

CORNELL Chronicle

Volume 27 Number 15 January 18, 1996

IT'S ALL ABOUT ACCESS

The ILR School's Catherwood Library is selected as a site for archiving and transmitting federal reports.

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CAT WITH AN ATTITUDE?

Cornell researcher works on developing a kitten personality test to predict adult behavior.

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Experiment Station unveils state's Fortune

Cornell's Agricultural Experiment Station in Geneva, N.Y., formally introduced the Fortune apple – a large, tasty eating apple – at the annual New York State Horticultural Show at the Dome Center in Rochester last week.

Fortune is “gently sweet and reminiscent of the Delicious apple that is part of its genetic makeup, but with a juicy McIntosh snap when bitten into,” wrote Mimi Sheraton, food author, in the November 1995 issue of *Audubon Magazine*.

The Fortune is the latest in a long line of achievements by the Geneva Apple Breeding Program and the second apple release under the leadership of Susan K. Brown, Cornell associate professor of horticultural sciences.

“By the turn of the century, we expect Fortune to be well



Brown

on its way to successful commercial acceptance,” Brown said. “Growers have the product on the market, and there is already good commercial demand. Usually it takes 15 to 20 years for an apple to develop commercial acceptance – as it did with Empire, which the Agriculture Experiment Station released 30 years ago.”

Bred for both the processing and fresh markets, the Fortune apple was once known as just a tasty little number: New York 429. It was one of the first apples to gain high praise and commercial status before being officially named or introduced. Since it was so successful in trials and considering that its numerical name “429” sounded like fortune, growers later requested that it officially bear that name.

The high-colored apple is a hybrid offspring of the Schoharie Spy and the Empire apple. The apple has cream-colored flesh, crisp texture and stores well.

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K. Colton/NYS Ag. Expt. Sta./Cornell

The Fortune apple was developed at Cornell's New York State Agricultural Experiment Station in Geneva.

Spider silk is model for super fibers

By Roger Segelken

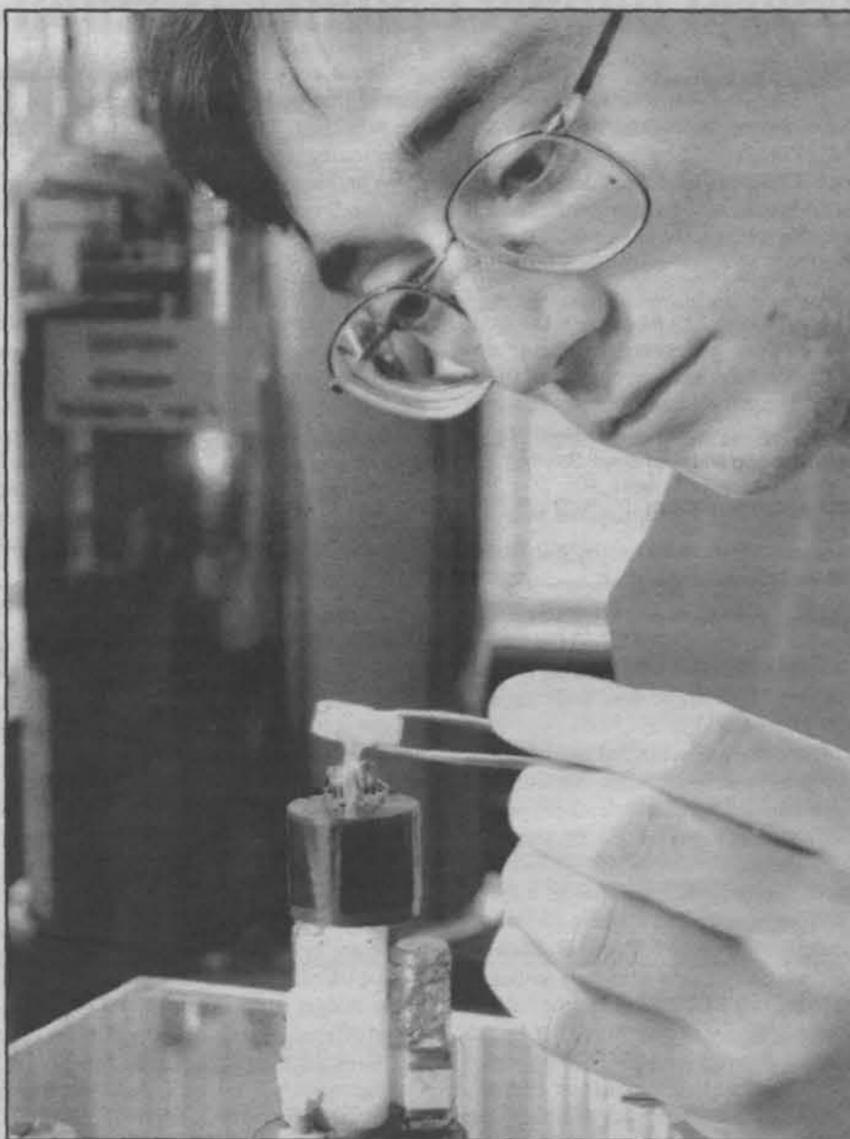
Scientists hoping to produce super-tough, bio-inspired fibers are a step closer with a new model for the molecular arrangement of spider silk, proposed by Cornell researchers in the Jan. 5 issue of the journal *Science*.

Alexandra H. Simmons, Carl A. Michal and Lynn W. Jelinski reported their findings in the article, “Molecular Orientation and Two-component Nature of the Crystalline Fraction of Spider Dragline Silk.”

Focusing NMR (nuclear magnetic resonance) studies on one of nature's most remarkable materials, the dragline silk from the golden orb-weaver spider – and on one crystalline amino acid in particular, alanine – the Cornell scientists found a surprising blend: highly oriented segments, amorphous material and barely oriented segments, all working together to make a fiber that is stronger than steel and much more elastic.

“Developing an understanding of the molecular origins of silk's excellent mechanical properties takes on a new urgency,” said Jelinski, director of Cornell's Center for Biotechnology and professor of engineering. “Now the tools of biotechnology make it possible to produce designer materials. We envision an era when bacteria or plants, rather than oil wells and petroleum refineries, will produce high-

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Robert Barker/University Photography

Carl Michal, fourth-year graduate student in physics, built one-of-a-kind hardware for collecting the data on spider silk structure.

CU arranges business meeting with Taiwanese

In an effort to generate new business investment and technology transfer, Cornell officials arranged for executives from 11 U.S. companies that evolved from Cornell research to meet with venture capital groups and industrialists in a meeting that took place in Taiwan on Jan. 15.

The all-day meeting at the Far Eastern Plaza Hotel in Taipei included President Hunter Rawlings; Norman R. Scott, Cornell vice president for research and advanced studies; Chin Lin, president, and other officials of China Venture Management Inc.; Michael Stamm, president of Tompkins County Area Development in Ithaca; Inge Reichenbach, Cornell acting vice president for public affairs; Tsu-lin Mei, the Hu Shih Professor of Chinese Literature and Philology at Cornell; Catheryn Obern, Cornell director of International Public Affairs; and executives of 11 U.S. companies in Central New York, California and Atlanta.

The Americans made presentations to some 100 Taiwanese venture capitalists and industrialists during the meeting, which was hosted by China Venture Management Inc. The U.S. executives are looking for investment capital, marketing and sales partnerships and licensing opportunities.

Rawlings, who also met with Taiwan President Lee Teng-hui during his trip to Taiwan, said Cornell actively supports entrepreneurship, business creation and innovation based on research developed at the university.

“The discovery of new knowledge with potential commercial value is something that happens with surprising regularity at

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Governor's state budget proposal raises some concerns at Cornell

By Jacquie Powers

Cornell officials have examined the details of Gov. George Pataki's state budget proposal, which reduces funding for higher education, and are consulting with legislative officials to restore critical components to the university's budget and to student financial aid programs.

Analysis of the governor's budget proposal is complicated this year by accounting changes in the budget format and by a proposed change in the fiscal year for the State University of New York (SUNY), through which the four state-supported colleges at Cornell receive a portion of their

funding. The new fiscal year would run from July 1 to June 30, rather than April 1 to March 30.

“We are concerned about the continuing impact of state budget reductions on the statutory colleges at Cornell. Over the past seven years they have absorbed \$21.6 million in appropriation reductions, with a loss of more than 300 positions,” said Cornell Provost Don M. Randel. “At this point further reductions pose a severe threat to the quality of students' education and to our ability to serve essential needs of New York state industries and citizens.”

The executive budget recommendation, announced Dec. 15, would produce a roughly \$100 million reduction in

operating support to SUNY campuses. Cornell's state-supported colleges are the College of Agriculture and Life Sciences, College of Human Ecology, School of Industrial and Labor Relations and College of Veterinary Medicine.

In addition to the SUNY appropriation reduction, Pataki proposed reducing Tuition Assistance Program (TAP) funding by \$100 million, to \$527 million. This will have a direct impact on students who attend all private and public colleges and universities in New York state.

Family income eligibility would be changed from \$50,500 net taxable income to \$50,500 adjusted gross income. This

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BRIEFS

■ Part-time study: With department approval, regular full-time and part-time non-academic Cornell employees may enroll in on-campus courses through the School of Continuing Education and Summer Sessions. Tuition will be waived for up to four credits. The 1996 spring term classes begin Monday, Jan. 22.

Employees may register by mail by submitting the extramural study application form available from the Continuing Education office in B20 Day Hall, or from the Human Resource Relations and Development office at 20 Thornwood Drive. The course instructor and the employee's supervisor and department head must sign the form; some colleges have additional requirements for registering in their courses. The deadline for employees to register by mail is Jan. 30.

The Continuing Education office also makes available the extensive course offerings of the university to adults who are interested in taking a course for their own interest and advancement and who are not enrolled in a Cornell degree program. Registration will take place on Monday, Jan. 22, and Tuesday, Jan. 23, in B16 Day Hall from 8:30 a.m. to 4 p.m.

In addition, the Visitors' Program is offered for adults who do not wish to earn college credit. Courses can be taken for a nominal fee of \$50 per credit. Please call 255-4987 for registration procedures.

For more information, or if you would like to receive *Extramural Study: A Guide to Policies and Procedures*, please come to B20 Day Hall, telephone 255-4987, or e-mail <exmu@sce.cornell.edu>.

■ Campus networking award: Cornell has won the 1995 CAUSE Award for Excellence in Campus Networking, presented for its efforts to make networking widely used on campus. The award was presented on Nov. 30, 1995, at the CAUSE annual conference in New Orleans.

CAUSE, the association for managing and using information resources at colleges and universities, cited a commitment among Cornell's top administrators to improve the use of information technology as critical to the success of the university's efforts.

"From a situation in 1991, where only half the faculty, a quarter of students and a mere 10 percent of staff were served by a network, Cornell has evolved into an Information Age institution, where 95 percent of the faculty, almost 100 percent of the students and 90 percent of the staff are connected to and use the campus network," the award presenters stated.

Seventeen colleges and universities applied for the award, each documenting an experience that could serve as a model for developing a campuswide network.

■ Free English classes: Registration for free English classes sponsored by the Cornell Campus Club will take place on Thursday, Jan. 25, from 7:30 to 9 p.m. in the One World Room, Anabel Taylor Hall. There is a \$10 registration fee. Classes begin Jan. 29. For more information, call Ann Marie Dullea at 277-2488 or Joan McMinn at 277-0013.

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And now the fun begins



Adriana Rovers/University Photography

Human Ecology Dean Francille M. Firebaugh, left, mingled with students and family members after a recognition ceremony for January graduates of the college, held Dec. 15 in Martha Van Rensselaer auditorium. Above, the dean talks to Miriam Levine '96, center, who gave the "Message to the Class" during the ceremony, and her sister Tammy, while their parents, Philip and Joyce Levine, at right, look on.

Federal budget update: Turmoil and mixed news

By Michael P. Voiland

There's good news and bad news for Cornell at the federal budget level.

With Congress and President Clinton still at odds over how to balance the federal government's budget by the year 2002, only seven of the 13 fiscal year 1996 bills that appropriate funds to run the government have become law. But passage of the agriculture, defense and energy-water appropriations bills have assured continued funding of many agricultural programs (such as Cornell Cooperative Extension) and research projects conducted at Cornell through the fiscal year, which ends Sept. 30.

The remaining appropriations bills ei-

ther have not passed the Congress or have passed that body but have been vetoed by the president. This has led to the need for "continuing resolutions" passed by Congress and signed by the president to maintain funding on a temporary basis.

Currently, a continuing resolution has funded the National Institutes of Health (NIH)—Cornell's single largest federal sponsor—at a 5.7 percent increase for the balance of the fiscal year. A different continuing resolution allows spending through Jan. 26 for all other unappropriated agencies but at levels generally equal to or less than that received last year.

Falling under this short-term, limited funding resolution are many agencies or

programs of great interest to university faculty, such as the National Science Foundation (Cornell is NSF's largest university beneficiary), NASA, EPA (including Cornell's Superfund Basic Research and Education Program), the Department of Commerce (including Cornell's Sea Grant, Northeast Regional Climate Center and Local Government programs) and the Department of the Interior (including Cornell's Cooperative Fish and Wildlife Research Unit and Water Resources Institute programs).

Unless appropriations bills covering these programs pass before Jan. 26, another continuing resolution, or program-specific funding bills, will have to become law if further program shutdowns are to be averted.

Budget *continued from page 1*

would lower the eligibility ceiling by approximately \$10,000 and would affect many Cornell students.

