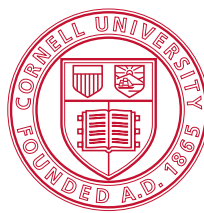


Cornell Chronicle

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Cornell University

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Cornell President Emeritus Frank H.T. Rhodes awards Franklin medal to Hans Bethe's widow, Rose.

PAGE 5 BOOM FILLS ATRIUM

The annual Bits On Our Minds computing fair fills the Duffield Hall atrium with innovations.

Students create earthy happening to launch life sciences building

By Larry Klaes

It was a happening worthy of late-night TV host David Letterman. The audience of trustees, alumni and faculty had just finished watching a short video, specially produced for the ground-breaking ceremony for the Life Sciences Technology Building (LSTB) on March 11 at Phillips Hall Auditorium. The last scene of the video showed six Cornell sweatshirt-clad students – with red shovels and buckets on a pile of earth on Alumni Field – leaping skywards and yelling, “Congratulations!”

At that instant, the same students echoed the word and rushed from the back of the hall wielding their shovels and earth-filled buckets, which they presented to the groundbreaking speakers, including renowned building architect Richard Meier '56.

“Cornell’s first cross-campus groundbreaking,” exclaimed President Jeffrey Lehman, receiving his bucket of ceremonial soil.

The virtual midwinter groundbreaking for the gleaming white four-story structure – and the ebullient presentation of Alumni Field soil – was created to celebrate the final stages of planning for the LSTB, which will begin to rise on the western end of the field in May or June, with completion scheduled for August 2007. The \$140 million facility, the university’s most ambitious building project yet, was described by Kraig Adler, vice provost life sciences, as “the central capital element in the academic and economic leadership of Cornell.”

The new building will be the centerpiece of Cornell’s New Life Sciences Initiative (NLSI), a \$600 million program involving seven colleges, hundreds of faculty members and up to 60 departments in research across the biologi-

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Robert Barker/University Photography

From left: Richard Meier '56, Life Sciences Technology Building architect; Leti McNeil '05, government; Jennifer Zhao '05, engineering; Peter Meinig, chairman of the Cornell Board of Trustees; Sanford Weill, chairman of the Board of Overseers of Weill Cornell Medical College; and Steve Hohwald '07, engineering, celebrate at the indoor groundbreaking ceremony for the new life sciences building, in Phillips Hall, March 11.



Kevin Stearns/University Photography

This refurbished 1948 Spartan Manor trailer houses the newest incarnation of Gimme! Coffee in the Ithaca area, a java spot nestled into the courtyard space between Emerson Hall, the Plant Science building and Mann Library.

Courtyard Café is abuzz with a new brew – the Gimme! Coffee trailer

By Franklin Crawford

Considering the amount of construction on campus these days, the site of a trailer is hardly noteworthy – unless it happens to be a refurbished 1948 Spartan Manor airstream trailer advertising Gimme! Coffee nesting where the walls of Emerson Hall, the Plant Science building and Mann Library form what, until recently, had been a space with all the aesthetic charm of a prison yard.

Now *that's* a conversation piece.

It's also the second step in a cooperative

concept called the Courtyard Café – an effort, according to Professor Susan McCouch, “to transform a barren, wind-swept plaza into an attractive vibrant place for people to sit, read, enjoy a cup of coffee, have a meeting or a chance encounter with a colleague.” McCouch is Cornell professor of plant breeding and genetics and member of the Courtyard Café Committee, the group that agitated for the spatial upgrade.

“I’m ecstatic about having Gimme in there and doing business, and I think it’s a

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CU and LimeWire fix security flaw in popular file-sharing software

By Bill Steele

A Cornell research group has discovered serious vulnerabilities in a widely-used peer-to-peer file-sharing program. The weakness in LimeWire, a popular client for the Gnutella file-sharing network, would allow an intruder to read any file on a computer running the program, including confidential information and some password files. The problem occurs in both the free and paid versions of the program, in all operating systems.

As soon as members of his research group noticed the problem, Emin Gun Sirer, Cornell assistant professor of computer science, immediately notified LimeWire LLC, the company that distributes the software. “LimeWire responded immediately and had a patch ready within a few hours,” Sirer reported, adding that the company needed several days to get the patches out to all of the 36 million people who had downloaded the program. LimeWire automatically posts a notice of the need to install a patch when it is turned on. Patches are available for all versions except those that run on classic versions of the Mac OS, and the company is working on that, Sirer said.

The most serious vulnerability affects LimeWire versions 4.1.2 through 4.4.5. It enables intruders to connect to a computer even through a firewall. A second vulnerability affects versions 3.9.6 through 4.6.0, but can be stopped by a firewall. The latest, corrected version of the program is version 4.8.0; on

the Mac platform, the latest corrected version is 4.0.10.

Both vulnerabilities can be exploited without any special tools, Sirer said, through an ordinary telnet login. Like other Gnutella clients, the LimeWire program is designed to allow users to download music and video files shared through the Gnutella network, and also to allow the user to provide shared files to others. The glitch in the program unfortunately allowed remote users to retrieve other files, not just those in the user’s sharing folder.

Sirer is a specialist in peer-to-peer systems. He and graduate student Kevin Walsh discovered the LimeWire problem while working on a new application, called Credence, that is intended to work with LimeWire to give users a way to determine how trustworthy upload sites may be. “Much of the content in peer-to-peer file-sharing networks is corrupt, damaged, or mislabeled. Such polluted content makes it difficult for correctly functioning peers to locate desired content,” Sirer explained.

Credence allows users to share ratings of objects, similar to the ratings on Amazon, but with features that discourage dishonest ratings. The idea has applications to many other types of peer-to-peer networks, such as those in which distributed workers collaborate. “As systems scale bigger and there is more collaboration on the net, we are going to need systems for evaluating the statements made by peers,” he explained.

A dozen CU faculty honored at ceremony for teaching, advising

Twelve distinguished Cornell faculty members were honored during a special dinner and recognition ceremony on campus March 10. The dinner was held in the Statler Hotel Ballroom, and President Jeffrey Lehman and Provost Biddy Martin introduced the awards and the recipients and made the presentations to the winners.

The awards presented were: the Robert and Helen Appel Fellowships for Humanists and Social Scientists, the Kendall S. Carpenter Memorial Advising Awards, the Robert A. and Donna B. Paul Award for Excellence in Advising in the College of Arts and Sciences and the Stephen H. Weiss Presidential Fellowships.

Lehman honored the recipients and the donors who created the awards in his remarks, explaining that his pleasure in welcoming those in attendance "comes from being a direct beneficiary of the great teaching and great advising that takes place at Cornell ... Coming back to the hill after all these years has been made even more meaningful for me by the discovery that some of my own professors are still teaching and advising Cornell undergraduates."

"By honoring the great teachers and mentors of Cornell in the 21st century, we are also honoring a tradition that goes back to our university's roots," Lehman said. "Andrew D. White selected his first faculty with great care ... he knew what he was looking for: individuals who had 'the power of discovering truth and the power of imparting it,' traits that White believed were 'almost invariably found together.'"

"At the heart of a first-class university is its faculty," Martin said, "and in my years as provost I am constantly being reminded of the excellence and dedication of Cornell's faculty, even as I beat back the raiding parties from other universities that would steal these superlative faculty from us."

The following are the descriptions of the awards and this year's winners, excerpted from Lehman's and Martin's remarks:

Robert and Helen Appel Fellowships for Humanists and Social Scientists

Presidential Councillors Robert '53 and Helen '55 Appel established the Appel Fellowships for Humanists and Social Scientists in 1995 to help Cornell attract and retain outstanding faculty members in the humanities and the social sciences, Lehman said at the presentation.

This year's honorees for the Appel fellowships were: Mary Pat Brady, Department of English; Delia Graff, Department of Philosophy; and Jose Paz-Soldan, Department of Romance Studies.

According to Martin, Brady received the Modern Language Association Award for best book in Chicano/Latino literature in

2003, and her research interests include cultural studies and American multi-ethnic literature. Graff, who joined the faculty in 2001, focuses on the semantics of attitude ascriptions and the semantics of names and descriptions. Soldan won the Bolivian National Book Award in 2003 for his novel *El Delirio de Turing*, which is among six novels he has published. Soldan was not in attendance at the ceremony, as he currently is directing the Cornell Abroad program in Spain, Martin said.

Kendall S. Carpenter Memorial Advising Awards

Cornell Trustee Stephen B. Ashley '62 MBA '64 and his wife, Janice, established the Kendall S. Carpenter Memorial Advising Awards in honor of the late Ken Carpenter, who was Stephen Ashley's adviser and professor of business management, Lehman said.

This year's winners of the Carpenter advising awards were: William W. Goldsmith, Department of City and Regional Planning; Harold F. Hintz, Department of Animal Science; Carole A. Bisogni, Division of Nutritional Sciences; and Alan D. Mathios, Department of Policy Analysis and Management.

