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The Rockefeller University

news&notes

June 23, 1995 Volume 5, Number 30 The Rockefeller University

University honors David Rockefeller for 55 years of service

Alumni, faculty, students, and trustees offer thanks and tributes

With a two-day celebration, the university honored David Rockefeller upon his retirement from the Board of Trustees after 55 years of service—20 years as chairman of the board and 25 as chairman of the executive committee.

"This must be the most emotionally charged day of my life," David Rockefeller told members of the community who gathered for the unveiling of a bust of him, donated by faculty and placed in the Rockefeller Research Building lobby next to that of his father. "It is wonderful that faculty, trustees, and alumni have each in their own way done something for me. I thank everyone for this triple header, and am more grateful than I can possibly say."

Rockefeller repeatedly stressed that he would not be leaving altogether, telling even *The New York Times*, "I would miss it if I were going to walk away and never see the university again. But I will continue to come to meetings. So while it is sad in one sense, I don't feel as if I am leaving."

Heartfelt tributes, humorous anecdotes, and fond memories of the university's evolution abounded during the celebration, which included Rockefeller's election to honorary chairman and life trustee of the Board of Trustees at their June meeting (for other news from the board meeting, see story below). Rockefeller also received the first David Rockefeller Award for Extraordinary Service to The Rockefeller University at the university's 37th convocation, which was dedicated to him.

Alumni honored him by creating a new fund for graduate students in his name, commemorating his role in initiating graduate study here and his ensuing commitment to graduate students. Alumni also held a scientific symposium in his honor. Finally, following convocation, the university hosted a birthday dinner for Rockefeller, who turned 80 Mon., June 12.

During convocation, President Torsten Wiesel said, "I've been told that in 1939, John D. Rockefeller, Jr., asked his children to assume positions in his various philanthropic organizations. And I used to wonder: What induced David to become a trustee here, at the age of 25? Was it the romance of science that lured him here or was it an arranged marriage that he simply agreed to?

"However it began, the union blossomed into one of great love and mutual respect. David Rockefeller has loyally supported

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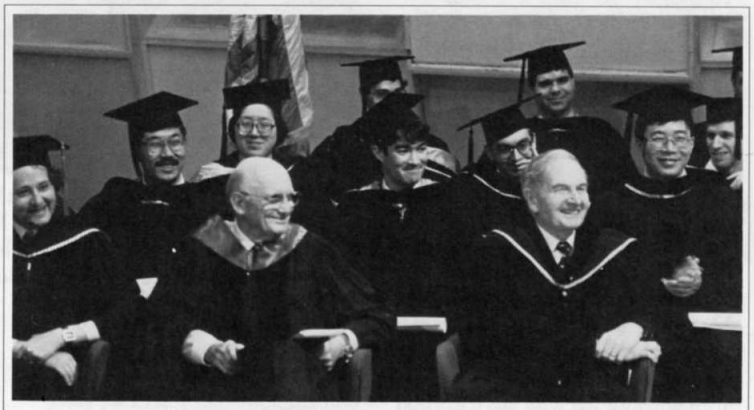

Twenty students graduated at the university's 37th convocation. David Rockefeller *(front, left)*, to whom the graduation was dedicated, and Chairman of the Board of Trustees Richard Furlaud enjoyed the presentation of the candidates. See story, page 3.

Wendy Barrows

The university hosted a birthday dinner for David Rockefeller. With graduate fellow Firdaus Dhabhar, he blew out the candles on his cake.

News from the Board of Trustees

Friedman promoted, recruitments and chairs approved, trustees elected

Rockefeller Head of Laboratory Jeffrey Friedman was promoted to professor by the Board of Trustees at their spring meeting Thurs., June 15. The trustees also learned that two scientists whose appointments had previously been approved will join RU: Jeffrey Ravetch, an RU alumnus at Memorial Sloan-Kettering Cancer Center, will become professor at Rockefeller in July 1996, and Thomas Muir, a chemist from Scripps Research Institute, will join this fall as assistant professor and head of lab.

In other business at the meeting, the trustees voted to appoint three senior faculty members to named chairs: Albert Libchaber to the Detlev W. Bronk Professorship, Brian Chait to the Camille and Henry Dreyfus Professorship, and Ralph Steinman to the Henry G. Kunkel Professorship. New Professor A. James Hudspeth will hold the new F.M. Kirby Professorship, announced in January 1995.

In addition, the board approved the creation of the Theresa and Eugene M. Lang Professorship, established jointly by Eugene Lang, who is the husband of trustee emerita Theresa Lang; the Herzog Foundation; and David Rockefeller.

Finally, the trustees also elected to membership on the board Jeffrey Epstein, president of J. Epstein & Co., who serves on the advisory committee to the Center for Studies in Physics and Biology; Professor Eric Kandel of Columbia University; and Nancy Kissinger, an RU Council member since 1991.

"We are very pleased with the actions of the board, which are highly productive for the university and in keeping with the Academic Plan that charts our growth," said President Torsten Wiesel. "These faculty and trustees are committed citizens of the Rockefeller community, and we look forward to their contributions as we pursue our mission of biomedical research and development. We are also grateful to the Langs, and yet again, to the Herzog Foundation and David Rockefeller, all of whom have demonstrated their support for our goals."

New chairs

Chait, who earned his doctorate in nuclear physics from the University of Oxford in 1976, joined Rockefeller as a research associate in 1979. He is director of the Rockefeller University Mass Spectrometric Biotechnology Research Resource.

Hudspeth has been an investigator of the Howard Hughes Medical Institute (H.H.M.I.) since 1993. He conducts research primarily on the mechanoelectrical transduction of sound by hair cells inside the ear. Hudspeth, who earned his B.A., Ph.D., and M.D. at Harvard University, was elected to the National Academy of Sciences in 1991.

