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The Rockefeller University News and Notes

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## **NEWS AND NOTES 2000, VOL.11, NO.7**

The Rockefeller University

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# news & notes

THE NEWSLETTER OF THE ROCKEFELLER UNIVERSITY

FRIDAY LECTURE

## AIDS researcher David Ho will discuss problems in treating HIV-1

At the Friday lecture today (Nov. 10), Rockefeller University Professor David Ho, scientific director of the Aaron Diamond AIDS Research Center, will discuss "Obstacles to the Treatment of HIV-1 Infection."

Ho's lab focuses on the pathogenesis of HIV infection with particular emphasis on the dynamics of HIV replication in vivo. They are interested in defining the turnover of CD4 lymphocytes during HIV/SIV infection and its linkage to viral replication. His lab is also involved in studies to define the early events of transmission, using the SIV/macaque model. Considerable effort is devoted to developing and testing treatment strategies that emerge from the lab's new understanding of viral dynamics.

Ho has been scientific director and chief executive officer of the Aaron Diamond AIDS Research Center since the center's founding in 1990. Under Ho's direction, researchers at the Diamond Center have published groundbreaking studies examining the details of HIV replication in an infected person, the identification of the CCR5 molecule as a central gateway for the entry of HIV into CD4+ lymphocytes, the natural resistance of some

*continued on page 2*



#99-115

Professor David Ho, scientific director of the Aaron Diamond AIDS Research Center, will discuss HIV-1 infection today (Nov. 10).

## Women & Science program hosts forum on estrogen

On Thurs., Oct. 26, the fall *Women & Science* breakfast forum brought more than 300 women to campus for a program about "The Estrogen Question: Aging, Alzheimer's, Heart Disease, Menopause and Nutrition."

Featured speakers included Professor Jan Breslow and adjunct faculty member Barbara Levine, who co-direct Rockefeller's Human Nutrition Program; former Rockefeller University scientist Howard Fillit, executive director of the Institute for the Study of Aging; and Richard Bockman, a 1971 Rockefeller University alumnus who is now chief of the endocrine service at the Hospital for Special Surgery.

Rockefeller University's newest Nobel laureate, Paul Greengard,

also took part in the program and discussed the need to support women pursuing scientific careers. Last year, the *Women & Science* initiative raised more than \$300,000 for fellowships.

The *Women & Science* program was established by The Rockefeller University in 1998 to provide a forum for women to learn about current scientific research and to raise support for women scientists.

Since the program began, more than 600 women from New York's business and philanthropic circles have participated in these forums and have contributed funds to support fellowships for young women researchers.



#00-138

Above: Featured speakers included (from left) Professor Jan Breslow, adjunct faculty member Barbara Levine, former Rockefeller University scientist Howard Fillit, and Rockefeller alumnus Richard Bockman.

Right: At the breakfast reception, Paul Greengard (left), talked with Bockman (center) and Fillit.



#00-038

## Rubens visit lab named in their honor

On Tues., Oct. 31, Lawrence and Selma Ruben met with President Arnold J. Levine and Assistant Professor Tom Muir, head of the newly named Selma & Lawrence Ruben Laboratory of Synthetic Protein Chemistry. The Rubens' visit to campus included a tour of the Ruben Laboratory, which is located in Flexner Hall.

A recent gift of \$1 million from the Selma and Lawrence Ruben

Foundation is supporting cancer investigations at Rockefeller, including work by Levine and Muir, who are collaborating on a new approach to understanding and treating cancer.

Several years ago, an earlier gift from Lawrence and Selma Ruben helped to fund the colon cancer research program of Steven J. Shiff, an associate professor for clinical investigation at

The Rockefeller University Hospital.

Selma and Lawrence Ruben have been members of The Rockefeller University Council since 1996. Selma Ruben also participates in the *Women & Science* initiative at Rockefeller.



Lawrence and Selma Ruben met with President Levine (second from left) and Assistant Professor Tom Muir (far right).

00-072 #14

## Peggy Rockefeller concert to feature violinist, pianist

"I'll give you five minutes," said Isaac Stern when the 16-year-old Vadim Gluzman came to play for the great violinist in Jerusalem in 1991. Five minutes later, a wonderful friendship was born.

Gluzman now ranks among the few first-class artists of his generation and is rapidly gaining recognition throughout the world. He and his wife, pianist Angela Yoffee, will perform in Caspary Auditorium at the next Peggy Rockefeller Concert on Wed., Nov. 15.