Goldsmith has been a member of the Cornell faculty since 1968 and is a specialist on theories and policies of city planning, urbanization and regional economic development, Martin said. He was chairman of the department in the 1980s and has served as director of graduate studies and of the undergraduate program in urban and regional studies as well as of the study-abroad program in Rome. Goldsmith also founded the Cornell Program on International Studies in Planning. Harold "Skip" Hintz is professor of animal nutrition and joined the Cornell faculty in 1967 and has advised students for many years. Bisogni is a specialist in community nutrition and served as associate director for academic affairs in the department for more than a decade and was instrumental in developing the human biology, health and society major in Human Ecology. She also serves as faculty adviser to the women's swimming and diving team. Mathios has served as associate chair and director of undergraduate studies for his department and is currently the associate dean of the College of Human Ecology. He is committed



Robert Barker/University Photography

Delia Graff, left, associate professor of philosophy, her daughter Clarissa Graff Fara, 6 months, and Robert Appel '53, right, enjoy a moment at the Faculty Awards Recognition Ceremony held March 10 in the Statler Ballroom. Graff was one of three faculty members to receive a Robert and Helen Appel Fellowship for Humanists and Social Scientists at the dinner.

to student development, and his research focuses on government tax policy and its impact on smoking onset and cessation.

Robert A. and Donna B. Paul Award for Excellence in Advising

Robert Paul '59, a Cornell trustee emeritus and presidential councillor, established the Paul Advising Endowment in Arts and Sciences with his wife, Donna, said Lehman. The endowment funds, among numerous advising programs, the Paul Awards of Excellence in Advising.

This year's recipients of the Paul award were: Szonya Szelenyi, Department of Sociology; and Michael Koch, Department of English.

Szelenyi was an associate professor of sociology but has since left Cornell, Martin said. She had served as director of undergraduate studies in the college. Koch, a senior lecturer in the English department, edits *Epoch*, the department's award-winning, internationally distributed literary magazine.

Stephen H. Weiss Presidential Fellowships

The Weiss Presidential Fellows Award was established by Stephen H. Weiss '57, emeritus chair of the board of trustees and a presidential councillor, and his wife, Suzanne, said Lehman. Stephen Weiss is also a life overseer of the Weill Cornell Medical College and former chairman of its board.

This year's winners were: T. Michael Duncan, School of Chemical and Biomolecular Engineering; C. Richard Johnson Jr., School of Electrical and Computer Engineering; and Peter J. Katzenstein, Department of Government.

Duncan arrived at Cornell in 1990 following a decade with AT&T Bell Laboratories' engineering research department. He has been associate director of his school for the past 10 years and is known for his interest in keeping material fresh and relevant to students while ensuring that it is grounded in scientific fundamentals of chemistry, physics and math. He has been the recipient of numerous teaching awards. Johnson's primary research interest has been in adaptive filter design for communications, Martin said. He began teaching at Cornell in 1981 and has been not only a leader in electrical and computer engineering, but a mentor who changes undergraduate students' lives for the better, she said. He also has received numerous teaching awards over the years. Katzenstein has taught in the Department of Government for more than three decades, and his research and teaching are at the intersection of the fields of international relations and comparative politics. He is also dedicated to graduate and undergraduate students and has received several academic honors and fellowships, including the Stephen and Margery Russell Distinguished Teaching Award.

OBITUARIES

Donald J. Belcher, professor emeritus in the School of Civil and Environmental Engineering, a civil engineer, educator and leading pioneer in the science of remote sensing, died in Papa'loa, Hawaii, Feb. 8. He was 93.

Born in Chicago on Feb. 11, 1911, he was the son of the late Ova Clarence and Helen Edson Jenks Belcher. He earned a doctorate in civil engineering from Purdue University in 1946. During this period he began a lifelong exploration of the practical engineering applications of aerial photography, a discipline that became known as aerial photographic interpretation and, more recently, as remote sensing.

Belcher joined Cornell's School of Civil Engineering in 1946, where he founded and directed the Center for Aerial Photographic Studies until his retirement in 1976. In a storied career that spanned 50 years, Belcher distinguished himself as an educator, scholar and innovator. During World War II, he served as a civilian consultant under Gen. Douglas MacArthur to improve the military's intelligence of battlefield conditions. Following the war, he used his skills in aerial photographic interpretation to locate land mines in Western Europe, and performed a wide variety of consulting assignments for U.S. military and civilian agencies and foreign governments.

As the exploration of space advanced,

Belcher helped interpret surface conditions on both the moon and Mars and used air photos to identify sources of industrial pollution. At the dawn of the information age, Belcher also pioneered a computer-based land use and natural resource inventory system.

Belcher was preceded in death by his wife, Nancy Foote Belcher, and daughter Helen Stacy Belcher. He is survived by daughters Marilyn Kay (Gerald) Whisman of Goddard, Kan.; Candace Brann of Hiram, Ohio; and sons Mathew (Emily Claspell) Belcher of Kamuela, Hawaii; Mark (Anne Marie Thurber) Belcher of Washington, D.C.; and Neil (Ailish) Belcher of Ithaca. Memorial contributions may be made to the Cornell University Donald J. Belcher Master of Engineering Fellowship in Civil and Environmental Engineering.

Lenore Frances Coral, adjunct professor of music and librarian for the Cox Library of Music and Dance, died of cancer March 8 at Hospicare in Ithaca. Coral was raised in Detroit and attended Cass Technical High School, where she was active playing the flute and piccolo. She went on to study at the University of Chicago, earning a B.A. in music (1961) and a master's degree in library science (1965). She continued her studies on a Fulbright Fellowship

at King's College, University of London (1965-67), receiving a Ph.D. in musicology in 1974. Her career began at the University of California-Irvine in 1967, where she was the founding librarian of the fine arts collection. She then served as music librarian at the University of Wisconsin-Madison, and from 1982, as music librarian and adjunct professor of music at Cornell. Her Ph.D. dissertation began her lifelong study of British auction and sales catalogs containing musical materials, a field in which she was considered a pre-eminent expert. At the time of her death she left the nearly completed manuscript of a book, which in her last days she arranged to have finished, edited and published. Coral also will be remembered around the world for her notable contributions to scholarship in the fields of library science and musicology. At Cornell she presided over one of the finest music libraries in North America, taught a famous seminar introducing students to the arcane skills required to do original research in music and mentored generations of students. Coral is survived by her companion of many years, Anders Lönn, of Stockholm, Sweden, and her sister, Suzanne Allender of Prescott, Ariz. A memorial service will be held in Barnes Hall Auditorium on April 9 at 2:30 p.m. In lieu of flowers, donations may be made to the Lenore Coral Endowment for the Cornell Music Library.

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Rhodes awards Franklin medal to Bethe on 'a bittersweet day'

By David Brand

It was, in the words of Cornell President Emeritus Frank H.T. Rhodes, "a bittersweet day."

Three days after his death at the age of 98, Hans Bethe, one of the most honored scientists ever to grace Cornell, received a final tribute—the Benjamin Franklin Medal of the American Philosophical Society (APS). "It is a day of sadness, but it is also a day of pride," said Rhodes, the APS president, in making the award.

Accepting the gold-plated medal at Kendal at Ithaca, where Bethe died quietly on March 6, his widow, Rose, spoke of how her husband had been looking forward to the ceremony. "Hans was very touched when he heard about it because he thought that at his age to be honored once more was really beyond anything he had hoped for," she said.

"He was particularly struck that the philosophical society was founded for the promotion of useful knowledge, because that's what he believed in."

The APS is the oldest learned society in the United States, founded by Ben Franklin in 1743. The medal was created in 1906 by the U.S. Congress to mark the 200th anniversary of Franklin's birth.

It was not the first time the medal had been awarded posthumously: in 1993 it was awarded to Nobel laureate and former Cornell researcher Barbara McClintock, who had died the previous year.

Also a Nobel laureate, Hans Bethe was professor emeritus of physics and an architect of the age of modern atomic theory. He spent 70 years at Cornell, during which time he "literally changed not only Cornell but changed world of learning and the kind of model that was set," said Rhodes, who had flown in from New York City for the ceremony.

Said Rhodes: "He was also a wonderful statesman of science; somebody who advised three presidents; somebody who was a public advocate for the social conscience of science, for defense, for energy and especially for nuclear power and for human welfare in the broadest sense. And it was to him that so many of the rest of the scientific community looked, and still look, for leadership and inspiration."

Rhodes also paid tribute to Rose Bethe and her family: "The source of so much of Hans' strength, inner strength and resilience was the love of you and other members of the family ... that wonderful marriage, with so much to celebrate. We thank you and salute you in honoring Hans,



Robert Barker/University Photography
Frank H.T. Rhodes, former president of Cornell and now the president of the American Philosophical Society, presents the Benjamin Franklin Medal to Rose Bethe, widow of physicist Hans Bethe, March 10.

because this was a partnership in which you were inseparable and which meant so much."

The award citation for Hans Bethe reads:

*In recognition of his role as
A preeminent physicist of the twentieth century, whose
productive research career has spanned eight decades.
A pioneer in atomic physics, whose seminal work on
stellar energy production earned him the 1967 Nobel Prize.*

*A leader of the Theoretical Division at Los Alamos.
A senior statesman of science and advisor to U.S. Presidents on atomic energy.
A courageous critic of defense policy and passionate advocate of arms control.
A beloved mentor to generations of Cornell physicists, whose efforts helped to transform the Cornell University Physics Department into one of the world's great centers of physics.*

Heckscher Foundation awards \$900,000 grant to Urban Scholars Program

The Heckscher Foundation for Children recently awarded a \$900,000 grant to the Cornell Urban Scholars Program, in which students from Cornell help address challenges confronting New York City's poorest children, families and neighborhoods.

