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The Rockefeller University

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news & notes

May 1, 1992 Volume 2, Number 31

The Rockefeller University

Herzog Foundation awards RU \$1.9 million for clinical program

At the spring meeting of The Rockefeller University Council last week, Chairman of the Board of Trustees Richard Furlaud announced that the Carl J. Herzog Foundation will give the university a major challenge grant to help fund the Clinical Scholars Program. The Clinical Scholars Program brings young physician-scientists to The Rockefeller University Hospital for two to three years to conduct clinical research.

"The Herzog Foundation has agreed to contribute to the Clinical Scholars Endowment one dollar for every two dollars contributed by other donors over the next two years up to a maximum of \$1.9 million," said Furlaud. "On behalf of all the Council members, trustees, and faculty, I would like to publicly thank Mr. Peter Bentley [president of the foundation] and his fellow trustees at the Herzog Foundation for this splendid commitment and also take this opportunity to acknowledge the Foundation's long-term partnership with the university...."

Furlaud also thanked The Reverend Sydney Woodd-Cahusac, a trustee of the Herzog Foundation, for his role in making the grant possible. Woodd-Cahusac is a member of The Rockefeller University Council who served as Treasurer of the university from 1971 to 1983.

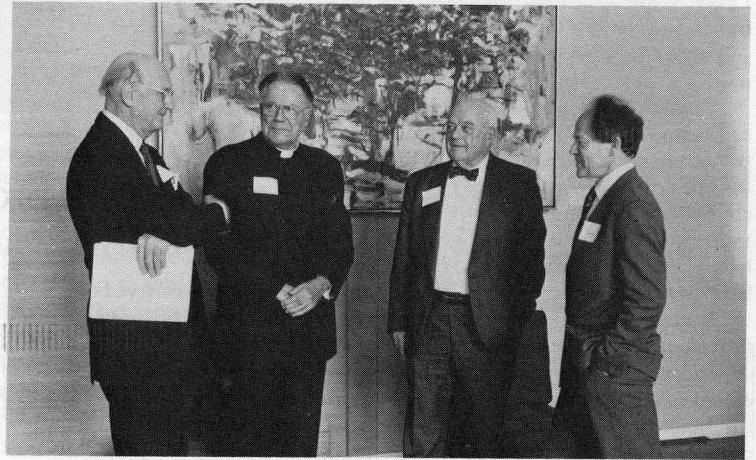
Bentley made a surprise announcement at the meeting by pledging additional funds from the foundation. Recognizing that expendable funds are needed as well as endowment monies, Bentley said that the foundation would provide expendable funds up to \$70,000 for the first clinical scholar recruited while the first endowment accrued sufficient interest to cover the costs.

"I have greatly enjoyed my discussions with Mr. Bentley and

Rev. Woodd-Cahusac," said President Torsten Wiesel. "I am heartened by their decision to make these wonderful contributions aimed at strengthening the Hospital's clinical research programs."

Jules Hirsch, the Hospital's physician-in-chief, explained that the Clinical Scholars Program brings young people to the Hospital to ask fundamental questions about disease. He said: "The unique aspect about clinical investigation is that it uses the bedside as other labs use the bench—as the primary site of scientific investigation. My hope is that by expanding programs like the Clinical Scholars Program in which investigators conduct both clinical and laboratory research, The Rockefeller University Hospital can assure its place at the forefront of a new and exciting era in which clinical research generates new questions for molecular biology."

In addition to recruiting young physicians who have just completed their training, the Hospital will expand the Clinical Scholars Program to include senior research-



Chairman of the Board of Trustees Richard Furlaud, Reverend Sydney Woodd-Cahusac, a trustee of the Carl J. Herzog Foundation, Peter Bentley, president of the foundation, and President Torsten Wiesel (from left to right) chat at the spring meeting of The Rockefeller University Council, where it was announced that The Herzog Foundation will give the university a \$1.9 million challenge grant.

ers. The senior Clinical Scholars will be affiliated with labs, but will conduct their own independent research projects. The number of Clinical Scholars will increase to twelve, Hirsch said. Furlaud's announcement of the Herzog Foundation grant was part of a busy schedule of events at The Rockefeller University Council meeting April 23. President Torsten Wiesel introduced the day's program,

entitled "The Neurosciences: A Great Frontier." Professor Charles Gilbert spoke on "The Neurobiology of Visual Perception"; Assistant Professor Arturo Alvarez-Buylla spoke on "The Formation of New Nerve Cells In Adult Birds: Clues to the Assembly and Repair of the Brain"; and Professor Paul Greengard spoke on "Approaches to the Understanding and Treatment of Alzheimer's Disease."