Born in 1973 in the Ukraine into a family of professional musicians, Gluzman began studying violin at the age of seven. Before moving to Israel in 1990, he studied with Zakhar Bron and

later with Yair Kless at the Rubin Academy of Music in Tel Aviv. He has also studied in the United States at the Julliard School.

He has performed in the United States, Europe, Russia, Japan and Canada, as a soloist, chamber musician and in a duo setting with Yoffee.

Yoffee was born in Riga, Latvia, into a family of highly respected musicians. She has been lauded for her outstanding musical gifts and has performed as a soloist and chamber musician in the halls of Russia, Latvia, Lithuania, France, Israel, Switzerland and the United States. Currently, Yoffee is a piano assistant in the violin studio of Dorothy Delay at

the Julliard School, where she studied.

Gluzman and Yoffee have given recitals in Ravinia, St. Louis, Corpus Christi, New York City and Canada in a tour sponsored by the Israel Consulate. They also toured several cities in Japan and performed at numerous music festivals.

Gluzman plays the outstanding 1690 ex-Leopold Auer Stradivari, on extended loan to him through the Stradivari Society of Chicago.

The young Israeli violinist Vadim Gluzman will perform with his wife, the superb Latvian pianist Angela Yoffee, at the next Peggy Rockefeller concert on Wed., Nov. 15, in Caspary Auditorium.



Hard Copy

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- 3 IN THE LAB
- 4 CALENDAR

**Benefits enrollment**

It's that time of year again. Open Enrollment will be from Wed., Nov. 1, to Thurs., Nov. 30. You may join or make changes to your health insurance as well as to your Voluntary Accidental Death and Dismemberment Insurance.

This is the only time to sign up for the 2001 Flexible Spending Accounts (FSA). In addition, you may also sign up for the 2001 Transportation Reimbursement Incentive Program (T.R.I.P.).

Previous elections will not rollover into 2001. You must re-enroll every year. All enrollments and changes will be effective Jan. 1, 2001.

If you have any questions, please call Human Resources, x8300.

**CFC applications available now**

Applications are now available for the 2001-2002 academic year at the Child and Family Center. The center serves children from infancy to age five. For an application, please contact Marjorie Goldsmith, x8580.

**Papers and talks**

If you are about to publish a paper or give a scientific talk, *News&Notes* would like to know about it. Please send your information by campus mail to Box 68, by E-mail to newsno or by fax to x7876.

## Centennial corner

**Centennial lecture**

Rockefeller University President Arnold J. Levine, along with other leaders of the tri-institutional community, will take part in a Centennial Lecture on Science and Society entitled "The Future of Research at 68th & York." This street corner is an epicenter for scientific activity where four world-class institutions come together: Weill Medi-

cal College of Cornell University, New York-Presbyterian Hospital, Memorial Sloan-Kettering Cancer Center and The Rockefeller University.

Joining Levine at the lecture are Herbert Pardes, president of New York-Presbyterian Hospital; Antonio Gotto, dean of Weill Medical College of Cornell University; and Harold Varmus, president of the Memorial

Sloan-Kettering Cancer Center.

This lecture is part of the Archive Center's conference on the history of the university. For details of the event, consult the listings below on this page.

**Centennial exhibit**

The exhibit "Mentors and Students: An Intellectual Pedigree of The Rockefeller University" has been installed in the lobby of the

Rockefeller Research Building. This exhibit traces lineages of Rockefeller scientists that span the century from the university's founding to the present.

The pedigree chart is silkscreened on a blackboard, so as to be interactive. Members of the Rockefeller University community are invited to pick up a piece of chalk and add names to the tree.

## Ho continued

individuals to HIV infection, the possible origin of the AIDS epidemic and the reduction of HIV to undetectable levels in the blood, semen and lymph tissue through combination drug therapy.

Ho has served on numerous advisory councils and boards, helping to set the direction for biomedical research at government institutions, universities and major hospitals. He is currently a member of the Scientific Advisory Board of the National Cancer Institute and a council member for the Office of AIDS Research at the National Insti-

tutes of Health. He also serves as a member of the Board of Trustees of the California Institute of Technology (Caltech) and the Board of Overseers of Harvard University. Ho, a reviewer for 18 peer-reviewed scientific journals, has authored over 150 scientific publications.