"These cuts in the student aid program will be particularly difficult for our students, in view of similar federal proposals that also would lower levels of financial aid," Randel said.

The budget proposal does not, as it did in previous years, provide a specific allocation for the state-supported colleges at Cornell. Instead, all SUNY and statutory colleges are included in a \$2.7 billion appropriation, which would be divided by the SUNY Board of Trustees among the 34 SUNY-operated campuses, the statutory colleges and the SUNY central administration. Cornell has been involved in ongoing discussions with SUNY administrators and trustees about the need for continued financial support of the statutory colleges' essential and unique statewide outreach and research missions, as well as their educational functions.

Cornell received \$120.1 million for its four statutory colleges from the state for the 1995-96 fiscal year, prior to a mid-year cut of \$1.2 million. For fiscal 1996-97, Cornell asked the state for \$126.1 million.

Nathan Fawcett, Cornell's director of statutory college affairs, expressed concern for the state-supported colleges' ability to continue delivering critical outreach and research programs.

In addition, programs such as Sea Grant and the New York State College of Veterinary Medicine's canine research efforts no longer have a separate line item in the executive budget and, therefore, their funding levels are in question.

Cornell officials did find these bright spots in the budget announcement and in amendments offered by the governor this week.

- Direct Institutional Aid to Independent Colleges and Universities (Bundy Aid) would remain at the current year level of \$39 million. (Cornell receives approximately \$2 million based on the number of graduates each year.)

- Statewide aid to county Cooperative Extension associations through Cornell would remain at \$2.9 million.

- Cornell's supercomputing Theory Center would continue to receive \$800,000.

- Support for the state's Centers for Advanced Technology would continue. Cornell's Biotechnology Center receives \$1 million.

- Support is maintained for the state's Educational Opportunity Programs, which provide funding and counseling services for economically and educationally disadvantaged students.

- The Integrated Pest Management (IPM) Program was restored to last year's level of \$787,000.

- The College of Veterinary Medicine's Diagnostic Laboratory, which protects the health and economic vitality of the state's production animal industry, also was restored to last year's level of \$1,845,100.

- The "Agriculture in the Classroom" program, which was eliminated in the original executive budget proposal, would see half of its funds (\$30,000) restored.

In addition, the governor announced in his annual State of the State message that in an amendment to his budget proposal he was including \$250,000 to support breast cancer research and extension programs at Cornell. In the only reference to higher education in his speech, Pataki said he would include funding "for scholars at Cornell University to work with the state to computerize and coordinate information on pesticides and pesticide usage throughout the state."

NOTABLES

Thomas W. Jones '69 and '72, Cornell trustee and vice chairman, president and chief operating officer of the Teachers Insurance and Annuity Association-College Retirement Equities Fund, has been appointed to the

board of directors of the New York Federal Reserve Bank and designated deputy chairman for the coming year.

Donald Saleh, acting dean of Admissions and Financial Aid, has been elected to

the College Scholarship Service for a two-year term as chair-elect and vice chair of the College Scholarship Service Assembly. Beginning in 1997, Saleh will begin a two-year term as chair of the assembly.

Name sought for unified transit system

What's in a name? The future of public transportation in Tompkins County, according to Barbara Blanchard, a member of the Tompkins County Board of Representatives and chair of the operations committee of the Ithaca-Tompkins Transit Center.

"We've been talking for several years about consolidating the city, county and university bus systems to provide a cost-effective public-transit system with better routes and schedules," Blanchard said.

"Now we're ready to do it."

Currently, Ithaca Transit, Tomtran and CU Transit are the three major players. In anticipation of a unified system by summer 1996, Blanchard says the community is being asked to help name the new system, which will operate under "one banner, one name."

Blanchard, who represents the city of Ithaca's 1st ward on the county board, says the new name should create an image for the future, one that is "easy to read, pronounce, and remember, and that is upbeat and positive, creative and fun, and marketable."

She added, "It should be a name that you would be proud to see splashed across the sides of very large vehicles."

Entry blanks will appear soon in the *Ithaca Journal*, *Ithaca Times*, *Cornell Chronicle*, *Ithaca Pennysaver* and the *Suburban Shopper*, as well as on buses and at other locations throughout Tompkins County.

Entries can be submitted through Feb. 29, Leap Year Day.

A panel of distinguished local citizens will review entries, and the winner and the new name will be announced in early March, Blanchard said.

The winner will receive a one-year bus pass valid on the consolidated bus system, plus a \$250 U.S. Savings Bond or tickets and charter transportation for two people to Toronto to see *Phantom of the Opera*. In addition, the first 50 entries will qualify for an Ithaca-Tompkins Transit Center mug.

"The name-that-bus contest is open to all. You don't have to be a current bus rider, but we encourage you to try public transit before you enter," Blanchard said.

She said more people in Tompkins County are riding buses than ever before. According to the latest figures available, ridership has grown since 1992 by about 14 percent, with more than 2.3 million riders in 1995.

"This is a positive performance, but we know we can continue to improve, thus we need a name that not only creates an image for the future, but defines a new standard of high-quality customer service in a bus system that has one, new name," Blanchard said.

"With consolidation, it's possible to improve service and be more cost effective at the same time," she said.



Adriana Rovers/University Photography

Stuart M. Basefsky, a reference librarian for the School of Industrial and Labor Relations' Catherwood Library, shows off the Catherwood Electronic Archive, which he directs.

Library-government partnership will aid access

By Darryl Geddes

In a move designed to make U.S. government reports more accessible to a wider population, including scholars and businesses overseas, a Cornell library has been selected as a site for collecting, transmitting and archiving selected federal labor reports on the Internet.

This development at Cornell puts libraries in the position of becoming public service publishing houses and underscores their importance in formulating national information policy.

The Martin P. Catherwood Library of the School of Industrial and Labor Relations has established the Catherwood Electronic Archive in collaboration with several offices within the U.S. Department of Labor for the dissemination of national reports via the Internet.

"The goal of this initiative is to enable widespread and immediate access of these important documents," said Stuart M. Basefsky, a reference librarian at the Catherwood Library, who directs the electronic archive.

The major advantage to such a partnership, according to Basefsky, is that these documents are now available to a much broader audience.

"Scholars around the world can now access these documents from their desktop," Basefsky said. "The partnership creates a library without walls. We're able to serve many more individuals than

'This partnership is but one way libraries can take a proactive approach to helping construct a national information policy.'

— Stuart Basefsky

those who walk into our facility here at Cornell, and the government is able to make its work available to more people."

Statistics show just how in demand such materials are. According to figures maintained by Catherwood Library, the already-archived Glass Ceiling Commission report has been accessed 3,672 times from Jan. 6 through Oct. 13, 1995, for an average of 13 files transmitted daily from places as far away as Australia.

Posting these reports on the Catherwood Electronic Archive means such documents are available to library users sooner. "There would be a significant delay from the time the U.S. government released the report to the time we could make the document available to our library users," Basefsky noted. "Thanks to this relationship with the Department of Labor, we are able to get these documents on-line within 24 hours after they are released."

Relationships, like the one between the Catherwood Library and the U.S. Department of Labor, highlight the new role libraries can play in collecting, disseminating and archiving government information.

"This initiative is an excellent example of public service privatization," Basefsky said. "From a public-policy standpoint, this sort of privatization becomes a major pay back from libraries for all the government funding they have received in the past and expect to receive in the future. . . ."

"Clearly there are advantages for both the federal government and libraries in fostering partnerships such as the one between the Catherwood Library and the U.S. Department of Labor," he said. "This partnership is but one way libraries can take a proactive approach to helping construct a national information policy."

With more than 193,000 volumes, Catherwood Library contains the most extensive collection of industrial and labor relations materials of any university library in the world and is second overall only to the combined collections of the Library of Congress and the U.S. Department of Labor Library.

To access the Catherwood Electronic Archive via the World Wide Web: <http://www.ilr.cornell.edu/library/e_archive>. To access the archive via FTP Site: <<ftp://ilr.cornell.edu>>. To access the archive via GOPHER: <<gopher://ilr.cornell.edu>>.

Cornell Cooperative Extension helps put one town on 'Best 100' list

By Blaine Friedlander Jr.

Once in desperate straits, Penn Yan, N.Y., recently was named one of the best small towns in America, thanks in part to early advice from Cornell Cooperative Extension agents.

"Penn Yan, N.Y., pulled out of an economic depression by creating a thriving new county marketplace—inspiring other towns to do the same," Norm Crampton wrote in a Dec. 1 *USA Weekend* magazine article. The article was based on his new book, *The 100 Best Small Towns in America* (Simon & Schuster, 1995), released in December. Penn Yan was ranked 60th, tied with Brewton, Ala.

The Windmill Farm & Craft Market, a cooperative and the foundation of Penn Yan's economic recovery, was but a twinkle in the eyes of the town leaders when they approached the Cooperative Enterprise Program at Cornell Cooperative Extension



(CCE) in 1987.

Then newly formed, the cooperative needed hard cash and raw land to get started. With the help of CCE, the cooperative of-

ferred an in-town commercial stock offering. Penn Yan residents bought 500 shares of preferred stock at \$100 apiece. Thus, the cooperative had \$50,000 to start building. First, one structure. Then, two. Soon, the town bank wanted to underwrite the loans for future construction. The bank now flourishes, too.

Before the market opened, the economic picture for Penn Yan was gloomy. Yates County had the lowest per capita income and lowest per capita wage level in New York. When major employers like Angler Boat and Walker-Bin let hundreds of workers go, it hit the town of 5,690 hard.

"This new cooperative effort is being driven by the need for survival and to provide an alternative form of employment. There are fewer resources with which to work, and many mom-and-pop operations don't have heir apparents, so we are looking at ways to stimulate the economy," said Brian Henahan,

senior extension associate of Cornell's Cooperative Enterprise Program.

Local leaders were confident that if they built it, people would come. The core leadership of the cooperative in Penn Yan determined that almost 1.5 million people live within a two-hour drive of the proposed market. So, after raising capital in 1987, they held an old-fashioned barn-raising and erected a 60-by-100-foot marketplace building. That was the small start to the Windmill Farm & Craft Market. Today, there are eight buildings at the marketplace complex.

"This market was destined to be, there's no other way to say it," said Ron Nissen, general manager of the market and one of the charter leaders. The market now receives more than \$280,000 annually in rents from more than 230 vendors and as many as 10,000 shoppers in a day. That planning translates into \$6.2 million of commercial

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Fortune continued from page 1

In 115 years of horticulture at Cornell's Agricultural Experiment Station in Geneva, more than 224 new fruit varieties have been introduced that were developed in New York, including 63 varieties of apple. In 1995, the New York Agricultural Statistics Service projected production of more than 1 billion pounds of apples in New York. Five varieties developed at the experiment station - Cortland, Empire, Jonagold, Jonamac and Macoun - account for almost 20 percent of the state's total production.

More than 3,300 apple varieties or genetically unique lines are grown at the experiment station and U.S. Department of Agriculture's Agricultural Research Service orchards at Geneva, providing important germplasm for future research. Geneva's

In 115 years of horticulture at Cornell's Agricultural Experiment Station in Geneva, more than 224 new fruit varieties have been introduced.

apple collection was begun by horticulturist Emmet S. Goff in 1883 and has grown from 700 varieties of apples and crabapples to what is now considered the largest collection of apples in the world.

"With access to our rich collection of apple genes, scientists at Geneva will continue to provide exceptional, new and improved apple varieties in the future for producers and consumers," said James E. Hunter, director of the Station.

Characteristics selected for in the apple breeding program at Geneva use both traditional and molecular techniques to improve insect and disease resistance, fruit flavor, size, texture, firmness, storage and shelf life, tree productivity, tolerance to cold weather and tree structure.

"Fortune is available in limited supply from select retailers," said Mike Durando, president of the New York Apple Association. "How much production expands is determined by the response of the retail trade. Initial response has been very positive."

Lee Peters, vice president of sales and marketing at Fowler Bros. Inc., Wolcott, N.Y., a firm that grows, packs and ships apples worldwide, said, "Our next available supply of Fortune will be October 1996. Consumer response has been excellent this year. Fortune is worth waiting for."

Taiwan business continued from page 1

Cornell," Rawlings said. "As a major research university, Cornell takes very seriously its responsibilities to make its facilities and the results of its research available for the benefit of society."

To spur new businesses, the Cornell Office of Technology Access and Business Assistance (COTABA) was created a year ago, Rawlings said, and a new initiative, the Cornell Value-Added Research Fund, is in the planning stages. The fund, created initially from private contributions, will move commercially promising discoveries from the laboratory to the marketplace by investing in areas where Cornell already has outstanding research strength, in fields that include medicine, engineering, agriculture, computing and physical sciences.

The Jan. 15 meeting was a continuation of relationships developed during President Lee's historic visit to Cornell last June. At that time, Lee, who earned his Ph.D. in agricultural economics from Cornell in 1968, met with leaders of several high-tech companies that have connections with Cornell and gave his endorsement to building stronger relations with them.

Cornell alumni are well-represented in Taiwan's universities and scientific and research organizations, including National Taiwan University and Academia Sinica, the major academic and scientific research organization in the Republic of China.

