lakes Ecosystems," Don Stewart, SUNY, March 2, 3:35 p.m., 304 Fernow Hall.

Floriculture & Ornamental Horticulture

"Tropical Agroforestry Tree Seed Production Research: Jumping between Cornell and Hawaii," Eric Brennan, floriculture and ornamental horticulture, Feb. 27, 12:15 p.m., 404 Plant Science.

Food Science

"Listeria in Seafoods," Thakor Patel, Memorial University of Newfoundland, Feb. 28, 4:30 p.m., 204 Stocking Hall.

Fruit & Vegetable Science

"Disease Resistant Apples: Problems and Promises," Dave Rosenberger, Feb. 23, 4 p.m., 404 Plant Science.

"Economic Minifarming with Sustainable Soil Fertility," John Jeavons, Ecology Action, March 2, 4 p.m., 404 Plant Science.

Geology

"Global Tectonic and Environmental Change at the End of the Proterozoic," Paul Hoffman, Harvard University, Feb. 28, 4:30 p.m., 1120 Snee Hall.

Gender & Global Change

"Dress as Social Policy: Change in Rural Turkish Women's Dress," Charlotte Jirousek, textiles and apparel, Feb. 27, 4:30 p.m., 102 Rockefeller Hall.

Genetics & Development

"Towards the Therapeutic Application of Ribozymes to Human Diseases," Dan Stinchcomb, Ribozyme Pharmaceuticals Inc., Feb. 27, 4 p.m., Conference Room, Biotech. Bldg.

Human Ecology

"Child Welfare: Policy Initiatives for the New Administration," Rosemary Avery, Feb. 28, noon, E405 Martha Van Rensselaer Hall.

"Medicaid Participants' Knowledge and Perceptions of Managed Care and the Relationships of Personal Lifestyles and Health," Louis Morton, consumer economics and housing, March 2, 4 p.m., 114 Martha Van Rensselaer Hall.

International Nutrition

"The Effectiveness of the Chinese Nutritional Surveillance System," Tiefsu Shen, nutritional sciences, Feb. 23, 12:40 p.m., 100 Savage Hall.

"Training and Research in Community Health in Northern Vietnam," Tran Tuan, Hanoi Medical School, March 2, 12:40 p.m., 100 Savage Hall.

International Studies

"Design Issues in Developing Economies," Terry Plater, planning, Feb. 24, 12:15 p.m., 115 Tjaden Hall.

Laboratory of Ornithology

"Saving the Shore: Conserving Bird Habitat Around Lake Ontario," Kris Agard, The Nature Conservancy, Feb. 27, 7:30 p.m., Fuertes Room, Laboratory of Ornithology, 159 Sapsucker Woods Road.

Latin American Studies

"Democracy, State Power and Economic Reform in Latin America," Hector Schamis, government, Feb. 28, 12:15 p.m., 153 Uris Hall.

Materials Science & Engineering

"Hydrogenated Amorphous Silicon and Its Technologies," Chris Wronski, University of Pennsylvania, Feb. 23, 4:30 p.m., 140 Bard Hall.

"Me V Ion Implantation in Semiconductors: Structural Changes," Sjoerd Roorda, University of Montreal, March 2, 4:30 p.m., 140 Bard Hall.

Microbiology

"Three-Dimensional Structure of Antibodies Complexed with Bacterial Oligosaccharide Antigens," David Bundle, University of Alberta, Feb. 24, 12:15 p.m., Boyce Thompson Institute Auditorium.

Neurobiology & Behavior

"Behavioral Endocrinology of Alternative Male Phenotypes," Michael Moore, Arizona State University, Feb. 23, 12:30 p.m., Morison Seminar Room, Corson/Mudd Hall.

Continued on page 7



Elsa Voelcker

LiveOak and Company: clockwise, from upper left, Frank Wallace, guitarist/baritone; Jane Hershey, viola da gamba player; Grant Herreid, tenor/lutenist and Nancy Knowles, soprano.