In 1974, after receiving his B.S. degree summa cum laude in physics from Caltech, Ho attended Harvard Medical School, where he received his M.D. degree in 1978. He completed his medical residency at Cedars-Sinai Medical Center in 1981 and became chief resident

in internal medicine there that same year. From 1982 to 1985, Ho was a clinical and research fellow at Massachusetts General Hospital and Harvard Medical School. From 1985 to 1996, in addition to serving as a researcher and physician, Ho taught at Harvard Medical School, UCLA School of Medicine and NYU School of Medicine. He was named director and CEO of the Aaron Diamond AIDS Research Center in 1990, and in 1996 became a professor at The Rockefeller University.

Among his many honors, Ho has

been the commencement speaker at several colleges and universities, including Harvard, MIT, Caltech and Swarthmore. He received the Ernst Jung Prize in Medicine in 1991 and was named *Time* Magazine's Man of the Year in 1996. In 1997, Ho was elected to the Institute of Medicine of the National Academy of Sciences.

Ho's talk begins at 3:45 p.m. in Caspary Auditorium and is preceded by a tea in the Abby Aldrich Rockefeller Lounge at 3:15 p.m. All are welcome.

## History conference schedule, Nov. 13 and 14

**Monday****Welcome and Remarks**

Arnold Levine, President, The Rockefeller University

Darwin Stapleton, Director, Rockefeller Archive Center

**Morning (9:30-11:30 a.m.): The Idea of a Great Research Institution**

"The New Image of Medical Progress in America, 1880 to 1900," Bert Hansen, Department of History, Baruch College.

"John D. Rockefeller's Great Idea," Ron Chernow, author of *Titan: The Life of John D. Rockefeller, Sr.*

"Junior Did It: The Role of John D. Rockefeller Jr. in the Forming of the University," Peter J. Johnson, co-author of *The Rockefeller Century* and *The Rockefeller Conscience*

**Noon (12:00 - 1:00 p.m.)**

"The Model of a Modern Biological Research Institution: A Century of The Rockefeller," Rogers Hollingsworth, University of Wisconsin

**Afternoon (2:30 - 5:00p.m.): The First Fifty Years**

"Hideyo Noguchi and the Pursuit of Immunity," Aya Takahashi, Iwaki Meisei University, Japan

"Herbert Gasser and the International Network of Physiologists," Abigail O'Sullivan, Oxford University

"Herbert S. Gasser: The Quantum Leap in Neurophysiology," Robert L. Schoenfeld, The Rockefeller University

"Innovation in Modern Surgery," Shelley McKeller, University of Toronto

"Research in the Hospital of the Rockefeller Institute," Olga Amsterdamska, University of Amsterdam

**Evening (7:00 - 8:30 p.m.)**

Centennial Lecture on Science: "The Future of Research at 68th & York." See Centennial Corner (at top of page) for more details.

**Tuesday****Morning (9:00 - 11:45 a.m.): Research and Researchers**

"Rufus Cole and the Clinical Approach," Jules Hirsch, The Rockefeller University

"Paul Alfred Weiss (1898-1989): The Cell Engineer," Sabine Brauckmann, University of Munster

"Women Scientists at the Rockefeller: A Prosopographical View," Elizabeth Hanson, The Rockefeller University

"James B. Murphy, the Rous Sarcoma Agent, and Origins of Modern Cell Biology," Carol Moberg, The Rockefeller University

**Noon (12:00 -1:00 p.m.)**

"Rockefeller University and the Molecular Revolution in Biology," Robert Olby, University of Pittsburgh

**Afternoon (2:00 - 4:00 p.m.): Issues in the History of The Rockefeller University**

"Building 'A New Type of Body in Which to Grow a Cell': Tissue

Culture Technology at the Rockefeller Institute, 1908-1935," Hanna Landecker, Max Planck Institute for the History of Science

"Peyton Rous, James Ewing, and the Controversy over the Cause of Cancer," Ton van Helvoort, University of Maastricht

"Organized Concern for Animals in the United States," Bernard Unti, American University

**Afternoon (4:30 - 5:30 p.m.)**

"Reflections on How Great Science Happened at The Rockefeller: A Panel." Arnold Levine, President, Chair; Purnell W. Choppin, President Emeritus, Howard Hughes Medical Institute; James E. Darnell, Jr., The Rockefeller University; Jules Hirsch, The Rockefeller University.



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[www.rockefeller.edu/pubinfo/news\\_notes.html](http://www.rockefeller.edu/pubinfo/news_notes.html)

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Ideas and submissions can be sent interoffice (Box 68), by electronic mail (newsno) or by fax (212.327.7876). Copyright, 2000, The Rockefeller University

## Fischetti lab seeks "the enemy of our enemy"

For all the advances researchers have made in killing microscopic germs, nature remains the master at creating materials to knock out the bugs. This is especially true for bacteria that cause infections. Every form that evolves has a corresponding natural enemy, a virus called a bacteriophage, that invades and kills the specific microbe. Today, as bacterial resistance to antibiotics increases at an alarming rate, Rockefeller scientists are exploring ways to harness the power of these viruses.