Libchaber joined Rockefeller in 1994. A participant in the university's new Center for Studies in Physics and Biology, he is interested in the physical forces basic to

See ***Trustees****, page 8*

Heartfelt tributes, humorous anecdotes, and fond memories abound at two-day celebration

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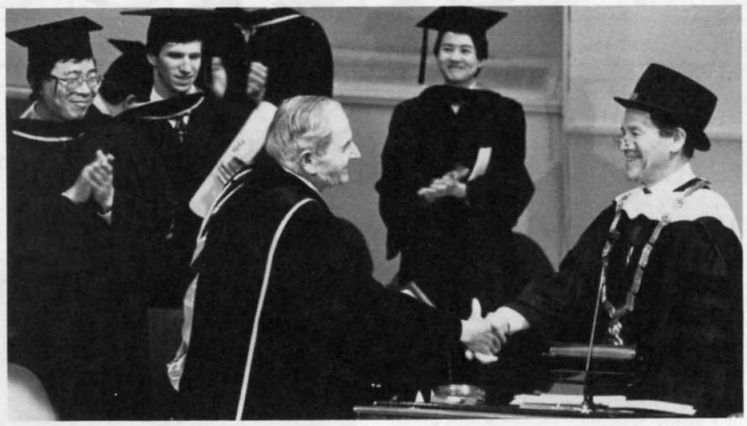
and guided the university for more than half a century. While federal and commercial funding of biomedical research have waxed and waned, David always championed science and its support."

Trustee resolutions honor Rockefeller's commitment

At its spring meeting Thurs., June 15, the Board of Trustees voted to name Rockefeller as honorary chairman and life trustee. In the resolution declaring him life trustee, the board wrote, "David Rockefeller is valued as a friend and counselor of the faculty, of the administration, of the members of the board, so that it is inconceivable that the university could continue to thrive and look to the future with confidence and optimism without his wise advice, good cheer, and undaunted enthusiasm." Declaring him honorary chairman, they wrote, "The leadership role that David Rockefeller has played for more than five decades serves both as the model and inspiration for the trustees who have served with him, and stands as an example of what trusted and committed leadership is and should be."

Wiesel dedicates convocation

In keeping with Rockefeller tradition, advisors presented graduates at convocation Thurs., June 15 (see story, page 3). However, the university suspended the custom of awarding honorary degrees, instead paying tribute to David Rockefeller, who received such a degree in 1980. Wiesel presented him with the first David Rockefeller Award for Extraordinary Service to The Rockefeller University. Proposed by the university administration and approved by the trustees, the award will be given annually to "an individual from the university who exemplifies David Rockefeller's commitment to the university."



President Torsten Wiesel (*right*) congratulated David Rockefeller after giving him the first David Rockefeller Award for Extraordinary Service to The Rockefeller University. The assembly responded with a standing ovation.

"David Rockefeller is known as an excellent sailor, and we have seen his navigational skills here at the university," said Wiesel. "He has steered a steady course, not in a predetermined direction, but has turned the sails where the winds of science blow. He's avoided the dangers of stagnant water, instead hauling toward the promise of uncharted seas. When the university administration sought renewed direction, in the 1950s and again in the 1990s, he gave of his courage and resources and demonstrated a steady purpose. This award in his name will recognize individuals with his spirit and devotion."

Faculty present bronze bust

After convocation, Wiesel invited the audience to a reception and to the unveiling of a bust of David Rockefeller in the lobby of the John D. Rockefeller, Jr., and David Rockefeller Research Building. Created by William Crozier, the bust complements that of his father, John D. Rockefeller, Jr., which Laurance S. Rockefeller gave to the university in 1994. The university Senate voted to create the bronze tribute at its December 1994 meeting and invited all faculty members, current and emeriti, to contribute a fund for it. The fund more than met its goal of $25,000.

"We will cherish this gift as much as you," Professor Emil Gotschlich, chairman of the Academic Senate, told Rockefeller. "It will remind us of your service and devotion and of our shared love of the ideals and aspirations of the university."

In expressing thanks for the gift, Rockefeller noted that the text on the marble wall of the lobby informed him that he and his father had between them served the university for 106 years. "This must be some kind of record," he mused aloud.

Alumni announce fund and present symposium

Also during the unveiling ceremony, Bob Barlow, '67, professor of neuroscience and opthalmology at SUNY, Syracuse, and Miki Rifkin, '69, associate professor at Mt. Sinai Medical School, announced the creation of a fund for the David Rockefeller Fellowship for Graduate Study at The Rockefeller University. Bob Barlow said, "In a few short weeks, we've raised $58,000. We hope to support several David Rockefeller Fellows. They would be nominated after completing their second year and would be selected for their promise as scientists and for their leadership at the university."

A committee of alumni headed by Rifkin organized a symposium in David Rockefeller's honor. Entitled "Continuing the Commitment: Biomedical Research for the Benefit of Humankind," the symposium took place the day after commencement. It featured speakers from various decades of the graduate program.

Early in the morning's program, Barlow reminisced: "My father was a banker. Back in the early 1970s, he met with David Rockefeller at Chase, to discuss banking matters. They were having a very mundane conversation about banking, and my father mentioned that he had a son who had recently graduated from Rockefeller University. My father told me that David Rockefeller's face just lit up. They began talking about the university and biomedical research and the conversation never returned to banking."

Rifkin told the audience that the symposium marked a new involvement in the life of the university on the part of alumni. "We propose another event in 1999. In the year 2000, there were will be too many other things to celebrate, but 1999 will be the 40th anniversary of the first degree awarded by the university. We want to give something back to the university that has given us so much."

Miki Rifkin, '69 (*right*), and Bob Barlow, '67, organized alumni events in David Rockefeller's honor.

Peggy Rockefeller listened to her husband's analysis of his likeness in bronze. The sculpture, by William Crozier, was a gift to David Rockefeller from the faculty.

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At convocation: Tales of achievement in tones of affection

Graced by picture-perfect weather and a sprightly string quartet, Rockefeller held its 37th commencement exercises Thurs., June 15, conferring 20 doctorates.

The event opened with the traditional processional up the 66th St. drive. A breeze rippled the sombre robes of faculty, trustees, and students, and their colorful hoods lifted slightly, like flags. Lining the drive, friends, families, and erstwhile colleagues applauded and cheered.

Once all had gathered in Caspary Auditorium, faculty mentors presented graduates one by one, telling stories of adversities and accomplishments in benchwork. They described scientific and collegial contributions, eccentric work habits and midnight perseverance; they waxed proud, fond, and sad by turns. Following each description, candidates stood to receive their hard-won diplomas and their blue and gold velvet hoods.

