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The Rockefeller University

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# news & notes

November 12, 1993 Volume 4, Number 9

The Rockefeller University

## RU mourns loss of D. Martin Carter (1936-93)

The Rockefeller University community is mourning the loss of D. Martin Carter, Carl J. Herzog Professor of Clinical Investigation and senior physician, who died on Sunday at his home in Manhattan. He was 57 years old. The cause of death was a dissecting aortic aneurysm.

"Martin was renowned throughout the world in the field of clinical and experimental dermatology, and he was recognized for his contributions in studies of psoriasis, epidermolysis bullosa, skin cancer and wound healing," said President Torsten Wiesel. "He was a superb clinician with profound insights and with a sense of humanity, who reached out to colleagues and patients all over the world.

"Martin was an important and integral member of our faculty, chairing the Executive Committee during a critical period in our history," Wiesel continued. "He was always ready to work for the best interests of this institution. On the campus Martin was loved and respected not only as an esteemed clinical scientist but also for his wit and his readiness to stand up for what he considered right. He was a generous and gregarious man who enjoyed his family, friends, art, music and civic activities. The Rockefeller University had a very special place in his heart and we have lost a very dear and wonderful individual."

Carter made many important contributions to the scientific understanding of genetic and environmental factors that influence the development of diseases of the skin, as well as to treatments for these conditions. Carter was a pioneer in the use of psoralens—photosensitizing drugs—in a variety of diseases. A pioneer also in cellular and molecular studies on epidermolysis bul-

losa (EB), a group of rare hereditary disorders, he was founder of the National Epidermolysis Bullosa Registry.

Carter also made significant contributions to the understanding and treatment of chronic skin wounds. Treatment protocols that were under study in his lab included autologous skin grafts—performed with compatible tissue grown in culture from the patient's own skin cells—and treatment with growth factors.

In Carter's lab, studies have also been conducted on psoriasis and Fanconi anemia. Recent research demonstrated that the inflamed skin of psoriasis patients contains large numbers of activated immune system cells, as well as epidermal cells with a number of biochemical abnormalities. In the lab's work on Fanconi anemia, a reliable, early prenatal test for Fanconi anemia was developed and it was demonstrated that transfusions of blood from the umbilical cord of a healthy newborn sibling can be used to treat Fanconi anemia patients. Studies also have been under way to identify the genes responsible for this disease.

A highly respected physician and distinguished teacher, Dr. Carter nurtured the careers of many indi-

viduals ranging from high school and college through the faculty level. He was also much in demand as a speaker at dermatology departments and scientific meetings around the world, and on radio and television broadcasts.

Carter was born on June 10, 1936 in Doniphan, Missouri. He was a graduate of Dartmouth College (A.B., 1958), Harvard Medical School (M.D., 1961) and Yale University (Ph.D., 1971). He was a medical intern and resident at the University of Rochester (1961-63), a teaching fellow at the Center for Disease Control in Atlanta (1963-65), a resident in dermatology at the University of Pennsylvania (1965-67), and a postdoctoral fellow at the Yale University of School of Medicine (1967-70).

In 1970, Carter became attending physician at the Yale-New Haven Hospital and assistant professor of dermatology at Yale University School of Medicine. In 1973 he became associate professor at the university; in 1977, professor; in 1981, clinical professor of dermatology.

Carter came to Rockefeller in 1981 to head the new Laboratory for Investigative Dermatology at The Rockefeller University Hospital. Serving also as professor



Professor and Senior Physician D. Martin Carter

of dermatology and co-head of the Department of Dermatology at The New York Hospital-Cornell Medical Center at Cornell University Medical College, Carter helped to build a strong Tri-Institutional program linking investigative, teaching and research efforts in cutaneous biology.

Carter was a member of many professional organizations and for

See *RU mourns*, page 2

## Watson, co-discoverer of double helix, to give lecture

A lecture by Nobel laureate James D. Watson, best known for discovering the double-helical structure of DNA, will formally inaugurate The Rockefeller University's year-long celebration, "50 Years of DNA: Celebrating Oswald Avery and the Discovery of the Thread of Life." Watson will speak on "Early

Days of DNA" Tues., Nov. 16 at 6:00 P.M. in Caspary Auditorium.