CU scientists help to develop Asian Diet Pyramid

By Susan Lang

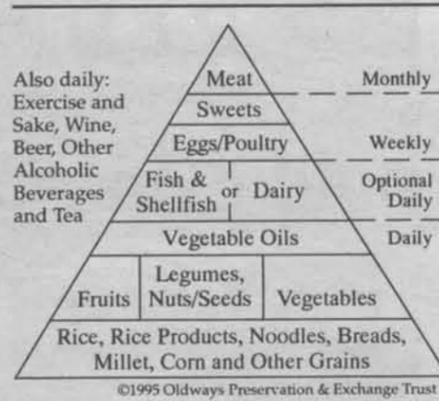


Campbell

To offer a healthful alternative to the 1992 U.S. Food Guide Pyramid, which lumps some animal and plant foods together in a single group, Cornell and Harvard University researchers have teamed up with other experts to assist the non-profit foundation, Oldways Preservation & Exchange Trust, unveil an official Asian Diet Pyramid.

It reflects the traditional, plant-based rural diets of Asia, which research increasingly shows to be linked to much lower rates of certain cancers, heart disease, obesity and, in some cases, osteoporosis and other chronic, degenerative diseases than those found in the United States.

The Asian Diet Pyramid emphasizes a wide base of rice, rice products, noodles, breads and grains, preferably whole grain and minimally processed foods, topped by another large band of fruits, vegetables, legumes, nuts and seeds. Daily physical exercise, a small amount of vegetable oil and a moderate consumption of plant-based beverages, including tea (especially black and green), sake, beer and wine also are recommended daily. Small daily servings of dairy products (low fat) or fish are op-



tional; sweets, eggs and poultry are recommended no more than weekly, and red meat no more than monthly.

It was developed by specialists from the Cornell-China-Oxford Project on Nutrition, Health and Environment based at Cornell University; the Harvard School of Public Health; and the Oldways Preservation & Exchange Trust, which issued the Mediterranean Diet Pyramid three years ago.

"The nutrient composition of the traditional rural Asian diet is very similar to the Mediterranean diet in that both are largely plant-based and both pyramids recommend that meat be consumed no more than once a month or more often in very small amounts," said T. Colin Campbell, Cornell professor

of nutritional biochemistry and director of the Cornell-China-Oxford Project, a massive survey of more than 10,000 families in mainland China and Taiwan designed to study diet, lifestyle and disease across the far reaches of China. By investigating simultaneously more diseases and more dietary characteristics than any other study to date, the project has generated the most comprehensive database in the world on the multiple causes of disease. Much of the research behind the pyramid is based on the China project's research findings.

"However, the Asian diet, which is significantly lower in total fat, may prove to be an even more healthful diet," Campbell added.

Dairy products, which are largely absent in the diets of Asia (except in India), are well regarded in this country for their calcium and are thought by many to inhibit the development of osteoporosis. "Yet, the plant-based, dairy-free diets of much of Asia are linked to a low rate of osteoporosis," Campbell noted. "In fact, Western countries, with their calcium largely taken in the form of dairy products, have significantly higher rates of osteoporosis."

Campbell said he hopes that the Asian Diet Pyramid will bring further attention to the evidence that there are many traditional cuisines worldwide which are useful in promoting good health.

Book honors, expands on Bronfenbrenner's work

By Susan Lang



Bronfenbrenner

A quarter-century ago, Cornell Professor Urie Bronfenbrenner developed his ground-breaking concept on the ecology of human development. That theoretical model transformed how many social and behavioral scientists approached the study of human beings and their environments.

A new book has just been published that honors Bronfenbrenner, the Jacob Gould Schurman Professor Emeritus of human development and family studies and of psychology. The book, *Examining Lives in Context: Perspectives on the*

Ecology of Human Development (American Psychological Association, 1995), assesses and builds upon his theoretical model. The final two chapters are written by Bronfenbrenner.

"In this volume, more than two dozen distinguished scholars recast, reflect on and further extend Bronfenbrenner's theoretical framework in the light of their own research and theoretical perspectives," said Phyllis Moen, the Ferris Family Professor of Life Course Studies at Cornell, director of Cornell's Bronfenbrenner Life Course Center and the first editor of the book. Bronfenbrenner's theory is that development from childhood through adulthood and old age is influenced by one's changing social, cultural and economic environments, as well as one's personal life history of events,

beliefs, relationships and behaviors.

"These leading researchers cross borders of discipline, theory and method toward a common destination in an uncharted terrain. That destination: an international and interdisciplinary understanding of the forces and experiences that shape human development through the life course in a rapidly changing world," Moen said.

The 706-page volume, co-edited by Moen, University of North Carolina's Glen H. Elder Jr. and University of Konstanz's (Germany) Kurt Luscher, is a tribute to Bronfenbrenner's thinking and lifelong accomplishments, Moen said. Those accomplishments, which include authoring numerous scientific publications and co-founding the Head Start program, also embrace an unusual ability to link theory, research and policy.

Galvin, president and CEO.

- Moore Computer Consultants Inc. of Ithaca; Terry Moore, president and CEO.

- RM Capital Holdings; Robert E. Maroney, president and CEO.

The 11 companies participating in the meeting are in the early growth stage, with interests ranging from computer graphics (3D/EYE) to microelectromechanical devices (TMS) to biological non-chemical pesticides (TGT).

"We are very pleased that Cornell took the initiative to organize this trip," said Stamm of Tompkins County Area Development. "We have an excellent opportunity to access significant capital resources because of Cornell's longstanding relationship with the government in Taiwan. This effort is one more example of Cornell's commitment to economic development in our region."

Cornell ranks ninth in the nation in R&D expenditures, with more than \$330 million in total research projects. In recent years, at least 46 firms with annual revenues of \$270 million and 2,250 employees have been developed from Cornell research; 32 of them in Tompkins County and the remainder primarily in upstate New York.

The Cornell Research Foundation, which administers the university's patent and technology licensing, has 800 domestic and 450 foreign patents approved

or pending. Forty new patents approved last year range from veterinary drugs and vaccines to medical devices, food products and processes, and nanofabrication and semiconductor technologies.

Scott noted the great energy among the audience and speakers, which was exhibited throughout the day - both during the respective presentations in the morning and in the afternoon at private meetings between the American businessmen and Taiwanese colleagues.

"The day was filled with a spirit of enthusiastic sharing of information and discussion of future collaborations for tangible development of new business relationships," Scott said.

Stamm said, "We were pleasantly surprised with the level and seriousness of the interest by Taiwanese venture capitalists in investing in Ithaca-area companies. For a variety of reasons, the timing of the Cornell-organized trip was perfect. It is clear that the Taiwanese business people have great respect for Cornell. We feel confident that the foundations of many long-term, mutually profitable relationships were formed."

The Republic of China on Taiwan is one of the world's wealthiest economies with foreign exchange reserves exceeding \$100 billion, second only to Japan. Taiwan ranks as the United States' sixth-largest trading partner with \$42.4 billion worth of goods.

CORNELL RESEARCH

CO₂ process could help keep milk fresh – for months

By Blaine P. Friedlander Jr.

Imagine milk in the refrigerator kept fresh for months. Far-fetched?

Not at all, say Cornell food scientists, who believe they have a way to keep dairy products fresh and fortified for several months—carbonation, the same kind added to carbonated drinks but at lower levels.

"This will further enhance the safety of refrigerated, pasteurized milk by ensuring that pathogenic bacteria will not grow," said Joseph H. Hotchkiss, Cornell professor of food science. He and colleagues previously demonstrated that dissolved CO₂ can extend the shelf life of cottage cheese by about 200 percent. Modified milk has been found to last more than two months in a refrigerator, and it still tastes fresh and contains no dangerous bacteria.

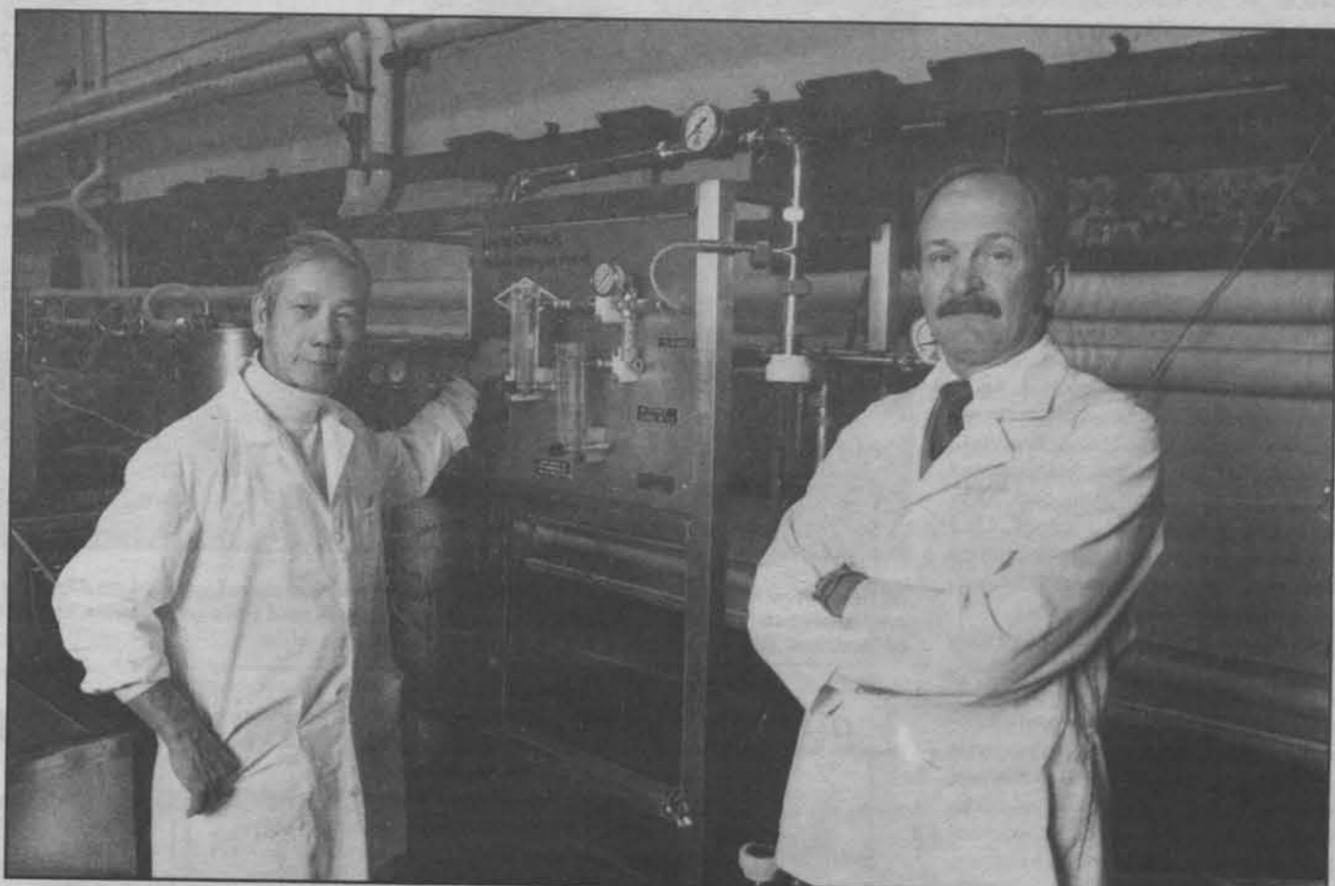
While carbonation has been used in soda for more than a century, the process has not been applied to milk because the microbial activity of low amounts was unknown and because the carbonation would dissipate in milk cartons. Further, the method for inserting the carbonation was not efficient. Thanks to advanced packaging technologies and more efficient carbonation processes, a new style of fortified milk now is possible.

Consumers need not worry that milk now will start tasting like soda. The amount of carbonation injected into the milk is below the threshold of taste detection, according to Hotchkiss, but it is enough to stave off harmful bacteria.

"How much CO₂ must be added depends on a number of factors," he said. "The upper limit is the amount which can be tasted in the fluid milk. The lower limit depends on the desired shelf life and degree of barrier in the package."

The research was reported in an article, "Modified Atmosphere Packaging of Fluid Dairy Foods for Consumer and Institutional Markets," as part of the 1995 annual report of the Northeast Dairy Foods Research Center, the group that funded the study.

How long processors want the milk to



Joseph H. Hotchkiss, right, professor of food science, poses with Joseph H. Chen, senior research associate in food science, in front of carbonation equipment in the Pilot Plant of the Food Science Building.

stay on the shelf drives the prices. "The amount of CO₂ used is very small. The equipment to store and add the CO₂ are relatively simple, and they are a one-time cost," Hotchkiss said. "The largest cost generally is in the improved packaging materials and equipment. Longer shelf life requires better carton barriers, which cost more."

While the technology used to insert the CO₂ was tested in the cottage cheese industry, the cartons to contain the fortified milk are made for the orange juice industry. Thanks to ethylene vinyl alcohol (EVOH) coated cartons, Hotchkiss believes that fluid milk will be able to main-

tain the carbonation.

"Right now, it's our barrier of choice," he said. "Whether consumers accept this new technology or not will be settled in the marketplace."

The technology could have far-reaching effects beyond the grocer's shelves. Hotchkiss said that fluid milk carbonation might have uses during the transport of raw milk over long distances. In some parts of the country, during the summer in Florida for example, milk is imported from northern states because Florida's heat severely reduces dairy production. Injecting CO₂ into raw milk, before it is processed, improves the chances the milk

arrives safely.

The bottom line is still the consumer. A process like this could mark a significant shift in how consumers regard milk. About 11 percent of consumers' total food expenditures is spent on dairy products, according to the report.