After President Torsten Wiesel recited the rites of investiture, he paid tribute to David Rockefeller, who is stepping down from his position on the Board of Trustees (see story, page 1), and bestowed on him the first annual David Rockefeller Award for Extraordinary Service to The Rockefeller University.

Below are excerpts from the advisors' remarks.

John Sholtis

Pose for posterity. **The class of 1995 arrayed themselves for the traditional portrait on the steps of Founder's Hall. The university has commemorated graduates with a class photograph since the first doctorates were awarded in 1959.**

Richard Bernstein

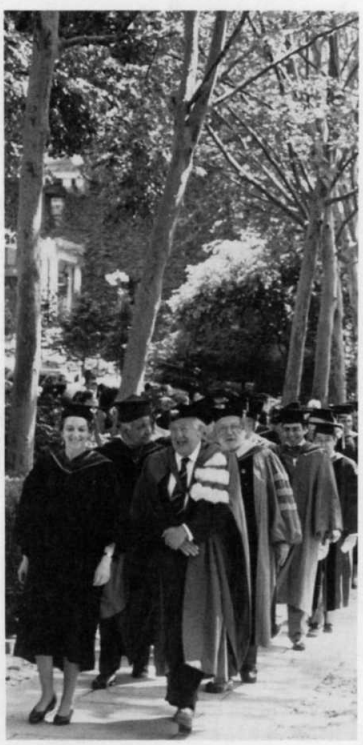
Richard entered my laboratory in 1990 to pursue his interests in the biochemical basis of gene expression. After exploratory projects, where Richard's creative insights into fundamental mechanistic problems exceeded existing technologies, he settled on another important but more tractable problem, which led to the cloning and functional characterization of a cellular transcription factor called TFIIA. This factor plays a key role in signal transduction from gene-specific regulators to the basic machinery that makes copies of genes. This Richard accomplished with confidence and determination in record time, while continuing as a highly interactive and stimulating colleague.

I am especially grateful for Richard's keen input into discussions on critical scientific problems, and will remember him as the individual who always volunteered to review incoming papers.

Possibly the highlight of Richard's time here was his trip to the White House, where he met Bill and Hillary and no doubt presented his views on health care and research funding; but, alas, this visit had nothing to do with Richard's science, but rather the musical talent of his wife Marina, whose quartet was playing by special invitation.

Richard is back in medical school, happily engaged in the pursuit of clinical training, but his obvious joy in the laboratory leads me to believe that he eventually will end up there.

—Robert Roeder



In full regalia. **Marchers in the convocation proceeded along the walkway into Caspary Hall, led by trustees Alexander Bearn and Neva Goodwin.**

Heather Cameron

Heather Cameron came to Rockefeller in 1990 after completing her undergraduate degree at Yale University and working as a research technician in the Yale School of Medicine. At Rockefeller, working with Elizabeth Gould, she began to study the birth of new neurons in the adult mammalian brain. Neurogenesis is a rare phenomenon, and only certain brain regions such as the hippocampus generate new neurons. In her first project, Heather found that the majority of cells born in the adult rat hippocampus are neurons. In her thesis work, Heather showed that such neurogenesis is regulated by adrenal hormones (sometimes called "stress" hormones) and by excitatory amino acid neurotransmitters, which are also turned on by stress. These results suggest that the number of neurons born in the adult hippocampus depends on the stress an animal experiences.

Heather's work has brought us closer to understanding how the hippocampus manages to create new neurons throughout life. These findings have implications for schizophrenia as well as for a variety of neurological diseases, such as Parkinson's disease, Alzheimer's disease, and A.L.S.

Heather has published 13 articles; she is first author on 5. In the fall, Heather will go to the N.I.H. as a postdoctoral fellow and will marry a legislative director for a congressman. We are counting on Heather to use her influence at work and at home to support the growth of biomedical research sponsored by the government.

—Bruce McEwen

Scott Dougan

Scott played a major role in changing the direction of the science in my lab. I think this happened because in science, as in other matters, he is continually curious. Scott thoroughly enjoys not only his work, but that of others. He will be hard to replace. Someone else will have to go out at 4:30 each day and buy M&M's.

Lastly, even though I am supposed to be his "boss," Scott has been a friend to me. In the earlier days, when we both had more time, we discovered some really good rhythm and blues bands.

Scott will join Richard Harland's laboratory at the University of California, Berkeley, where he will explore mechanisms of patterning the vertebrate nervous system.

—Stephen DiNardo

Adrian Ferré-D'Amaré

Adrian, the first graduate from my laboratory, entered science through marine biology, which he studied at the Technical Institute for Higher Studies in Monterrey, Mexico. Before graduation, he redirected his considerable drive and intellect to chemistry, and worked in organic synthesis at Syntex.

Adrian joined my laboratory in 1990 to study the role molecular recognition plays in regulating expression of certain genes in mammalian cells. After helping me set up the lab, he launched a successful study of two related transcription factors that recognize DNA and alter the rate at which messenger RNA is synthesized. In collaboration with Professor Edward Ziff (a former Rockefeller faculty member), he solved the three-dimensional structure of a protein called Max—work which immediately catapulted him to fame. Collaborating with Professor Robert Roeder, he also solved the structure of upstream stimulatory factor. These were significant firsts, of great technical difficulty and of signal importance in structural molecular biology and oncology.

Although Adrian works harder in the lab than anyone I have ever met, he did not ignore the cultural opportunities of New York City. We also shared a strong interest in

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Japanese culture, which naturally extended to love of sushi, and I have fond memories of an early morning foray to the Fulton Street Fish Market to buy a side of tuna.

Adrian has joined the laboratory of Professor Jennifer Doudna at Yale University, where he is studying the structure and function of an RNA molecule that acts as chemical catalyst. It has been a most stimulating experience to have Adrian in my laboratory, and I have absolute confidence that he will have a tremendous career.

—Stephen Burley

Pierre Gönczy

Pierre started with what was only an idea and shaped it into a whole experimental system. The work was collaborative and fun.

In his nonscience incarnation, Pierre is an accomplished photographer, and has been a very responsible member of the RU community. He played a conscientious role in the Outreach program, assisting in workshops for high school students and teachers.

We will all miss Pierre tremendously—and for reasons other than the loss of really great Swiss chocolate, which probably we owe to visits from Pierre's parents, more than to him.