CALENDAR

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Peace Studies

"Is Fascism Coming to Russia?" Yuri and Sidney Orlov, Feb. 24, 12:15 p.m., 153 Uris Hall.
 "Supply and Demand for War," Richard Rosecrance, University of California at Los Angeles, Feb. 24, 2 p.m., 145 McGraw Hall.

Plant Biology

"The Role of Ion Transport Processes in Root Hair Tip Growth," David Jones, U.S. Plant Soil and Nutrition Lab., Feb. 24, 11:15 a.m., 404 Plant Science.

Plant Breeding

"Potato Germplasm Enhancement and Biotechnology for Developing Countries," Kazuo Watanabe, Feb. 28, 12:20 p.m., 135 Emerson Hall.

Plant Pathology

"Orchard Replant Problems," Ian Merwin, fruit and vegetable science, Feb. 28, 3 p.m., A133 Barton Laboratory.

TBA, March 1, 12:20 p.m., 404 Plant Science.

Physiology & Anatomy

"Function of Heparan Sulfate Proteoglycans in Lipoprotein Lipase Degradation," Andre Bensadoun, nutritional science, Feb. 28, 4 p.m., T1 003 Veterinary Research Tower.

Psychology

"Distinguishing Eyewitness Accuracy from Error," David Dunning, psychology, Feb. 24, 4:30 p.m., 202 Uris Hall.

TBA, Ken Nakayama, Harvard University, March 2, 4:30 p.m., 202 Uris Hall.

Southeast Asia Program

"What Happened in Mangkiling Locality in Global Environmentalism," Anna Lowenhaupt-Tsing, University of California, Santa Cruz, March 2, 12:20 p.m., Kahin Center, 640 Stewart Ave.

Science & Technology Studies

"The Culture of Technocratic Modernity in Wilhelmine Germany," Mi Gyung Kim, Chemical Heritage Foundation, Feb. 27, 4:30 p.m., 609 Clark Hall.

Society for the Humanities

"Indian Art in the Tapestry of the Modern," Daniel Herwitz, Feb. 23, 4:30 p.m., Guerlac Room, A.D. White House.

"Violence and Ideality," Etienne Balibar, Sorbonne, Paris, Feb. 24, 2 p.m., Guerlac Room, A.D. White House.

"Heterotextual Reproduction: Myths, Archetypes and Chicano Subjectivity," Alfred Arteaga, University of California in Berkeley, Feb. 27, 4:30 p.m., Guerlac Room, A.D. White House.

"Murder and Mentorship: Advancement in *The Silence of the Lambs*," Bruce Robbins, Rutgers University, March 1, 4:30 p.m., Guerlac Room, A.D. White House.

Textiles and Apparel

"A Brief History of Fabric Structures in Architecture," Kent Hubbell, Feb. 23, 12:20 p.m., first floor faculty commons, Martha Van Rensselaer Hall.

"Importance of Posture and Changed Body Configuration of Garment Fit for Women Aged 55 to 65," Inez Kohn, March 2, 12:20 p.m., first floor faculty commons, Martha Van Rensselaer Hall.

Theory Center

"The Compositional Structure of Nonpremixed Turbulent Reacting Flows," Givi Peyman, SUNY Buffalo, Feb. 28, 12:30 p.m., 178 Theory Center.

"Path Integral Simulation of Quantum Systems," David Ceperley, physics, Feb. 28, 2:30 p.m., 456 Theory Center.

Women's Studies

"Women's Issues for the New Administration: What Hunter Should Know," brown bag series moderated by ACSW and NWN members, Feb. 28, noon, G-10 Biotech Auditorium.

symposia

Chemistry

Wentink Symposium: "A Symposium for Distinguished Graduate Students in the Department of Chemistry," with graduate students, March 1, 4:40 p.m., 119 Baker Hall.

Human Ecology

"Unmentionables: Women's Bodies and Technology," March 2, 265 Martha Van Rensselaer Hall Amphitheater. "If Men Wore Bras...Taking Feminine Technology Seriously," Judith McGaw, University of Pennsylvania with Susan Watkins and Susan Ashdown, 3-5 p.m. "Learning to Menstruate 'The American Way,' 1880-1950," Joan Jacobs Brumberg, human development, with Carolyn Goldstein, 5:30-7 p.m.