The grant will provide three years of operational funds for the Urban Scholars Program. A Heckscher Foundation grant in 2002, and others that followed, established and propelled the program, which is a collaboration between Cornell's Department of City and Regional Planning, Public Service Center, Cornell Cooperative Extension of New York City and the Cornell Graduate School. The undergraduate and graduate

students in the program work with nonprofit organizations and municipal agencies in New York City on advocacy and policy issues, as well as provide applied research.

"The Heckscher Foundation strongly believes in the good work of the Urban Scholars Program, which is helping improve the quality of life for many New York City children, while developing Cornell students' interests in nonprofit and public-sector careers," said Heckscher Foundation Director Peter Sloane.

The Urban Scholars Program sets students up with paid summer internships with some of New York's leading nonprofit or public sector agencies, and it provides weekly seminars, public policy field trips

and a weeklong community service workshop during the academic year.

The program is co-directed by Kenneth Reardon, a professor in Cornell's Department of City and Regional Planning, and by Leonardo Vargas-Mendez, who directs the university's Public Service Center. "The generosity of Peter Sloane and the Heckscher Foundation has enabled students from Cornell to engage in work that has a positive impact on New York City's poorest citizens," said Vargas-Mendez. Added Reardon, "The program has engaged students from across the campus and has had to grow to accommodate the interests of undergraduates who want to know more about the

public service sector before they travel to New York, and now graduate students, whose theses build on the work of the program."

In addition to the summer internship program, the Cornell Urban Scholars Program supports an Alternative Spring Break service trip to New York City, Cornell's Nonprofit and Government Career job fair and a high school leadership training institute at Cornell.

The Heckscher Foundation was established in 1921 to promote the welfare of children. Grants are made for child welfare and family service agencies, education, job training, recreation, music and the performing arts, health and hospitals, summer youth programs and camps and aid to the handicapped.

Wind energy use studied for campus

Prompted by students from KyotoNOW!, Cornell is studying the possibility of producing wind-generated electricity for its campus and has opened discussions with its neighbors.

"Our investigation into using renewable wind energy is still in the study phase, and there still are a lot of issues to explore," said Harold Craft, Cornell vice president for administration and chief financial officer, "but, so far, the possibility looks promising."

In 2004 Cornell's Department of Utilities and Energy Management completed an investigation into whether locally produced wind-generated electricity would be cost effective for the Ithaca campus. This work was prompted by a request in the fall of 2003 by students from KyotoNOW!, an environmental advocacy organization on campus.

"The students are aware of many of the benefits of wind energy, and we agreed that looking into that possibility for Cornell made sense," said Lanny Joyce, Cornell manager of engineering, planning and energy management in the Department of Utilities and Energy Management, who leads Cornell's Kyoto Task Team, chartered by Craft in

2001 to guide the university's effort to reduce energy use and carbon dioxide emissions. Wind energy could complement the many other conservation measures the campus utilizes, Joyce added.

Cornell's utilities and energy management department completed a wind inventory study for a 15-mile radius around Ithaca, and Mt. Pleasant, on university-owned property in the town of Dryden, has been identified as a possible wind resource site.

The next step for exploring the feasibility of wind energy generation on the Mt. Pleasant site is to install a temporary (24-month) meteorological station to better assess the wind resource, Joyce said. That temporary station will be constructed in April.

Cornell has initiated open discussions with residents in the Mt. Pleasant area about the study and about the plan to install a temporary meteorological test station. And the university is talking to immediate neighbors about the possibility of wind energy planned for the Mt. Pleasant hilltop.

Cornell's energy and other sustainability initiatives are described online at <<http://www.sustainablecampus.cornell.edu>> and <<http://www.utilities.cornell.edu>>.

Kevin Kornegay again named Lumpkin educator of the year

Kevin Kornegay, Cornell associate professor of electrical and computer engineering, has been named the Janice Lumpkin Educator of the Year by the National Society of Black Engineers (NSBE). The award is one of 15 annual Golden Torch Awards given by the NSBE



Kornegay

for those in the profession who have achieved excellence in their chosen disciplines. The awards will be recognized during NSBE's 31st Annual National Convention and Career Fair March 24 in Boston.

The Golden Torch, which symbolizes the "everlasting burning desire to succeed and affect positive change in the quality of life for all people," is the premier award and recognition program for African-American technical professionals. The Educator of the Year award

recognizes a faculty member with demonstrated commitment to advancing education in engineering, science and mathematics. This is the second year in a row the award has been given to Kornegay.

Kornegay is director of the Cornell Broadband Communications Research Laboratory,

where research focuses on the design of integrated circuits that operate at radio and millimeter wave frequencies for broadband wired, wireless and optical communications systems, such as high-speed wireless local area networks. He previously has been named one of the "50 Most Important Blacks in Research Science for 2004," has received the Cornell Provost's 2004 Award for Distinguished Scholarship and was named Black Engineer of the Year in 2001. He joined the Cornell faculty in 1998.

CU chosen to be part of \$5 million food-safety initiative funded by USDA

By Susan S. Lang

Acute gastroenteritis – commonly referred to as food poisoning – is the second most common household illness in the United States, with an estimated 76 million food-related illnesses occurring each year.

To learn more about preventing the spread of food-related illness pathogens on the farm, researchers at Cornell are joining a new U.S. Department of Agriculture (USDA)-funded Food Safety Research and Response Network (FSRRN), led by North Carolina State University. FSRRN is a new multi-institutional, multidisciplinary team of more than 50 food safety experts from 18 colleges and universities who will investigate several of the most prevalent food-borne pathogens; it is funded by a \$5 million grant from the USDA Cooperative State Research, Education and Extension Service.

“We will study pathogens, such as *E. coli*, *Salmonella* and *Campylobacter*, which are among the most important food-borne pathogens in the United States, to determine where they thrive in the environment, how they infect herds, how they can be detected and what can be done to reduce their presence in livestock and their risk to human health,” explained Yrjo Grohn, one of the co-principal investigators on the project, a professor of epidemiology and chair of Population Medicine and Diagnostic Sciences in the College of Veterinary Medicine at



Chang



Grohn



Schukken



Warnick

Cornell. The research, he said, will focus on pre-harvest food safety on farms.

At Cornell, all the researchers involved are in Grohn's department and include Yung-Fu Chang, professor; Ynte Schukken, director, Quality Milk Promotion Services (QMPS) and professor of epidemiology and herd health; Lorin Warnick, associate professor; and Linda L. Garrison-Tikofsky, senior extension veterinarian at QMPS.

Chang is co-leading work that will focus on characterizing the virulence factors required for *Campylobacter* and *Salmonella* to colonize in animals in an effort to identify potential target genes for pre-harvest intervention of these food-borne pathogens.

“Although these two organisms are widely distributed in the intestinal tract of animals and birds, relatively little is known about the specific molecular mechanisms by which these organisms colonize or cause disease in different animal hosts,” explained

Chang. “By better understanding these virulence factors and their role in the pathogenesis of these diseases, we hope to develop strategies that could help control and prevent food-borne diseases.”

In collaboration with Washington State University, Grohn and Warnick are co-leading research that seeks to better identify the sources and spread of pathogens in livestock feeds. The researchers hope to learn how to minimize the transmission of pathogens in swine, poultry and cattle feed, on farms and at livestock production facilities. Grohn also will be taking the lead in developing new diagnostic tests, detection methods, pathogen surveillance strategies and models to understand the presence, distribution and abundance of pre-harvest food safety pathogens. Schukken and Garrison-Tikofsky of QMPS, a research and service microbiology laboratory that handles some 200,000 samples annually, will provide technical assistance.

While researchers at NC State are establishing a microbial core facility to serve as a clearinghouse for information about techniques used to detect, identify and characterize bacterial pathogens, researchers at Cornell and University of California-Davis are coordinating a second core facility to provide epidemiology support.

“Food-related pathogens can enter the food chain anywhere from the farm to home preparation of meals,” said Grohn. “By reducing pathogens at the farm level, we should be able to make a significant impact in reducing risks to consumers. However, consumers should realize that most food-related disease outbreaks can be prevented with proper cooking, storage and food handling.”

FSRRN also will serve as a response team of experts. At the request of other federal and state agencies, the team would be mobilized to conduct focused research needed to control major episodes of food-related illness.

The 16 other institutions in the project are: Iowa State University, McMasters University, Mississippi State University, North Dakota State University, Ohio State University, Tuskegee University, University of Arizona, University of California-Davis, University of California-Berkeley, University of Florida, University of Illinois, University of Kentucky, University of Minnesota, University of Montreal, Washington State University and West Texas A&M University.

Building *continued from page 1*

cal, physical, engineering, computational and social sciences. The LSTB will be home to the Cornell Institute of Molecular and Cell Biology and the Department of Biomedical Engineering, as well as an incubator for start-up businesses.

New York state has provided \$25 million to the building project, making the LSTB the largest life-science research facility in the state. It will be, said Lehman in opening the ceremony, a “building as large in scale and bold in design as the research to be conducted in it.”