Later this fall, Pierre will join Tony Hyman's Laboratory at the E.M.B.L. in Heidelberg, where he will explore aspects of nuclear migration and cellular asymmetry.

—Stephen DiNardo

Heidi Greulich

A Princeton graduate, Heidi Greulich joined our lab to study the function of oncogenes in cell transformation. The oncogene most extensively analyzed by Heidi was *crk*, the oncogene of CT10 virus—the virus isolated by Albert Claude in the 1930s here at Rockefeller.

Heidi took charge of solving the question as to whether the Ras-MAP kinase pathway, which is a common pathway stimulated by growth factors and other oncogenes, is also used in the process of Crk transformation. She did an excellent job. In addition to direct demonstration of an increase in MAP-kinase activity, Heidi showed that inhibitors of farnesylation reaction, a unique modification required for the Ras protein, can block transformation of Crk. These elegant experiments clearly demonstrated that the Ras-MAP-kinase pathway is essential for Crk transformation, a finding that may eventually be useful for prevention or therapy of cancer.

Although extremely busy with her research, Heidi managed to perform on her cello in her orchestra. Heidi's speech is rapid, difficult for the average foreigner to follow; on the other hand, her linguistic excellence was valued by her colleagues. Heidi will go to Harvard to do postdoctoral research with Ray Erikson. We will miss her not only as an English teacher, but as a hard-working colleague and as a friend with whom to exchange opinions on complex issues, conversations that often ended with her characteristic laugh.

—Hidesaburo Hanafusa

Akiko Hata

Akiko Hata came to Rockefeller in 1990 with a master's degree from the University of Tokyo. She was the second student in our program who came directly from Japan, and I am pleased that she completed the program with outstanding research accomplishments.

Akiko's major work in her thesis research was to understand the function of a special tyrosine kinase, known as Csk, C-terminal src kinase. As the name indicates, this enzyme was first discovered in the rat brain by its ability to phosphorylate the src protein kinase. Akiko decided to evaluate the role of Csk directly by disruption of both alleles of this gene on the chromosome. Akiko found that src family kinases are indeed less phosphorylated and, as a result, they were activated in the csk-deficient cells. Moreover, studies with these cells demonstrated that the activation of the src family tyrosine kinase is not sufficient for full activation of B-cell activation signaling, suggesting the existence of other pathways that are also stimulated by antigen.

Akiko arrived well trained, knowledgeable, quick in understanding, and technically superb. She is now also independent. Akiko is open, even by American standards, but remains a modest, compassionate Japanese woman. The distinctiveness of her voice reflects her openness: Akiko's conversation can be heard in the next room. With the departure of Heidi and Akiko, we will desperately need fun activity directors.

Akiko has started her postdoctoral research in the lab of Joan Massague at Memorial Sloan-Kettering Cancer Center. It is nice to hear that her bench is next to that of Marcus Kretzschmar, another of today's graduates.

—Hidesaburo Hanafusa

Erich Jarvis

Erich Jarvis came to my laboratory with an interest in the molecular biology of learning. He also brought a relentless and playful spirit. I tried to turn him away because I did not believe that the study of song learning in birds was ready for a molecular approach. Fortunately, Erich persisted and developed several very successful lines of work. I like best his observation that ZENK, which others have shown to be associated with learning, is turned on in the song system of canaries at those very times of year when these birds consolidate the memories of songs they have developed and rehearsed during the previous weeks. Selective blockade of the expression of this gene prevents the formation of long-term memories. It now seems that the song system of birds may, after all, be a useful system in which to study the molecular biology of how auditory and motor experience are converted into stable long-term memory.

In sum, Erich's thesis is seminal. Two other RU scientists—Miriam Rivas, who happens to be Erich's wife, and Claudio Mello—gave Erich continuous help and encouragement. Erich will spend the next year as a postdoctoral fellow here, completing projects, publishing results, applying for patents, and regaling us with his creative mind and contagious mirth.

—Fernando Nottebohm

Susie Jun

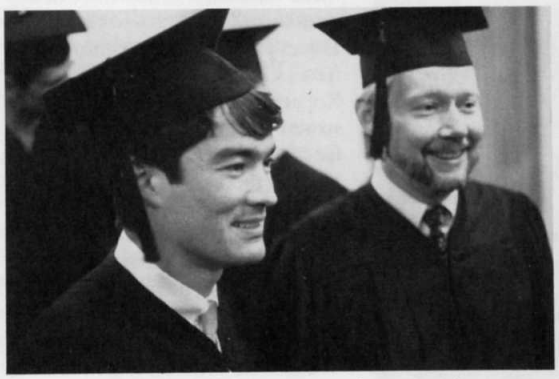
In attempting to describe Susie, I must refer to one of my young children's videos, *Snow White*. Not that Susie reminds me of Snow White; no, she reminds me more of Grumpy! However, just as Grumpy was really a nice guy underneath, Susie always helped all of us: When one had an experiment that does not work, he or she went to Susie; late at night, when one did not know how to do something, we knew that Susie was here and knew it all.

Scientifically, Susie's contribution is the source of the work of others in the lab, and her contribution will be felt for many years. In a word, she has brought us to an understanding of how a multifunctional transcription factor works, using alternate domains to perform different functions.

She returned to medical school

Michael Dames

A toast. **Graduate Pierre Gönczy (*second from right*) celebrates with President Torsten Wiesel (*left*) and his father at the reception for graduates and their families and friends, held the night before convocation at the President's House.**



Dressed for success. **Awaiting the convocation ceremony in the robing room were graduates (*left to right*) Mark Wurfel, William J. Swiggard, and Heather Cameron.**

three weeks ago, but I guess she misses us as much as we miss her, since she has already come back twice to the lab. During Susie's years in graduate school, we got the impression that she did not really want to return to medical school. I only recently understood her commitment to patients, and that all this Ph.D. work was in fact to allow her to be a good doctor, a new kind of doctor. If Susie decides to become a doctor, she will be an exceptional one, caring about people, about their souls, their bodies, the organs, the cells, and the molecules behind the sick person in front of her.

—Claude Desplan

Marcus Kretzschmar

Marcus was born and educated in Germany, where his undergraduate and early graduate studies provided a strong background and research experience in biochemistry and molecular biology.