"It is fitting that James Watson will be the first speaker in our 50th anniversary celebration," said President Torsten Wiesel. "His discovery of the structure of DNA was made possible by the research we are celebrating: Oswald Avery,

Colin MacLeod and Maclyn McCarty's groundbreaking discovery at our Hospital that genes are made of DNA."

Watson shared the 1962 Nobel Prize in Physiology or Medicine with Francis Crick and Maurice Wilkins for the discovery of the structure of DNA. They proposed that the DNA molecule takes the shape of a double helix, an elegantly simple structure that resembles a gently twisted ladder.

This research emphasized a concept central to the emerging field of molecular biology: understanding the structure of a molecule can give clues about how it functions. Because each nucleotide within a rung of the DNA ladder is always paired with the same complementary nucleotide, one half of the molecule can serve as a template for the construction of the other half.

In 1968, Watson became direc-

### One historic discovery leads to another

James D. Watson writes in his book, *The Double Helix*: "Avery's experiments strongly suggested that future experiments would show that all genes were composed of DNA. If true, this meant to Francis [Crick] that proteins would not be the Rosetta Stone for unraveling the true secret of life. Instead, DNA

would have to provide the key to enable us to find out how the genes determined, among other characteristics, the color of our hair, our eyes, most likely our comparative intelligence, and maybe even our potential to amuse others." [See interview with Professor Emeritus Maclyn McCarty, page 3.]

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3 Interview with Maclyn McCarty

4 Stein lecture to feature chemist

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# Anniversary-Retirement Dinner honors dedicated RU employees

By Jennifer Horne King

Over 130 friends and colleagues assembled at the Anniversary-Retirement Dinner last week to honor members of The Rockefeller University celebrating special anniversaries of 25 years or more, or retiring after 10 years or more. For what may be the first time in the history of the university, one individual, Margery Pedersen, celebrated six and a half decades at Rockefeller. Also of special note was 60-year veteran Professor Emeritus William Trager. (Articles about Pedersen and Trager will appear in an upcoming issue of *News&Notes*.)

"Tonight is a family celebration," said President Torsten Wiesel, who presented a gift and a few warm words to each honoree. "What a wonderful opportunity to bring together and honor all of those who have made or continue

to make this such a rich and varied university."

Those receiving gifts were free to address the crowd. Most thanked the university, friends and colleagues. Erminio Gubert, former electron microscope technician in the Trager lab, who retired after working at the university since 1966, said: "It certainly has been a stimulating environment. I received much more than I was able to give." Madeleine "Babs" Naylor, former secretary to Professor David Luck who worked for 31 years before retiring, said: "Well, we've all heard of 'officers and gentlemen.' I am happy to say that during all of these years I have had the pleasure of working for 'scholars and gentlemen.'"

At the end of the program, Wiesel awarded Lila J. Magie, former director of Faculty Administration and corporate secretary who retired in 1991, a chair



The annual Anniversary and Retirement Dinner Nov. 4 honored employees celebrating their 25th, 40th, 60th and 65th anniversaries at the university and those retiring after 10 or more years of service. An event the previous week honored those celebrating their 10th and 20th anniversaries.

engraved with the logo of the university in appreciation for 41 years of service.

This year, the reception and buffet dinner, organized by the Personnel Office, took place in the newly refurbished rooms of the Tower cafeteria. The sweeping view of the river and city, together with new palms and decorative flower arrangements, contributed

to the festive atmosphere.

Gifts awarded at the ceremony were: 25th anniversary, a Tiffany & Co. portfolio clock; 40th anniversary, an engraved Tiffany & Co. crystal disc or, for Lillie Mae Curry, a poster of the 23rd Psalm; 60th anniversary, a brass lamp; 65th anniversary, a silk Hermès scarf; and retirement, a Tiffany & Co. wrist watch.

## Anniversary and retirement awards

### Anniversary awards

#### 65 years

Margery Pedersen

#### 60 years

William Trager

#### 40 years

Te Piao King  
Victor J. Wilson  
Lillie Mae Curry

#### 25 years

Enrique Alvarez  
John Gerlach  
Rose Lawrence  
Sarah Leibowitz  
Ann Quatela  
Daisy Rice  
Helen Robinson  
Virginia Rosario  
Julien Rouse  
Shigeru Sassa  
Frederick Seitz  
Nuton Stewart  
James Stiasny  
Venecia Urena

#### 20 years

Vincent Alleyne  
Verline Barrett  
Mario Castillo  
David A. Cowburn  
James E. Darnell, Jr.  
Angelina Dohnert  
Herbert Gibbs  
Alva Halloway