Meier, the architect of the Getty Center in the Santa Monica hills north of Los Angeles, is senior partner of Richard Meier and Partners and a Frank H.T. Rhodes Class of '56 University Professor at Cornell. The LSTB, he told the audience, is “my first academic building anywhere.” His goal as an architect, he explained, “is to bring people together to collaborate – buildings are about people.”

Among its many features, the building will have open public spaces that, along with most of the building, will “take advantage of the changing natural light throughout the day,” explained Meier. The two-story Learning Center wing extending from the main complex will be a focal point for both formal and informal exchanges among faculty, researchers and students, and tunnels will connect to the nearby Biotechnology Building and Plant Sciences Building, he said.

Meier noted that working on the LSTB had brought him full circle in his career. “I hoped one day I could give back to the place that has given me so much,” he said. “The final result [of a building] really depends on the client, and Cornell has been a really great client.”

It was nice, Provost Bidy Martin noted, “to have such a great architect who also understands the Cornell culture.”

Other ceremony speakers also stressed the importance of the new building and the NLSI to the university and beyond. “Connectivity is the key. NLSI and the LSTB are important for Cornell, Ithaca and the world,” said Sanford I. Weill, '55, chairman of the Board of Overseers of Weill Cornell Medical College in New York City and a university trustee emeritus. The building and the program have “already propelled Cornell to the forefront of life sciences, which will help millions of lives in many ways,” said Peter Meinig, chairman of the Board of Trustees.

As Lehman noted, “Cornell's revolutionary genius has always been in making connections across disciplines that no group or institution has done before.”

VIVO search engine indexes life sciences resources

A key goal of Cornell's New Life Sciences Initiative is to support collaboration among biologists, engineers, physical and social scientists, mathematicians and computer scientists to enhance both research and education in the life sciences. To help all these people find each other, Cornell University Library has created VIVO: a powerful Web-based index to life sciences resources, instruction, research, personnel and facilities at Cornell.

VIVO, located at <<http://vivo.library.cornell.edu>>, brings together in one Web site all the information you need to figure out who's doing what, where, and how in the life sciences at Cornell – and what library resources are available to support that work. Library officials call it a “virtual life sciences library.”

“VIVO provides unparalleled ‘one-stop’ access to information about the life sciences at Cornell,” said Kraig Adler, vice provost for life sciences. “It's a wonderful tool for researchers and graduate students, as well as undergraduates who are looking for research opportunities in faculty labs.”

Students and faculty members can use VIVO to search for fellow researchers, recent publications with Cornell first authors, courses, undergraduate majors and graduate fields, events, and just about anything else related to the life sciences at Cornell. A VIVO search transcends campus, college and department divides. It also provides easy access to professional tools including online databases, software and image collections licensed for use by the Cornell community, as well as to important external resources.

“In a sense, VIVO is a virtual community center where students and faculty can not only find the information they need to support their research, but also connect with others who are pursuing similar studies,” said Janet McCue, director of Mann Library, which led the development of the site.

Unlike most search engines, VIVO displays results with appropriate cross-referencing to place them in a context that makes sense. For example, a search for “proteomics” in VIVO will display listings for faculty members working in

the field at Cornell, classes related to that subject, recent articles published by Cornell faculty, and some helpful online research tools. Each entry is linked directly to the original resource, which could be the full text of a recent journal article, a new genomics service or a Web page describing a faculty member's research.

VIVO was developed by the library's Life Sciences Working Group, a committee of librarians and information technology specialists from the Mann, Engineering, Entomology, Geneva, Physical Sciences, Veterinary and Weill Cornell Medical libraries. Bioinformatics/Life Sciences Librarian Medha Devare chairs the working group. “As the university's Life Sciences Initiative progresses, we plan to expand the array of resources available through VIVO,” Devare said. “We encourage faculty and students to contact us with feedback and suggestions for new material to add to the site, or whenever they need help using VIVO.”

For more information about VIVO, contact Devare at <mhd6@cornell.edu> or 255-2199.

Search engine for biologists ties together databases

By Bill Steele

Not long ago a biologist had to understand Latin and memorize the vast array of Latin names for plants and animals. Today a biologist has to understand computer databases and work with the names and numbers that describe thousands of known genes and proteins and their functions in living things.

Now a computational biologist at Cornell has created a new tool that ties much of this information together. Biozon, at <<http://biozon.org>>, is a sort of combination of Google and Amazon.com applied to databases of biochemical knowledge. Biozon allows researchers to search published data on DNA sequences, protein sequences, protein structures, protein-protein interactions, cellular pathways and protein families, and provides tools to combine information from all these sources.

“Each biological entity can be viewed in its extended biological context, through its relations to other biological entities,”

said Golan Yona, Cornell assistant professor of computer science, who is heading the Biozon project. For example, genes can be connected to the proteins for which they code, and to the biological processes in which those proteins participate. A researcher might call up the structures of proteins related to cancer, then identify the genes that code for those proteins. Or, to take a more technical example, search for “3D structures of proteins that are involved in phosphorylation interactions and are part of the Prostaglandin and leukotriene metabolism pathway.” The results returned are ranked, using a first-of-a-kind biological ranking system that resembles the methods implemented in Google.

Beyond complex searches, Biozon also supports “fuzzy” searches that will find things similar to the search key. There are tools that allow users to store queries and download the resulting data. In addition researchers may incorporate their own datasets, allowing them to search and combine their own data and

public data, but without making their proprietary data visible to others.

Biozon also includes analysis tools, such as methods for comparing protein shapes or predicting what common building blocks may appear in a protein based on its amino acid sequence.

The searchable databases include some 38 million nucleic acid sequences, 1.8 million protein sequences, 28,000 protein structures, 73,000 interactions, 2.25 billion sequence alignments and 8 million structural alignments. Sources include PDB, Genbank, Uniprot, KEGG and BIND, among others.

The information is stored in many different formats. The secret of Biozon is its ability to read the many formats and translate the results into a model that allows the datasets to be linked. Creating the infrastructure, the data model, the transformation functions and the search tools has required more than three years of work, Yona said, and it was the result of a team effort, most notably involving programmer/developer Aaron Birkland.

BOOM '05 fills Duffield Atrium with scintillating sights and sounds

Computing projects span range of fields

By Alex Kwan

Hundreds of enthusiastic students filled the Duffield Hall atrium March 9 with glossy posters and computer presentations for BOOM (Bits On Our Minds) 2005, an annual fair that showcases Cornell's best student computing projects to the community.

BOOM 2005 boasted more than 50 projects with the common theme of computing. In between the expected projects on databases, programming and robotics, a few displays demonstrated how computing could be applied in fields as diverse as biology, psychology, economics and even the arts.

The Genetic MusicComposer was a Java-based creation of Yash Parghi '06, A&S, and Andrew Dailey '06, A&S, which brings together computer science and music by intelligently composing short tunes. Using a genetic algorithm, the program generates random tunes and scores them based on such criteria as harmony and rhythm. In the next stage, the most promising tunes are selected and recombined to make better tunes. This process is repeated until a worthy tune emerges. "Our program will not produce anything approaching a masterpiece anytime soon, but our approach is very open-ended and has great potential," said Parghi.

While its tunes might not be ready for the concert halls, Genetic MusicComposer was a perfect fit at BOOM. The program created new tunes within seconds and played them through speakers. To have an objective feedback for their work, the team set up a Web page with five MIDI samples and asked participants to rate them on humanness and pleasantness. "The survey response varies. Some would say they couldn't believe the

tunes were generated by a computer. Others, especially the musically trained, were disappointed at the music quality," said Parghi.

Daniel Cohen's project on solid freeform fabrication of tissue implants was an interdisciplinary effort combining computing and medicine. Cohen, a master's degree student in biomedical engineering, and his adviser, Hod Lipson, assistant professor of mechanical and aerospace engineering, made gantry robots that deposit cell-seeded gels layer by layer, following a pattern from computer-aided design drawings. When incubated under growth conditions, the cells consume the gel and form a structure made of living tissue.

"We can make these tissues in impressive geometries. Compared to the conventional fabrication methods using scaffolding, our technique is very efficient and quick," explained Cohen. He also noted that their technique enables them to create tissues consisting of multiple types of materials. "Our eventual goal is to provide inexpensive implants that are specific to the needs of a patient," he said.

This year was the ninth time that BOOM was held, but it was the first time the event was held in Duffield Hall. The spacious atrium provided the perfect venue for all the student projects to be displayed in one central location. In previous years, the event spanned several floors in Upson Hall.

The BOOM 2005 Web site at <<http://www.cis.cornell.edu/boom>> contains links for all the exhibits. The event was organized by the faculty of Computer and Information Science and sponsored by Bloomberg and Credit Suisse First Boston.

Alex Kwan is a science writer intern with the Cornell News Office.