Marcus came to the Rockefeller in 1990 and, luckily for me, expressed an interest in joining my laboratory to study the regulation of gene expression in animal cells and viruses. Having displayed an attraction for the cold room where our critical biochemistry is done *and* a discriminating taste for sushi, it was clear that he was destined for success in our laboratory and he was eagerly accepted.

Remarkable success followed. Using HIV as a model genetic unit, Marcus played a key role in the identification, purification, molecular cloning, and characterization of a novel group of proteins (coactivators) that are necessary for the function of a variety of gene-specific factors in activating cognate target genes. This outstanding work, chronicled by a half dozen publications (four as first author) in prominent journals, added to our understanding of genetic regulation in animal cells and set the stage for studies here and elsewhere.

On a more personal note Marcus has contributed to the spirit of the laboratory. Apart from being a most congenial and helpful lab worker, he participated in everything from laboratory and barroom discussions to our soccer games.

Marcus will pursue postdoctoral studies with Joan Massague at Sloan-Kettering.

—Robert Roeder

Carlos Lois

Carlos came from Valencia, Spain where he completed medical school earning the national medical award. In the best tradition of explorers from the south Iberian Peninsula, Carlos is a determined and stubborn individual.

Very soon after arriving at Rockefeller, his philosophy became "time away from the bench taking courses is wasted time for research." He plunged into the lab. On weekends and late at night he would convert it into a jazz playhouse. You would find him whirling around, testing challenging hypotheses. Carlos' thesis demonstrated that subventricular zone cells in the adult brain can give rise to new neurons. Carlos then went on to show something equally surprising: most of these cells don't die or give rise to glial cells as many papers had suggested, but instead become neurons in a distant location within the adult brain. For this, neuronal precursors engage in a long journey that is accomplished in an unprecedented way. Cells use each other as guides and substrate to form long chains, much as army ants use each other to guide their excursions through the rain forest. This is a new mechanism of migration for neuronal precursors. These findings are helping develop new approaches for brain repair and suggest an unprecedented flexibility in the adult mammalian brain.

Carlos will do a postdoc at M.I.T. with David Baltimore. His most recent slogan is: "Boston is to New York what elevator music is to jazz." I will miss Carlos and the excitement that he infuses into research.

—Arturo Alvarez-Buylla

Masaki Oishi

Both of Masaki's parents worked in the biomedical profession: Masaki's father, Michio Oishi, is director of the molecular biology department at Tokyo University; Masaki's mother, Akiko Oishi, was a dentist. In college, Masaki followed his parents into biomedicine, majoring in biochemistry and biophysics. Subsequently, Masaki joined our M.D.-Ph.D. program. Masaki's doctoral research focused on the regulation of the phosphorylation and processing of a protein involved in the development of Alzheimer's disease. His contributions were distinguished. I am sure he will go on to a career in biomedicine that we will all be proud of.

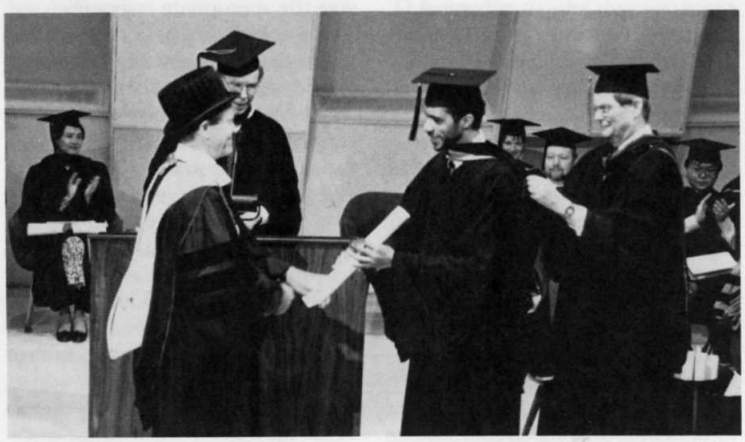
While in the laboratory Masaki pursued his other passion—computer games. We had the best computer games on campus. Masaki also pursued his passion for Yumiko, who, to everyone's surprise but mine, agreed to become his wife. Masaki and Yumiko have been married four months, and Masaki has been steadily gaining weight.

—Paul Greengard

Gregory Pelts

Gregory Pelts's route to this convocation was unusual. He arrived in this country as a refugee from Russia in 1991, with a candidate's degree from the University of Leningrad, but no job and no prospects. He was faced with a choice—he could have pushed a wheelbarrow on Orchard Street, but he settled instead for science.

He set about calling local universities, looking for faculty working in string theory. Somehow, he got my name. My response was cautious, because physics does seem to attract more than its fair share of cranks, but I nonetheless invited Gregory to attend our seminars. This he did, and he showed himself to be a very accomplished scientist.



The moment. **Erich Jarvis accepts his diploma from President Wiesel.**

We ended up admitting him as a student, though it was far less than he deserved.

Gregory attacked a big question head-on. He chose to address the problem of deforming conformal field theories. It amounts to seeking the equations that describe all physical processes in a world governed by superstring theory, which in turn is our best bet for a fully unified field theory. I and collaborators had figured out how to make very small deformations, but, when we tried to make these deformations bigger, we ran into severe problems and our program crashed and burned. Gregory decided we were looking at this problem the wrong way. He reformulated it and solved it, reinventing several significant mathematical tools along the way. This truly was a tour de force.

I learned a great deal from Gregory, and it was a privilege to be his advisor.

—Mark Evans

William Swiggard

Some people choose at an early age the pursuits that will occupy their lives. All of us, Mr. Rockefeller, are grateful that you decided early in your career to make this institution an object of your attention and abilities. My student Bill Swiggard began as an actor. He only became captured by science when he was forced to earn money—by delivering specimens to a pathology lab. Fortunately he decided to have a look at what was happening to those specimens. He then set his life upon another track.

He trained rigorously in biochemistry, then joined our M.D.-Ph.D. program. Bill did not forsake his skills in the performing arts, however. Bill not only communicates, he captivates, so much so that I wanted to charge admission to his presentations at journal clubs and lab seminars. Happily, Bill Swiggard also found a match for his gifts in the practice and presentation of science: his wife and fellow M.D.-Ph.D., Una O'Doherty.