Discovered in 1917 by Canadian scientist Felix d'Herelle, bacteriophages (or "phages" for short) are made up of a head composed of protein with an inner core of nucleic acid and a hollow protein tail. The tiny viruses inject DNA into bacterial cells and use the host cells' chemical energy to produce new phage particles. Eventually the bacterial cell bursts, releasing the phage particles to infect other cells.

After phages were discovered, researchers initially thought they would provide an effective way to kill bacteria. They soon learned, however, that phages must bind to receptors on the surface of bacteria before injecting their material; as bacteria evolve, they change their receptors and shut out the phages. Any therapy using phages to target the bacteria would become ineffective as soon as the bacteria mutated. Because of this drawback, phage therapy waned as a technology in most countries.

In recent years, however, antibiotics such as penicillin have lost their power, and health officials are warning that excessive use of antibiotics are only making bacterial threats worse. Scientists have begun looking for new technologies in old places.

Rockefeller University Professor Vincent Fischetti is investigating whether phage enzymes can be effective against streptococci bacteria without harming any other organisms. His research so far has been encouraging, and it has drawn the interest—and financial support—of both the United States Department of Defense (DOD) and a private diagnostic company.

Fischetti, co-head of the Laboratory of Bacterial Pathogenesis, studies Group A streptococci, a type of bacteria that resides only in humans and causes many diseases, the most common being strep throat. Although not life-threatening in itself, strep throat can develop into rheumatic fever, which permanently damages the heart. At any one time, up to one-fifth of the population car-

ries group A strep in their throats, and each year 30 percent of children develop strep throat infections.

The enzymes Fischetti uses are produced by phages after they have finished replication and need to exit the bacterium. The enzymes dissolve the cell wall, allowing the newly created virus particles to escape. Fischetti's lab is using these same enzymes to attack the bacteria from the outside.

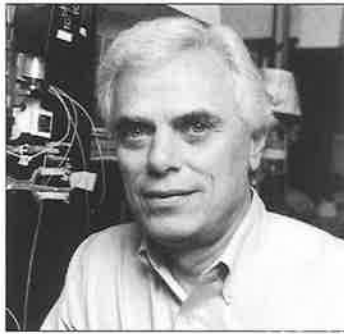
"It kills the bacteria by punching holes in the cell walls," Fischetti says. "From what we have seen so far, using these enzymes can be quite effective."

In addition to being potent, the enzymes are also highly specific. For instance, an enzyme made by a streptococcus phage will, when purified, kill only certain streptococci when applied to the microbes externally. Also, since the enzymes kill so rapidly and do not require receptors to destroy bacteria, they should not spur resistance among the microbes they are targeting.

"The phage enzymes will not likely cure an infection—their importance lies in lowering the chance that strep will cause infection in the first place," Fischetti says. "The enzymes would be used to eliminate the source of the disease bacteria, which in most cases are the human mucous membranes. The organisms generally spread from an infected or colonized individual through contaminated saliva. The enzyme could be given in the form of a spray, administered at frequent intervals—such as twice a day—to maximize effectiveness."

The lab harvests the enzymes from phages that have infected bacteria, but they have the ability to make them artificially if necessary. Fischetti says production costs could be as low as 10 cents per dose.

The military's interest in Fischetti's work stemmed from a need to control strep infections among its personnel. At present, all new recruits receive a penicillin injection to prevent strep outbreaks that inevitably occur in a group sharing close quarters. Antibiotic resistance has compelled the military to try shifting away from such routine use of the drug. The hope is that giving the phage enzyme to each recruit once or twice a day—probably in spray form—would allow control of strep without this hindrance. The same approach could be used with children in day-care centers and schools.



Professor Vincent Fischetti is investigating whether phage enzymes can be effective against streptococci bacteria without harming any other organisms.

Apart from their concern with strep throat, military officials think phage-enzyme therapy could prove valuable in bio-warfare defense. The latest multi-million dollar grant comes from the Defense Advance Research Project Agency (DARPA), which wants Fischetti to explore the use of phage enzymes to fight specific bio-warfare organisms.

The technology could prove even more valuable in developing countries, where rheumatic fever is a major cause of heart disease in children. Controlling the streptococci in the population would lessen the chance of someone's being exposed to strep throat, which would reduce cases of rheumatic fever.