Hidesaburo Hanafusa

Teruko Hanafusa

Ehud Kaplan

Loucia Kochoumian

Violeta Matthew

Madeleine Naylor

Angela Piperno

Anna Polowetzky

Grace Silvestri

Cedric Stewart

Agatha Wint

Paulette Zabriskie

#### 10 years

Alfonso Arias  
Maryse Aubourg  
Leonard Beaton  
Vivian Bellofatto  
Yvonna Bouillon  
Katharine Cameron  
Peter Cox  
Andrew Czernik  
Leonida Fleming  
Margaret Gabriel  
Richard Galbraith  
Charles Gilbert  
JoAnn Greene  
William Griesar  
Nathaniel Heintz  
Eileen Holleran  
Lloyd Jones  
Mark Kowitz  
Karl LaForge  
Ina Leong  
Ana Malave  
Francisco Matthew  
John Muller

Angus Nairn

Harold Oakhill

Debkumar Pain

Maria Popov

Robert Roeder

Eva Straumsnes

Marius Sudol

Catherine Vanchieri

David Vicario

Torsten Wiesel

Ira Woods

John D. Young

### Retirement awards

H. Osborn Bagg

Charles Baird

Willie Brown, Jr.

E.G.D. Cohen

Vicente DeJesus

Newman Duhaney

Audrey English

Muriel Fabrizio

Oliver Farley

Erminio Gubert

Ivy Anne Hussey

Neil McKinnon

Madeleine Naylor

John Porter

Charney Rattigan

Pearl Rivers

Gregorio Rosario

Leila Semple

Elliona Simpkins

Pedro Torres

Modesto Vazquez

## RU mourns death of D. Martin Carter

(continued from page 1)

the year 1985-86 was president of the Society for Investigative Dermatology. He was a member of The New York Academy of Sciences, The New York Academy of Medicine and a fellow of the American Association for the Advancement of Science. His nonprofessional memberships included The Century Association, The Practitioners Society and the New York Medical and Surgical Society. He was an elder of the Madison Avenue Presbyterian Church, where a memorial service in his honor was held yesterday (Nov. 11).

He is survived by his wife, Anne ("Jill") Babson Carter; two daughters, Anna Carter Florence and Elizabeth Carter Rooney; a son, Christopher Hart Martin Carter; his father, Joseph Martin Carter; his brother, James Leighton Carter; and one grandchild, Caleb Martin Florence.

A special memorial will be held at Rockefeller at a date to be announced.

Contributions in memory of Carter may be sent to The

American Skin Association, 150 East 58th Street, 32nd floor, New York, NY 10155.

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# Maclyn McCarty speaks about origins of DNA revolution

*Doron Weber of News&Notes spoke recently with Professor Emeritus Maclyn McCarty about his historic discovery with Oswald Avery and Colin MacLeod that DNA was the carrier of genetic information.*

**News&Notes (N&N):** Can you give us a brief overview of the story leading up to the discovery that genes are made of DNA?

**McCarty:** The research had its origins in the study of bacterial pneumonia. It started with the finding of an Englishman Fred Griffith in 1928 who described a phenomenon he called the transformation of pneumococcal types. For many years, the problem was pursued for its possible bearing on the control of pneumonia, then the leading cause of death, ranking well ahead of today's principal killers—heart disease and cancer.

But as time went on, and the nature of the transformation became better defined, it seemed clear that it must have broader implications. It involved a change in one type of pneumococcus that was induced by a substance extracted from another kind. This change was predictable and permanent, being transmitted from generation to generation on subculture of the organisms. It had all the earmarks of what we would call today the transfer of genetic information. The Avery lab, which had been studying the problem since Griffith first described it, became focused on determining the nature of the substance responsible for the transformation.

When I arrived in the summer of 1941, Avery and MacLeod had just finished a year in which they had initiated a renewed effort on this problem. With MacLeod's departure to New York University Medical School, I fell by chance into the unexpected position of joining Avery on this project. I would say that the next two years were as exciting as laboratory research can possibly be. Gradually a number of pieces of evidence emerged from the experimental work that all pointed to DNA as the active substance.

