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Campus dedicates new bridge



"The Campus Community Bridge in Honor of Torsten N. Wiesel" was dedicated just before Thanksgiving when more than 100 Rockefeller University pedestrians followed the former president onto the eponymous span. The historic crossing between Weiss Café and Scholars Residence occurred Wed., Nov. 23, after a ceremony in the lobby of Weiss Building to unveil the city's first cantilever cable-stayed bridge. Architect Wendy Evans Joseph and her children helped Wiesel and Chairman Emeritus of the Board of Trustees Richard Furlaud cut a ribbon at the top of the new spiral staircase leading to the bridge entrance (pictured above). The entourage, joined by children from the RU Child and Family Center, headed to the middle of the bridge for a celebration with families from Faculty House and Scholars Residence led by Professor Markus Stoffel (photos at right). With that, 800 hundred slices of "bridge" cake were served in the Café to celebrate the tying together of the residential and academic campuses. Designed by Joseph and structural engineer Matthys Levy, of Weidlinger Associates Inc., the bridge will open early next year.

Aerial photo by Bob London. Other photos by Paul Schneck.



Friday lecture: Hemmati-Brivanlou to discuss embryonic induction

Associate Professor Ali Hemmati-Brivanlou, head of the Laboratory of Molecular Vertebrate Embryology, will discuss "Embryonic Induction" at the Friday lecture today (Dec. 3).

Hemmati-Brivanlou's lab studies the molecular mechanisms responsible for the formation and patterning of the vertebrate embryo. The lab uses two species of frogs—*Xenopus laevis* and *Xenopus tropicalis*—as well as mammalian embryos for these studies. Amphibian embryos provide the researchers with the opportunity to study development from the first cell cycle onward and to carry out experiments involving detailed manipulations of the embryos. Mammalian embryos allow the group to use genetic approaches in parallel with the frog studies.

Hemmati-Brivanlou joined the university in 1994 as an assistant professor and head of laboratory after working as a postdoc in Douglas Melton's lab at Harvard University. During this time he began formulating the default model of neural induction. Scientists in the 1980s had shown that cells from an early embryo, if grown in isolation, become neural tissue. Cells that were allowed to come into contact with one another became epidermal cells. Hemmati-Brivanlou theorized that to become epidermis, embryonic cells need to receive a signal that instructed them to not become neural; in the absence of such a signal, cells will neuralize by default. Hemmati-Brivanlou later identified bone morphogenetic protein 4 (BMP4) as a signal that inhibits neural development and induces epidermis. He proposed that neural formation in vivo requires inhibition of BMP signaling. Five neural inducers have been identified so far in vertebrates. All appear to act by inhibiting

See Friday lecture, page 2

Mirsky lecture features MacKinnon on the body electric

On Tues., Dec. 28, Professor Roderick MacKinnon, head of the Laboratory of Molecular Neurobiology and Biophysics and an investigator with the Howard Hughes Medical Institute, will present the 40th Annual Alfred E. Mirsky Christmas Lecture Series on Science to 400 area high school students.

The proper function of cells in our bodies depends on the passage of electric charges across membranes. This movement is controlled by highly selective channels that allow certain ions to enter or exit while rejecting other charged particles. MacKinnon's lab studies how the structure of ion channels enables them to selectively control the flow of potassium, sodium or calcium ions across the cell membrane.

In 1998, MacKinnon's laboratory solved the structure of the potassium ion channel, and its three-dimensional image was published on the cover of *Science* magazine, which labeled the feat one of its "Breakthroughs of the Year." Largely as a result of this accomplishment, MacKinnon was named a recipient of the 1999 Albert Lasker Award for Basic Medical Research.

MacKinnon's first lecture, "The Spark of Life," at 10:30 a.m., will trace the search to understand electricity's role in biology by scientists throughout history, detailing how researchers built upon the knowledge compiled by their predecessors. The lecture also will illustrate how many electric phenomena are the same

from simple physiologies to the most complex, so that studying bacteria can shed light on how electricity works in higher organisms such as human beings.

In the day's second lecture, "Electric Avenues," at 1:30 p.m., MacKinnon will describe the elegant and ingenious mechanisms nature has designed to regulate the electric signals that allow us to think, see, move, eat—in short, to live and thrive.

MacKinnon is a graduate of Brandeis University (B.A., 1978) and the Tufts University School of Medicine (M.D., 1982). After receiving his medical degree, he was medical house officer in internal medicine at Beth Israel Hospital, Harvard Medical School. In 1985, he began an N.I.H. Postdoctoral Fellowship there, but the next year he switched from medicine to research and returned to Brandeis to complete the fellowship in the lab of his undergraduate mentor, Christopher Miller.