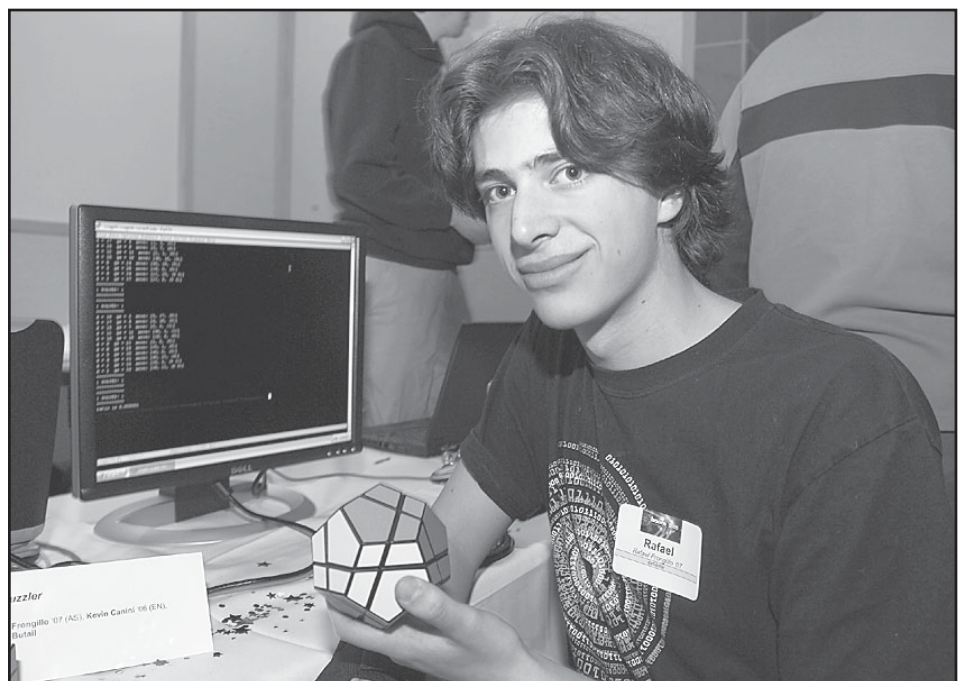


Nicola Kountoupes/University Photography

Students flock to the different projects set up in the Duffield Hall atrium, this one called "Physical," during the BOOM (Bits On Our Minds) 2005 fair, March 9. The annual fair showcases projects in multiple disciplines that share a central theme of computing.



Aaron Nathan '06, ECE, commands the movements of a miniature model of the vehicle that Cornell's DARPA Grand Challenge Team is building for the challenge, a 175-mile race run by fully autonomous vehicles that will be held in October. The team uses the model as a prototype platform before implementing different coding and sensors on the full-size truck.



Rafael Frongillo '07, math and computer science, Arts and Sciences, poses with one version of the Rubik's Cube that his artificial-intelligence program can solve. His was one of the numerous booths in Duffield Hall's atrium during the BOOM fair March 9.



This was the first year BOOM exhibitors enjoyed one central location – the large open atrium of Duffield Hall. In previous years, the exhibits were spread throughout several floors in Upson Hall.

1943 psychological profile of Hitler accessible on CU Law Library site

By Linda Myers

A rare 1943 document – a psychological analysis of the personality of Adolph Hitler that predicted, among other things, his eventual suicide – has just been made available to the world at large on the Cornell Law Library's Web site, at: <http://www.lawschool.cornell.edu/library/donovan/hitler/>.

The copyright to the original document – number three of only 30 copies made – was granted to the Law Library by Nina Murray, the widow of the document's main author, Dr. Henry A. Murray.

Henry Murray was a pre-World War II director of the Harvard Psychological Clinic and, during the war, served in the Office of Strategic Services. The OSS was a forerunner of the CIA and Murray was brought in by General "Wild Bill" Donovan, then the OSS director. The psychological profile of Hitler is among the papers in the Law Library's Donovan Nuremberg Trials Collection.

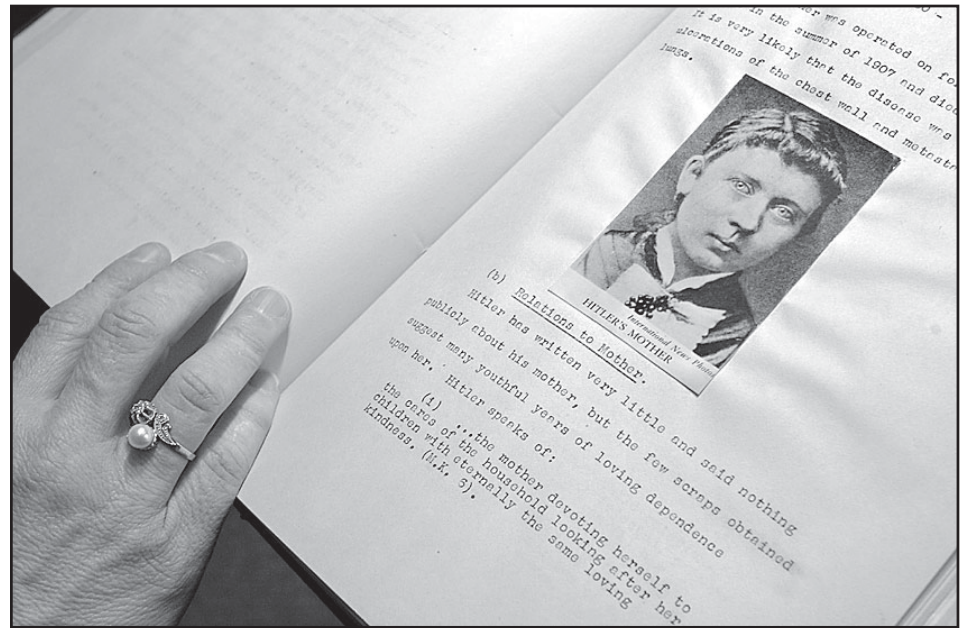
"It's almost a unique piece," said Claire Germain, the Edward Cornell Law Librarian and professor of law at the Law School. "Posting it on the Web in pdf format makes it available to a broader audience and shows the depth and uniqueness of some of the valuable bits of history located within Cornell's walls," she said.

The document has achieved new relevance, Germain said, because of growing interest in the Holocaust, present-day war crimes trials of past dictators such as Slobodan Milosevic and Saddam Hussein, and a controversial German documentary,

"The Downfall," nominated for an Academy Award this year that presents Hitler as a flawed human being, rather than a demonic figure. The document may interest Holocaust and World War II scholars, military and psychology historians, students and the general public, she said.

Murray was commissioned in 1943 to help the Allied Forces understand Hitler's psychological makeup in order to predict his behavior as they pushed forward to defeat the Nazis. The document is interesting historically in that it presents a range of scenarios describing the potential effect on Hitler of Germany's defeat (Murray guessed he might kill himself in a dramatic, explosive way but also worried that he might be made into a martyr if he were killed). Included in the document are suggested strategies to convert the German people, post-war, into, in Murray's words, "a peace-loving nation," a case history of Hitler by W.H.D. Vernon, who worked under Murray's supervision, as well as copies of rarely seen photos from Hitler's life.

Murray, who gained fame when he developed an early psychology technique for analyzing personalities, wrote that Hitler had a personality type stimulated by real or imagined insult or injury, that held grudges, had a low tolerance for criticism, an excessive demand for attention and a tendency to belittle, bully or blame others and seek revenge. But his personality also manifested a persistence in the face of defeat, along with strong self-will and self-trust. However, Hitler lacked "the offsetting qualities that round out



Kate Schlee/The Ithaca Journal

A picture of Adolf Hitler's mother adorns one of the pages in an early psychological analysis of Hitler, one of the many volumes included in the Gen. William J. Donovan's Nuremberg Trials Collection. The volumes are housed in the Dawson Rare Book Room of the Cornell University Law Library.

a balanced personality," wrote Murray.

"Even though psychology has moved ahead, the document still gives some insight into Hitler's personality," said Thomas Mills, a research attorney at the Law Library in charge of the Donovan collection and other rare books and special collections.

Mills says he gets frequent requests for documents in the Donovan collection, which includes much on the Nuremberg war crimes trials of Nazi leaders. Recently a lawyer defending a prisoner at Guantanamo asked if the rule imposed by the Bush administration preventing him from meeting with his client had a precedent at the Nuremberg

trials. "Documents in the Donovan collection seem to indicate that at Nuremberg this was not the case," said Mills.

Murray himself was a controversial figure. Returning to Harvard after the war, he was involved in psychological experiments in 1959-62 in which a stress test similar to one the OSS used to assess recruits was administered to unwitting student volunteers, including the young Theodore Kaczynski, then a precocious student at Harvard. Kaczynski's lawyers in his trial as the Unabomber traced some of his emotional instability and fear of mind control to his role as a subject in those tests.

Gimme! Coffee *continued from page 1*

great example of a successful grass roots effort on this campus," she said. "I hope it's a raving success for Gimme and for the entire community."

Gimme opened for business last week and sales were almost as brisk as the air rushing through the breezeway between Plant Science and Mann. Snow still mantled the outdoor tables and chairs that arrived last fall as part of the initial phase of converting the plaza. But it wasn't too hard to imagine a day when fair weather will allow for exactly what planners envisioned: a charming outdoor café enhanced by urban landscaping, art exhibits and, of course, some primo java.