**N&N:** What was known about DNA before your paper was published in *The Journal of Experimental Medicine* in 1944?

**McCarty:** DNA had been discovered in the middle of the 19th century, but very little was known about its biological activity. Chemical studies of the nucleic acids suggested they were not very

diverse and they had only a small number of components. Phoebus Levine, a leading biochemist at Rockefeller, suggested that nucleic acids would not have the potential for the kind of diversity required for transferring genetic information. So, the prevailing attitude was that if any known substance was likely to be the gene, then it would probably be protein.

**N&N:** Were most geneticists following the Avery lab's work as it unfolded in the '30s and '40s?

**McCarty:** No, it didn't get picked up widely other than by medical microbiologists concerned with pneumococcal pneumonia as a clinical problem. The geneticists were, by and large, looking at chromosomal genetics and the various ways in which you could work with this in *Drosophila* and corn. Their experiments weren't designed to analyze the nature of the genetic substance. In addition, bacteria were not recognized as in the same pathway of life as higher organisms. The whole idea of the genetic continuity of life had not taken hold yet. They were really two separate worlds.

**N&N:** So it was your discovery that later led to the understanding that DNA is the common denominator, the secret code that runs through every living thing from a microscopic bug to a human being?

**McCarty:** That's right. Today we know that the DNA code is universal. The DNA code in a bacterium is really like the DNA code in a mammalian cell and their differences are due to outward appearance rather than to the internal mechanisms that guide the growth and development of the organism.

**N&N:** Did you know you were on the threshold of something so significant at the time?

**McCarty:** Yes. This was a very special and exciting time. It was even fulfilling before we knew, for sure, that the transforming substance was DNA. Even with the ups and downs that came from experiments that didn't work, the disappointments were trivial compared to the general feeling of excitement—the idea that you were putting in this material that was able to make a change in the organism which was permanent. It didn't take long to feel that it was probably taking place at the genetic level. This meant I had the opportunity, very early in my scientific career, to work on as exciting a project as possible.

**N&N:** I understand that many of your experiments focused on isolating the transforming substance by eliminating possible candidates?

**McCarty:** Yes, Avery and MacLeod had been trying to eliminate possible causes of transformation, such as RNA and protein, for several years. The first set of experiments I did used the enzyme that René Dubos had first derived in the early years with Avery to attack the polysaccharide, showing that it did nothing to hurt the transforming activity. We undertook many different kinds of experiments to be sure that we weren't being fooled. Interestingly enough, they didn't know that DNA was in their extracts until January of 1941, six months before I arrived.

**N&N:** So the 1944 paper was really a cumulative product?

**McCarty:** Yes, it reported results for the first time from experiments that went back as far as 1934.

**N&N:** When you finally put the paper together did you feel "we've done it, this long pursuit has finally paid off?"

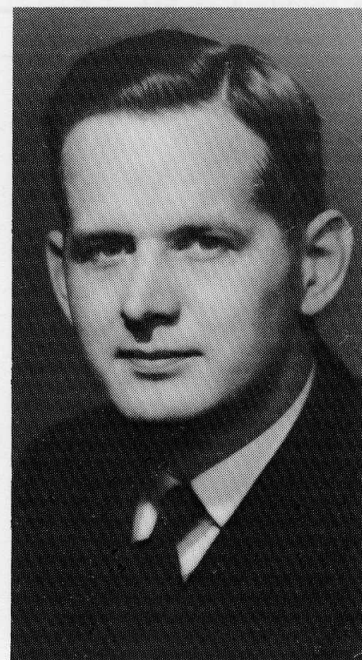
**McCarty:** There is no question that we felt that this was the answer. It made so much sense, since it was known that DNA was an important component of the chromosome in higher cells. All you had to do was accept the idea that it was wrong to say that DNAs are all alike. On the basis of our work, Irwin Chargaff immediately turned to analyzing nucleic acids and showed quite clearly they were far from all alike. And then the structural work by James Watson and Francis Crick opened the way for many of the following modern developments.

**N&N:** What does it feel like to have been one of the three people who essentially laid the foundation for the modern biological age?

**McCarty:** Well, I've taken pride in having been there and been involved with this discovery. I've also taken a lot of pleasure in watching the developments that followed because I discontinued this work and got into a more disease-oriented problem in 1946.

**N&N:** Could this tremendous new power you unleashed one day be used for sinister ends? What about human cloning?

**McCarty:** Well, I really don't worry much about that. The potential for misuse is there, but I don't see that as a reasonable excuse for the



**Professor Emeritus Maclyn McCarty, about 1944, the date the historic paper was published on DNA.**

human race to remain ignorant the rest of its existence. Some controls may have to be imposed on human cloning, but I think it will be as manageable as most other technologies that have arrived.