Entering class of Ph.D. candidates eager to come to RU

The entering class of graduate fellows is practically complete, ending the hard work of the Admissions Committee for another year.

"We have 18 Ph.D. candidates—17 biology students and a physics student—in the entering class," said Marjorie Russel, associate professor and dean. "There is one other biology student who may still join the group. The students seem very enthusiastic about coming to Rockefeller—several have already asked me how soon they could come to campus to start the program."

Like last year's class, this class draws students from around the world. The 13 foreign students include two Yugoslavians, a Russian, a Bulgarian, a Korean, and two Chinese. The class will include at least eight women.

Russel noted that this year the university received more applications from students attending top liberal arts colleges, such as Oberlin, Swarthmore, Reed, and Mount Holyoke, than in the past.

"Students from small colleges may have less sophisticated research experience than those from larger

institutions, but they often have fantastic motivation and a great interest in science," Russel said. "I've heard Detlev Bronk believed that small colleges were the best source of students with great potential."

This year's applicants showed an awareness of expanding areas of research at Rockefeller, in particular of computational neuroscience, Russel said. Computational neuroscience—a field concerned with finding testable mathematical theories that predict how the nervous system is organized and how it computes its perceptual problems—will be the topic of research of Joseph Atick, who will soon join the faculty here (see story, page 3).

The Rockefeller University admissions committee began reviewing the first applications for the Ph.D. program in mid-January. The committee reviewed the last of the 300 applications last month. This year's committee members are: Assistant Professor Arturo Alvarez-Buylla, Professor Emil Gotschlich, Professor Hidesaburo Hanafusa, Russel, Assistant Professor Thomas Sakmar, Associate Professor Elaine

Tuomanen, and Professor Victor Wilson.

To encourage accepted candidates to come to Rockefeller, a visiting day was held at the university March 20. In addition to meeting with faculty and attending the Friday afternoon lecture, prospective students spent time speaking with current students, learning about their research and campus life at Rockefeller.

"Current students have a great deal of knowledge about programs at other institutions," said Russel. "They are in a good position to appreciate the areas that make Rockefeller unique."

A Tri-Institutional committee—whose Rockefeller members this year are Russel, Sakmar, and Professor and Senior Physician Ralph Steinman—began reviewing applications for the M.D.-Ph.D. program shortly after Thanksgiving. The committee finished reviewing the last of the applications in early March. The entering class for this program will also be complete soon. Nine individuals have accepted places in the class; several offers are still outstanding.

2 Children's School director named

3 Neuroscientist uses information theory

4 Researcher fishes for good music

New benefit saves employees money

Every employee can save money by taking advantage of flexible spending accounts (FSAs), says Darryl Williams, benefits manager in the Personnel Office.

There are two ways to save money with this benefit:

- Premiums. FSAs enable employees to use pre-tax dollars to pay for health care premiums (which are deducted from pay-checks). Depending on whether individuals are single or married, faculty or staff, they will save \$17 to \$100 per year.
- Accounts. Special accounts can provide pre-tax wages to pay for dependent care and medical expenses not covered under health insurance plans (such as deductibles, contact lenses, or braces).

The Personnel Office will conduct several one-and-a-half-hour workshops on FSAs next week. Participants will learn how to enroll in the plan, how the spending accounts work, and how to estimate eligible expenses. Workshops will be held:

Monday, May 4: 10:00 A.M., 1:30 P.M., 7:00 P.M.

Thurs., May 7: 10:00 A.M., 1:30 P.M., 7:00 P.M.

Mon., May 11: 10:00 A.M., 1:30 P.M.

Seating may be limited in some of the seminars: if they are oversubscribed, others will be arranged. Except for the session on May 7 at 10:00 A.M., which will be held in Tower 301, workshops will be held in Tower 305. For more information, contact Darryl Williams, x8297, or Ginny Hansen, x8299.



Allen Glenn



JoAnn Greene

New residential property manager believes in results *Long-time employee continues to direct Housing Services*

A new manager has arrived on campus to oversee the maintenance and operation of all off-campus residential buildings owned or partially owned by the university: he is Allen Glenn, from Phipps Houses Services, Inc. JoAnn Greene, coordinator of The Rockefeller University's Housing Services, will continue to assign residential units, administer campus housing, and respond to housing policy issues.