Russian scientists who have maintained phage-enzyme technology over the years will collaborate with Fischetti to improve their own antibacterial efforts. The Russians have a large collection of phages, each producing its specific enzyme, that Fischetti wants to work with in his research. In return, the Russians may learn ways to improve their own phage technology through Fischetti's findings.

Fischetti characterizes his current research as a "platform technology" in which phage enzymes from a wide range of disease bacteria may be used to control these organisms. The method has potential applications that go beyond strep throat, by controlling otitis media (inflammation of the middle ear) and flesh-eating disease.

"I've been working with this enzyme for most of my career," he says. "Even though it seems obvious, we've only realized recently that you can use this method to kill bacteria. Phages have been involved with bacteria for eons, and they've figured out how to kill these organisms efficiently. Now we are just harnessing that power."

Support for the initial research was provided by a grant from New Horizons Diagnostics, a company in Columbia, Md.

### A Unique Bacterial Target for Nerve Pathogenesis

The link between bacteria and disease is not always so clear-cut as it is with group A streptococci. Researchers in the Laboratory of Bacterial Pathogenesis also study microbes that are so slow and indirect in causing disease that symptoms may not be noticed until years after infection. This presents a major challenge when investigating neurological diseases like leprosy and multiple sclerosis.

Now one scientist in the Laboratory of Bacterial Pathogenesis who studies the leprosy bacterium *Mycobacterium leprae* (*M. leprae*) reports identifying a component on the microbe's surface that allows it to select and attack the peripheral nerves. The research, led by Anura Rambukkana, principal investigator and research associate, clarifies the pathway through which the bacterium infects the peripheral nervous system, which subsequently causes nerve damage. He reported the study in the Oct. 27 issue of the journal *Cell* along with Graduate Fellow Vincent Ng and researchers at three other institutions. This finding sheds light on the early stages of nerve damage in other neurodegenerative diseases such as Guillain-Barre syndrome and multiple sclerosis.

"The cause for many neurodegenerative diseases are unknown, and pathological features similar to these diseases are also induced by many neurotropic pathogens upon infecting the nerves. If we can understand what neural cell molecules the bacteria use to infect the nerves, we'll gain more insight into what kinds of signaling pathways are involved in bacterial-induced nerve degeneration," Rambukkana says. "I believe there are common themes in the early molecular events of neurodegenerative diseases of both infectious origin (bacterial and viral) and those with unknown cause, like multiple sclerosis. Our research is now focusing on identifying these early molecular events using this bacterium and neurotropic viruses as tools."

The peripheral nervous system consists of all the nerves that fan out from the central nervous system and includes the muscles, skin and internal organs. During development, Schwann cells encase nerve

fibers and wrap around the axon to form the myelin sheath. The Schwann cell-axon unit is surrounded by an outer layer called the basal lamina, a matrix secreted by the Schwann cells.

Rambukkana and colleagues previously reported that a major component in the Schwann cell basal lamina, called laminin-2, and its receptor, called dystroglycan, are involved in *M. leprae*'s interaction with Schwann cells. This interplay allows the bacterium to infect the peripheral nerves, which eventually causes nerve damage.

The new research focuses on the invader's side of the interaction—specifically, a major cell wall component of *M. leprae* called phenolic glycolipid-1 (PGL-1). The researchers demonstrated that PGL-1, which is unique to the leprosy bacterium, binds specifically to laminin-2 but not to other proteins in the Schwann cell basal lamina. It turns out that invasion of the Schwann cell is ultimately controlled by the target, not the invading microbe. The basal lamina and Schwann cells respond to PGL-1 upon contact with the bacterium by opening the pathway to welcome the intruder.

The finding adds another piece to the puzzle of how *M. leprae* seeks out peripheral nerves to attack, and it provides a molecular basis for the unique preference for peripheral nerves. In addition, learning what the bacterium does to perturb neural signaling is helping researchers understand how the pathway normally works—a process that is still poorly understood.

"We think clarifying PGL-1's role in nerve infection will eventually make it possible to develop strategies to block bacterial invasion of the peripheral nerve cells at an early stage and thus prevent neurological damage before the immune system gets involved," Rambukkana says.

*The research was supported by grants from the National Institutes of Health and the UNDP/World Bank/WHO Special Program for Research in Tropical Diseases.*



# calendar

NOVEMBER 10 THROUGH NOVEMBER 26

EVENTS

## Friday Lectures and Thesis Presentations

THESE EVENTS ARE HELD IN CASPARY AUDITORIUM AT 3:45 P.M. AND PRECEDED BY TEA AT 3:15 P.M. IN ABBY ALDRICH ROCKEFELLER LOUNGE. ALL ARE WELCOME.