Restaurateur/White House chef consultant to visit

Anne Rosenzweig, chef and owner of the Arcadia restaurant in New York City and a chef consultant to the White House, will visit Cornell this month as part of the 1995 Guest Chef Series sponsored by the School of Hotel Administration.

Rosenzweig will assist Hotel School students in preparing an elegant dinner Feb. 26. The evening will begin at 6:30 p.m. with a wine reception sponsored by Domaine Chandon of California's Napa Valley. Dinner will be served at 7 p.m. in Banfi's of the Statler Hotel. The cost of the reception and dinner is \$60 per person. Diners can enjoy a special selection of wines with their meal for an additional \$15.

The menu includes Arcadia salad, grilled salmon on wild herbed rice cake with cool tropical gazpacho, roasted lamb sirloin on a panoply of roasted, grilled and frizzled onions, gingerbread shortcake with lemon curd ice cream and poached winter fruits.

Rosenzweig opened Arcadia, located at 21 E. 62nd St. in New York, in 1985; she also has served as vice chairman in charge of food operations for the "21" Club and as one of three chef consultants to the White House.

The New York Times described Rosenzweig as a chef "whose reputation was ultimately made mining traditional American dishes for their inherent finesse — turning the sturdy into the elegant." *Newsday* cited Rosenzweig's culinary style as taking "proven classics and giving them unexpected twists, creating hearty food with rural roots and urban polish."

Much of the chef's work is influenced by her culinary styles in foreign lands. A trained anthropologist, Rosenzweig did field work in Africa, India and Nepal and studied how those cultures used limited ingredients to create flavorful cuisine.

Various social causes benefit from Rosenzweig's cooking. She has worked with other prominent chefs on benefit projects for such groups as Meals On Wheels, the Association for the Help of Retarded Children and Share Our Strength.

Rosenzweig is co-founder of the International Association of Women's Chefs and Restaurateurs (IAWCR), a group created to help women attain equal access to the positions and rewards offered by the restaurant industry. Women in the restaurant industry have been invited to an IAWCR information session and to meet Rosenzweig Feb. 26 at 4 p.m. in the Rowe Room of the Statler Hotel.



Anne Rosenzweig, chef/owner of Arcadia restaurant in New York City.

The Guest Chef Series is actually part of a course on specialty food and beverage operations designed for students who are considering careers in the hotel food and beverage environment, or those who anticipate interacting with current culinary trends.

"Students are involved in every aspect of special event planning and food preparation," said Barbara Lang, who co-teaches the Guest Chef Series course. "Students order all ingredients to the specifications of the guest chef, develop recipes and plan a schedule for food preparation. Students also recreate the atmosphere of the chef's restaurant through menu selections and place settings and then create a marketing plan to help sell the evening."

Lang said the most informative part of the Guest Chef Series actually comes long after the dessert is served. "After each meal, the chef participates in a roundtable discussion with the students," she said. "By this time, students have spent close to 60 hours

working side-by-side with the chef so they're very much at ease, which creates an ideal atmosphere for an open discussion.

Senior Elif Bali has done much of the advance work for the event. Last week she traveled to New York to meet with Rosenzweig at her restaurant. "She's so busy," Bali said. "It seemed that at every moment she was on the phone doing something for her business." Bali was able to find time to meet with Rosenzweig and discuss publicity issues.

The Guest Chef Series continues March 12 with Patrick Clark, executive chef of the Hay-Adams Hotel in Washington, D.C., and April 2 with Traci des Jardin, chef of the Rubicon in San Francisco. To make reservations, contact the Great Chef Series at 254-2606. Individuals making reservations for all three events will receive an autographed 1995 Guest Chef Series cookbook, featuring the recipes of all foods served during the series. The cookbooks also will be available for purchase.

theatre

Center for Theatre Arts

A Lie of the Mind is a play by Sam Shepard exploring the destinies of two families, linked by marriage but set apart by jealousies and distrust. Feb. 23, 24, 25 at 8 p.m.; Feb. 25 at 2 p.m.; Class of Flexible Theatre, 30 College Ave., \$6/\$8. Call 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 7 p.m. in Anabel Taylor Hall. For more information call 273-1541.