"My goal is to increase the quality of the buildings' maintenance while controlling costs," said Glenn. "I believe that residents are above all interested in results. That's what residents see and that's what they appreciate. Currently we are painting the lobby, refinishing the floors, and repairing the elevators in Scholars Residence and Faculty House. I hope these improvements will make the buildings feel like better places to live."

Glenn will oversee the operation of about 650 Rockefeller living units in eight buildings, including those in Scholars Residence, Faculty House, Sutton Terrace (which

consists of three buildings), and those on East Eighty-First Street, East Eighty-Fourth Street, and East Seventieth Street.

Glenn, an engineer by training, has 30 years experience managing real estate properties. Most recently, he worked for Darwood Management managing luxury condominiums on the Upper East and Upper West Sides. He also has held positions with Broadway Management, and Iraco, Inc. A resident of the Upper East Side, Glenn is married and has three children.

The responsibilities of Greene in Rockefeller University's Housing Services begin where Glenn's leave off. Greene manages the distribution of the residences and policy issues related to university housing.

"If individuals have maintenance problems, they should contact Phipps for off-campus residences or Custodial Services for on-campus residences," Greene said. "But if there is any other problem or suggestion related to housing, I'm the right person to see."

In addition to managing

residential housing for students and faculty, Housing Services runs:

- Guest facilities, which include 11 rooms in Abby Aldrich Rockefeller Hall and 22 rooms in Scholars Residence;
- Short-term housing, which consists of furnished units available to visiting scholars for one to ten months;
- The Rockefeller University cottages, MacInnes Cottage and Hostage Cottage, which are located about 50 miles from the city.

Another project keeping Greene busy is the major renovations underway in Graduate Students Residence.

"To upgrade student housing the university is converting units that consist of two rooms with a shared bathroom into small self-contained apartments," she said. "This project began in April and will probably run to July. These renovations will be great for the students in the long-run."

Greene has been at Rockefeller for nine years. Previously, she managed residential properties for The New York Hospital. Greene, a resident of the Upper West Side, has one daughter.

Director of RU Children's School appointed

A New Yorker with excellent credentials in early childhood education has been appointed director of The Rockefeller University Children's School.

She is Marjorie Goldsmith, who for eight years has been director of the First Presbyterian Church Nursery School in Manhattan.

"After a thorough search, Marjorie Goldsmith emerged as a compelling candidate of our hard-working search committee," said President Torsten Wiesel. "I am very impressed by her academic credentials and her broad experience. Her professional background and personal qualities assure me that she will succeed in the very difficult task of replacing Barbara Adams. She has my enthusiastic support in leading this very vital part of our community."

Goldsmith was educated in New York, receiving a bachelor's degree from Hofstra University in art and literature, and she received a master's degree in education from the Bank Street College of Education. She has had additional training at a number of institutions, including the Harvard Graduate School of Education, where she attended an institute on early childhood education.

Over the past 20 years, Goldsmith has been a staff member in several early childhood educational programs, and has taught at both City College and the College of New Rochelle on child development and early childhood education curricula.

Before assuming the directorship of the First Presbyterian Church Nursery School, she was educational

director of Plaza Head Start in Manhattan for six years and materials development coordinator of the City College Day Care Training Program.

Goldsmith succeeds Barbara Adams, who will retire at the end of this academic year after heading the Children's School for 18 years. Adams began teaching at the school in 1967, one year after it opened. In 1970, she left to become director of another program. In 1974, she came back to the Children's School as director.

Under Adams's nearly two decades of dedicated leadership, The Rockefeller University Children's School responded to the growing needs of parents on campus. It began to offer a summer program, longer hours, and an after-school program.

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The Rockefeller University is an equal opportunity employer and has an affirmative action program to increase the employment of women and members of protected groups at all job levels.



Researcher uses information theory to study brain

By Sam Flamsteed

The human brain is an incredibly complicated organ, with billions of neurons interconnected in trillions of ways. It is far more elaborate than the most sophisticated supercomputer in existence. Yet such feats as object recognition, for example, where the brain has to determine where an item's boundaries lie and then compare it to stored memories of similar objects—which in turn might have been seen at different angles or under different lighting or in different contexts—involve such intensive computation that even the remarkable complexity of the brain's hardware is, by itself, woefully inadequate to explain what is going on.