FRIDAY, NOVEMBER 10

**Obstacles to the Treatment of HIV-1 Infection.** David Ho, Professor and Scientific Director Aaron Diamond AIDS Research Center, RU.

THURSDAY, NOVEMBER 16

**Thesis Presentation: A Niche for Adult Neurogenesis: Analysis of BMP Signaling and GeneChip Transcriptional Profiles of Adult Subventricular Zone Cells.** Daniel Lim, Biomedical Fellow, Alvarez-Buylla Lab, RU.

FRIDAY, NOVEMBER 17

**Molecular Capacitors for Evolutionary Change.** Susan Lindquist, Albert D. Lasker Professor of Medical Sciences, Department of Molecular Genetics and Cell Biology, U. of Chicago.

FRIDAY, NOVEMBER 10

10:00 A.M. **Mycobacterium tuberculosis Interactions with Dendritic Cells.** Willem Hanekom, Research Associate, The Rockefeller University. TB Seminar. 110B NURSES RESIDENCE. REFRESHMENTS AT 10:15 P.M. CONTACT CLAUDIA MANCA, 327-8103.

12:00 P.M. **The Role of Mitochondria in Apoptosis.** Xiaodong Wang, Associate Professor, Dept. of Biochemistry, U. of Texas Southwestern Medical Center, and Investigator, HHMI. Cellular Biochemistry and Biophysics Seminar. 116 ROCKEFELLER RESEARCH LABORATORIES, MSKCC, 430 EAST 67TH ST.

MONDAY, NOVEMBER 13

9:15 A.M.—5:00 P.M. **Creating a Tradition of Biomedical Research.** Centennial History Conference. CASPARY AUDITORIUM. TO ATTEND CONFERENCE TALKS, REGISTRATION (NO FEE) IS REQUIRED FOR THOSE OUTSIDE THE RU/WMCCU/NYPH/MSKCC COMMUNITY. FOR PRE-REGISTRATION AND FURTHER INFORMATION, CALL (914) 631-4505 OR E-MAIL ARCHIVE@MAIL.ROCKEFELLER.EDU. SPONSORED BY THE ROCKEFELLER ARCHIVE CENTER.

12:00 P.M. **Carbohydrate Processing in Pathogenic Bacteria.** James Naismith, Centre for Biomolecular Sciences, St. Andrews U., Scotland. Lecture. 301 WEISS.

12:00 P.M. **Passive Immunization against AIDS Viruses.** Ruth Reprecht, Harvard Medical School and the Dana-Farber Cancer Institute. CFAR Seminar. SIXTH FLOOR CONFERENCE ROOM, ADARC, 455 FIRST AVE. CONTACT GARY GAILOR, 448-5163.

12:00 P.M. **The Model of a Modern Biomedical Research Institution: A Century of The Rockefeller.** A public lecture of The Rockefeller University Centennial History Conference. J. Rogers Hollingsworth, U. of Wisc. CASPARY AUDITORIUM.

1:30 P.M. **Transcription Factors that Specify Lineage Commitment in Lymphocytes.** Laurie Glimcher, Professor of Immunology and Infectious Disease, Harvard School of Public Health. Immunology Seminar. WEILL AUDITORIUM, WMCCU, 1300 YORK AVE.

4:30 P.M. **Bicarbonate-regulated Adenylyl Cyclase.** Jochen Buck, Associate Professor, Dept. of Pharmacology, WMCCU. Cell Biology and Genetics Seminar. PAPANICOLAOU LIBRARY, A-106. WMCCU, 1300 YORK AVE. COFFEE WILL BE SERVED. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

4:30 P.M. **Trafficking of Ion Transport Proteins in Polarized Cells: Molecular Signals and Physiologic Regulation.** Michael J. Caplan, Professor of Cellular and Molecular Physiology, Yale U. School of Medicine. PBMM Research Seminar. WEILL AUDITORIUM, WMCCU, 1300 YORK AVE. COFFEE AT 4:15 P.M.

7:00 P.M. **At the Crossroads of Science: The Future of Medical Research at 68th and York.** Antonio Gotto, Dean, WMCCU; Arnold J. Levine, President, RU; Herbert Pardes, President, NYPH; and Harold Varmus, President, MSKCC. Centennial Lectures on Science and Society. CASPARY AUDITORIUM.