In 1989, MacKinnon returned to Harvard Medical School and held several academic positions until 1996. He then joined Rockefeller as a professor and head of the laboratory. In 1997, he was appointed an investigator with the Howard Hughes Medical Institute.

MacKinnon is a member of Alpha Omega Alpha, the medical honor society, and was a PEW Scholar in the Biomedical Sciences and a McKnight Scholar. In addition to being honored with the Lasker Award, he also has been the recipient of the AAAS Newcomb



RU Professor Roderick MacKinnon will discuss the role electricity plays in cellular functioning. Photo by Arnold Adler.

Cleveland Prize, the Biophysical Society Young Investigator Award, and the W. Alden Spencer Award from Columbia University.

Mirsky, a biochemist and RU librarian, established the Mirsky Christmas Lectures in 1959. He modeled the series on a popular program of science lectures for children initiated in London in 1827 by legendary experimenter Michael Faraday. Since 1974, when Mirsky died, the series has been funded through an endowment provided by his widow, Sonya Wohl Mirsky. Each year, a lecturer is chosen from among the university's faculty to provide high school students with a level of mentoring normally reserved for the nation's best graduate students.



Ali Hemmati-Brivanlou will present today's Friday lecture (Dec. 3). Photo by Robert Reichert.

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Child and Family Center gives thanks with food

Older children at RU's Child and Family Center celebrated the Thanksgiving holiday with traditional fare last Wed., Nov. 24. Restaurant Associates cooked two whole turkeys for the occasion, and these were garnished with stuffing, cranberry sauce and corn bread baked by the children. The meal was served to the children in their classrooms and topped off with homemade chocolate-chip pumpkin cookies.

Photos by Patricia Childers-Divone.



Piano trio performs at next Peggy Rockefeller Concert



The Golub-Kaplan-Carr Trio is the featured artist at the Wed., Dec. 8 Peggy Rockefeller Concert. Photo courtesy of the artists.

The Golub-Kaplan-Carr Trio will perform at the Peggy Rockefeller Concerts in Caspary Auditorium on Wed., Dec. 8, at 8 p.m.

The Trio has been lauded as one of the finest piano trios before the public today. David Golub, Mark Kaplan and Colin Carr are all celebrated solo artists, performing throughout the world with the orchestras of Philadelphia, New York, Chicago, Washington, Cleveland, London, Paris and Berlin, as well as at leading music festivals including Ravinia, Aspen, Edinburgh, Spoleto and Marlboro. Inspired by their friendship and their common love of chamber music, they have elected to devote a part of each season to the exploration of the piano trio literature.

Since their debut in 1982, the Golub-Kaplan-Carr Trio has toured throughout the United States and Europe in major art centers including New York's Lincoln Center, the Kennedy Center in

Washington, DC, London's Southbank, the Concertgebouw in Amsterdam, as well as Los Angeles, San Francisco, Chicago, Rome and Paris.

The *Washington Post* wrote, "When musicians with international renown as soloists join forces, one awaits, sometimes fruitlessly, a revelatory performance that lives up to the individual talents. Yesterday proved that such a blending is not a pipe dream." The Trio also maintains an active interest in contemporary music, having commissioned and premiered works in New York, London, Amsterdam, Cologne, Milan and Florence. In addition, they enjoy frequent collaborations with distinguished colleagues, presenting programs and mini-series organized around specific themes.

On Dec. 8, the Trio will perform Beethoven's *E-Flat Variations*, Op. 44, Maw's *Piano Trio* (1991) and Dvořák's *Piano Trio in E Minor*, Op. 90.

Blobel's Nobel lecture to be broadcast on Web



Professor Günter Blobel's Nobel prize lecture will be webcast Wed., Dec. 8. Photo by Robert Reichert

Professor Günter Blobel's Nobel Prize lecture in Stockholm on protein targeting will be webcast live on Wed., Dec. 8, from 8:50 a.m. to 9:45 a.m. EST.

The webcast will be available at <http://www.nobel.se> and Nobel Website organizers said it will be online for approximately a month. The lecture, which will take place in the Main Auditorium of the Karolinska Hospital in Stockholm at 2:50 p.m. local time, is the only Nobel lecture that will be webcast live.

Blobel says he has an extremely busy schedule while he is in Stockholm. "They have us going from early in the morning until the evening," he says.

The Nobel Prize Award Ceremony, which takes place on Fri., Dec. 10 at 4:30 p.m. local time (10:30 a.m. EST), will also be webcast live at the same URL.

Friday lecture, continued from page 1

BMP4 activity, providing support for Hemmati-Brivanlou's default model.