So while it is possible and interesting to make mathematical models of how the brain is organized, Joseph Atick, a computational neuroscientist who will be joining the Rockefeller faculty next month, prefers instead to try and understand how it actually works. "We know that the brain is solving problems," he says. "So the idea is to construct a theory that will tell us, 'these are the steps it goes through.' My dream is to construct such a theory from first principles. In physics, by analogy, you also have first principles—the conservation of energy for example—that are the most basic rules about how matter behaves. The observed behavior may be much more complex, but the principles are simple."

Atick knows a bit about physics. When he was halfway through high school, in Jerusalem, he realized that the course work was just not very interesting. So he dropped out—and wrote a college-level physics textbook. "It wasn't based on original research," he says modestly, "but it did attract a certain amount of attention in the Middle East." Realizing that he was

sorely lacking in formal credentials, Atick began to contact universities around the world. "I was most interested in doing graduate work," he recalls, "but I would have settled for undergraduate." He didn't have to. At 18, having passed a battery of tests, he entered Stanford's graduate program in theoretical high-energy physics. On graduation, he took on a postdoctoral research fellowship and then a long-term appointment at the Institute for Advanced Study, in Princeton, New Jersey.

A year later, he switched fields. "Physics was certainly interesting and challenging," he says, "but neuroscience really is the most fascinating frontier of science. In high-energy physics, you have to invest billions of dollars in an accelerator like the Superconducting Super Collider before you can get one tiny bit of data. In this field, though, we're awash in data, and the challenge is in creating theoretical models that can explain it. I want to apply the rigor of physics to these problems."

The theoretical model he is working on at the moment is one that describes one of the brain's most basic subsystems: visual processing. "We ask ourselves, 'given the input that strikes the first element of the visual processing system, the retina, how does the brain deal with it?'" he says. At the first level of the visual pathway, the input is recorded literally: the light-detecting cells in the retina simply respond to the light-levels and colors of what's there. Imagine, for example, that the eye is looking at a room; there's a white wall, a window off to one side a black desk and a red chair. On the retina itself, large numbers of adjacent neurons will register exactly the same input. Those taking in the wall, say, will all record about the same intensity of white.

Is that useful to the brain? For the answer, Atick and his colleagues

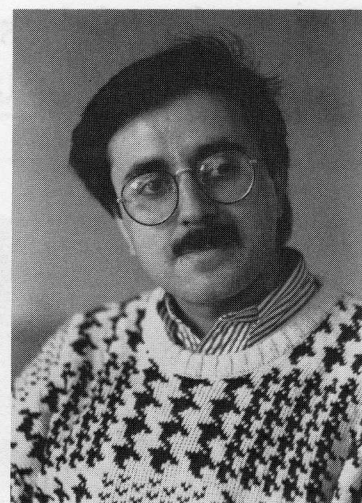
turned to information theory, a branch of mathematics, pioneered by Claude Shannon and others in the 1950s. Information theory is a rigorous way of analyzing the movement of information, not through a particular data-carrying system, but through all conceivable systems; it sets down general rules about how information can be most efficiently recorded, stored, and retrieved.

"One of the discoveries of information theory," says Atick, "is that it is more efficient to code information so that every element is statistically independent from the others." And that is clearly not how visual information reaches the retina. Because many neurons are recording the same data, it is very likely that if you know what's on one, you can predict that the adjacent one will be registering the same data. If you can use what's going on in one place to predict what's going on next door, the two are statistically dependent.

That amounts to duplication of information, a wasteful situation the brain can't afford. It must therefore re-code the information and, over hundreds of millions of years of human and animal evolution, it's plausible that nature slowly learned what information theory now explains: that this recoding should be done at the next stop on the visual pathway more statistically independent than it was at first. Instead of thousands of nerve cells carrying the message "white" and thousands more saying "red" or "black," you should have just a few neurons carrying the more complex concept of "white wall" and "red chair" and "black desk."

"If you postulate that this is indeed a first principle of visual processing," says Atick, "and you look at what the actual recoding rule is, you learn two things. First, the rule will change in different environments, which explains why different animals—a fish, a horse, a bird—perceive the world differently. This is what we call an ecological theory, a theory that changes depending on the environment. Second, the rule is very complex. It takes several mathematical steps to transform the information, which are paralleled by several physical steps along the visual pathway."