TUESDAY, NOVEMBER 14

9:00 A.M.—5:30 P.M. **Creating a Tradition of Biomedical Research.** Centennial History Conference. CASPARY AUDITORIUM. TO ATTEND CONFERENCE TALKS, REGISTRATION (NO FEE) IS REQUIRED FOR THOSE OUTSIDE THE RU/WMCCU/NYPH/MSKCC COMMUNITY. FOR PRE-REGISTRATION AND FURTHER INFORMATION, CALL (914) 631-4505 OR E-MAIL ARCHIVE@MAIL.ROCKEFELLER.EDU. SPONSORED BY THE ROCKEFELLER ARCHIVE CENTER.

11:00 A.M. **Bridging Experiment and Theory Using Biomolecular Dynamics Simulations.** Tamar Schlick, Professor, NYU. Pels Family Center for Biochemistry and Structural Biology Seminar. 301 WEISS. CONTACT ROSER BUSQUETS, 327-7050. COFFEE AND COOKIES AT 10:45 A.M.

12:00 P.M. **The Rockefeller University and the Molecular Revolution in Biology.** A public lecture of The Rockefeller University Centennial History Conference. Robert Olby, U. of Pittsburgh. CASPARY AUDITORIUM.

4:00 P.M. **Designability in Protein Structures.** Chao Tang, NEC Research Institute, Princeton. Center for Studies in Physics and Biology Seminar. B LEVEL CONFERENCE ROOM, SMITH HALL ANNEX. TEA AT 3:30 P.M. CONTACT ERIK VAN NIMWEGEN, 327-8184.

4:00 P.M. **Taking Apart Modular Signaling Proteins.** Wendell Lim, UCSF Tri-institutional Structural Biology Seminar. WEILL AUDITORIUM, 2ND FLOOR, ROOM C-200, WMCCU, 1300 YORK AVENUE. COFFEE AT 3:45 P.M.

WEDNESDAY, NOVEMBER 15

10:00 A.M. **Melatonin, Birdsong and Seasonal Neuroplasticity.** Gregory Ball, Johns Hopkins U. Precise Population Dynamics Underlying Vocal Sequences in the Songbird. Michale Fee, Bell Labs. Neural Plasticity and Learning Seminar. 305 WEISS. CONTACT CONSTANCE SCHARFE, 327-8381. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

10:00 A.M. **What Evolution Can Tell Us about Protein Folding and Protein-DNA Recognition.** Leonid Alex Mirny, Junior Fellow, Harvard Society of Fellows, Dept. of Chemistry, Harvard U. Seminar. 101 ROCKEFELLER RESEARCH LABORATORIES, MSKCC, 430 E. 67TH ST.

12:00 P.M. **Defining the Genomic Responses to G Protein Signals by Engineering Receptors and G Proteins in Transgenic Mice.** Bruce Conklin, Assistant Professor of Medicine and Pharmacology, Gladstone Institutes, UCSF Seminars in Clinical Research. 110B

NURSES RESIDENCE. CONTACT DALE MILLER, 327-8411.

4:30 P.M. **Dissecting Hematopoietic Development and Disease Using the Zebrafish.** Leonard I. Zon, Associate Professor of Pediatrics, Children's Hospital, and Associate Investigator, HHMI. MSKCC President's Research Seminar. AUDITORIUM, ROCKEFELLER RESEARCH LABORATORIES, MSKCC, 430 EAST 67TH ST. TEA AT 4:00 P.M.

THURSDAY, NOVEMBER 16

12:00 P.M. **Regulation of HIV-1 Infection by  $\beta$ -chemokines.** Helena Schmidtmayerova, The Picower Institute for Medical Research. CFAR Seminar. SIXTH FLOOR CONFERENCE ROOM, ADARC, 455 FIRST AVE. CONTACT GARY GAILOR, 448-5163.

12:00 P.M. **The Syndrome of 5- $\alpha$  Reductase-2 Deficiency: Its Biological and Psychosexual Implications in Man.** Julianne Imperato-McGinley, Professor of Medicine and Chief, Division of Endocrinology, Diabetes and Metabolism, WMCCU. Endocrinology and Reproductive Biology Seminar. 301 WEISS.

3:00 P.M. **Genes at the Interface between Cardiovascular Disease and Diabetes.** Jerome I. Rotter, Director, Division of Medical Genetics, and Medical Genetics Chair, Board of Governors, Professor of Medicine, Pediatrics, and Human Genetics, Cedars-Sinai Medical Center, UCLA Medical Center. Starr Center for Human Genetics Seminar. 301 WEISS. CONTACT EMILY HUFFMAN, 327-7387.