"Consumers demand high quality, and they are sensitive to quality defects when purchasing dairy products. Off-flavors are easily detected, especially in fluid milk," Hotchkiss said. "Adding CO₂ is an economical way to extend the shelf life and improve the quality of perishable foods in home storage as well as in retail distribution."

Salt craving drives moth to drink . . . and drink and drink and drink

By Roger Segelken

While human barflies order another round because the pretzels are so salty, a tiny moth is drinking prodigious quantities of water just to get the sodium it craves.

Careful measurements by Cornell chemical ecologists Scott R. Smedley and Thomas Eisner, as reported in the cover article of the Dec. 15 issue of the journal *Science*, demonstrate what lepidopterists have long suspected but never proved: Adult moths' and butterflies' "puddling" – as sipping from mud puddles and other sources of moisture is called – is all about salt.

Sodium acquisition may be the primary function of puddling, said the ecologists, who work with a creature that could be the world's champion drinker. They watched in the field as a male *Gluphisia septentrionis* drank and voided continuously for nearly three and a half hours, consuming more than 600 times its body mass: 38.4 milliliters of puddle water.

"I weigh 165 pounds," said Smedley, a postdoctoral associate in the Cornell Institute for Research in Chemical Ecology (CIRCE), comparing himself to the 1.5-centimeter-long moth. "To keep up with *Gluphisia*, I'd have to drink 12,000 gallons at a gallon per second."

The male *Gluphisia* moth, which lives



Although the male *Gluphisia septentrionis* moth is only 1.5 centimeters long, it can eject water 0.25 meters or farther. Flash photography shows the individual droplets that make up each of the 4,325 water ejections that Cornell biologists counted while one moth drank continuously for more than three hours.

less than a week as an adult, doesn't want the salt just for himself, observed Eisner, the Schurman Professor of Biology. Rather, the male is preparing to mate and pass along the concentrated sodium – as a kind of nutrient legacy – in his sperm packet, Smedley reported in his 1993 Ph.D. thesis.

In a separate article, set for publication in *Proceedings of the National Academy of Science*, Smedley and Eisner will tell what happens next: The short-lived female doesn't keep the donated sodium entirely to herself, either, "but bestows it in large measure on the eggs, thereby endowing the offspring with a first dose

of the valuable ion," they wrote in the *Science* article.

Life is not easy for the *Gluphisia* moth, which lives throughout much of North America. Its favorite food, while in the larval stage, is poplar (or quaking aspen) leaves. Poplar could be on the menu for salt-restricted humans because, as trees go, it's a particularly poor source of sodium. Fortunately for *Gluphisia* caterpillars, their parents bequeath a gift of salt, a head start in a life that will end soon after they do the same for the next generation.

When they analyzed male *Gluphisias*' bodies after their drinking

bouts, the scientists found sodium concentrated in the reproductive parts. "The female, potentially as deficient as the male in sodium, because her larval diet is the same as the male's, receives supplemental sodium from the male at mating, with the sperm package," Smedley and Eisner wrote in *Science*.

The male's sperm package is transferred to the female in a five-hour-long copulation. Then the female allots much of the male-donated nutrient to the eggs.

"It's like dad giving the kids a one-day vitamin plus minerals," Smedley said, "to get them going in life."

Thomas Eisner

Alumnus named peer in Britain's House of Lords

By Jill Goetz

As a graduate student at Cornell during the 1960s, William Wallace, Ph.D. '68, wrote his thesis on the revival of Great Britain's Liberal Party. Now he is serving that party in Parliament.

On Dec. 20, Wallace became a peer in the House of Lords, where he will advise house members on foreign policy, defense and European issues and examine legislation from the Parliament's other house, the House of Commons. Also recently named peers were five Conservatives, four members of the Labour Party and one fellow Liberal Democrat, their numbers dictated by the number of seats each party controls in the House of Commons. Of a total of 1,000 peers — who hold lifetime appointments — approximately 400 are currently practicing, Wallace said.



Wallace

Britain's political parties submitted their nominations for peers to the prime minister last fall. Those nominations were then considered and approved by an all-party committee, before formal approval by the queen. Wallace said one of his party's goals is to make the House of Lords an elected body.

"Overwhelmingly, for me, the most important issue is next year's intergovernmental conference on the future of the European Union and the question of its enlargement to include Eastern Europe," Wallace said. "I am particularly looking forward to getting involved in the whole debate about the future of Europe and Britain's role in the future of Europe."

Wallace will lend considerable expertise to the House of Lords, both political and pedagogical. He first joined the Liberal Party in 1960 and is a longtime national officer. "I was puzzled by the narrow outcome of the 1964 election," he recalled, "watching it at a distance from Ithaca, and decided to write my thesis on the revival of the Liberal Party since its near collapse in the early 1950s." He has been involved in every general election since 1966, on five occasions as a candidate and on three as part of the national campaign team.

In addition, Wallace has been a professor of international studies at Central European University in Prague and Budapest since July 1994 and a Reader in International Relations at the London School of Economics since October 1995.

He also has held visiting positions at the French Institute for International Relations and at Freiburg, Columbia and Harvard universities. He was the Walter F. Hallstein Senior Research Fellow at St. Antony's College, Oxford University, from 1990 through 1995; research director for the Transatlantic Policy Network from 1992 to 1994; and director of studies at the Royal Institute of International Affairs in London from 1978 to 1990.

A native of Leicester, England, Wallace first visited Cornell in 1962 for a year of study while enrolled at Cambridge University. He chose to pursue a Ph.D. in political science at Cornell, where his thesis committee chair was Mario Einaudi, founder of Cornell's Center for International Studies, and his adviser was Theodore J. Lowi, the John L. Senior Professor of American Institutions.



At her home in Ithaca, Lee C. Lee, professor of human development and family studies in the College of Human Ecology and professor of Asian studies in the College of Arts and Sciences, talks about a photo she took of children in the streets of Suzhou, China, in 1982.

Lee C. Lee: Asian American studies pioneer

By Susan Lang

Were it not for a near-fatal case of meningitis at age 16 that destroyed her photographic memory and her ability to read, Lee C. Lee, an expert on Asian-American psychology and identity, might never have emigrated to America, founded the East Coast's first comprehensive Asian American Studies Program at Cornell or launched the Hong Kong America Center in Hong Kong, which promotes understanding between the two cultures.

Lee, professor of human development and family studies in the College of Human Ecology and professor of Asian studies in the College of Arts and Sciences, was born in Suzhou, China, in the 1930s. At 16, she was teaching in an American school in Taipei, Taiwan, and attending a religious youth group when a severe case of meningitis damaged her brain and shattered her reading ability. The American minister of her youth group and his wife took her under their wing and painstakingly taught her to read again.

The couple urged Lee to go to college in America. With a lack of resources, she could go only where she was guaranteed a four-year scholarship. Mount Union College in Ohio, a school at which the minister had contacts, gave her such a guarantee.

Thus, in 1954, Lee became one of the few foreign students studying at the college. When she received a C grade in psychology, which tainted her straight-A average, Lee became determined to "show them" by winning the school prize in psychology. She went on to earn a master's degree in clinical psychology (1959) and Ph.D. in developmental psychology (1968) from Ohio State University. She joined the Cornell faculty in 1968 and now teaches courses in experimental child psychology, personality and social development of children, Asian-American identity, cross-cultural issues in psychology, and she is developing a course on the psychology of the Chinese.

In 1981, with a research fellowship from the U.S. Academy of Sciences, Lee became

'Although Asian Americans have been in this country in significant numbers for at least a hundred years, their cultures and presence had been largely ignored in university settings.'

— Lee C. Lee

the first American psychologist permitted to do research in the People's Republic of China after the Cultural Revolution. She studied the development of prosocial behavior in Chinese children in Beijing and Shanghai. In 1986, Lee returned to China as a consultant for a *Washington Post-Newsweek* television documentary on China's day-care system. And in 1988, Lee collaborated with Chinese colleagues from Wuhan to work on a two-year, seven-site study on the socialization of Chinese children.

During this time, however, Lee became increasingly concerned about the lack of knowledge Asian Americans had about their history in America and other Americans had about Asian Americans. "Although Asian Americans have been in this country in significant numbers for at least a hundred years, their cultures and presence had been largely ignored in university settings," Lee says. "Yet, ethnic studies are an important vehicle for the infusion of new ideas and approaches into mainstream culture. Such programs are a step toward recognizing value in cultural diversity and toward preserving the broad philosophical base crucial to excellence in higher education."

Thus, Lee developed courses on the Chinese in America, attitudes of U.S. media toward Asian Americans and the social history of Asians in the United States from the 19th century to the present. Her concerns about Asian-American issues led to the formation of the Asian American Studies Pro-

gram at Cornell in 1987, and Lee was its founding director.

Today, Cornell is the national headquarters of the Association for Asian American Studies and secretariat of the East of California network.

Lee has continued to build Asian American bridges; in 1992, she took a sabbatical leave from Cornell with a Distinguished Fulbright Professorship to serve as the founding director of the Hong Kong America Center. An independent, non-profit organization open to any American scholar seeking office space and academic resources in Hong Kong, the center promotes the understanding of American society, culture and the arts for the Hong Kong community and the understanding of Hong Kong in America.

In just seven months, Lee found a home for the center at The Chinese University of Hong Kong, got it designed and built, formed a board of governors, launched its inaugural symposium, found corporate sponsors and members, and obtained a donation of a local area network (LAN) with more than 20 computers and a multimedia computer network.

"I am most proud of the fact that for the first time in Hong Kong, colleagues from different Hong Kong universities were working together to support the center, yet each have nothing to gain personally from doing so," says Lee, who notes that by the time Hong Kong is returned to China in 1997, the center hopes to have an endowment so that it may continue serving Chinese and American universities.

In addition, Lee is doing research on Chinese children in the Chinatown section of New York City and is editor of the forthcoming book *Handbook of Asian American Psychology*, due out in 1996 with profits going to the Asian American Psychological Association. Lee is also an avid photographer. She has had five solo shows at the Everson Museum in Syracuse, the Hartell Gallery here at Cornell, Stanford, in Elmira and New York City. One of her photos was featured on the front page of *The New York Times* Friday Metro Section.

Penn Yan on 'Best 100' list *continued from page 3*

dollars flowing through Yates County. "A lot of things have changed in Yates County," Nissen said.

"Some people have to buy gasoline, others have to go to restaurants. The market helps other businesses. Essentially, we have a tourist draw."

Before the market, there was only one

business on the rural road on which it is located. Today, there are 15. "Now that is rural economic development," said Bruce Anderson, director of the Cooperative Enterprise Program.

The market has also spawned related markets. Once a week there is a hay auction, and last year the facility provided for a

biweekly wholesale produce auction. By the end of the season, it had 128 registered buyers from throughout New York's Southern Tier. The Windmill Market is now the largest employer in Yates County, providing about 120 jobs.

"The cooperative not only provides an alternative source of employment, a

stimulator of local business activity, but more importantly it is an object of pride which the entire community can enjoy," Anderson said.

"The market was a real team effort, and we with Cornell Cooperative Extension are proud to have been a part of the team," he said.

CU astronomers find counter-rotating stars in a spiral galaxy

By Larry Bernard

Cornell astronomers, observing what they call "the most boring, average galaxy" they could find, have discovered some unusual mechanics: counter-rotating stars in a spiral galaxy.

About 80 percent of the stars in the galaxy NGC 4138 — mostly older stars — are rotating in a direction opposite to the younger stars and a huge cloud of hydrogen gas encircling the galaxy, according to findings by Martha Haynes, Cornell professor of astronomy, Katherine P. Jore, doctoral student, and Adrick H. Broeils, research associate at Cornell's Center for Radiophysics and Space Research. They presented their findings today (Jan. 18) at the American Astronomical Society meeting in San Antonio, Texas.

"This galaxy appears to be completely normal," said Haynes, who directed the studies. "This is a relatively featureless, smooth-armed spiral galaxy. But what we found was a big surprise."

The researchers found that a huge cloud of atomic hydrogen gas surrounds the stars that comprise the galaxy visible in optical images. But the hydrogen gas is rotating in the opposite direction from the stars in the visible galaxy. A closer look revealed that they were not all traveling together in their orbits: 20 percent of them are traveling along with the atomic gas while the other 80 percent of the stars are going around the opposite way.

"It's like being in a car on a traffic rotary with 80 percent of the cars going in the opposite direction," Haynes said.

The concept of two intermingled disks of stars and gas, traveling in opposite directions, appears to contradict as-

'This is a relatively featureless, smooth-armed spiral galaxy. But what we found was a big surprise. . . . It's like being in a car on a traffic rotary with 80 percent of the cars going in the opposite direction.'

— Martha Haynes

tronomers' understanding of how spiral galaxies, like the Milky Way, form. "Counter-rotation can be understood in rare instances if two galaxies merge with each other," Haynes said. "However, in such cases, we would expect to see some disturbance in the galaxy's appearance or some nearby companion."

Mergers appear to have been more common at high redshift and frequently are seen in Hubble Space Telescope images of distant objects. Counter-rotating disks, believed to be the result of the swallowing of a small companion, have been seen in the centers of some elliptical galaxies and a few other spiral galaxies, such as the peculiar galaxy known as the "Evil Eye."

The researchers said they did not know why this was occurring in NGC 4138. Said Jore: "Our review of all of the evidence suggests that the counter-rotating disk may come from the accretion of a gas-rich dwarf companion, or might just be the result of the continual infall of material with an opposite spin onto NGC 4138 from far outside."