Astronomical Observing

The Cornell Astronomical Society hosts an open house every clear Friday evening at Fuertes Observatory, located on north campus next to Helen Newman Gymnasium. Enjoy stunning views of the planets, moon and other heavenly bodies through an historic 12-inch diameter brass refracting telescope. Hours are from 8 p.m. to midnight.

Durland Alternatives Library

The Durland Alternatives Library is having a book sale of unique publications and audiotapes. The sale will take place in the library, 127 Anabel

Taylor Hall, through Feb. 26. Open Mon.-Fri., 9:30 a.m.-6 p.m.; Wed., until 9 p.m.; Sat., noon-4 p.m. and Sun., 7:30-10:30 p.m. For more information: 255-6486.

CRESP

"The Welfare Dilemma: Do We Have the Answers?" Discussion five successive Thursdays from 4:30-5:30 p.m. in Anabel Taylor Hall. Session 2: "Food Insecurity: What Will Be its Impact?" Christine Olsen, nutrition, Feb. 23. Session 3: "Cause and Cure: the Program or the Person?" Jutta Dotterweich, Ithaca Teen Pregnancy and Parenting Program, March 2.

EcoVillage at Ithaca

EcoVillage at Ithaca will be holding its fourth annual meeting on Feb. 25 from 2-5 p.m. in the Founders Room at Anabel Taylor Hall. The meeting is open to the public.

Emotions Anonymous

This 12 step group which helps people deal with emotional problems meets on Sundays at 7:30 p.m. and Tuesdays at 8 p.m. at the St. Luke Lutheran Church, 109 Oak Ave., Collegetown. For more information call Ed/Karen at 273-5058.

Mann Library

Free computer classes open to the Cornell community; to be held in the Stone Microcomputer Center, first floor, Mann Library. Call 255-5406 for dates, times and more information. Last class: • Surfing the Internet.

Writing Workshop

Free tutorial instruction in writing is offered through the Writing Workshop Walk-in Service: • 178 Rockefeller Hall: Sun., 2 to 8 p.m.; Mon.-Thurs., 3:30 to 5:30 p.m. and 7 to 10 p.m. • Robert Purcell Community Center, Wendy Purcell Study Lounge: Sun.-Thurs., 8 to 11 p.m. • 320 Noyes Center: Sun.-Thurs., 8 to 11 p.m.

sports

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

Men's Basketball (9-13)

Feb. 24, PRINCETON, 7:30 p.m.
Feb. 25, PENNSYLVANIA, 7:30 p.m.

Women's Basketball (9-13)

Feb. 24, at Princeton, 7 p.m.
Feb. 25, at Pennsylvania, 7 p.m.

Women's Fencing (9-15)

Feb. 25, NIWFA Champs. at Vassar, 8 p.m.

Women's Gymnastics (4-8)

Feb. 25, Ivy Invit. at Pennsylvania, 1 p.m.

Men's Hockey (8-12-3)

Feb. 24, at Princeton, 7:30 p.m.
Feb. 25, at Yale, 7 p.m.

Men's Squash (5-12)

Feb. 25-26, NISRA Team Champs. at Princeton

Men's Swimming (5-5)

March 2-4, Easterns at Princeton

Women's Swimming (7-4)

Feb. 23-25, Eastern at Harvard

Men's Indoor Track (8-7)

Feb. 25-26, Heptagonals at Cornell

Women's Indoor Track (10-4)

Feb. 25-26, Heptagonals at Cornell

CALENDAR

February 23
through
March 2

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

All events are open to the Cornell community and general public and are free unless otherwise noted. Beginners are welcome; partners are not necessary. Balkan music jams are held on selected Sundays at 6:30 p.m. (call 257-7711.) For information, call 387-6547.

Feb. 26: 6:30 p.m., Kritikos Syrtos, Malevisiotikos, Sagoritikos, Karsilama (couple dance) from Greece taught by Ed; 7:30 p.m., teaching to be scheduled, 8:30 p.m., open dancing and requests.