Bill's thesis provided insights that no one had foreseen. He decided to characterize a molecule whose function in the immune system was unknown. It took Bill's range of talents to isolate this large sensitive molecule, then he worked closely with Michel Nussenzweig and Wanping Jiang to clone it. As a result we now have a totally new receptor for antigen, which very likely presents self- and foreign antigens to the immune system by recognizing their attached sugars. As Jackie Gleason, a member of Bill's earlier profession, put it: "How sweet it is!"

—Ralph Steinman

Fei Wang

Fei Wang joined my laboratory in 1990. He almost immediately got involved in computer calculations on the diffusive motion of a point particle on lattices, whose sites are randomly occupied by deterministic scatterers, which force the particle to move in a different direction than it moved before.

Fei has, in fact, a nose for discovering new phenomena. He has worked hard, investigated a great number of different scattering rules, and found a wealth of interesting new behavior. His work has inspired some leading mathematicians to prove some theorems about these new phenomena, and such popular magazines as the

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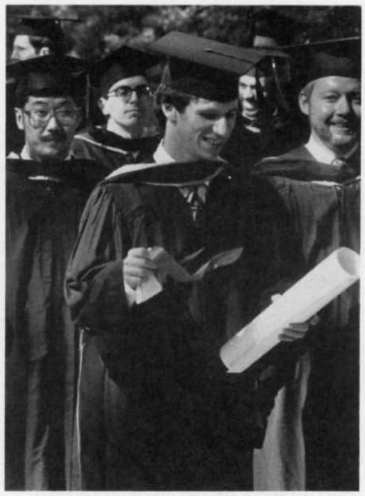

The ever-curious scientist. **Gregory Pelts unrolls the sheepskin after the ceremony.**

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Mathematical Intelligencer and *Scientific American* have taken notice.

After graduation, Fei will embark on a new career in biology, doing experiments and theory on the motion of ions through membranes with T.-C. Hwang, a former postdoc and assistant professor at Rockefeller, now at the University of Missouri, Columbia.

Fei was one of the most pleasant, active, and mature students I have had. He is also my fifth collaborator who has gone into biology. This demonstrates to me that there are at present areas in biology amenable to collaborators with a physics background. I have no doubt that Fei will be one of the good ones amongst those.

—E.G.D. Cohen

Daniel C. Weinstein

It is in the spectacular new field of developmental genetics that Dan Weinstein focused his considerable energy and talent. When Dan started, he decided that two transcription factors, both of which had hinted "we are important early," were ideal targets for the new technology that can knock out a single mouse gene. Wishing to knock out a gene is easy; doing it is not. But Dan worked as a partner with William Chen, a postdoctoral fellow, and together they succeeded beyond our wildest expectations. Mice were deprived separately of each of these two different genes, and defects arose in the developing embryos.

One gene, HNF-4, hepatocyte nuclear factor 4, was required for a visceral endoderm function—the first clear proof of a required function for this tissue. The second deleted gene, HNF-3, gave an even clearer result: no notochord appeared. This mystical structure, the notochord, appears early in all vertebrates, then disappears; it was thought to be important for triggering the axial nervous system. Dan's experiment proved this beyond any doubt: mice lacking only the HNF-3 gene had no notochord and no axial nervous system developed.

These are wonderful experiments—exciting when they are done and productive of facts that will henceforth be pillars of knowledge in how vertebrate embryos are formed. Dan is remaining at Rockefeller for an additional year, working with Ali Hemmati-Brivanlou. During this year, Ann, Dan's at least equally talented wife, will complete her thesis in English literature at New York University.

—James Darnell

Mark Wurfel

Mark Matsuo Wurfel is a rock-climber, gymnast, marathoner, and extremely talented young scientist. In the last four years, Mark tackled a challenging scientific problem with trademark athleticism. Mark explored how blood proteins neutralize endotoxin and block its effects on cells. He soon showed that a protein called LBP works along with lipoprotein to neutralize endotoxin. This finding was revolutionary because LBP was known to the world as a protein that did the exact opposite job—it enhanced responses to endotoxin.

Mark engaged in mental gymnastics. How could one protein, LBP, both enhance and inhibit a cellular response to endotoxin, and what is the logic behind this apparent paradox? In collaboration with Eric Hailman, another excellent student, Mark showed that LBP facilitates two sequential lipid transfer reactions. As a consequence, endotoxin has a strong but short-lived ability to stimulate cells: A bacterium in tissue will cause a response in nearby leukocytes, but endotoxin that escapes into the bloodstream will be neutralized before it can affect cells in other parts of the body. This beautiful mechanism allows localized responses to bacterial infection. Dysregu-lation of this mechanism might allow the uncontrolled responses to infection seen in endotoxic shock, a syndrome that claims 100,000 American lives each year. Work is now directed to applying these findings.

In his thesis work, Mark showed the endurance of a marathoner. Entering the lab with a degree in economics, he graduates today as one of the most thoroughly knowledgeable students I have seen. Mark will stay an additional year to knock out the LBP gene in mice and definitively test some of his hypotheses. He will then complete his medical training at Cornell.

—Sam Wright

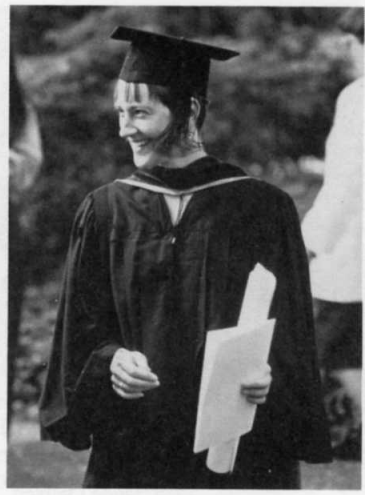
Zhong Zhong

The exceptional young scholars from China who come to our labs have greatly benefited our graduate program and thus the university. Zhong Zhong, a native of Shanghai and graduate of Fudan University, earned uniform superlatives in his university and national examinations.

Soon after Zhong began at Rockefeller, he became interested in our work on how cells recognize and respond to signals that they receive from polypeptides, to which they are constantly exposed in the circulation and to which they must give the appropriate response. These signals and responses are critical to development and to maintaining adult tissues.