The Hemmati-Brivanlou lab also studies induction of other systems, including the induction of sensory organs, such as the eye, ear and nose. In fruit flies, a protein called Pax6 had been shown to trigger the formation of extra (or ectopic) eyes, suggesting that it plays a key role in normal eye development in this species. It was not clear if Pax6's role as a key regulator of eye development was conserved in higher animals. Just a few months ago, in the journal *Development*, the lab and colleagues at New York University Medical Center Skirball Institute showed that overexpression the Pax6 gene can generate the development of ectopic eyes in tadpoles.

An important aspect of Hemmati-Brivanlou's work is the development and application of new technologies to study the early embryo. Among these are the development of transgenic frogs and the generation of the first *Xenopus* cDNA microarrays for the large-scale analysis of

gene expression. According to Hemmati-Brivanlou, with this technology researchers can examine more than 20,000 genes in a single experiment, in order to assay gene function and identify novel genes. His laboratory has also adapted recent advances in computer imaging to follow movements of individual cells in the whole living embryo.

Hemmati-Brivanlou received his doctoral degree in 1990 from the University of California at Berkeley while working with Richard Harland, with whom he spent a postdoctoral year before moving to Melton's lab. He has received the Irma T. Hirsch-Monique Weill-Caulier Trust Career Scientist Award, the Searle Scholar Award, the James A. Shannon Director's Award from the National Institutes of Health, the McKnight Scholar Award, the William S. Stone Memorial Award, the Presidential Early Career Award for Scientists and Engineers and the John Merck Award.

The lecture begins at 3:45 p.m. in Caspary Auditorium. All are welcome.

Potpourri

Construction updates

Due to the operation of a crane in the Bronx Laboratory area, the 66th St. parking lot, north of the tennis court, will be closed Friday evening, Dec. 17 to early Mon., Dec. 20.

If you are a staff member who parks in this lot (D and PM stickers), please remove your car from the lot by midnight Fri., Dec. 17.

Due to the construction there will be no parking for visitors or guests during this period.

Hudspeth lectures in Chile

Professor A. James Hudspeth presented a talk on "Hair-bundle Movements as a Source of Mechanical Amplification in the Ear" at the University of Chile Medical School in Santiago, Chile, in mid-November.

While in Chile, he also spoke at the joint meeting of the Chilean Society and the United Kingdom Society of Physiological Sciences in Pucon.

Give your regards to Broadway

For a limited time, Human Resources is offering a limited number of tickets to the new Broadway revival of Arthur Miller's *The Price* at a reduced cost. Tickets are for the Tues., Dec. 7 show, which begins at 8 p.m., and cost

\$20.50 each. To reserve your tickets call Ron Kurtz, x8303.

Above the law?

A reminder to campus dog walkers: Please remember to abide by the city's leash and pooper-scooper laws.

McEwen to talk at the 92nd Street Y

On Mon., Dec. 6 at 6:30 p.m. Professor Bruce McEwen will talk about the positive and negative effects of stress on our lives at the 92nd Street Y. This lecture is part of a series entitled "To Your Health." Tickets are \$20 (\$10 for members of May Center for Health, Fitness & Sport). For more information or to register, call 212-966-1100. The Y is also offering a 50 percent discount for members of the Rockefeller community on tickets purchased the day of the lecture. To receive this discount, present your RU ID card.

AwardsCorner

Professor Emeritus Joshua Lederberg is the 1999 recipient of the Morris Collen award. This award, presented yearly by the American College of Medical Informatics, recognizes an individual's lifetime achievement and contributions to the discipline of medical informatics.

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Employees exhibit artistic talent in first RU Art Show 99-025

On Wed., Oct. 20, the Employee Art Show opened in Welch Hall, helping to kick off a week's worth of events recognizing RU employees. More than 10 artists exhibited their work, displaying over 40 pieces, which included painting, photography and a 3-D installation. This show was the first in a planned series of events, which will take place during the year, to feature the creative abilities of the university's employees.



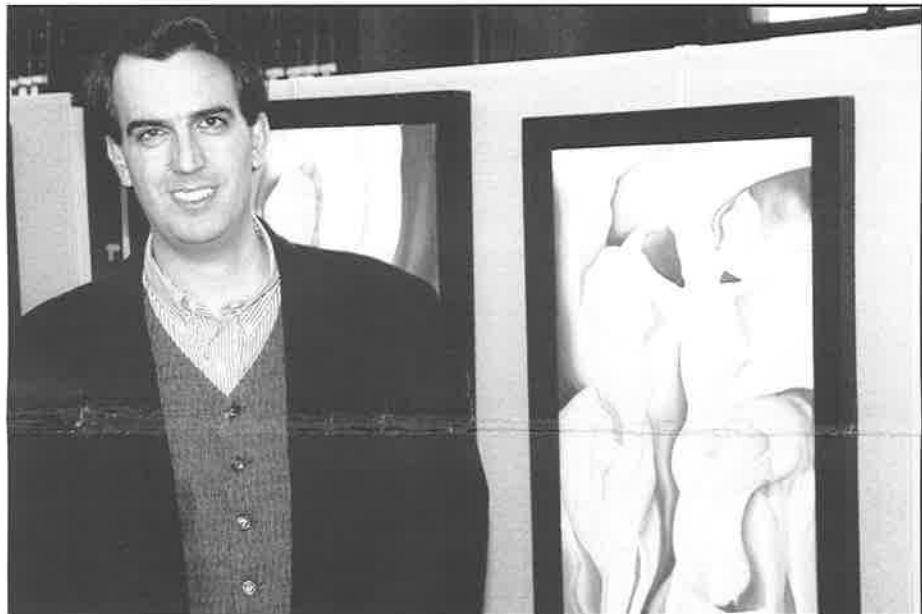
Susanna Katsman of the Hospital with three of her photographs.