Israeli Folkdancing

Thursdays, 8 p.m., Edwards Room, Anabel Taylor Hall; instruction and request dancing, beginners welcome; free and open; info. 255-4227.

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.

- "Whistler and His Influence: Experiments on Paper," through April 2. Highlights the museum's collection of over 90 Whistler prints.

- "Alfred Stieglitz's Legacy: Photography into Art," through April 9. Drawn from the museum's permanent collection; includes work by Alvin Langdon Coburn, Gertrude Käsebier, Karl Struss and Clara Sipprell, in addition to work by Stieglitz.

- "Between Light and Shadow: The Work of James Turrell and Robert Irwin," through April 9. American artists Irwin and Turrell use light and shadow to create uniquely contemporary art.

- "Traditional Arts of Southeast Asia," through April 2. This show presents ceramics and textiles from private collections and is presented in cooperation with the Southeast Asia Program.

- "A Splendid Diversity: Mannerist Prints from Parmigianino to Goltzius," through April 2. This exhibition includes nearly 30 16th-century prints from the museum's permanent collection.

- "The Machines of Leonardo da Vinci," through April 2. Leonardo's designs come alive in more than thirty reconstructed models of his proposals for a printing press, military tanks, flying machines, high-powered gears and a spring-driven automobile.

- 12 O'Clock Sharp, Thursday Noontime Gallery Talks: Feb. 23, Nancy Green, curator of prints, drawings and photographs will discuss "Whistler and his Influence: Experiments on Paper."

"Winterfest 1995: The Arts of Southeast Asia," an afternoon of music, dancing and art on Feb. 25 from noon to 4 p.m. This free festival highlights Southeast Asian cultures and art forms.



Sharron Bennett/University Relations

Members of the Cornell Figure Skating Club practice for the upcoming show. Left to right: Emery Nordberg, Nancy Peters, Karen Kabelac, Anna Goehner, Chris Bolgiano and Colin Bennett.

Figure skating ice show scheduled for Feb. 26

The Cornell Figure Skating Club of Ithaca Inc. presents the ice show, "Silver Screen on Ice," on Sunday, Feb. 26 at 5 p.m. at Lynah Rink on the Cornell campus.

Featuring club members of all ages and guest skaters, the show will highlight selections from movie themes. Guest skaters include award-winning pairs and freestyle skaters Stacey and Nathan Pensgen of Fairport, N.Y., and dance couple Kendall Tupper and David Mitchell from Cortland and Syracuse who will all perform in the Junior Olympics in April. Gold medalists

Sian Matthews and Yovany Durango, senior national dance competitors from Delaware who are currently competing in the U.S. Figure Skating Championships in Providence, R.I., also will skate.

Solo performances by club members include Edna Novak, Karen Kabelac and Anna Goehner, who have all completed juvenile freestyle tests; Cornell students Kristen Elliott, a former senior ladies freestyle gold medalist at the Empire State Winter Games, Jennifer Ross, Amy Trimble and Colin Bennett, who recently won the Junior Mens

Silver Medal at the U.S. Figure Skating Championships in Providence, R.I.

The Crown City Jewels Precision Skating Team, comprised of young women from Ithaca and Cortland, will skate the routine they will compete with at the Empire State Winter Games in Lake Placid in March.

Tickets are \$5 for adults and \$3 for students, children and senior citizens. They are available at Alberding Ticket Office, at the ticket center at the Clinton House, from a club member, or at the door.

Eye Openers Workshop: "Singing Clay: Pre-Columbian Whistles," On March 4 and 11, Laurie Hultberg will lead whistle workshops for adult partners and children ages 7 to 9 from 10 a.m. to noon and children ages 10 to 12 from 1-3 p.m. On March 18 both groups will meet from 10-11 a.m. to receive their whistles and learn to play a tune. \$30/members; \$34/non-members. Scholarships are available. Call 255-6464 to register before Feb. 27.

Kroch Library

"Hans Bethe: 60 Years at Cornell," through April 15. An exhibition documenting the life and work of German-born American physicist and Nobel laureate Hans Bethe. The exhibit is located in the Carl A. Kroch Library exhibition gallery.