The scientists will have more observing time at the Kitt Peak National Observatory and the Palomar Observatory in March and April to look more closely at the two stellar components. "It is possible," Jore said, "we may be able to separate them and to better develop the picture of how the two came to coexist."

The team originally was attempting to map the dark matter in spiral galaxies. For this study — Jore's Ph.D. thesis — they attempted to examine only galaxies that had not been involved in mergers or interactions with other galaxies that might have peculiar characteristics. Her thesis was jokingly referred to as the "boring galaxy project."

NGC 4138 was the first galaxy they observed. They used the Very Large Array radio telescope of the National Radio Astronomy Observatory in New Mexico for eight hours to map the hydrogen cloud. It was a year later, when they observed the galaxy for two hours with the 200-inch Hale telescope at Mount Palomar that they discovered — to their complete surprise — the counter-rotation. Cornell astronomers have 25 percent of the observing time at the Hale telescope.

Haynes speculates that perhaps this kind of peculiar rotation is common and points out that "if we had stopped after we made the VLA observations, we would not have even found the real rotation of the galaxy." Most astronomers do not observe both the stars and the gas when they study how galaxies rotate. The Cornell researchers have found two other examples of counter-rotating stars where they are not expected, but those results are pending.

"This is not what we were looking for. Probably it has nothing to do with the dark matter problem," Haynes said. "But NGC 4138 is not a boring galaxy after all."

Kitten personality test may predict adult behavior

By Roger Segelken

Whether a kitten grows up to be an aloof loner or a participating family member, a confident kitty or a fraidy feline is something animal adoption agencies and potential pet owners would like to predict.

Now, animal behavior experts at Cornell's College of Veterinary Medicine are developing a kitten personality test to help choose a cat, based on expectations of the pet as an adult.

"Not everyone wants a cat that sits on your head like a hat and helps you type," said Soraya Juarbe-Díaz, D.V.M., a resident in the Animal Behavior Clinic at the veterinary college. "For some people, an aloof cat — one that regards you as a can opener with legs and leaves you alone the rest of the time — is the ideal pet."

Too many cats are abandoned or returned to animal shelters because their temperament as adults was not what owners expected, Juarbe-Díaz said. Owners hoping for a docile lap cat may get an unmanageable monster, while those with mouse problems get a purring pacifist. Sometimes the new cat in the house simply can't get along with the established animal occupants.

"There are personality tests for puppies, but it's not clear how useful they are in predicting adult temperament, and besides, most dog tests probably don't apply to a completely different species," said Katherine A. Houpt, V.M.D., Ph.D., director of the Animal Behavior Clinic. "Dr. Juarbe-Díaz' experiment should show whether a kitten personality test is possible or whether cats need to be a little older before we can predict how they turn out."

Working with kittens and older cats that are up for adoption at the SPCA shelter in Ithaca, Juarbe-Díaz will try a variety of tests designed to predict adult behavior. Among the questions:

- How do kittens as young as 6 weeks respond to silhouettes and recorded sounds of a barking dog and a meowing cat?
- Do they resist when they are held on a lap for petting, when they are lifted by the scruff of the neck the way mothers carry kittens or when they are restrained for a veterinary examination?
- Do they like to be petted?
- When they are placed in an unfamiliar environment, do they explore or do they cower in the corner?
- When a toy is dragged by, do they



Adriana Rovers/University Photography
Veterinary resident Soraya Juarbe-Díaz, D.V.M., performs a personality test on a cat at the Ithaca SPCA. This particular test is used to differentiate a lap cat from one that doesn't like to be petted or held by people.

play like a pussy cat or pounce like a predator?

The animal-behavior experts will check every few months with people who adopt the cats to learn how the animals matured and whether their temperament matches the owners' expectations. But the owners will not be told at first how their cats scored on the kitten personality test, in part because the veterinarians don't yet know whether kitten traits are really meaningful.

"I'd be happy if five or six of the traits turn out to be useful predictors," Juarbe-

Díaz said. She hopes to develop a standardized test that animal shelter personnel — with some training — can apply. Simply choosing a kitten, she said, shouldn't require the services of a Ph.D. behavioral psychologist.

And what kind of cat does the behavior expert prefer? Juarbe-Díaz doesn't have a cat; a dog and a horse are enough right now, she said. But she wouldn't mind a cat that "sits on my head and helps me type," she noted, adding, "I'd probably pick the boisterous kitten that's climbing up the side of the cage."

Donald Rakow named director of Plantations

By Blaine P. Friedlander

Donald A. Rakow has been named the Elizabeth Newman Wilds Director of Cornell Plantations, which administers the arboretum, botanical garden and other natural areas of Cornell's Ithaca campus. He had been acting director.

As director of the university's outdoor museum for living plants, Rakow will lead efforts to continue to beautify more than 2,900 acres of awe-inspiring gorges, manicured lawns framed by venerable structures and exquisite botanical gardens, as well as keep up with the latest in arboretum technology.



Rakow

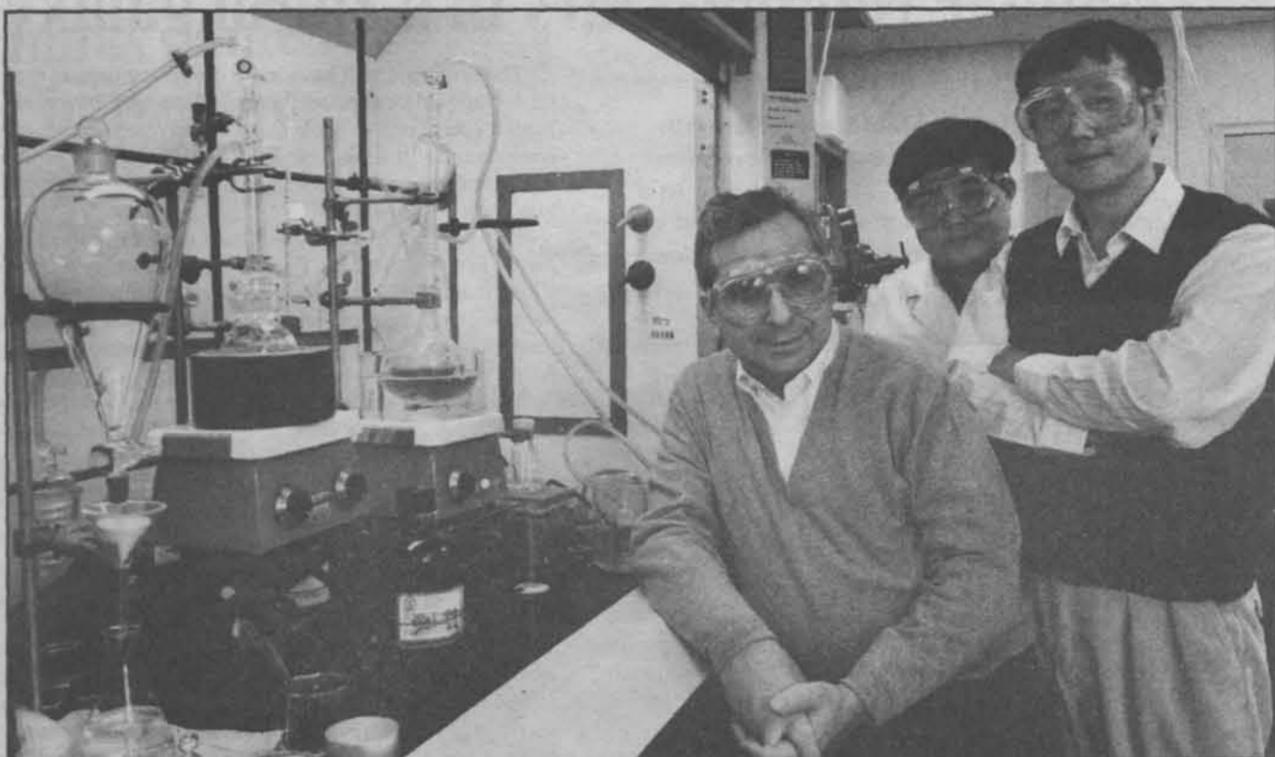
In September, Cornell Plantations received a \$112,500 grant from the federal Institute of Museum Services. The grant came at a critical time for the Plantations, said Rakow, since it was the only one of 27 grants bestowed to botanical gardens in New York.

"Plantations is currently engaged in a comprehensive evaluation of our educational programs and physical facilities, planning for the future," Rakow said. "These funds will help us further the review and planning processes to better meet the needs of our audiences, particularly the Cornell community and the regional public."

More than 100,000 visitors tour Cornell Plantations annually, an activity which last June gave rise to a new book, *Cornell Plantations Path Guide*. For visitors prepared with comfortable walking shoes, the guide provides instructions for enjoying the seven miles of beautiful paths.

Rakow has served as associate director of Cornell Plantations and also holds an associate professorship of landscape horticulture in the Department of Floriculture and Ornamental Horticulture in the College of Agriculture and Life Sciences. Prior to that, he was a horticulture extension agent with Cornell Cooperative Extension in Broome County.

Rakow received his master's degree and doctorate from Cornell in the Department of Floriculture and Ornamental Horticulture. He received his bachelor's degree, cum laude, from the State University of New York at Albany.



Adriana Rovers/University Photography

Researchers involved in inventing a novel class of biomaterials having biological activities for repairing damaged human tissue and organs, are, from left to right, Jack H. Freed, professor of chemistry; Keun Ho Lee, doctoral student in textiles and apparel; and C.C. Chu, professor of fiber science.

Inventions aim to improve medical procedures

By Susan Lang

A Cornell fiber/biomedical material scientist has made two breakthroughs, both recently approved by the U.S. Patent Office, to help the health care industry and medical patients: a non-toxic method for sterilizing biodegradable medical materials and devices, and an innovative chemical process that could make implants "biologically active" to help promote healing and fight off disease.

These inventions are the work of C.C. Chu, professor of fiber science in the Department of Textiles and Apparel in the College of Human Ecology. Chu is an expert in polymer science and biomaterials.

The first involves modifying the currently used gamma irradiation sterilization process with extremely low temperatures (-192 degrees C) and a very strong vacuum. This method could replace the current ethylene oxide gas method of sterilizing biodegradable materials and devices, which is tedious, time-consuming and toxic to workers.

Currently, biodegradable biomaterials, such as surgical thread, staples, clips and surgical meshes, must be sterilized by ethylene oxide gas, a highly toxic substance that poses serious risk to workers. Other methods of sterilization de-

stroy the properties of these biodegradable sensitive biomaterials.

By modifying the existing, convenient and efficient gamma irradiation process, however, Chu has successfully sterilized biodegradable biomaterials without any deterioration of the materials' mechanical properties.

"Extremely low temperatures — those used for liquid nitrogen — in a strong vacuum somehow retards the breakdown of the biomaterial's properties by gamma rays," Chu said.

Adapting existing gamma sterilization equipment would be relatively inexpensive, Chu said, and easy for the industry to accept. With K.H. Lee, a doctoral candidate in textiles and apparel, Chu has tested the new method using standard protocols of sterility.

The second invention, in collaboration with Lee and Jack Freed, Cornell professor of chemistry, is a new chemical process to attach nitric oxide and its derivatives — molecules that play important roles in blood clotting, blood pressure, neurotransmission and anti-tumor functions, among others — onto biomaterials.

"Nitric oxide, named the Molecule of the Year by *Science* magazine, is a very small but highly reactive and unstable free radical biomolecule with expanding known biological functions," Chu ex-

plained. To date, artificial delivery of this "wonder" biochemical and its derivatives into humans at a controlled rate for therapeutic purposes has been difficult because of the molecule's extreme instability and short shelf life.

By devising a successful method of attaching these messenger molecules onto synthetic biomaterial substrates, implants could become "biologically alive." In other words, nitric oxide and its derivatives could be delivered to any living tissue at any desirable concentration, and the rate of their release could be controlled for performing biological functions. In addition, biologically active surgical implants could be developed that reduce inflammatory and foreign-body reactions, Chu said.

"This new process has the potential to trigger the development of a new class of biomaterials, from anti-cancer drugs, surgical implants and wound closure biomaterials with improved healing and anti-microbial capabilities to innovative drug control/release devices for fortifying the immune system against cancer and synthetic vascular grafts that would not clot for the reconstruction of injured, diseased or aged blood vessels," Chu said.

Each of the projects was supported with about \$50,000 from the College of Human Ecology.

Firm becomes a corporate partner at Theory Center

By Linda Callahan

The MathWorks Inc. of Natick, Mass., has joined the Cornell Theory Center's (CTC) Corporate Partnership Program. A research team at Cornell is working with The MathWorks on a project to increase the capabilities of the programming language MATLAB for multiple processors and high-performance computing.

MATLAB (matrix laboratory) is a technical computing environment for high-performance numeric computation and visualization. MATLAB integrates numerical analysis, matrix computation, signal processing and graphics in an easy-to-use environment where problems and solutions are expressed just as they are written mathematically — without traditional programming.

Used in university engineering and computer science departments, and also used in industrial settings for research and for solving practical engineering and mathematical problems, MATLAB is a complete, extensible technical computing environment that provides computation, visualization and application-specific toolboxes.

The research team, comprising members from the Theory Center and Cornell's Computer Science Department, is investigating methods for running MATLAB not only on high-performance computers such as the SP but also on networks of workstations, without requiring changes to the MATLAB kernel product.