All well and good, but the theory remains a theory until Atick and his colleagues can show that the brain indeed acts the way mathematics says it should. And at the first level, that is just what they have done. "The electrical signal coming out of real retinas into the visual



Joseph Atick, a computational neuroscientist, will join the Rockefeller faculty next month.

pathway has been measured carefully in the lab," he says, "and it is closely related to the input of light, but modified." And the modifications, it turns out, are just of a form that information theory dictates should take place as a first step. "It turns out," says Atick, "that a simple mathematical principle underlies both color processing and the processing of images as objects move through space and time."

Atick and his collaborators are now trying to extend their mathematics further up the visual pathway, trying to model what happens at each step of the image processing system. "Sensory processing really seems to be a tractable problem," says Atick, "But we're still talking about the most primitive aspects of brain function. It's too soon yet to talk about modeling high functions, like creativity—although I predict that within a decade, we will be doing so."

The ultimate goal is not just to understand how the brain really works, but also to use that knowledge to build computers that work like brains. "If you know the principles," he says, "you can build brains that are optimized for their environments. Actual brains have developed evolutionarily, within their environments. If you want a device that mimics the brain, you don't reconstruct the hardware—you apply its basic principles to whatever hardware you have." And that is why Atick is happy to be coming to Rockefeller. "I'll miss the peaceful surroundings at the Institute for Advanced Study," he says, "and the administration has been terribly supportive of my somewhat radical change of fields. But if you want to understand a problem in depth, you go to where the experts are."

Personnel seminar on SRAs draws 60

The seminar on Supplemental Retirement Annuities (SRA) sponsored by the Personnel Office drew over 60 employees last week. Martin Volpe, an advisory officer at Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF), discussed how SRAs increase savings for retirement and decrease taxes.

"We were very pleased by the turnout at the seminar," said Darryl Williams, benefits manager. "I'm

glad that so many people got to hear Mr. Volpe's message that it is never too early to save. Everyone should consider opening an SRA."

Volpe also discussed the new option of borrowing against contributions to an SRA. Individuals can borrow up to 45 percent of their contributions, not exceeding \$50,000.

Those who have questions about SRAs should contact Darryl Williams, x8297, or TIAA-CREF, 1-800-842-2776.

Researcher fishes for good music using violin, piano, accordion

By Olivia Gushin

A small stuffed fish hangs above Assistant Professor Andrew Lin's computer in the Carter lab. His desk displays photos of him in hip boots and waders. Just as prominent is a radio, tuned to WNCN, the "new wave in classical music station." While Lin could live without fishing, he can't imagine life without music. For the six years he's been at The Rockefeller University, Lin has played the grand piano in the Caspary practice rooms at least once a week.

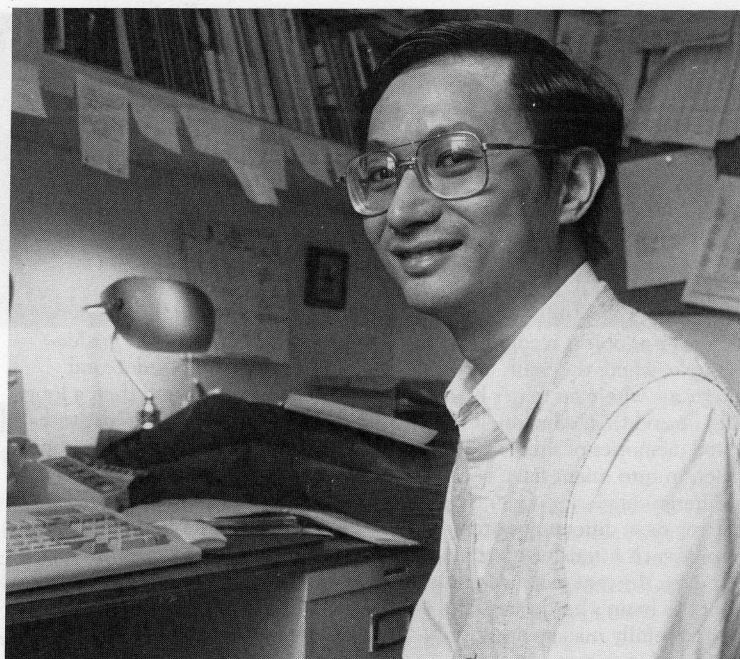
As a child in Vancouver, Canada, Lin began playing the violin in the third grade. Lin says his parents are not very musically inclined but many of his cousins are. Although he likes the violin and still plays the instrument, Lin found few solo pieces for the violin and was always looking for accompaniment. So he decided to try the piano, which is, according to Lin, a more versatile instrument.