We had established the beginnings of an understanding as to how the interferons work: IFN binds to a surface projection, a receptor, which then changes chemically and activates a latent transcription factor, which goes to the nucleus and directs gene activity. Our intuition was that this pathway was too beautiful and sensible not to be used by polypeptides other than IFN, so Zhong set out to find "family members." He found two. We now can state, due in large part to Zhong, that our newly discovered signaling pathway is a very common means of communicating between cells.

Nearing the end of his graduate work, Zhong wanted to leave New York, but when he went to visit



Pride and joy. **Hood in place, diploma in hand, Heidi Greulich beams.**

Richard Axel's lab at Columbia University, he decided that it was too interesting to miss. I'm giving 10-to-1 odds he'll make important advances in neurobiology with Richard.

—James Darnell

Chen Zong

One of the most active research areas in cell biology in the last decade has been the mechanism of signal transduction by growth factor and its receptors. Chen's major task was to define how the Eyk kinase transmits signals and why those signals cause cell transformation.

To make a long story short, he found that the viral Eyk kinase activates the JAK-STAT pathways, rather than the conventional Ras-MAP-kinase pathway. The JAK-STAT signaling pathways were newly discovered pathways that can be stimulated in response to many cytokines, including interferon, and large parts of this discovery were made by Professor James Darnell and his colleagues one floor below us. With their help, Chen demonstrated for the first time that the oncogenelike *eyk* uses the JAK-STAT pathway to cause tumor formation. In addition, helped by Avery August, a postdoc, Chen convincingly showed that formation of dimers of the transmembrane kinases is critical in allowing phosphorylation of themselves intermolecularly, and further enhancing the kinase activity.

Chen's work did not proceed smoothly as first. He did a remarkable job of keeping his smile. He was certainly a hard worker, but he also has a strong spirit that never gave up. Once he grabbed the right subject, his productivity was fantastic. I am extremely pleased at his success, and am glad that he has agreed to stay another year to finish a number of ongoing projects.

–Hidesaburo Hanafusa

Managing the multitudes

Population expert suggests ways to curtail global population growth

Margaret Catley-Carlson, president of the Population Council, gave a talk entitled, "Will the Population Equation Change in the Post-Cairo Conference Era?" at the Zanvil A. Cohn Forum on Health Affairs Mon., May 1. Below is an excerpt from her talk, prepared by News&Notes.

One of the most remarkable aspects of the International Conference on Population Development held in Cairo, Egypt in 1994 was the acceptance of family planning. For the previous two conferences, the world community could not mention it without footnotes, qualifiers, and parentheses of all kinds. For the first time, at Cairo, we as a community talked about family planning as one of the components of better health for people.

This amounted to a very real change in worldwide appreciation of the population issue. So, what will be different in the population world after Cairo?

We're at 5.7 billion people now. Some experts project a doubling of world population, if it grows at the present rate, by the end of the next century. An achievable goal is the stabilization of population levels by the second half of the next century; those who wish to decrease global numbers are dreaming.

Population is much, much more than family planning; fertility is not simply a function of contraceptives. The world has taken a real and significant step toward the realization that demographic and development objectives will not be reached without taking into account the primary importance of the situation of women and girls, and their social and reproductive health needs as well.

What are the domestic policy changes needed to hasten demographic transition, based on this realization? Based on the conference and on Population Council research, population policy after Cairo should have three components: to meet unmet need for contraception through better family planning services; to alter through education and economic change the social conditions that lead women to prefer large family sizes; and to foster later marriage and postpone first births, also through education.

Need for contraception

Contraceptives now reach over half of the world's women. Twenty-seven countries in the world have had declines in birth rate of 25 percent or more in the last 20 years. The global fertility rate has dropped from 6.0 children per family to 3.4.

Population Council President Margaret Catley-Carlson spoke at the final Cohn forum of the academic year.

And yet an additional 120 million women who would have liked to postpone or forgo more children do not have birth control available to them. This is a global opportunity. If these women could use contraceptives, 25 percent of pregnancies now taking place would be avoided. Child death would decline, as would infant and maternal mortality. Contraceptive prevalence could rise to 60 or 65 percent; 75 percent is about what we need to reach population replacement levels. And just by meeting this unmet need we could limit the global population level at about 8 billion, rather than the projected 10.

Incentives for lower fertility

Governments should provide enabling policies that foster good family planning programs. Providing quality contraception services to meet this need is obviously the first line of policy action. I believe if this demand were met in this way, the demand would grow.

But even after we've met this demand, we're still less than one-third of the way to population stabilization. Fertility would still be higher than the replacement level of two births per family because desired family size is still higher, between 2.6 and seven, in virtually all the developing countries. These preferences, and the social and economic insecurity that underlie them, are fundamental causes of high birth rates.

What can be done to affect change in the desired family size? We have to create conditions for families and women to want and seek a lower number of children. We need to get girls into school by the end of this millennium.

Women's wages rise by 10 to 20 percent for every year of schooling. Four years of school boosts farmers' annual productivity by about 9 percent. Finance ministers around the world must become attuned to the fact that women who are better educated change the economic outlook for their societies, as well as the demographic outlook. The World Bank and the International Monetary Fund have to start safeguarding this element in the adjustments to their assistance programs. Concentrating on girls' education is beginning to happen; it is not *terra incognita*. But it needs a major policy push to make it happen entirely.

We also have to ensure better access to credit for women and better entry into the cash economy. Wouldn't it make sense to you if you were a woman living in a country where you had a 60 percent chance of being widowed by the age of 45 to have a lot of children, as an insurance policy? If you could only inherit through living sons, wouldn't it make sense to have two? And to get two sons, mathematically, you need four children.

If a woman does not have access to the cash economy and to some way of making a living and having some kind of security other than through her family, her chances of choosing a higher fertility pattern are greater.

So we have to ensure this entry and access. We have to make policy decisions to encourage existing financial institutions to find affiliations with microcredit enterprises, in exchange for which they would earn tax advantages. This is not beyond the realm of possibility. Many organizations around the world use this microcredit model; now we just need to link them with major financial institutions.

In addition, increasingly well-educated women have the number of children they want—not necessarily the number we'd want them to want, but the point is that they are able to judge and adjust that number in accord with family circumstances. One implication of this is that we have to continue to emphasize the need to reduce infant mortality rates.