Katja Liedtke of the Hudspeth Lab displays her 3-D installation "Essen."



Joan Falciano of Computing Services shows her quilt "Sunshine."



Stefano Lami of the Goulianos Lab with his work "Pity of Love."



Maria Pospischil of the Protein/DNA Technology Center pauses to take a closer look at some campus clicks.



Paula Desko of the Library and Peter Cassidy of Custodial discuss the campus talent.



Corrine Stoewsand of the Housing Office with her work "Women."

Employee Recognition Award Program honors employees with 10 and 20 years of service

Eleven employees celebrated 20 years of service to the university, while over 40 celebrated 10 years of service at the annual Employee Recognition Award Program held in Welch Hall on Wed., Oct. 20.



Jaime Felipe of the Housing Office smiles as the crowd cheers for his 10 years of dedication.



From left: Jacqueline Chiappetta (20 years) and Marguerite Nulty (10 years) of the Steinman lab and Virginia Menendez of the Nussenzweig lab enjoy the celebration.

99-025



Stuart Gezelter of Computing Services stands to accept his award for 10 years of service to the university.

Employee Recognition Award Program (continued from page three)



From left: Jimmy Sullivan, Grounds, with Luis Matos of Custodial Service and President Arnold Levine. Sullivan and Matos received crystal bowls from Tiffany & Co. in thanks for their 20 years of service.



Pecolia Rieder of the Archive Center celebrates 10 years of service.



Elizabeth and Professor Emeritus Bruce Merrifield (left) congratulate Professor Brian Chait (right) on his 20 years of dedication to the university.

University fetes employees at Anniversary-Retirement Dinner

Eighteen employees and 13 new retirees were honored by The Rockefeller University at this year's Anniversary-Retirement Dinner, held on Wed., Nov. 10, in the Weiss Café.

Professor Emeritus and Nobel laureate Bruce Merrifield was honored for his 50 years of service at the university. Also in attendance, being honored at the dinner for their service, were Professor Emeritus Jules Hirsch for 45 years, and Catherine Volin for 40 years. Unable to attend the event were Professor Emeritus William Trager, celebrating 65 years of service, and Professor David Mauzerall and Professor Emeritus Philip Siekevitz, each celebrating 45 years of service.

To help commemorate the university's centennial, the menu for the Anniversary-Retirement Dinner reflected a special dinner prepared in 1924 at the Hotel Ambassador to honor Simon Flexner, first director of The Rockefeller Institute, for his individual accomplishments and influence in the development of science.



President Arnold Levine congratulates Nyna Wilson of Development on her retirement.



Professor Emeritus Norton Zinder celebrates his recent retirement.



President Arnold Levine congratulates Paulette Zabriskie of the RU Press on her recent retirement.



A mix of good emotions: Margarita Campell of the Allfrey lab (back, left); Margery Pederson (back, center), RU retiree; David Lyons (back, right), retiree; and Professor Emeritus Vincent Allfrey (front) reminisce about their RU experiences.



Professor Emeritus Jules Hirsch (far left) celebrates 45 years with Ann Ho (far right) of the Kreek Lab and her guest.



Isaiah Curry of Laboratory Safety (left), celebrates his 25-year career at RU with recent retiree Gene Roth of the Carpenter Shop (right) and Rudolph Spangler of the Kreek Lab.



President Arnold Levine thanks Vilma Henry of Bio Nutrition for her contributions to RU.



Yolanda Alvarez of the Controller's Office speaks of her 25-year career at RU.

99-029

Plant molecular biology lab discovers new way of identifying transgenic plants

by Ann-Marie Blaber

Since the 1950s, genetic engineering has been helping scientists improve on mother nature. Thanks to its advances, many crops have been reengineered in helpful ways, including having a higher tolerance for salt in the soil and pests in the environment.

While the benefits reaped from transgenic plants are apparent, the methods that are currently employed to create them cause concerns about the possibility of spreading antibiotic resistance.