**N&N:** How do you feel about the enormous advances such as the human genome project and gene therapy spawned by your work?

**McCarty:** It has been exhilarating to watch it all come along. The ability to first sequence DNA, and then to clone it, have become such powerful tools in biology. And it doesn't much matter what one is doing in biology—whether it is immunology, developmental biology, embryology, plant science or neurobiology. Everybody is using these tools. And it is now being used more and more for medical problems. It is helping us understand and devise treatments for diseases such as atherosclerosis and heart disease.

**N&N:** So in the sense that you started by looking for a way to treat pneumonia, one could say that your work is coming back full circle?

**McCarty:** Yes I think it already has to some degree. For example, I have an anemia and one of the new synthetic products that's been helping me is erythropoietin. So I am taking a recombinant DNA product for my health. In a sense, I am being treated by one of the fruits of this research myself.



# Harvard chemist to give 1993 Stein Memorial Lecture *Watson to speak at RU celebration*

Stuart Schreiber, professor of chemistry at Harvard University, will speak on "A Natural Products-Based Approach to Understanding and Controlling Signal Transduction," at the William H. Stein Memorial Lecture today (Nov. 12).

"Stuart Schreiber is a notable young organic chemist with a strong background in synthetic chemistry," said Professor William Agosta. "He has become fascinated with modern biology, and his research has successfully applied sophisticated organic chemical techniques to modern biological problems."

Schreiber's current research is concerned with protein-ligand interactions in intracellular signal transduction pathways that regulate the cell cycle. These efforts have relied on natural products to both understand and control signal transduction pathways, including nonnatural, designed pathways for transgenic animals.

Schreiber received a B.A. in

chemistry from the University of Virginia in 1977 and a Ph.D. in organic chemistry from Harvard in 1981. Following completion of his doctoral studies, he joined the faculty at Yale University where he achieved the rank of full professor in 1986. In 1988, he returned to Harvard. Together with K.C. Nicolaou, he is a co-founder and co-editor of the new journal *Chemistry & Biology*.

Schreiber is a founder and chief scientist of ARIAD Pharmaceuticals, Inc., which focuses on discovering therapeutic agents that modulate intracellular signaling pathways by combining the disciplines of organic chemistry, molecular cell biology and structural biochemistry.

Schreiber has received numerous honors and awards, most recently the Rhone-Poulenc Silver Medal, Royal Society of Chemistry, 1992; Eli Lilly Award in Biological Chemistry, American Chemical Society, 1993; Leo Hendrik Baekeland Award, 1993, and the

Award for Creative Work in Synthetic Chemistry, American Chemical Society, 1994.

The William H. Stein Memorial Lecture Series was established by the friends and family of William Stein after his death in 1980. Throughout his distinguished scientific career, Stein pioneered research that elucidated the complex relationship between the chemical structure of proteins and their biological activities. Together with his Rockefeller colleague, the late Stanford Moore, he received the 1972 Nobel Prize in chemistry for decoding the chemical structure of the enzyme pancreatic ribonuclease. It was the first time the complete chemical structure of an enzyme had been obtained. Stein and Moore shared the award with Christian Anfinsen of the National Institutes of Health.

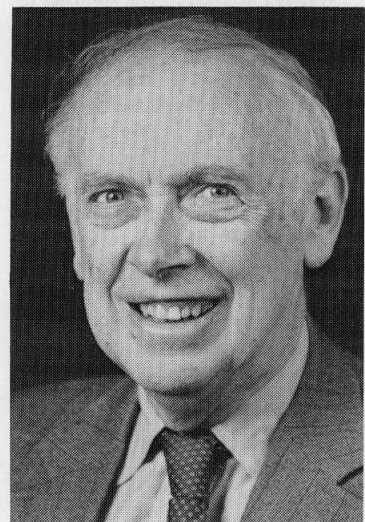
The lecture, hosted by President Torsten Wiesel, will be held at 3:45 P.M. in Caspary Auditorium. Tea will precede it at 3:15 P.M.