"I think we are going to help achieve the committee's objective of bringing this space to life," said Kevin Cuddeback, owner of Gimme! Coffee. "And we tried to work out our business plan so there were some town-gown synergies in addition to our campus presence. For instance, one percent of our gross will go to Historic Ithaca."

The effort is truly a cooperative venture. A committee consisting of about 15 faculty, staff and students brought the idea into

being and shepherded it through a variety of unforeseen challenges over the last year and a half, said McCouch. College of Agriculture and Life Sciences Dean Susan Henry's office provided financial support, as well as Mann Library administration and 10 department chairs in the immediate vicinity of the courtyard. The site will become a major landscaping project for students in Horticulture and Landscape Architecture, led by Nina Bassuk, professor of horticulture and Peter Trowbridge, professor of landscape architecture.

Cuddeback calls the mobile coffee unit Gimme V – it's his fifth operation since opening the first Gimme shop at the corner of Cayuga and Cascadilla streets in downtown Ithaca. Gimme! Coffee was first distributed on campus in Statler Hall and in Goldwin Smith Hall's Temple of Zeus café.

Transforming a trailer into an espresso-friendly unit took about six months of intensive labor. But the Courtyard Café probably won't be Gimme V's permanent place of business. A future café is planned for Mann Library, and once that is up and running, Gimme V will take its show on the road.

ILR Kheel Center labor photos on Web

A digital collection of more than 1,000 photographs documenting the 95-year history of the International Ladies Garment Workers Union (ILGWU) is now available on the Web.

Drawn from among the 350,000 labor union and work photographs held by the Kheel Center for Labor-Management Documentation and Archives at the Cornell School of Industrial and Labor Relations' Catherwood Library, the images in this database may be searched at <http://www.laborphotos.cornell.edu>.

The labor photos image database consists of photographs of work, union activities and important events in American labor history. "The resources it makes available are of potential interest to scholars of labor and working class history, gender studies, immigration and ethnic studies, and to union members, students, teachers, filmmakers, artists and publishers," said Richard Strassberg, director of the Kheel Center and associate director of the Catherwood Library.

The project is designed to support teaching and research at the ILR School. The images available in the labor photos

database are continually expanded to encompass photographs from the center's varied collections. Users of this database can save selected images for later review and order reproductions as digital files or photographic reprints.

The Kheel Center, <http://www.ilr.cornell.edu/library/kheel>, is Catherwood Library's special collections unit and is one of the country's leading archives of industrial and labor relations, holding nearly 28 million historical items. Its holdings include the definitive historical records of 14 international unions, including those of the ILGWU, its sister union the Amalgamated Clothing Workers Union and the two unions' ultimate successor, UNITE-HERE. Center collections are rich in background material on pioneering federal regulatory and state protective labor legislation. Also available at the center are the records of professional organizations in related fields as well as the papers of more than 500 individuals prominent in the field of industrial relations.

For more information, contact Barbara Morley, Kheel Center media curator, at kheel_center@cornell.edu.

CALENDAR *from page 8*

those dealing with emotional problems, meets Sundays at 7:30 p.m. and Tuesdays at 8 p.m. at St. Luke's Lutheran Church, 109 Oak Ave. For information, call Ed at 387-8257.

Pesticide Applicator's Update

The College of Agriculture and Life Sciences' Dean's Office is sponsoring the annual Pesticide Applicator's Update March 22 in 146 Morrison Hall. The program will address regulatory compliance, liability and indemnification when using pesticides, pesticides and honey bees, and a progress report on the Cornell Safety, Health and Environmental Management System. DEC registration begins at 8:30 a.m.; the program runs from 9 a.m. to noon. For more information, contact Eric Harrington, 255-0485 or eh22@cornell.edu.

Maple Weekend at Arnot Forest

Cornell's Arnot Forest is participating in the statewide Maple Weekend celebration of the time-honored tradition of syrup production. Visit the Arnot Forest March 19 and 20 for a pancake breakfast, tours of the sugar house and sugarbush, children's events and educational displays. Pancake breakfast is \$5 for adults, \$4 for children; other events are free. Dress for the weather. For directions, visit <http://www.dnr.cornell.edu/arnot/>.

sports

Baseball

These games take place in Bradenton, Fla.:
March 19, Illinois State, 5:15 p.m.
March 20, Northwestern, 2 p.m.

March 21, Wisconsin-Milwaukee, 10 a.m.
March 22, Northwestern, 2:30 p.m.
March 23, Illinois, 10:30 a.m.
March 24, Ohio State, 2:30 p.m.

Golf

March 18, Rider, at Orlando, Fla.

Gymnastics

March 19, at Pennsylvania, 1 p.m.

Men's Hockey

March 18, Vermont, at Albany, 4:30 p.m.
March 19, ECACHL Champs., Albany, 8 p.m.

Men's Lacrosse

March 23, at North Carolina, 7 p.m.

Women's Lacrosse

March 19, at Stanford, 7 p.m.
March 22, at Ohio State, 1 p.m.

Men's Polo

March 18-20, Eastern Regional Championships, Ithaca

Women's Polo

March 18-20, Eastern Regional Championships, Ithaca

Softball

March 19-20, at Stetson Invit., Deland, Fla.
March 21-25, at Rebel Games, Kissimmee, Fla.

Men's Swimming & Diving

March 24-26, at NCAA Champs., Minneapolis

Women's Swimming & Diving

March 17-29, NCAA Championships, W. Lafayette, Ind.

Men's Track & Field

March 19, at Long Beach Invitational, Long Beach, Calif.

Women's Track & Field

March 19, at Long Beach Invitational, Long Beach, Calif.

Wrestling

March 17-19, at NCAA Championships, St. Louis

Maker of anthrax vaccine discusses challenges of marketing overseas

By Courtney Potts '06

BioPort is the only FDA-licensed producer of the anthrax vaccine.

On March 9, MBA students taking International Political Risk Management, a course taught by Elena Iankova, a lecturer at the S.C. Johnson Graduate School of Management, heard Fuad El-Hibri, chairman and CEO of Bioport's parent company, Emergent BioSolutions Inc., discuss the hurdles his firm faces in making and marketing its products abroad.

His guest lecture was titled "Managing International Risk in the Bio-Defense and Telecommunications Industries."

Using his own company as an example, El-Hibri outlined six areas of risk in international business, among them export/import regulations, politics at home and abroad and financial issues. Much of his talk focused on political issues ranging from export regulations to how to deal with foreign governments.

One hurdle: when BioPort sought to export its anthrax vaccine, BioThrax, the U.S. Department of Defense claimed the vaccine was primarily of military importance and should therefore fall under International Traffic in Arms Regulations (ITAR). Under ITAR, export of the vaccine is controlled by the Department of State and a license is required for each sale. BioPort succeeded in arguing that its product was non-military in nature and therefore belonged under Export Administration Regulations (EAR). Exportation under EAR is controlled by the Department of Commerce and has far fewer restrictions.

El-Hibri seemed to take such challenges in stride. "Obviously," he said, "the U.S. government is interested in vaccines, especially bio-defense vaccines." It controls which countries vaccines can be exported to and may use them as a bargaining chip in its own deals with foreign ministries of defense, he commented. "They like to throw our vaccine into the mix and say, 'Listen, if you buy one more tank or one more fighter jet ... we'll throw in 10,000 doses of anthrax vaccine,'" he said. But such giveaways create problems for



Kevin Stearns/University Photography
Fuad El-Hibri, chairman and CEO of Emergent BioSolutions Inc., speaks March 9 in Sage Hall.

companies like BioPort by reducing demand for its products in foreign countries.

Some uncontrollable variables that affect the demand for vaccines are: Politics within the foreign country, the country's relationship with the United States, its finances, its fears about

external threats and regional geopolitics, noted El-Hibri.

He also repeatedly mentioned the importance of having local connections. "It is critical that you appoint or partner up with a local distributor," he stressed. A local partner can help businesses stay abreast of the political situation and provide valuable insight into local culture and customs, he said, noting that acceptable business practices often vary widely between countries.

For example, in many countries it is common practice for businesses to offer bribes or gifts to government officials in return for their assistance, he commented. But under U.S. law, it is illegal for American companies to do so, with stiff penalties for violations. While the restriction can be circumvented by giving small gifts, under \$25 in value, a better policy is to avoid gifts altogether, said El-Hibri, and instead get close to decision makers by developing relationships with them, helping them solve some of their problems.

He also stressed that the media can be either an important ally or a formidable enemy. "Many of our competitors aren't as media savvy as we are and that gives us an edge."

Iankova later said of El-Hibri's talk: "I was impressed because he's put a lot of effort into addressing exactly the issues we addressed in class. [It was] very helpful for my students."

Gligor Tashkovich '87, MBA '91, who worked with El-Hibri in the telecommunications industry and helped to organize his visit to campus, called him "a brilliant businessman and entrepreneur."

And Herb Lara, MBA '06, president of the Health Care and Biotechnology Club, a student group at the Johnson School, enjoyed having the opportunity to hear El-Hibri speak. "Bio-defense is something that's not a widely available topic for discussion, so it was definitely a big deal to have someone of his stature come here to talk to us," he said.

Before entering the biopharmaceutical industry 15 years ago, El-Hibri worked at Citicorp and Booz Allen & Hamilton.

Courtney Potts is an intern with the Cornell News Office.