In a recent paper published in *Nature Biotechnology*, Andrew W. Mellon Professor Nam-Hai Chua and members of his research team unearthed a highly controllable, more efficient process for producing and identifying genetically altered crops that could help allay public concerns about transgenic plants. The new process is quicker than traditional methods, allows for transformation of multiple genes and, most importantly, provides for easy identification of transformed genes *without* the use of an antibiotic-resistant marker.

To create transgenic plants, there must be an inscribed marker, which allows for the identification of trans-



Members of the Laboratory of Plant Molecular Biology who authored the paper that appeared in *Nature Biotechnology* (from left to right: Guest Investigator Qi-Wen Niu, Postdoctoral Fellow Tim Kunkel and Andrew W. Mellon Professor Nam-Hai Chua) examine plant cells that were exposed to the Dex system. Photo by Ann-Marie Blaber.

antibiotic-resistant gene expression is commonly used, it is tedious and has inefficiencies. For instance, during antibiotic exposure not only are the non-resistant cells killed off, but some desirable transformed cells are damaged as well. The procedure has also raised concerns that the antibiotic-resistant genes could be passed along

antibiotic, and firefly luciferase (*luc*), a firefly gene that allows for viewing of gene expression events *in vivo*.

Following the transformation process, in which transgenes are inserted into cells, the plant cells are placed on a medium containing the Dex inducer. In the presence of Dex, *ipt* becomes activated, which leads to elevated cytokinin levels. The cytokinin promotes shoot growth making the transgenic plants easy to spot. However, too much of a good thing is not a good thing.

Plants with elevated cytokinin levels display abnormal shoot growth, including strangely shaped leaves, very little space between leaves on the plant stem and leaves that take a long time to mature. In addition, elevated cytokinin levels delay and can even prohibit roots from growing, and the plants are often sterile. Chua's process induces the regeneration of transformed plants (thus making the transformed plants easy to spot). But because of the elevated cytokinin levels these plants would be severely affected in their morphology.

The lab's solution to the complications of elevated cytokinin levels is simple: they remove the plant cells from the Dex inducer and transfer them to a root-inducing medium without Dex. This procedure acts as an on/off switch to the *ipt* gene's expression.

Once the transformed cells are identified and placed on a medium without an inducer, they grow normally—and quickly. (The lab's data for the transgenic

tobacco shoots showed that more than 40 percent of the transgenic shoots developed a strong root system within 20 days of being placed in the Dex-free medium.)

As in other protocols for creating transgenic plants, scientists are in the dark about which plants have accepted the new genes following transcription. They need a mechanism that allows them to see which plant cells have accepted the transgenes. In Chua's protocol, *ipt* is the light, which can be turned on when it is "plugged in" to the Dex inducer, which allows the scientists to see. What is different about this protocol is that once the transformed plants have been identified, the light is easily turned off by removing Dex, allowing fine-tuning of the *ipt* gene's expression, much like a dimmer switch.

Previous studies had regulated *ipt* expression by using constitutive promoters, but they lacked the control afforded by an outside inducer, such as Dex. What these studies lacked was an on/off switch to *ipt* expression. As a result, the transgenic plants in most of these studies suffered the perils of elevated cytokinin levels (abnormal shoot growth). The few studies that did manage to produce viable plants did so less than 1 percent of the time, and the cultivation period required to get normal regenerants was lengthy.

Chua's findings shine brightly on the future of genetic engineering. Not only have they identified a way to tightly regulate *ipt* gene expression (by finding a plant system that can turn the gene on or off, allowing scientists the utmost control), they also have found a new marker system that is reliable and does not depend on antibiotic-resistant genes.

The study shows that the cytokinin-dependent transformation system the lab employed allows for introduction of multiple genes into the plant genome. Data from measuring Luc activity and hygromycin resistance, along with northern blot hybridization results, showed that the *luc*, *hpt* and *ipt* genes were successfully cotransferred in about 80 percent of the tested shoots.

While the lab's results are valid for tobacco and lettuce plants, whether this process will work in other plants remains to be tested.

This research was supported by an International Human Frontier Science Program Organization Grant.

Chua and members of his research team unearthed a highly controllable, more efficient process for producing and identifying genetically altered crops that could help allay public concerns about transgenic plants.

formed cells. The typical method for genetic modification of plant cells employed today uses an antibiotic-resistant marker and has two main steps. First, plant cells are transformed with an antibiotic-resistant gene, such as the kanamycin-resistance gene, along with the desired transgenes. Following transcription, the cells are treated with an antibiotic, such as kanamycin. The cells that do not express the resistance gene are killed off by the antibiotic, while the transformed cells continue to grow and divide. The final step in the process is to place the transformed cells onto a medium containing the phytohormones auxin and cytokinin, which promote regeneration of plant cells into shoots and roots.