"Technical virtuosity is more important on the violin than on the piano," says Lin with a nod towards violin chauvinists. "If a piano is in tune it usually sounds half decent."

While in college and medical school in Vancouver he grabbed practice time whenever he could, "fifteen minutes here and fifteen minutes there." These days Lin plays on a spinet at home and enjoys playing the grand piano in Caspary.

Lin describes his repertory as mostly classical. His favorite piece at the moment is the romantically titled, "About Strange Lands and Foreign Lands" from a collection of Schuman's *kinder szenen* (scenes from childhood).

"Being a music lover in New York is a fantasy come true," he says. It's hard to imagine when Lin has time to savor New York's cultural offerings. When he is not practicing the piano, the bulk of his time is spent working on developing experimental treatments for a group of disfiguring skin diseases. With



"Being a music lover in New York is a fantasy come true," Assistant Professor Andrew Lin says.

Professor and Senior Physician D. Martin Carter, Lin is editor of the book *Epidermolysis Bullosa: Basic and Clinical Aspects* which will be published next month by Springer Verlag.

But music is rarely far away. Lin owns an accordion he has not yet learned to play. But he should be proficient soon. It's a lot easier to bring an accordion on a fishing trip than a piano.

Potpourri

Chess game

The Rockefeller Chess Club has been invited to play a friendly tournament with the Harvard Chess Club, Mon., May 18 at 7:00 P.M. Interested players should contact Thomas Akompong, x8625, for further information.

Tri-Institutional Noon Recital

The Lark Quartet will perform works by Hadyn and Borodin at Tri-Institutional Noon Recital today (May 1). The group has won prizes in many competitions, including the Gold Medal in the 1991 Shostakovich International String Quartet Competition (St. Petersburg, Russia), the Borodin Quartet Prize, Shostakovich Society Prize,

and the coveted Naumburg Chamber Award (New York) in 1990. Today's recital, in Caspary Auditorium, is open to the Tri-Institutional community. Admission is free.

Baroque concert

A concert in honor of the meeting between The Rockefeller University and L'Institut Pasteur will be held Sun., May 3, at 8:00 P.M., in Caspary Auditorium. Cellist Roberta Cooper and pianist Gilya Hodos will perform a sonata by Bach. The group Oncydium will perform works by Bach, Rameau, and Lully. Admission is free and everyone in the university community is welcome.

Bake sale

A bake sale to benefit the Children's School will be held today (May 1) in Tower Lobby.

Lecture

Torsten Wiesel will give the Stephen W. Kuffler Lecture at Harvard Medical School May 7. He will speak on "Dynamic Aspects of Cortical Function."

Awards

The American Academy of Arts & Sciences recently announced the election of its new fellows, selected for distinguished contributions to science, scholarship, public affairs, and the arts. New fellows included Trustee Brooke Astor, Professor Donald W. Pfaff, and Rockefeller University alumnus David Malament ('75), now at the University of Chicago.

Election

Rockefeller University adjunct faculty member Olaf Andersen, also professor of physiology at Cornell University Medical College, has been elected president of the American Heart Association, New York City Affiliate.

Discount

Goldberger Pharmacy, 1200 First Ave. (at 65th St.), is offering a 10 percent discount on all items to

those with Rockefeller University identification cards.

Sunday film

Les Cousins, originally scheduled for May 3, will be shown May 10 at 7:30 P.M., in Caspary Auditorium.

Appointments

Adjunct Faculty: Edward Hackett, Lederberg lab; Barbara Mason, Kreek lab; Gerald Westheimer, Gilbert lab.

Visiting Professor: Nichols Gillham, Luck lab.

Postdoctoral Associates: Jongcheol Ahn, Aderem lab; Melissa Pope, Cohn/Steinman lab.

Postdoctoral Fellow: Tor Regberg, G.A.M. Cross lab.

Guest Investigators: Marcello Caria, Asanuma lab; Jan Jakus, Wilson lab.

Departures

Postdoctoral Associates: Helen and Mark Field, G.A.M. Cross lab.

Postdoctoral Fellows: Debra Goldman-Wohl, Heintz lab; Hiroshima Takeshima, Blobel lab.

Guest Investigator: Seiko Ishida, Baltimore Lab.

Correction

The seminar on Job Path for supervisors will begin at 12:30 P.M. today (May 1), not at noon as announced in last week's issue of *News&Notes*.



The Lark Quartet will perform at Tri-Institutional Noon Recital today (May 1).