Idea for sustainably made drugs wins \$10,000 in Johnson School's Business Idea Competition

By Linda Myers

An idea by a Cornell chemistry professor and his student team won \$10,000 as the first-place winner in the 2005 Business Ideas Competition (BIC) at Cornell's Johnson Graduate School of Management. The team plans to make medications through environmentally friendly processes that create less waste and cost less than standard generics. A low-cost version of the antidepressant drug Prozac will be the first product.



McQuade

The yearly competition is sponsored by BR Ventures (BRV), a student-run venture capital group at the Johnson School that invests in early-stage businesses. In addition to \$10,000 from BRV, the winner gets 20 hours of free legal assistance – an estimated \$4,000 value – from Cornell's Entrepreneurship Legal Services (ELS), a group staffed by Cornell law students who help start-up businesses.

The idea for the winning business, to be called Sustainable Pharmaceuticals, was put forth by Tyler McQuade, an assistant professor in chemistry and chemical biology, and his research team of graduate students: Kristin Price, Steve Broadwater, Muris Kobaslija and Brian Mason.

In the world of drug manufacturing, for

every pharmaceutical agent made, 25 to 100 kilograms (53 to 220 pounds) of waste is produced, according to a recent article in *Green Chemistry*, said McQuade. "We've come up with a process that's expected to reduce waste by five-fold and costs by two and a half-fold," he said.

"Pharmaceutical companies claim they can recycle waste but recycling is enormously energy intensive and, in my opinion, is a bad model because it creates so much waste and gives people a false sense that they are not harming the environment, said McQuade. "Why not, instead, cut back on wasteful processes?" he asked.

He explained: "Solvents are where most of the waste is generated." To cut back on their use, he and his team developed a technology in which catalysts in the manufacturing process are encapsulated – not unlike catalysts in natural biological processes – to prevent them from harming other catalysts. The results: less waste and less money spent getting rid of the waste.

McQuade said he was inspired to create a sustainable manufacturing process when he read a book about it, *Cradle to Cradle: Remaking the Way We Make Things*, by William McDonough and Michael Braungart. "It got me thinking about how to be an environmentally conscious innovator," he said.

The second-place winner in the competition went to an idea for a business dubbed Illuminaria, of Ithaca, which aims to manu-

facture portable biosensors for point-of-care diagnostics that can quickly detect biological threats, including pathogenic bacteria such as anthrax. The team, led by Scott Stelick, a Cornell master's of engineering graduate, received \$2,500.

The third-place winner was a plan for OTS Diagnostics of Ithaca, which seeks to make hand-held electronic kits that diagnose different diseases simultaneously and instantly. The team, led by current Johnson School MBA student Andreas Wankerl, received \$1,000.

The winners were selected from seven semifinalists February 24 in Sage Hall, by a panel of venture capital industry experts. Entrants were asked to submit a two-page description of their business idea. Judging was based on the viability of the ideas and their attractiveness to investors. This year 103 entries were received, 16 from outside the Cornell community.

BRV members are second-year MBA students who are well-versed in venture capital and entrepreneurship. The Cornell law students who staff ELS are led by Zachary Shulman, the J. Thomas Clark Senior Lecturer of Entrepreneurship and Personal Enterprise at the Johnson School. The Johnson School also runs a business incubator, the Big Red Incubator (BRI). The triad of entrepreneurial services, considered unique on a college campus, may lead to many innovative, viable new businesses in the upstate New York region.

BRIEFS

■ **WMD awareness training:** Robert Holt, director of the Office of Campus Safety at Ithaca College, and Curtis Ostrander, interim director of the Cornell Campus Police, have announced they will be hosting a one-day course dealing with Weapons of Mass Destruction (WMD) Awareness training. It will be held on the Ithaca College campus in the Emerson Suites of Phillips Hall Wednesday, April 20, from 8:30 a.m. to 4:30 p.m. This course has been designed for all campus public safety personnel who might participate in response to a WMD incident. Upon successful completion, participants will receive a certificate of attendance and documentation for Continuing Education units. This training is funded by a grant from the federal Department of Homeland Security. There will be a \$15 charge for lunch and coffee breaks. For more information, contact Sgt. Phil Mospan at 255-8952 or <pdm3@cornell.edu>.

■ **Hans Bethe DVD now available:** The Cornell Store is offering "Quantum Physics Made Relatively Simple: Personal and Historical Perspectives of Hans Bethe," now available on DVD for \$19.95. Get a copy at the book information desk or order it by e-mail at <store@cornell.edu>. A lower-resolution streaming video is available online at <http://bethe.cornell.edu>. Several additional streaming videos of Bethe's lectures and interviews will be posted at <http://ifup.cit.cornell.edu/bethe/> within the next two weeks.

David Barbano wins Haines award for contributions to dairy science

By Susan S. Lang

The California Dairy Research Foundation (CDRF) recently presented Northeast Dairy Foods Research Center Director and Cornell Professor David Barbano with the inaugural William C. Haines Dairy Science Award in recognition of his contribution to the field of dairy science.

"I can't think of a better choice to receive the first William C. Haines award than Dave Barbano," said Joseph O'Donnell,



Barbano

executive director of the CDRF. "Throughout his career, Dave has made numerous contributions that have had a direct, beneficial impact on the dairy industry – from leading the Northeast Dairy Foods Research Center to training the dairy scientists of tomorrow. His dedication to the field of dairy science is the perfect embodiment of this award."

Barbano, a faculty member in the Department of Food Science at Cornell since 1980, has served as the director of the Northeast Dairy Foods Research Center since its inception 17 years ago. His current research focuses on improving analytical testing methods for the measurement of fat, protein, lactose and solids content of milk and other dairy

products; the influence of mastitis and milk somatic cell count on dairy products' quality and yield; factors influencing manufacturing costs for cheese and whey products; improving natural cheese quality, production efficiency and yield through process control; and the utilization of low concentration factor casein concentrates from microfiltration for cheese making and milk serum protein concentrates from microfiltration in beverages.

Established in 2004, the William C. Haines Dairy Science Award was created to recognize individuals who have made a significant contribution to dairy science and the betterment of the dairy industry and consumers of dairy products.

CALENDAR

March 17
through
March 24

TO SUBMIT A NOTICE:

Items for the calendar should be submitted by campus mail, U.S. mail or in person to Chronicle Calendar, Cornell News Office, 312 College Ave., Ithaca, NY 14850. Notices should be sent to arrive 10 days prior to publication and should include the name and telephone numbers of a person who can be called if there are questions.

exhibits

Johnson Museum of Art

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.

- "Taboo and Transgression in Contemporary Indonesian Art," through March 20.
- "Material Matters," through March 20.
- "Elana Herzog," through March 27.
- "Point of View: An Anthology of the Moving Image," through May 15.
- Art for Lunch: March 17 from noon to 1 p.m., curator Andrea Inselmann will lead a tour of the exhibition "Material Matters."

Kroch Library, Hirshland Gallery

(9 a.m.-5 p.m., M-F; 1-5 p.m., Sat.; closed Sun.)

"The Passionate Collector: Willard Fiske and His Libraries," through May 28.

Mann Library

(8 a.m.-midnight, M-Th; 8 a.m.-6 p.m., F; noon-5 p.m., Sat.; and noon-midnight, Sun.)

"Freehand Drawing at Cornell: Selection of Student Illustrations Since the 1920s" is on view at the first floor of the Mann Library addition through March 31.

Olive Tjaden Hall Gallery

(8 a.m. to 4:30 p.m., Monday through Friday)
Recent paintings by Erik den Breejen, through March 18.

films

Films listed are sponsored by Cornell Cinema and held in Willard Straight Theatre, except where noted, and are open to the public. All films are \$6 (\$4.75 for undergraduates and seniors; \$4 for Cornell graduate students and kids 12 and under).

Thursday, 3/17

"Moog" (2004), directed by Hans Fjellestad, with introduction by Professor Trevor Pinch, 7:15 p.m.

"Dig!" (2004), directed by Ondi Timoner, with Anton Newcombe and The Brian Jonestown Massacre, Courtney Taylor and the Dandy Warhols, 9:15 p.m.

Friday, 3/18

"Festival Express" (2003), directed by Bob Smeaton, with Janis Joplin, the Grateful Dead and The Band, 7 p.m., Uris.

"Tom Dowd and the Language of Music" (2003), directed by Mark Moormann, with footage of Ray Charles and Aretha Franklin, 7:15 p.m.

Saturday, 3/19

"Callas Forever" (2004), directed by Franco Zeffirelli, with Fanny Ardant and Jeremy Irons, 7:15 p.m.

"Dig!" 9:30 p.m.

Sunday, 3/20

"Moog," 7:30 p.m.

Monday, 3/21

"Tom Dowd and the Language of Music," 7:30 p.m.

Tuesday, 3/22

"Callas Forever," 7:30 p.m.

Wednesday, 3/23

"Moog," 7:30 p.m.

Thursday, 3/24

"Callas Forever," 7:30 p.m.

lectures

City & Regional Planning

"From the Socialist to the Post-Socialist City:

Transformations in Spatial Structure and Built Forms in Sofia, Bulgaria," Sonia Hirt, University of Toledo, March 18, 12:20 p.m., 335 Baker Hall.