(continued from page 1)

tor of Cold Spring Harbor Laboratory on Long Island, New York. Watson steered the laboratory into the field of tumor virology, from which emerged our present understanding of oncogenes (cancer genes) and the molecular basis of cancer. In addition to research on cancer, plant molecular biology, cell biochemistry and neuroscience, the lab functions as a postgraduate university for DNA science.

Born in Chicago, Illinois, in 1928, Watson received a B.S. (1947) from the University of Chicago and a Ph.D. (1950) from Indiana University, both in zoology. Following a National Research Fellowship in Copenhagen and a National Foundation of Infantile Paralysis Fellowship at the University of Cambridge, England, he spent two years at the California Institute of Technology. He joined the Harvard University faculty in 1955 and became professor in 1961, resigning in 1976 to become full-time director of Cold Spring Harbor Laboratory.

In 1988 he was also appointed associate director for Human Genome Research of the National Institutes of Health. In 1989 he was appointed director of the National Center for Human Genome Research of the National Institutes of Health; in 1992, Watson resigned this position after successfully launching a worldwide effort to map and sequence the human genome.



James D. Watson, director of Cold Spring Harbor Laboratory, will lecture Tues., Nov. 16 at 6:00 P.M. in Caspary Auditorium.

## Potpourri

**Tri-Institutional Noon Recital**  
The Ensemble Rebel and guest artists baroque violist Sarah Sumner and baroque bassist Nicholas Pap will play works from the late 17th century at the Tri-Institutional Noon Recital today (Nov. 12). Winner of the first prize at the 1991 International Competition for Ensembles in Early Music, the group is the Ensemble-in-Residence of Amsterdam's Aemstelrande Concerten Series. Members of the group are baroque violinist Jörg-Michael Schwarz, baroque violinist Karen Marie Marmer, Gail Ann Schroeder on viola da gamba, and

harpichordist Pieter Dirksen. The concert, to be held at noon in Caspary Auditorium, is free and open to the public.

### Con Edison work

As part of a project providing natural gas as a second source of fuel to the university's Power House, the Consolidated Edison Company will install piping from the intersection of 64th St. and York Ave. eastward to the edge of the university's property bordering the FDR Drive. The work is scheduled to commence on Thurs., Nov. 18 and continue through the end of the month. A

meeting will be held each day at 3:00 P.M. in Plant Operations to address any questions or concerns which may arise. Inquiries may be directed to Bob Francis or Brendan Bolger, x8001.

### Green card notice

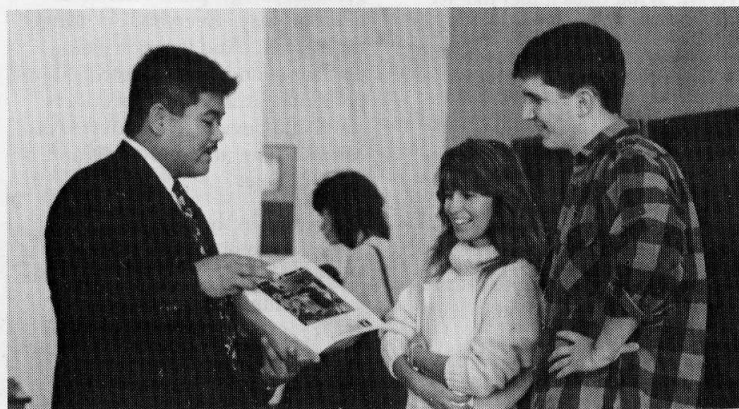
Employees should notify the Personnel Office as soon as they have obtained U.S. permanent residence (also known as a "green card"). As evidence, the office needs a copy of the green card, of a stamp in the passport marked "processed for I-551" or of any other notice of action which establishes U.S. permanent residence.

### Holiday special

The Housing Office is offering a holiday special to all Rockefeller University faculty, students and employees from Fri., Nov., 26 through the month of December. On Fridays, Saturdays and Sundays only and subject to availability, rooms at the Abby Aldrich Rockefeller Hall will be "two nights for the price of one." To make reservations, call x8500.

### Correction

Hsin-Fei Meng was incorrectly listed as a guest investigator in the E.G.D. Cohen lab in the Oct. 29 issue of *News & Notes*. He is a post-doctoral fellow.



The Personnel Office sponsored a Health Fair on Wednesday in the Tower lobby to educate employees about various health plans and other benefits. Open enrollment, the period where employees can change their health plans or sign up for the 1994 Flexible Spending Account (FSA), will extend until Tues., Nov. 30.