3:00 P.M. **Sight Unseen: Action without Perception in the Human Visual System.** Mel Goodale, Professor of Psychology, U. of Western Ontario. Systems Neuroscience Seminar. 305 WEISS. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

4:00 P.M. **Involvement of Ceramide in the Molecular Pathway of Endothelial Cell Apoptosis.** Adriana Haimovitz-Friedman, Associate Attending Radiation Biologist, Dept. of Radiation Oncology, Memorial Sloan-Kettering Cancer Center, New York, NY. LFKRI Research Seminar. LOWER LEVEL CONFERENCE ROOM, NEW YORK BLOOD CENTER, 310 EAST 67TH ST. TEA AT 3:45 P.M. CONTACT ROSANNA MARTINEZ, 570-3357.

8:00 P.M. **Telomerase and The Consequences of Telomere Dysfunction.** Carol W. Greider, Professor, Department of Molecular Biology and Genetics, John Hopkins University School of Medicine. Harvey Society Lecture. CASPARY AUDITORIUM.

FRIDAY, NOVEMBER 17

9:00 A.M. **Towards an Adjuvant Immunotherapy for HIV-1 Infection.** Andrew Lee, RU. Clinical Scholar's Grand Rounds. 110B NURSES RESIDENCE. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

12:00 P.M. **T-box Genes: Critical Genes in Mammalian Development.** Virginia Papaioannou, Professor, Dept. of Genetics and Development, Columbia U. Molecular Biology Seminar. 116 ROCKEFELLER RESEARCH LABORATORIES, MSKCC, 430 EAST 67TH ST. REFRESHMENTS AT 11:45 A.M. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

4:30 P.M. **Tri-institution Nutrition.** Meeting. WEISS 17TH FLOOR. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

MONDAY, NOVEMBER 20

1:30 P.M. **Mechanisms of Control of Mucosal Inflammation.** Lloyd Mayer, Professor and Chairman, Immunology Center, Mt. Sinai Medical Center. Immunology Seminar. 2ND FLOOR CONFERENCE ROOM, HSS, 535 E. 70TH ST.

4:30 P.M. **Inward Rectifying K Channels: From Molecular Mechanisms to Human Disease.** Colin G. Nichols, Professor of Cell Biology and Physiology, Washington U. School of Medicine. PBMM Research Seminar. WEILL AUDITORIUM, WMCCU, 1300 YORK AVE. COFFEE AT 4:15 P.M.

TUESDAY, NOVEMBER 21

12:00 P.M. **Somatic Cell Genetic Variation in Vivo.** Jay Tischfield, Professor of Pediatrics and Psychiatry; Duncan and Nancy MacMillan Professor of Genetics; Chair, Genetics Dept., Robert Wood Johnson College of Medicine, Rutgers U. Starr Center for Human Genetics Seminar. 110B NURSES RESIDENCE. CONTACT EMILY HUFFMAN, 327-7387.

4:00 P.M. **Novel Mithramycin Analogs by Combinatorial Biosynthesis: Potential Cancer and Bone Resorption Antagonists.** Jurgen Rohr, Associate Professor, Dept. of Pharmaceutical Sciences, Medical U. of South Carolina. Bio-Organic Chemistry Seminar. 116 ROCKEFELLER RESEARCH LABORATORIES, MSKCC, 430 EAST 67TH ST. TEA AT 3:45 P.M.

WEDNESDAY, NOVEMBER 22

10:30 A.M. **Biostatistics Course.** Knut Wittkowski, Biometrician, Senior Research Associate, RU Hospital. 128 HOSPITAL. CONTACT KNUT WITTKOWSKI, 327-7175. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

## The Arts and Other Events

FRIDAY, NOVEMBER 10

12:00 P.M. **Tri-institutional Noon Recitals.** Vienna Piano Trio. Performing Haydn: *Trio in D major, Hob XV:24*; Schumann: *Trio in G minor, Op. 17*; Beethoven: *Trio in E-flat minor, Op. 70/2*. CASPARY AUDITORIUM. OPEN TO RU/WMCCU/NYPH/MSKCC COMMUNITY AND GUESTS.

WEDNESDAY, NOVEMBER 15

8:00 P.M. **Peggy Rockefeller Concerts.** Vadim Gluzman, violin, with Angela Yoffe, piano. CASPARY AUDITORIUM. CONTACT JENNIFER GOLDSCHLAG, 327-8437.

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