While this protocol for producing and recognizing transgenic plants by

to bacteria, creating feared "super bugs."

In the protocol detailed in Chua's *Nature Biotechnology* paper, there is no need for an antibiotic-resistant gene marker because the transformed plants can be detected visually.

The marker used by the lab to help identify transformed plant cells was the isopentenyl transferase (*ipt*) gene. This gene, when expressed in a plant cell, increases cytokinin levels. The lab regulated *ipt* expression by placing it under the control of the dexamethasone (Dex)-inducible system. The Dex system consists of a hybrid transcription factor that, after activation by Dex, induces transcription of target genes. Using this system, the lab transformed tobacco and lettuce cells with genes for hygromycin phototransferase (*hpt*), an

Campus infrastructure improved to aid new labs

The challenge for Rockefeller University's Office of Plant Operations is how to adapt the existing campus infrastructure to meet the constant growth and development of laboratories. One of their current projects is increasing capacity for air conditioning and electricity. Air conditioning is not just a matter of personal comfort at RU, notes Robert Francis, director of Plant Operations, it is critical for many scientific experiments that are being performed in the labs.

Because the campus's existing cooling facilities had no physical space for additional chillers, the power plant underneath the Rockefeller Research Building (RRB) is being expanded (this work is being combined with Plaza renovations to be labor efficient). This new addition will increase the university's cooling capacity by 25 percent next year and 50 percent the following year.

In making these changes, Plant Operations is already planning for the next stage of campus expansions. President Arnold Levine's plans call for completing the top three floors of the RRB, completing additional work in Weiss Research Building, and renovating the Hospital, among other projects—each of which brings new cooling and electrical needs.

Plant Operations tries to plan for such needs three years ahead because infrastructure projects take a long time and require approvals from a number of environmental agencies. "If you don't think ahead," observes Francis, "you end up forced into incremental solutions, which are always more costly." Building infrastructure like heating and cooling and electricity is best done on a large scale.

When Francis came here in 1993, the university had only enough air conditioning capacity to service

the campus as it then existed. Since 1993, six floors have been added to the RRB, and many floors in Bronk Laboratory, Weiss and Flexner Hall have been renovated; all of these changes brought a need for new air conditioning and power.

"It's as Alice says in *Through the Looking Glass*," Francis observes, "It takes all the running you can just to stay where you are." Francis is proud to point out that because changes have been made on a systemic basis, rather than incremental basis, the campus infrastructure has become more efficient. The university spends no more money now on electricity than it did in 1990, even before taking inflation into account.

"Less money for Con Edison means more money for the labs," says Francis. "For us, that's the real bottom line."

DECEMBER

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DECEMBER

calendar of events

<http://www.rockefeller.edu/rucal>

THE ROCKEFELLER UNIVERSITY—Please post

FRIDAY, DECEMBER 3

12:00 p.m. **Regulation of TCR Surface Expression in Normal and TCR Transgenic Mice.** Janko Nikolic-Zugic, Associate Professor of Immunology, MSKCC, Immunology Seminar. **F-539 NYPH-WMCCU, 1300 York Ave.** Contact Michele Lavarde, 746-6452.

MONDAY, DECEMBER 6

4:00 p.m. **Genes From the Fountain of Youth.** Cynthia Kenyon, Professor, UCSF Medical School, Seminars in Cancer Biology. **Caspary Auditorium.** Contact Jill Benz, 327-8092. Open to RU/WMCCU/NYPH/MSKCC community only.

TUESDAY, DECEMBER 7

2:00 p.m. **To 'B' or Not to 'B': Apo B Secretion, Chylomicron Assembly and Diabetes.** Li-Shin Huang, Assistant Professor of Medicine, Columbia U. College of Physicians and Surgeons. M. Mahmood Hussain, Associate Professor, Dept. of Anatomy and Cell Biology and Pediatrics, SUNY Health Science Center, Brooklyn. Janet D. Sparks, Associate Professor of Pathology, U. of Rochester School of Medicine and Dentistry, New York Lipid and Vascular Biology Research Club Seminar. **301 Weiss.** Refreshments at 5:30 p.m. in the Weiss 17th Floor Lounge. Contact Hayes Dansky, 327-7733.

4:00 p.m. **Cloning Mice.** Teruhiko Wakayama, Developmental Biology Seminar. **305 Weiss.** Open to RU community only.

4:00 p.m. **Interactions of Nitric Oxide and Transforming Growth Factor-B in Ureteral Obstruction.** Diane Felsen, Associate Research Professor of Pharmacology in Urology, WMCCU. Pharmacology Seminar. **Weill Auditorium, WMCCU, 1300 York Ave.** Coffee and cookies at 3:45 p.m.