According to Anne Trefethen, a Cornell research scientist and one of the project leaders, "We want people to be able to use the computer resources around them with the tools they already know and enhance the power of those tools. We hope this collaboration will bring MATLAB into the high-performance computing arena."

Cleve Moler, MathWorks chairman and chief scientist, said: "We are excited about this project. The individual nodes of parallel computers are now powerful enough that each one can run a full copy of MATLAB. The prospect of combining dozens of MATLABs on a large-scale simulation is very intriguing. It has never been done before."

This is a non-commercial research project. Any software generated will be in the public domain, available from Cornell or MathWorks file servers.

"This kind of partnership shows how leading software vendors and advanced centers like CTC can join forces to demonstrate the value of scalable systems for both academic and commercial applications," said Peter M. Siegel, director of CTC's Corporate Partnership Program. "I am especially excited at the potential to affect new business communities, such as the financial industry, for which the combination of powerful, easy-to-use software like MATLAB and a scalably parallel computer like the IBM SP is ideal."

The MathWorks Inc. was established to develop and market interactive engineering and scientific software products. The company specializes in providing high-performance numeric computation and graphics in an easy-to-use environment for university, government and commercial markets worldwide. The company's goal is to increase the scope and productivity of science and engineering, accelerate the pace of discovery and development, facilitate learning and amplify the creativity of research.

Cornell Theory Center is one of four high-performance computing and communications centers supported by the National Science Foundation. Activities of the center also are funded by New York state, the Advanced Research Projects Agency, the National Center for Research Resources at the National Institutes of Health, IBM and other members of CTC's Corporate Research Institute.

Spider silk *continued from page 1*

performance, bio-inspired materials."

So far, no metal or synthetic fiber can match the properties of the orb-weaver's dragline silk, which is spun first to make the spokes of the web and support the arachnid's weight as it hangs from branches. Dragline silk is stronger, per cross-sectional area, than steel, yet it can stretch to, and rebound from, 15 percent of its original length.

Led by Jelinski, physics graduate student Michal and postdoctoral researcher Simmons, now a staff scientist at DuPont Canada, examined alanine, which is known to reside in the crystalline regions of spider silk. They fed the spiders a special diet that included deuterated (or "heavy") alanine and collected the deuterium-labeled silk on a spindle with their homemade silking machine.

"It's like painting all of the alanines red," explained Jelinski. "We then query the 'red' parts using nuclear magnetic resonance," she said, noting that the same technology used in medical MRI scans in this case gives biophysicists information about orientation and motion of molecules.

"The exciting part," said Michal, who built one-of-a-kind hardware for collecting the data, "was that we found two types of crystalline alanines." Using computer simulations, Michal found that 40 percent of the alanines are as highly oriented as molecules in the synthetic fiber Kevlar — an unexpected finding for a biological fiber. The other 60 percent are far less oriented but are crystalline nevertheless.

"The way we think it works," Michal said, "is that the poorly oriented crystalline segments are like fingers, reaching out to make a good coupling between the highly oriented and the amorphous domains."

Describing their new model in *Science*, the Cornell researchers wrote: "These poorly oriented crystallites may be important in effectively coupling the highly oriented domains and the amorphous regions, producing a biomaterial with exceptional toughness."

As close as the scientists have come to unraveling the spiders' secret, genetically engineered silk plants or bacteria-filled bioreactors are still several steps away,

Simmons said. "Our model is attractive in that it predicts several hypotheses that can be tested," she observed. "The model lets us predict that all of the glycine-serine amino acid pairs form loops, and it is the slight irregularity in their placement which will have to be duplicated in synthetic genes to achieve the same mechanical properties."

Silk studies by the interdisciplinary team were supported by the National Science Foundation and the National Science and Engineering Research Council of Canada. Working on another piece of the super-fiber puzzle is David T. Grubb, Cornell professor of materials science, who is examining spider fiber with X-ray diffraction at CHESS, the Cornell High Energy Synchrotron Source.

"This multidisciplinary team highlights one of the real strengths of Cornell's biophysics and bioengineering programs," said John E. Hopcroft, dean of the College of Engineering. "Where else can you bring together engineering, materials science, instrumentation, physics and biology in such a natural and high-impact way?"

Faculty nominees sought for Weiss Fellowships

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. They may hold the title along with other named professorships. President Rawlings appointed the members of the Weiss Committee, consisting of Weiss Fellows, emeritus faculty and three senior students from the undergraduate colleges, to solicit and then recommend nominees for his final se-

lection. 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. The committee will obtain any additional material required. Nominations, due by Feb. 19, 1996, should be sent to the Stephen H. Weiss Presidential Fellows Committee, 315 Day Hall. For information, call 255-4843.

The current holders of Weiss Fellowships are: Richard D. Aplin, agricultural, resource and managerial economics; David M. Galton, animal science; David Gries, computer science; Walter LaFeber, the Marie Underhill Noll Professor of American History; David A. Levitsky, nutritional sciences; James B. Maas, psychology; Mary J. Sansalone, civil and environmental engineering; Meredith Small, anthropology; and Stephanie Vaughn, English.

Hodges' focus is on policy issues of computer use

By Daisy Z. Dailey

Universities across the country — and around the world — are facing unique challenges in the realm of computer-use policy. Many issues must be dealt with, such as who has access to information and for what purposes, and what is and is not acceptable behavior in a networked world.

With most academic institutions, not to mention thousands of commercial enterprises using computer networks, the rules of the game can become quite complex. In fact, it might be more accurate to say that the rules are not yet written in many places; therefore, a number of questions must be addressed. For example, how are issues such as harassment, privacy and copyright dealt with in the electronic world? Is it possible to anticipate such issues before they arise, to write policy accordingly, or to use existing policy to deal with them?

At Cornell, the answer is yes. Shortly before the issuance of the Responsible Use of Electronic Communications policy to the campus in October 1995, Marjorie Hodges, Cornell's former Judicial Administrator, joined the Office of Information Technologies as policy adviser (see 30 Nov. 1995 *Cornell Chronicle*, p. 3, "New policy governs cyberspace conduct and responsibility" by William Steele).

While Hodges holds a law degree, she is not acting in the "usual" capacity of an attorney. Instead of providing legal counsel, she will be encouraging campus dialogue about the legal and ethical issues surrounding the use of network-based resources, sponsoring seminars and workshops, and participating in campus policy development efforts. In this capacity, she is working closely with various Cornell entities, including the offices of the University Counsel and the Judicial Administrator, and the Cornell Law School, Cornell Information Technologies and others.

In creating this position, Cornell is forging new ground. In addition to providing leadership to the campus, Hodges will assist other universities seeking guidance on issues related to the responsible use of computers and networks. According to Hodges, the response from Cornell and other institutions has been enthusiastic.

"I am amazed at the number of calls I have received in the last month requesting copies of Cornell's Responsible Use policy. Colleges and universities across the country are starting the process that we recently completed and may appreciate learning about Cornell's experiences," Hodges said.

Given the growing popularity of electronic communication and the Internet, the demand for experts who are knowledgeable about both law and computing will continue to grow. Hodges' position, a term appointment, will be extended if external funding becomes available.

Regarding her new role, Hodges said, "Law and ethics of computer use are dynamic topics right now, and I'm excited to work with the campus community to address these issues."

For more information on the Responsible Use of Electronic Communications policy or to find out more about educational opportunities related to computing policy, contact Marjorie Hodges, mwh2@cornell.edu, 254-8309.

For copies of the Responsible Use of Electronic Communications policy, contact Dolores Chase in the Office of Information Technologies, dtc1@cornell.edu, 255-8099.

If you have any questions or comments about this article, please send them to <citnews@cornell.edu>.



Hodges



Adriana Rovers/University Photography

English Professor Molly Hite, second from right, and her husband, University of Rhode Island Professor Frank Costigliola, third from right, gave a Dec. 16 "regression session" open house in their apartment in the Class of '18 Hall. Joining in the fun, which included finger-painting and cookie-baking, were fellow dorm residents, from left to right: Kristi Bullard '99 in engineering; Louis Silvers '99 in Agriculture and Life Sciences; and Zack Leifer, also '99 in ALS.

Professors and students share some living space

By Julia Bonney

When you cross the apartment threshold of professors Molly Hite and Frank Costigliola, you enter a home that is warm and inviting. The colorful paintings of their 11-year-old daughter, Molly Amanda, cover the walls of the entryway. An enormous fish tank bubbles away in the dining room and a plump rabbit munches contentedly in his hutch.

In many ways, their home is like any other. One notable difference is that this particular family shares an address with 206 Cornell students, most of whom are freshmen. The Hite-Costigliolas are part of the Campus Life Faculty-in-Residence program. They live in the Class of 1918 Hall on West Campus and interact extensively with its residents and residents of the Class of 1926 Hall, which houses the JAM (Just About Music) residential program.

Hite, who teaches 20th-century fiction, feminist theory and creative writing at Cornell, and Costigliola, on leave from the University of Rhode Island with a Guggenheim Fellowship, are in their second year as faculty members in residence. They are unconditional in their enthusiasm for the program and are already planning to "re-up" when this two-year commitment expires.

Hite and Costigliola believe that living in

'I knew students in the classroom, but I had no idea what their lives were really like.'

— Molly Hite

the residence hall has enriched their lives as academics. Hite explains: "I knew students in the classroom, but I had no idea what their lives were really like. You don't know that they can play incredible guitar, for instance, or that they've tutored non-English speaking people most of their lives. There are amazing aspects of these freshmen that are completely invisible in the classroom."

Being faculty-in-residence held some surprises for the couple, the biggest of which was how much they liked it. Even after agreeing to enter the program, they had reservations. They weren't certain how living in the residence hall would affect their privacy. They understood they would work closely with the residence hall staff, but they didn't know what to expect. They were afraid they would end up counseling students and dealing with their personal problems. As it turned out, all of their fears were unfounded.

Hite says that working with the Campus Life residence hall staff has been "a real eye-opener. They are wonderful, stable, mature, good people who are incredibly well-trained. They have impressive established procedures for handling problems, including unruly students. Our own residence hall director is such an extraordinary person, beloved and efficient. She's a real testimonial to the fact that Campus Life knows what it's doing. Because of her, we've had no trouble slipping into this job, with lots of access to students. At the same time, no one barges in on us. They view this apartment as our home."

Interaction with students takes on many forms, from poetry readings in JAM, to a group of women students meeting in the Hite-Costigliola apartment to view and discuss women's films. Groups of West Campus students often attend Bailey Hall concerts and Cornell theater with the family.

Hite and Costigliola are eager to see the Faculty-in-Residence program expanded. They believe the value of the program — in its various dimensions — lies in breaking down the barriers between living and learning. To that end, they are exploring the idea of teaching courses in the dorms, as a natural extension of what happens in the classroom setting.

Firm hosts Johnson School consulting competition

By Darryl Geddes

Management consulting firms no longer wait in lines at university placement offices to find new talent. Now they've entered the classroom to see how students perform as would-be consultants.

The consulting firm of Ernst & Young LLP recently sponsored and judged a \$5,000 consulting competition at Cornell University's Johnson Graduate School of Management. Ernst & Young's foray into the classroom marks a departure from how the firm connected with students in the past.

"We've met with students at different activities, like social events and receptions, but the case competition is a much more substantive approach," said David Tierno, national director of human resources and organization development for Ernst & Young LLP consulting services practice. Ernst & Young LLP is the largest professional services firm in the United States, employing over 22,000 here and 66,000 abroad. "Supporting competitions like this one at the Johnson School gives us more content and a better understanding of the educational environment and a better insight into the quality of the students and instructors."

The competition's final round, held Dec. 12, required each student consulting team to present a detailed plan on how their fictitious consulting firm could benefit a particular corporation. Students presented their plans to Tierno and two other Ernst & Young associates, Bradley Furman and Donna Meucci who, depending on the scenario, were cast as executives of the Ford Motor Co., Caterpillar, Marriott International and Apple Computer. (Furman and Meucci are graduates of the Johnson School.)



Charles Harrington/University Photography

At the award presentation, from left, are: Bradley Furman, senior manager, and David Tierno, partner and director of human resources and organizational development, Ernst & Young LLP; Alan McAdams, associate professor of managerial economics; and members of the winning consulting team, MBA students Bradley Stewart, Christopher Morris, Christian Abyholm and Andrei Bgatov.

One student consulting group cast Tierno as Ford's CEO Alex Trotman and suggested that if the automaker adopted the "new industrial paradigm" it could attain global leadership.

MBA student Miguel Fernandez-Martinez said the competition was one of the most rewarding educational experiences he's had. "This kind of project is important to have in business school," he said, "especially because it dealt much less with theory and more with actual experience."

The winning team - Christian Abyholm, Andrei Bgatov, Christopher

Morris, and Bradley Stewart - told how their firm, Aardvark Consulting, could help Ford Motor Co. improve its bottom line by implementing the new industrial paradigm. For their winning presentation the students split a \$4,000 prize.

MBA Consultants - John Bunce, Miguel Fernandez-Martinez, Janina Jancu and Anthony Riley - shared a second place prize of \$1,000 for their presentation to Marriott International.

"The school has much to be proud of," Tierno said. "The presentations were very thoughtfully done and very professional."

Students indicated a level of maturity and professionalism that does credit to the school and their faculty. The presentations showed evidence of a lot of preparation. I would not be ashamed to take any one of these people in front of my clients."

According to Alan McAdams, associate professor of managerial economics who teaches the management consulting class, the winning team impressed judges in every way. "Every member performed well and with high energy," he said. "The substance was strong and the presentation was tightly integrated."