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), except for Tuesday night Cinema Off-Center (\$2) and Sunday matinees (\$3.50). Films are held in Willard Straight Theatre except where noted.

Thursday, 2/23

"Delicatessen" (1991), directed by Jean-Pierre Jeunet and Marc Caro, with Dominique Pinon, and Jean-Claude Dreyfus, 7:30 p.m.

"Forrest Gump" (1994), directed by Robert Zemeckis, with Tom Hanks and Gary Sinise, 9:40 p.m.

Friday, 2/24

"Last Call at Maud's" (1993), directed by Paris Poirier, shown with "Chicks in White Satin" (1994), directed by Elaine Holliman, 7:30 p.m.

"Delicatessen," 7:45 p.m., Uris.

"Faust" (1994), directed by Jan Svankmajer, with Peter Cepek, 9:45 p.m.

"Forrest Gump," 10 p.m., Uris.

"Killing Zoe" (1994), directed by Roger Avary, with Eric Stolz and Julie Delpy, midnight.

Saturday, 2/25

Ithakid film fest: Pre-register (\$5 fee) for Anima-

tion Workshop with Stephany Maxwell for 4-7 year olds by calling 255-3522 (25 children max.). Participants will create their own films with Stephany's assistance. Workshop begins at 2 p.m.

"The African Queen" (1951), directed by John Huston, with Humphrey Bogart and Katherine Hepburn, 7:15 p.m., Uris.

"A Place in the World" (1992), directed by Adolfo Aristarain, 7:30 p.m.

"Forrest Gump," 9:40 p.m., Uris.

"Faust," 9:40 p.m.

"Time Cop" (1994), directed by Peter Hyams, with Jean-Claude Van Damme, Ron Silver and Mia Sara, midnight.

Sunday, 2/26

"Forrest Gump," 4:30 p.m., \$3.50.

"Viva la Muerte" (1972), directed by Fernando Arrabal, with Anouk Ferjac, Nuria Espert and Ivan Henriquez, 7:30 p.m., Uris, free.

"Forrest Gump," 8 p.m.



Jon Reis

Shadow puppets, Javanese gamelan and other arts and music of Southeast Asia are featured in free performances at the Johnson Museum's "Winterfest" on Feb. 25, from noon to 4 p.m.

Monday, 2/27

"Fanny and Alexander" (1982), directed by Ingmar Bergman, with Bertil Guve, Pernilla Allwin and Gunn Wallgren, 7 p.m.

"Time Cop," 10:40 p.m.

Tuesday, 2/28

Southeast Asia Film Series: "From the Barrel of a Gun," commentators: Andrew Abalakin and Christoph Giebel, 4:30 p.m., Kahin Center, 640 Stewart Ave., free.

"A Place in the World," 7:30 p.m.

"Einstein on the Beach: The Changing Image of Opera" (1984), directed by Robert Wilson, 7:30 p.m., CTA Forum, \$2.

"Killing Zoe," 9:40 p.m.

Wednesday, 3/1

"Alias, La Gringa" (1991), 8 p.m., Uris, free.

Campion Shorts: "Peel," "A Girl's Own Story," "Passionless Moments," "After Hours" and "The Audition," directed by Jane Campion, 7:15 p.m.

"Interview with a Vampire" (1994), directed by Neil Jordan, with Tom Cruise, Brad Pitt and Antonio Banderas, 9:30 p.m.

Thursday, 3/2

"Interview with a Vampire," 9:45 p.m.

"C'est La Vie, Mon Cheri" (1993), Directed by Derek Yee, with Anita Yuan, Fon Bao-bao and Lao Ching-yun, 7:30 p.m.

graduate bulletin

Course Changes: There is a \$10 charge for adding each course after Feb. 10. Courses may be dropped or credit hours or grading options may be changed through March 10 without penalty. Instructor of course and student's chairperson must sign the drop/add form. A course dropped after March 10 will appear on transcripts with a "W" (withdrawn). No course may be dropped or changed after May 5.

Commencement: Sun, May 28. To receive a May degree, the deadline for completing all re-

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