4:00 p.m. **Mechanisms of Regulation of the PTEN Tumor Suppressor.** Maria Georgescu, Postdoctoral Fellow, RU. Molecular Pharmacology and Therapeutics Seminar. **116 Rockefeller Research Laboratories, MSKCC, 430 East 67th St.** Tea at 3:45 p.m.

4:00 p.m. **Regulation of Prostate Gene Expression and Growth by Sex Steroids.** Yuan-Shan Zhu, Assistant Professor of Medicine, WMCCU. CNRU Monthly Meeting. **117 Rockefeller Research Laboratories, MSKCC, 430 East 67th St.**

WEDNESDAY, DECEMBER 8

12:00 p.m. **Heat Shock Proteins: Ancient Functions, Modern Roles.** Pramod Srivastava, Professor, Department of Immunotherapy, U. of Conn. Seminars in Clinical Research. **110B Nurses Residence.**

12:00 p.m. **The Rhombic Lip in Cerebellar Development.** Richard Wingate, Wellcome Research Career Development Fellow, King's College London, Guy's Campus. Lecture. **301 Weiss.** Open to RU/WMCCU/NYPH/MSKCC community and guests only.

3:00 p.m. **Canine Genetics: Pulling Timmy's Genes from the Well.** Elaine Ostrander, Clinical Researcher, Fred Hutchinson Cancer Research Center, Seattle, Washington. Starr Center for Human Genetics Seminar. **301 Weiss.** Contact Emily Gegeliya, 327-7387.

3:45 p.m. **A Critical Role for DNA End-Joining in Lymphogenesis and Neurogenesis.** Frederick W. Alt, Charles A. Janeway Professor of Pediatrics and Professor of Genetics, HHMI/Children's Hospital, The Center for Blood Research, Harvard Medical School. Genetics Seminar. **Auditorium, Rockefeller Research Laboratories, MSKCC, 430 East 67th St.** Tea at 3:15 p.m.

4:00 p.m. **Microrheology of Confined Geometries.** David A. Weitz, Professor, Harvard U. Center for Studies in Physics and Biology Seminar. **B Level Conference Room, Smith Hall Annex.** Tea at 3:30 p.m. Contact Martin Zapotocky, 327-8835.

THURSDAY, DECEMBER 9

2:00 p.m. **Intracellular β -Amyloid and Alzheimer's Disease.** Gunnar Gouras, WMCCU. **Biochemical and Genetic Links between the LDL Receptor-related protein and Alzheimer's Disease.** William Rebeck, Mass. General Hospital. **The Complex Genetics of Alzheimer's Disease.** Richard Mayeux, Columbia U. NY Alzheimer Research Symposium. **301 Weiss.** Refreshments will be served. Contact Huaxi Xu, 327-7567.

3:00 p.m. **Visual Mental Images in the Brain: How Low Do They Go?** Stephen Kosslyn, Harvard U. Systems Neuroscience Seminar Series. **305 Weiss.** Open to RU/WMCCU/NYPH/MSKCC community only.

4:00 p.m. **The Importance of Stem Cell Kinetics in Establishing How Many Rate Limiting Mutations Cause Cancer.** Mark Vickers, Senior Lecturer, Dept. of Medicine and Therapeutics, U. of Aderdeen, Scotland. Human Genetics Seminar. **116 Rockefeller Research Laboratories, MSKCC, 430 East 67th St.** Contact Valerie Charles, 639-6165.

4:00 p.m. **Tomatoes, Lycopene and Prostate Cancer Prevention.** Edward Giovannucci, Assistant Professor, Channing Laboratory, Dept. of Nutrition, Brigham and Women's Hospital and Harvard Medical School. CNRU Special Nutrition Lecture. **D-417 WMCCU, 1300 York Ave.**

FRIDAY, DECEMBER 10

12:00 p.m. **STAT3 Activation and Cyclin Expression in B-1 Lymphocytes.** Thomas L. Rothstein, Professor of Medicine and Microbiology, and Director, Immunobiology Unit, Boston Medical Center. Immunology Seminar. **117 Whitney, WMCCU, 1300 York Ave.**

12:00 p.m. **V(D)J Recombination: Links to Transposition and Double-strand Break Repair.** Martin Gellert, Laboratory of Molecular Biology, NIDDK, NIH. Cell Biology Seminar. **116 Rockefeller Research Laboratories, MSKCC, 430 East 67th St.**

7:00 p.m. **Psoriasis Support Group.** Patricia Gilleaudeau, Research Nurse, RU. Psoriasis Support Group. **110B Nurses Residence.** Contact Patricia Gilleaudeau, 327-8333.