Peace Studies' Judith Reppy attends Norway Nobel ceremonies

By Jill Goetz

The associate director of Cornell's Peace Studies Program was in Norway last month for the presentation of the 1995 Nobel Peace Prize, which went to London scientist Joseph Rotblat and the Pugwash Conferences on Science and World Affairs, the organization over which Rotblat presides.

Judith Reppy attended the Nobel ceremonies in Oslo City Hall on Dec. 10 as a co-chair of the U.S. Pugwash Committee and member of the organization's international governing body. Pugwash was founded 38 years ago in Pugwash, Nova Scotia, to work toward elimination of nuclear weapons.

Joining Reppy at the ceremonies - which included a banquet and choral performance - were Harvard University's Steve Miller, fellow co-chair of Pugwash's U.S. committee; John Holdren, chair of its executive council; and Richard Garwin, a long-standing Pugwash member and A.D. White professor-at-large at Cornell.

"It was a very happy occasion," Reppy said of the event. "People were thrilled that Pugwash had been honored in this important way and glad to celebrate it with close friends. The Peace Prize is the only one awarded by the Norwegian branch of the Nobel Institute, so the gathering was smaller than the one in Stockholm and, from all reports, more fun. There was a certain amount of pomp - the king and queen



Cornell's Judith Reppy and Francesco Calogero, director-general of Pugwash, at the Dec. 10 banquet honoring recipients of the 1995 Nobel Peace Prize in Oslo, Norway.

attended the official ceremonies and the concert, and there was literally a red carpet for them to walk on - but the atmosphere was generally friendly and informal."

Besides her post with the Peace Studies Program - where she also has served as director, a rotating position - Reppy

is associate professor in Cornell's Department of Science and Technology Studies. A specialist in issues relating to military spending and the economy, she received a Ph.D. in economics from Cornell in 1972 and has been affiliated with the Peace Studies Program since 1973.

Reppy joined Pugwash in the early 1980s and has participated in its annual meetings as well as special topical meetings, such as one in 1985 on the Strategic Defense Initiative and the Anti-Ballistic Missile Treaty. She has contributed background papers for Pugwash and currently is editing a book for the organization on the conversion of military research and development.

Other Cornellians who have participated in Pugwash include Hans A. Bethe, the John Wendell Anderson Professor of Physics Emeritus; Kurt Gottfried, professor of physics; Franklin A. Long, professor of chemistry emeritus; and Lawrence Scheinman, professor of government.

Current international and civil conflicts notwithstanding, Reppy is optimistic about the future.

"I think prospects for nuclear disarmament are generally better than at any time since 1945, but that does not mean that it will be easy," she said. "Personally speaking, Pugwash has made me much more aware of the different perspectives of people around the world. It is an excellent corrective to the U.S.-centered discourse on security that we get so much of in our media."

PCCW makes grants available for women faculty and researchers

To help advance the careers of women in academia, the President's Council of Cornell Women (PCCW) is offering grants to support the completion of dissertations and research leading to tenure and promotion.

Deadline for application for the grants, which can be in any subject, is Feb. 16. Eligible applicants include Cornell women who are either Ph.D. students or assistant or associate professors.

Established in 1992, the PCCW grants have supported research in a wide

range of fields. Funded proposals have included projects as diverse as investigating the impact of *Rhodococcus equi* pneumonia on racing performance of horses, law and the transformation of migrant identity in China's transition to a market economy, canopy mammals in Panamanian tropical forests and the relationship between Native Americans and the National Park Service.

In 1995, 13 of 112 applications were approved for funding. Recipients included two faculty members and 11

Ph.D. candidates representing five different colleges or units and 11 departments. Since 1992, PCCW has funded a total of 61 research studies and projects by women.

Applications for funding will be reviewed by university faculty and a committee of PCCW members, and will be evaluated on the statement of objective, research design, clarity of writing, feasibility, appropriateness of budget and strength of recommendations.

PCCW was formed in 1990 to involve

accomplished alumnae in advising Cornell's president on matters of particular interest to women in the campus community. There are approximately 135 active members, invited by the president to serve three-year renewable terms. In addition, there are currently 103 PCCW associates (formerly active members). All current women trustees serve as ex-officio members.

Details on proposal criteria are available from the PCCW office on the third floor of 626 Thurston Ave., 255-6624.

CALENDAR

from page 12

Physiology

"The Development of Circadian Rhythm," Majid Mirmiran, Netherlands Institute for Brain Research, Jan. 23, 4 p.m., Veterinary Research Tower.

Plant Pathology

"Oxidation Events in the *Botrytis cinerea*/Plant Interaction," Andreas von Tiedemann, Boyce Thompson Institute, Jan. 23, 3 p.m., A133 Barton Laboratory, Geneva.

"Characterization of Fusarium Species Associated With Potato Dry Rot in the Northeastern United States," Linda Hanson, plant pathology, Jan. 24, 12:20 p.m., 404 Plant Science Building.

Textiles & Apparel

"Leading Edge American Apparel Industries' Return," Diana Brown, Angelheart Designs, Jan. 25, 12:20 p.m., 317 Martha Van Rensselaer Hall.

theater

Cornell Savoyards

Auditions for Cornell Savoyards' spring concert production of Gilbert & Sullivan's *The Grand Duke*, will be Jan. 22 from 7 to 10 p.m. at the Community School of Music and Arts, and Jan. 23 from 7 to 10 p.m. at 403 Barton Hall. Many leads of all voice parts and large chorus are needed. For information, call 257-0496.

miscellany

Bereavement Support Group

Have you had a child die? Need a place to talk about it? The support group will form in January. Sponsored by Cornell United Religious Work, confidential, trained and supportive facilitation will be provided. For information, call Janet Shortall at 255-6003 or e-mail to js58@cornell.edu.

Cornell Plantations

A course on winter tree identification will be held Jan. 18 from 7:30 to 9 p.m. and Jan. 20 from 1 to 3 p.m. Learn to identify native and naturalized trees common to the Ithaca landscape using dormant buds and other characteristics present during the winter. Call 255-2407 for registration information.

Dialogue Meeting

Dialogue, an interfaith gathering of lesbian, gay and bisexual members of the Cornell community, students and friends, will be starting the spring semester with a showing of the film "One Nation Under God" followed by a discussion on Wednesday, Jan. 24, at 7 p.m. in the Anabel Taylor Cafe. Popcorn and refreshments will be served; donations are welcome. Weekly meetings will be held thereafter on Wednesdays at 7 p.m. in the Anabel Taylor Cafe.

Employee/Family Night at the Court

Come enjoy a delicious meal and watch as the Big Red takes on Columbia in both women's and men's basketball on Jan. 27. The women's basketball game starts at 5:30 p.m., and the men's will start at 7:30 p.m. in the Field House. Dinner will be served from 4:30 to 7:30 p.m. in the Multipurpose Room of the Field House. Combination tickets for the basketball and dinner are \$4 in advance. Dinner only or basketball only tickets are \$2 in advance. Tickets can be purchased through Jan. 26; meal-only tickets will not be sold after Jan. 22. They are available in 130 Day Hall, Campus Store Munch Market, 305 Helen Newman Hall or the Field House ticket office.

Lesbian, Gay and Bisexual Resource Office

The Lesbian, Gay and Bisexual Resource Office is sponsoring a staff/faculty gathering on Thursday, Jan. 18, from 4:30 to 6 p.m. in the Cafe at Anabel Taylor Hall. Staff and faculty interested in helping shape the LGB Resource Office's agenda for employee outreach are encouraged to attend. Items to be discussed include: support groups, book/video discussion groups, straight ally networking, climate change needs within departments, policy issues, confidential one-on-one consultations, social/recreational events, speakers series and outreach to community. RSVPs are appreciated at 254-4987 or <cu_lbg@cornell.edu>.

Library Research Orientation

Thursday, Jan. 18, from 3:30 to 4:30 p.m. and Friday, Jan. 29, from 2:30 to 3:30 p.m. in the Uris Library Computer Instruction Lab. A general introduction to using the Cornell Library for new students. For more information, call 255-4144.

Library Tours

• Olin Library: Tours will be conducted Jan. 18 at noon, Jan. 19 at 2 p.m., Jan. 30 at 3:30 p.m. and Jan. 31 at 2:30 p.m. Meet in the lobby of Olin Library. Tours last about a half-hour. For information, call 255-4144.

• Uris Library: Tours will be conducted Jan. 18 at 11 a.m., Jan. 19 at 1 p.m.; Jan. 30 at 2:30 p.m. and Jan. 31 at 3:30 p.m. Meet in the upper lobby of Uris Library. Tours last about a half-hour. For information, call 255-2339.

Lunchtime Meditation

For beginner through experienced meditators, Nanci Rose will give instruction Wednesdays from 12:15 to 1 p.m. in the North Room of Willard Straight Hall. Open to all faculty and staff. For info, call Gannett Health Center at 255-4782.

sports

Men's Basketball (4-8 overall, 0-2 Ivy)

Jan. 20, at Columbia
Jan. 22, at Holy Cross
The Big Red cagers went 1-2 last week, after suffering a pair of Ivy League losses to Harvard (65-47) and Dartmouth (68-57) on the road and posting an overtime victory over Army in Newman Arena (78-75).

Next: The Big Red defeated Holy Cross last season in Newman Arena, 80-73.

Women's Basketball (5-7, 1-1 Ivy)

Jan. 20, at Columbia
The Big Red posted a thrilling 70-69 win over Harvard on Friday, Jan. 12, and dropped a 65-55 decision to Dartmouth on Saturday, Jan. 13.

Next: Cornell won a pair of 25-point contests last year from Columbia, beating the Lions 66-41 in Ithaca and 73-48 in New York City.

Women's Fencing (3-5, 0-3 Ivy)

Jan. 27, at Pennsylvania with Yale.
The Big Red fencers recorded a 1-1 mark last weekend, after defeating Fairleigh Dickinson (19-13) and losing to St. John's at FDU (20-12).

Next: Cornell lost last year's contest with Penn, 29-3, and Yale won last year's meeting with the Big Red, 29-3.

Men's Hockey (7-6-3, 5-2-3 ECAC)

Jan. 17, at Colgate
Jan. 20, Colgate, 7:30 p.m.
The men skaters had only one game last week, dropping a 4-1 decision at Army on Friday night.
Next: Last year, Colgate blanked Cornell 6-0 at Lynah Rink for their second win over the Red in three days.

Women's Hockey (8-4-2, 2-3-2 ECAC)

Jan. 20, Brown, 2 p.m.
Jan. 21, St. Lawrence, 2 p.m.
The Big Red had its strongest weekend of the season as it returned to Ithaca with two very convincing victories over Ivy League foes Princeton, 5-1, and Yale, 3-0.

Next: Brown battled Cornell to a 4-4 tie earlier this season. The Big Red tied St. Lawrence by a 3-3 score on Nov. 11 in Canton.

Men's Squash (1-6, 0-3 Ivy)

Jan. 19, at Dartmouth
Jan. 20-21, at Army Invitational
The squash team played one match last week, suffering a 9-0 loss at Franklin & Marshall.
Next: Dartmouth won last year's meeting with Cornell, 7-2. This will mark Cornell's first appearance at the Army Invitational.

Men's Swimming (3-3, 3-3 EISL)

Jan. 17, at Navy
The men's swim team lost to Princeton 176-114 Saturday afternoon, Jan. 13.
Next: Navy beat Cornell 149.5 to 93.5 last year in Ithaca.

Women's Swimming (3-2, 2-2 Ivy)

Jan. 21, at Dartmouth
The women's swim team dropped a 155.5 to 138.5 meet to Princeton Saturday, Jan. 13, at the Teagle Pool.

Next: Dartmouth posted a 159-141 victory over Cornell a year ago in Ithaca.

Men's Track (2-1)

Jan. 19-20, Pennsylvania, Villanova
Last Saturday, the Big Red placed second in a quadrangular meet at Barton Hall. Georgetown won the meet with 76 points, followed by Cornell 62, Syracuse 52 and Colgate 6.

Next: Penn beat Cornell 133-60 last winter. The Big Red beat Villanova 60-46 in 1995.

Women's Track (2-1)

Jan. 19-20, Pennsylvania, Villanova, Penn State.

The Cornell women also placed second at last Saturday's competition at Barton Hall. Georgetown finished first with 78.5 points, followed by Cornell 61.5, Syracuse 42 and Colgate 5.

Next: Last year, Cornell beat Villanova 87 and 2/3 to 34 and 1/3, and lost to Penn 83-67.5 and Penn State 80-45.



Steve J. Sherman

From left, Cornell trustees Robert Appel '53, Ellen Adelson '58 and Austin Kiplinger '39, co-chairs of the Music Campaign for the Renovation of Lincoln Hall, speak to the Weill Recital Hall crowd about the campaign on Dec. 4.

Carnegie performance promotes awareness of Lincoln renovations

Some of the Music Department's brightest stars filled a sold-out Weill Recital Hall with the sound of music during a Dec. 4 performance at Carnegie Hall in New York.

Fortepianist Malcolm Bilson and soprano Judith Kellock joined pianists Xak Bjerkén, David Borden, Edward Murray and the Cornell Chamber Singers in a program that featured Gershwin, Brahms, Mozart, Haydn and Chopin.

The evening, billed as "The Lincoln Hall Renaissance," paid tribute to Cornell's music program and raised awareness for the renovation of Lincoln Hall, the Music Department's home on the Cornell campus.