Southeast Asia Program

"Extraordinary Times in Sumba, Indonesia: Moral Economy, Crisis and Subsistence," Christian Lentz, development sociology, March 17, 12:20 p.m., Kahin Cener, 640 Stewart Ave.

University Library

"What Can Universities Do to Promote Open Access?" Peter Suber, Scholarly Publishing and Academic Resources Coalition (SPARC), March 17, 10 a.m., G10 Biotechnology Building.

Wellness Program

"Turn Distress Into De-Stress With Massage," Matty Termotto, March 24, noon, G10 Biotechnology Building.

music

Department of Music

March 17, 12:30 p.m., B20 Lincoln Hall: Midday Music at Lincoln: Augustus Arnone, piano, featuring Roberto Sierra's *Piezas Imaginarias* and two études by David Rakowski.

'Bound for Glory'

March 20 and 27: Albums from the studio. "Bound for Glory" is broadcast Sundays from 8 to 11 p.m. on WVBR-FM, 93.5 and 105.5.

seminars

African Development, Institute for

"The Millennium Development Goal for the Alleviation of Poverty, Hunger and Malnutrition in Sub-Saharan Africa: Could It Be Achieved?" Per Pinstrip-Andersen, nutritional sciences, March 17, 12:20 p.m., 153 Uris Hall.

Astronomy & Space Sciences

"The Anatomy of a Solar Mass Protostar on

religion

Sage Chapel

No service March 20.

African-American

Sundays, 5:30 p.m., Anabel Taylor Chapel.

Baha'i Faith

Weekly prayer circle open to all faiths, sponsored by the Baha'i Club, held Sundays at 11 a.m. at 630 Stewart Ave. All are welcome.

Baptist Campus Ministry

Weekly Bible study meets Wednesdays at 8 p.m. in 314 Anabel Taylor Hall. For information contact Keith Bowman at <kcb29@cornell.edu> or 277-2283.

Buddhist

• Meditations: Monday, Wednesday and Thursday, 12:15-1 p.m., Founders Room, Anabel Taylor Hall.

• Zen Meditation practice is Mondays and Wednesdays, 5:30-6:30 p.m., Founders Room, ATH. Instruction is required before attending. For information, call Anne Marie at 273-4906.

Campus Crusade for Christ

Weekly large group meets Fridays at 7:30 p.m. in B14 Hollister Hall.

Catholic

Sunday Mass schedule: 10 a.m. and 5:15 p.m., Anabel Taylor Hall Auditorium; 9:30 p.m., Sage Chapel.

Daily Masses: Mondays, Wednesdays and Fridays at 12:20 p.m., ATH Chapel; Tuesdays and Thursdays at 5:15 p.m., ATH Chapel.

Solar System Size Scales," Claire Chandler, NRAO, March 17, 4:30 p.m., 105 Space Sciences.

Biogeochemistry & Environmental Biocomplexity

"Sources, Concentrations and Processing of Old Carbon in River Systems," Peter Raymond, Yale University, March 18, 4 p.m., A106 Corson Hall.

Biomedical Sciences

"Ca²⁺ and cAMP Signaling in Sperm," Donner Babcock, University of Washington, March 22, 4 p.m., Lecture Hall III, Veterinary Research Tower.

Chemistry & Chemical Biology

"NO and Oxygen Sensing: A Molecular Perspective on Ligand Discrimination in Biology," Michael Marletta, University of California-Berkeley, March 21, 4:40 p.m., 119 Baker Laboratory.

Cornell High Energy Synchrotron Source

"Mixing X-rays and Laser Light: A Nove. Recipe, but Does It Taste Good?" Ken Finkelstein, CHESS, March 18, 2:30 p.m., 380 Wilson Laboratory.

Cornell Institute for Public Affairs

"Global Labor Standards and Local Freedoms," Kaushik Basu, economics, March 17, 4:30 p.m., 100 Caldwell Hall.

Crop & Soil Sciences

"Carbon Stabilization in Biogenic Nanostructures," James Kinyangi, and "Impact of Forest Degradation on Hydrologic Processes in Southern India," Vishal Mehta, March 17, 12:20 p.m., 135 Emerson Hall.

Infection & Immunity

"Regulation of Memory T Cell Differentiation and Cellular Immune Responses to Respiratory Infection," Hao Shen, University of Pennsylvania School of Medicine, March 18, 12:15 p.m., Boyce Thompson Institute Auditorium.

International Nutrition

"Priorities for International Agricultural Research: A CGIAR Science Council Initiative," Per Pinstrip-Andersen, March 18, 3:30 p.m., 135 Emerson Hall.

Lab of Ornithology

"Assembly of the North American Songbird Fauna," F. Keith Barker, Bell Museum of Natural History, March 21, 7:30 p.m., Lab of Ornithology auditorium.

"Appalachian Treasures," a multimedia presentation focusing on the social and environmen-

tal impacts of mining in Appalachia, will be March 23 at 7 p.m. at the Lab of Ornithology.

Materials Science & Engineering

"Bio-Inspired Syntheses of Composite Materials: A View From the Organic/Inorganic Interface," Lara Estroff, Harvard University, March 17, noon, 140 Bard Hall.

"Novel Properties of Nanotube-Filled Polymer Materials," Jan Obrzut, NIST, March 17, 4:30 p.m., 140 Bard Hall.

Molecular Biology & Genetics

"Self-Renewing Mechanism of Stem Cells in the Germline," Haifan Lin, Duke University, March 18, 4 p.m., G10 Biotechnology Building.

Molecular Medicine

"Fragile X Protein Couples to Cell Polarity Complexes," Daniela Zarnescu, Emory University School of Medicine, March 24, 3:30 p.m., Lecture Hall III, Veterinary Research Tower.

Peace Studies Program

"Faltering Hopes: Why International Law Is in Trouble," Jeremy Rabkin, government, March 17, 12:15 p.m., G08 Uris Hall.

Plant Biology

"PRPs: Extracellular Matrix Proteins Important for Root Hair Cell Function," Mary Tierney, University of Vermont, March 18, 11:15 a.m., 404 Plant Science Building.

miscellany

Alcoholics Anonymous

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

Early Childhood Center Open House

Cornell's Early Childhood Center is holding an open house March 26 from 10 a.m. to noon in Martha Van Rensselaer Hall, ground floor. Applications will be available for fall 2005. Children must be 3 years old. Parking by building.

Emotions Anonymous

Emotions Anonymous, a 12-step program for

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Christian Science

Testimony meetings: Thursday, 7:30 p.m., Founders Room, Anabel Taylor Hall. Church services: Sundays, 10:30 a.m., and Wednesdays, 7:30 p.m., First Church of Christ Scientist, 101 University Ave., Ithaca.

Cornell Christian Fellowship

The InterVarsity chapter meets Fridays at 7:30 p.m. in Lewis Auditorium, Goldwin Smith Hall. For information visit the Web site at <http://www.ccfiv.org>.

Episcopal (Anglican)

Wednesdays, worship and Eucharist, 5 p.m., Anabel Taylor Chapel. Sundays, worship and Eucharist, 9:30 a.m., ATH Chapel. For more information, call 255-4219 or send e-mail to <eccu@cornell.edu>.

Friends (Quakers)

Meeting for worship, Sunday, 11 a.m., Edwards Room, Anabel Taylor Hall. For information visit <http://www.quaker.org/ithaca/> or call 273-5421.

Grace Christian Fellowship

The InterVarsity chapter meets Fridays at 7 p.m., B11 Kimball Hall. For more information visit the Web site at <http://www.curw.cornell.edu/gcf>.

Hindu

Weekly religious service is Saturday at 4 p.m. in the Edwards Room, Anabel Taylor Hall, followed by a Gita reading at 5 p.m.

Jewish

• Conservative: Fridays, 6:15 p.m., Founders

Room, Anabel Taylor Hall; Saturdays, 9:45 a.m., Founders Room, ATH.

• Reform: Fridays, 6:15 p.m., Chapel, Anabel Taylor Hall.

• Orthodox: Friday, Center for Jewish Living, call 272-5810 for weekly times; Saturday, 9:15 a.m., Edwards Room, ATH.

Korean Church

Sundays, 11 a.m., One World Room (in English), and 1 p.m., chapel (in Korean), Anabel Taylor Hall. Call 255-2250 for more information.

Latter-Day Saints (Mormon)

Cornell student branch: Sundays at 9 a.m. Call 257-7313 for information.

Lutheran

Campus ministry at St. Luke Church, 109 Oak Ave., in Collegetown, Sundays, 10:45 a.m. and 5 p.m. Bible study Tuesday, 7 p.m. For more information call 273-6811 or e-mail <rlb8@cornell.edu>.

Muslim

Daily congregational prayer at 218 Anabel Taylor Hall. Weekly Juma'a Prayer, Friday, 1:20 p.m., One World Room, Anabel Taylor Hall.

Weekly coffee hour Tuesdays, 4:30 p.m., Tower Café, Uris Library. For more information visit the Web site: <http://www.meca-online.org/>.

Pagan

For information call CURW at 255-4214.

Protestant Cooperative Ministry

Sunday service at 11 a.m. in Anabel Taylor Chapel.