MONDAY, DECEMBER 13

4:30 p.m. **A Physiological Train Wreck That Derails Pregnancy, Engineers Granulosa Cell Tumors, and Tickets Formation of Pituitary Adenomas.** John H. Nilson, John H. Hord Professor and Chair, Dept. of Pharmacology, School of Medicine, Case Western Reserve U. PBMM Research Seminar. **Weill Auditorium, WMCCU, 1300 York Ave.** Coffee and Cookies at 4:15 p.m.

TUESDAY, DECEMBER 14

4:00 p.m. **Repair of Oxidative Damage in DNA.** Gregory L. Verdine, Professor of Chemical Biology, Dept. of Chemistry and Chemical Biology, Harvard U. Tri-institutional Structural Biology Seminar. **Weill Auditorium, WMCCU, 1300 York Ave.** Tea at 3:45 p.m.

WEDNESDAY, DECEMBER 15

10:30 a.m. **Biostatistics Course.** Biostatistics Course. **128 Hospital.** Contact Knut Witkowski, 327-7175. Open to RU/WMCCU/NYPH/MSKCC community only.

11:00 a.m. **Gene Silencing by Double-stranded RNA in *Drosophila*.** Richard Carthew, Associate Professor of Biological Sciences, U. of Pittsburgh. Seminar. **305 Weiss.** Open to RU/WMCCU/NYPH/MSKCC community only.

12:00 p.m. **Genetic Determinants of Plasma HDL Levels.** Jonathan Cohen, Assistant Professor of Internal Medicine, U. of Texas Southwestern Medical Center. Seminars in Clinical Research. **110B Nurses Residence.**

4:30 p.m. **Efficient and Stable Gene Delivery in the CNS: Application in Cognitive Disorders.** Matthew J. During, Professor of Neurosurgery, and Director, CNS Gene Therapy Center, Thomas Jefferson U. Neurooncology Neuroscience Conference. **Hoffmann Auditorium, MSKCC, 1275 York Ave.** Snacks and refreshments at 4:25 p.m. Contact Vivian Tabar, 639-8556.

THURSDAY, DECEMBER 16

8:00 a.m. **New Insights into the Role of Mitochondria and Cytoplasmic Proteins in the Initiation of Apoptosis.** John Reed, Burnham Institute, LaJolla, Calif.; Doug Green, La Jolla Institute of Allergy and Immunology; Gabriel Nuñez, Dept. of Pathology, U. of Michigan Medical School; Imawati Budihardjo, Dept. of Biochemistry, U. of Texas Southwestern Medical Center; Emad Alnemri, Apoptosis Research, Kimmel Cancer Institute, Thomas Jefferson U.; Guido Kroemer, Centre National de la Recherche Scientifique, Villejuif, France. Cell Death Society Symposium. **17th Floor Weiss.** Contact Thomas Carty, 860-441-3782.

12:00 p.m. **Epidemiological Studies of Women's Reproductive Health.** Carolyn L. Westhoff, Associate Professor, Dept. of Obstetrics and Gynecology, Columbia U. Endocrinology and Reproductive Biology Seminar. **301 Weiss.**

THE ROCKEFELLER UNIVERSITY

Friday Lectures & Thesis Presentations

These events are held in Caspary Auditorium at 3:45 p.m. Tea is served in Abby Aldrich Rockefeller Lounge at 3:15 p.m. All are welcome.

FRIDAY, DECEMBER 3

Embryonic Induction. Ali Hemmati-Brivanlou, Associate Professor, RU.

FRIDAY, DECEMBER 10

Molecular and Cellular Mechanisms of Cardiovascular Arrhythmias. Mark Keating, Investigator, HHMI, Eccles Institute of Human Genetics, U. of Utah.

THURSDAY, DECEMBER 16

Thesis Presentation: Biogenesis of Opsin at the Endoplasmic Reticulum Membrane. Elliott Kanner, Biomedical Fellow, RU.

The Arts and Other Events

FRIDAY, DECEMBER 3

12:00 p.m. **Tri-Institutional Noon Recitals.** John Nauman, piano. Performing works of Gluck/Sgambati, Haydn and Chopin. **Caspary Auditorium.** Contact John Gerlach, 327-7776. Open to RU/WMCCU/NYPH/MSKCC community and guests only.

TUESDAY, DECEMBER 7

12:00 p.m. **Tri-Institutional Noon Recitals.** Adam Neiman, piano, performing works of Bach/Lizst, Mendelssohn, and Prokofiev. **Caspary Auditorium.** Contact John Gerlach, 327-7776. Open to RU/WMCCU/NYPH/MSKCC community and guests only.

WEDNESDAY, DECEMBER 8

8:00 p.m. **Peggy Rockefeller Concerts.** Golub-Kaplan-Carr Trio. Performing works by Beethoven, Dvořák and Nicholas Maw. **Caspary Auditorium.** Contact Cathy Rogers, 327-8437.

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