Hosts for the evening's activities, which featured a champagne reception, were Cornell President Hunter Rawlings and his wife, Elizabeth; Carnegie Hall board chairman Sanford Weill and his wife, Joan; and Natan and Jessica Weill Bibliowicz. Weill, his daughter and son-in-law are Cornell alumni.

The Department of Music has had three separate addresses on campus since its creation in 1903. No site has been ideal for educating students in music studies. Lincoln Hall, which the department moved to in the 1960s, gave faculty and students more elbow room and a permanent home, but the stone structure, originally built for the study of civil engineering and architecture, remains inadequate for music instruction and appreciation.

The \$15 million Lincoln Hall renovation and expansion project would provide the department with 50 percent more space. Key elements of the project include a climate control system to ensure the proper maintenance of instruments and library collections, a two-story rehearsal room and a computer lab.

The Department of Music offers courses to 2,000 students annually, of which 900 participate in many of the department's performing groups. The department offers more than 100 public concerts each year.

Conference on Jan. 27 will focus on Nazi-era entertainment films

A conference titled "Hollywood vs. Babelsberg: Nazi Entertainment Films" will explore the politics of film in the Third Reich, within the broader context of an emerging entertainment industry, Saturday, Jan. 27, at Cornell.

The conference, which will be held from 9:15 a.m. to 5 p.m. in the Cornell Center for Theatre Arts' Film Forum, features lectures from scholars and screenings of several entertainment films from Nazi Germany.

The conference is offered in conjunction with "The Ministry of Illusion," a series of 13 films from the Nazi era, presented by Cornell Cinema.

"A great deal has been written about German Cinema in the Third Reich, much of it focusing on the political propaganda films of that era," said conference coordinator David Bathrick, Cornell professor of German studies and theater arts.

"Such an emphasis appropriately highlights the use of media by the Nazi regime to reshape the values and social imagination of the German people in the cause of war and ethnic genocide; however, it also has led to some misunderstanding concerning the nature of the Third Reich cinema in its entirety," he said.

According to Bathrick, of the 1,100 feature films produced in Germany between 1933 and 1945, only 100 were officially coded as "political" and forbidden public showing in Germany by the allies after the war. In addition to melodramas and detective stories, almost half of all films were comedies and musicals, similar in genre to movies produced in Hollywood during the

same period.

Featured lectures include:

• "The Politics of Normal Life in Abnormal Times" by Isabel Hull, professor of history at Cornell;

• "Making the National Family: The Nazi Request Concert (*Wunschkonzert*)" by Bathrick;

• "Hollywood Made in Germany: Lucky Kids (*Glückskinder*)" by Eric Rentschler, professor of film studies at the University of California at Irvine;

• "The Doctor is In (and Out): *Paracelsus's* Open House" by Jaimey Fisher, a graduate student in German studies at Cornell.

On the eve of the conference, Cornell Cinema will screen *The Great Love* (*Die große Liebe*) at 7 p.m., Jan. 26. This 1942 musical melodrama was the Third Reich's biggest box office hit. The story is about singer Hanna Holberg's one night encounter with on-leave aviator Paul Wendlandt, who is called back to duty leaving Holberg forlorn and desperate.

All of Cornell Cinema's "Ministry of Illusion" films will be shown in Willard Straight Theatre. For further information on titles and tickets, contact Cornell Cinema at 255-3522.

The Cornell conference is co-sponsored by the Department of German Studies, The Institute for German Cultural Studies, DAAD (German Academic Exchange Service) and Goethe House in New York City. For more information on the conference or to register, call (607) 254-2700.

The "Ministry of Illusion" film series is sponsored by Goethe House.

CALENDAR

January 18 through January 25

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.

• Jan. 20, Potluck dinner and long-range planning discussion at Raven's.

• Jan. 21, North Room, Willard Straight Hall: Balkan dances taught by Ed Abelson, 7:30 p.m.; open dancing and requests, 8:30 p.m.

CU Jitterbug Club

For information about the following classes, contact Bill Borgida at 273-0126. The cost for each series is \$40 in advance, \$45 at the door.

• Jitterbug for Beginners: six-week series starts Jan. 24, 8 p.m., One World Room, Anabel Taylor Hall.

• Intermediate Jitterbug: six-week series starts Jan. 23, 7:15 p.m., 209 N. Aurora St., Ithaca.

• Basic West Coast Swing: six-week series starts Jan. 23, 8:30 p.m., 209 N. Aurora St., Ithaca.

• Basic Lindy Hop: six-week series starts Jan. 25, 7:15 p.m., 209 N. Aurora St., Ithaca.

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.

- "Matisse: The Jazz Series," through March 24.
- "Barbara Kasten," Jan. 20 through March 10.

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, 1/18

"Nobody Loves Me" (1994), directed by Doris Dorrie, with Maria Schrader and Pierre Sanoussi-Bliss, 7:15 p.m.

"The Last Seduction" (1994), directed by John Dahl, with Linda Fiorentino, Peter Berg and Bill Pullman, 9:30 p.m.

Friday, 1/19

"The Last Seduction," 6:45 p.m., Uris.

"Nadja" (1995), directed by Michael Almereyda, with Elina Lowensohn, Peter Fonda and Martin Donovan, 7:15 p.m.

"The Brothers McMullen" (1995), directed by Edward Burns, with Jack Mulcahy, Edward Burns and Mike McGlone, 9:15 p.m., Uris.

"Nobody Loves Me," 9:30 p.m.

"Beyond the Valley of the Dolls" (1970), directed by Russ Meyer, with Dolly Reid and Cynthia Meyers, midnight.

Saturday, 1/20

"The Brothers McMullen," 7:15 p.m., Uris.

"Nobody Loves Me," 7:30 p.m.

"The Last Seduction," 9:30 p.m., Uris.

"Nadja," 9:45 p.m.

"Beyond the Valley of the Dolls," midnight.

Sunday, 1/21

"Nobody Loves Me," 4:30 p.m.

"Nadja," 7 p.m.

Monday, 1/22

"Through the Olive Trees" (1995), directed by Abbas Kiarostami, 7:15 p.m.

"The Brothers McMullen," 9:30 p.m.

Tuesday, 1/23

"Paracelsus" (1943), directed by G.W. Pabst, 7 p.m.

"Through the Olive Trees," 9:15 p.m.

Wednesday, 1/24

"Lucky Kids" (1936), directed by Paul Martin, with Lilian Harvey and Willy Fritsch, 7 p.m.

"Dead Ringers" (1988), directed by David Cronenberg, with Jeremy Irons, 9:15 p.m.

Thursday, 1/25

"Request Concert" (1943), directed by Eduard von Borsody, 7 p.m.

"Twister" (1989), directed by Michael Almereyda, with Harry Dean Stanton and Crispin Glover, 9:15 p.m.

graduate bulletin

• **Registration:** New students and those continuing students with "holds" must register in-person at Sage Hall 8:30 a.m. to 4 p.m., Thursday or Friday, Jan. 18 or 19. Continuing students with no "holds" do not need to go to Sage Hall for registration. To determine if you have a "hold," check "JUST THE FACTS" on Bear Access.

• **Late registration** is Jan. 22 through Feb. 9, Office of the University Registrar, 222 Day Hall. A late registration fee of \$200 plus interest payments will be assessed to those registering after Feb. 9.

• **Course enrollment** is through Feb. 9. Bring completed course enrollment forms to Sage Graduate Center. Students who completed online precourse enrollment do not need to complete a course enrollment form; if there is a change in their schedule, they complete a course drop-and-add form.

• **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. Qualifica-

tions: doctoral candidate, completed six semesters in the Cornell Graduate School, passed A-Exam, no longer taking courses.

• **New students** return the completed Special Committee Selection and Change form to the Graduate School by Feb. 9. For an entering student, the form must bear at least the signature of a temporary adviser.

• **Active file fee deadline:** Ph.D. candidates for a May degree who are not registered for Spring 1996 and wish to avoid the \$200 Active File fee for Spring 1996 must complete all degree requirements 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.

• **Conference travel grants:** Applications are due at the Graduate Fellowship Office, Sage Graduate Center, by Feb. 1 for March conferences. Applications are available at graduate field offices; registered graduate students invited to present papers or posters are eligible.

• **Graduate faculty meeting,** Friday, Jan. 26, 4 p.m., General Committee Room, Sage Graduate Center. This meeting is solely for the purpose of voting on January degrees.

• **Teaching assistants:** Teaching development workshops will be held on Saturday, Feb. 3, 8:30 a.m. to 4 p.m. For information and registration forms, inquire at the Office of Instructional Support, 14 East Ave., Sage Hall, 255-8427.

• **Students trustees:** Candidates' petitions for student member are due Feb. 16; available from Office of Assemblies, 165 Day Hall.

• **Institute for European Studies Fellowships:** For European-based or related studies; research or study abroad for 1996-97, or summer research grants. Applications are available at 120 Uris Hall; deadline is March 1.

• **Graduate Community Assistant (GCA):** Graduate and Professional Student Housing will hold information sessions for those interested in GCA positions for 1996-97. This is a live-in position in one of the graduate resident buildings/complexes. Full time graduate students are welcome. To apply you must attend one session. Remaining sessions are: Tuesday, Jan. 23, 7:30 to 8:30 p.m., Big Red Barn; Monday, Jan. 29, 7:30 to 8:30 p.m., Hasbrouck Community Center. (Note: This position requires approximately 10-20 hours per week and may not be combined with another assistantship; graduate students may work no more than 20 hours per week and receive full residence credit.)

music

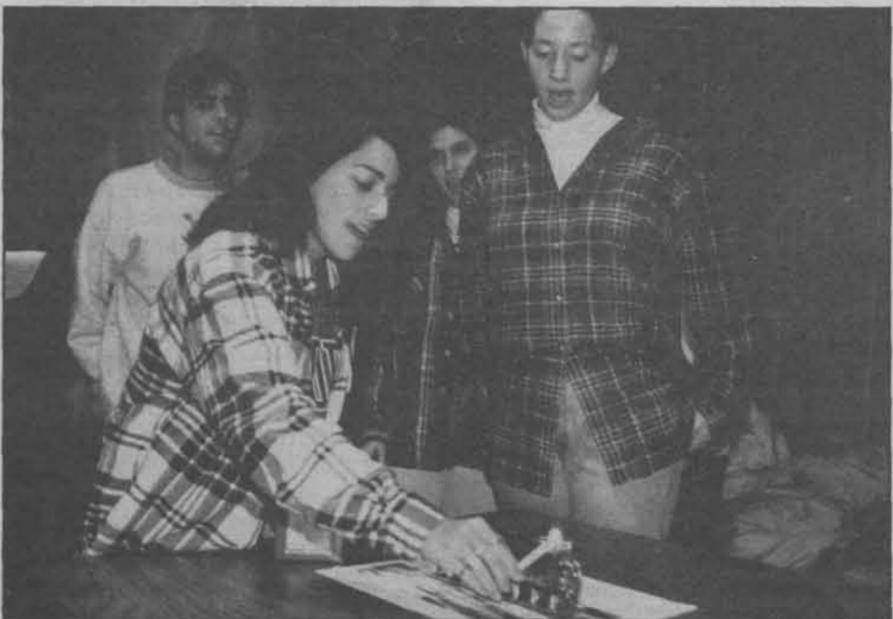
Finger Lakes Land Trust

Local bluegrass and acoustic band Cornerstone will perform at a benefit for the Finger Lakes Land Trust on Saturday, Jan. 20, at 8 p.m. in Barnes Hall. A minimum donation of \$5 is requested. For more information, call 275-9487.

Bound for Glory

Jan. 21: Dana Robinson 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. Bound for Glory is broadcast Sundays on WVBR-FM, 93.5 and 105.5 from 8 to 11 p.m.

Light of the season



Adriana Rovers/University Photography

While Bonnie Lestz '99 lights a candle for the first night of Chanukah, Dec. 17, in the lobby of Willard Straight Hall, Sarah Musher '97, and other students join her in singing. The ceremony, brought inside because of the weather, was a program of Cornell Hillel.

religion

Sage Chapel

No service.

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.

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 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, 8:45 p.m., chapel, Anabel Taylor Hall.

seminars

Ecology & Systematics

"Evolution of Some Sense Organs Used in Mate Acquisition by Dipterous Flies," Cole Gilbert, entomology, Jan. 24, 4 p.m., A106 Corson Hall.

Fruit & Vegetable Science

"The Importance of Varietal Selection in Sustainable Vegetable Production," Mark Hutton, vegetable crops candidate, Jan. 18, 4 p.m., 404 Plant Science Building.

Immunology

"Production of Recombinant Subunit Vaccines in Transgenic Plants (or, How to Build Research Bridges Across Tower Road Between the BTI and College of Veterinary Medicine)," Charles Arntzen, Boyce Thompson Institute, Jan. 19, 12:15 p.m., Boyce Thompson Auditorium.

Natural Resources

"Mixed Competition/Predation Interactions in Size-structured Fish Communities," Mark Olson, University of Wisconsin at Madison, Jan. 22, 3:30 p.m., 304 Fernow Hall.

"Management Strategies for Improving Fish Growth: Implications for Predator-Prey Interactions," Mark Olson, University of Wisconsin, Jan. 23, noon, CBFS, Shackleton Point.

"Navigating Among Research, Management and Public Interests - Observations From the Adirondacks Fishery Research Program," Michael Dutweiler, Cornell Cooperative Extension, Jan. 25, 3:30 p.m., 304 Fernow Hall.

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