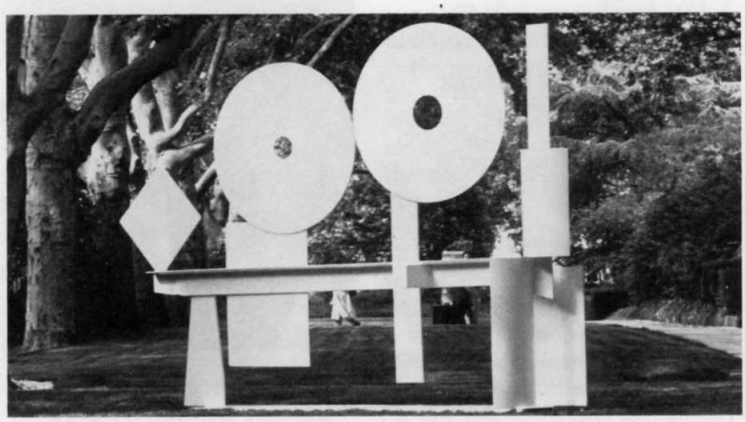
Encouraging later first births

Even if we met unmet need for contraception and reduced fertility rates to 2.1, global population would still increase to 7.3 billion. But, if the first birth in all developing countries could be delayed by five years, global population would stabilize at 6.1 billion. In most countries of Africa, women with seven years or more of schooling marry five years later than women with no education. In just about every country, a woman's age at first marriage is increasing, and education will cause it to increase more than anything else.

Policies and law on later marriage are essential, but unenforceable if they don't make sense. Later marriage could have as significant an effect on population as the introduction of many new contraceptives. Teenage pregnancy has a demographic effect as well as a devastating human effect here and in many societies. And we are now about to have the largest generation of teenagers that has ever been on this planet.

These are the three policy imperatives that have to follow Cairo. None of this is overly complex. These things can be worked through by adjusting policy frameworks over time.

Primo Piano I



On the lawn east of the Graduate Students Residence is *Primo Piano I*, created by the American sculptor David Smith (1906-1965). C&M Arts has loaned it to Rockefeller for a year.

Chair elected and four new members welcomed to Academic Council

At the meeting of the Academic Council Tues., June 20, Professor Mary Elizabeth Hatten was elected to chair the Senate and its Academic Council. The new council members for the 1995-96 academic year are: Professors Stephen Burley, James Darnell, and Albert Libchaber, and Assistant Professor Robert Darnell, who was elected by the junior heads of lab.

The Academic Council, which represents the faculty on matters of interest to the university, is composed of 12 faculty members—nine senior and three junior heads of lab. Members serve three-year terms. Continuing council members are: Professor Jan Breslow; Assistant Professor Ulrike Gaul; Professors Charles Gilbert, Nathaniel Heintz, John Kuriyan, and Peter Model; and Associate Professor Sanford Simon. Outgoing members are: Professors Emil Gotschlich, chair; David Gadsby; Konstantin Gouli-anos; and Associate Professor Michel Nussenzweig.

Trustees

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the life processes of cells. Libchaber received his Ph.D. in 1965 from the Ecole Normale Supérieure. Among his many honors, he has received the Wolf Prize.

Steinman came to RU as a postdoc in 1970. Among other projects, he studies antigen presenting cells in TB and AIDS. Steinman has been a Leukemia Society Fellow, an Irma T. Hirschl Fellow, and an established investigator of the American Heart Association.

New faculty appointments

Friedman earned an M.D. from Albany Medical College of Union University in 1977 and a Ph.D. from RU in 1986. He is associate investigator of the H.H.M.I. Friedman's lab isolated and cloned the *ob* gene, which plays a central role in weight control in mice, and its human homologue, a finding published in *Nature* last December.

Muir received a Ph.D. in bioorganic chemistry from the University of Edinburgh in 1992. He comes to Rockefeller after a postdoc at the Scripps Research Institute. Muir won scholarships and fellowships, including a postdoctoral fellowship from Amgen Corp.

Ravetch studies immunoglobulin receptors (FcRs) and the genetic basis for immune evasion by the human malaria parasite. Ravetch came to Rockefeller as an M.D.-Ph.D. student. Working in the laboratory of Professors Norton Zinder and Peter Model, he earned his doctorate in 1978, then completed his M.D. in 1979 at Cornell University Medical College (C.U.M.C.). He did postdoctoral work at the National Institute of Child Health and Human Development with Philip Leder. He currently holds several titles at Memorial Sloan-Kettering Cancer Center and is professor at C.U.M.C. A Pew Scholar, Ravetch has also won the Irma T. Hirschl/Monique Weill-Caulier Trust Career Science Award, among others.

New trustees

Jeffrey Epstein is president of J. Epstein & Co., a private holding company. After studying physics at Cooper Union, he joined Bear Stearns, where he was a limited partner until 1981. Epstein serves on the advisory board to the Interlochen School for Music and as director of the Wexner and Heritage foundations.

Eric Kandel, university professor at the College of Physicians and Surgeons, Columbia University, joined Columbia in 1974 as founding director for the Center for Neurobiology and Behavior. He became senior investigator in the H.H.M.I. in 1984. Kandel has received the National Medal of Science, the Albert Lasker Basic Medical Research Award, and the Harvey Prize of the Technion in Israel.

Nancy Maginnes Kissinger earned a bachelor's degree from Mount Holyoke College and completed course requirements for a Ph.D. at the University of California, Berkeley. Kissinger serves on the board of overseers of the Nelson A. Rockefeller Institute of Government at SUNY, Albany and is a trustee of the MacKay-Shields Mainstay Series Fund and Tax Free Bond Fund, the Animal Medical Center, and The Masters School.

Potpourri

Spraying

Weather permitting, the trees and shrubs on campus will be sprayed Sat., June 24 from 6:00 A.M. to noon. The Grounds Department recommends that those on campus that day stay out of direct contact of the spray, close windows, turn off air conditioners, and keep pets inside. The rain date is Sat., July 8. For more information, call James Sullivan, x8001.

Seminar

Mordechai Sokolovsky, Harry and Abe Sherman Chair in Neurobiochemistry at Tel Aviv University, will discuss "The Endothelins: Receptors, Signal Transduction and Medical Relevance" Mon., June 26 at 11:00 A.M. in Weiss 911.

Clinical Research Seminar

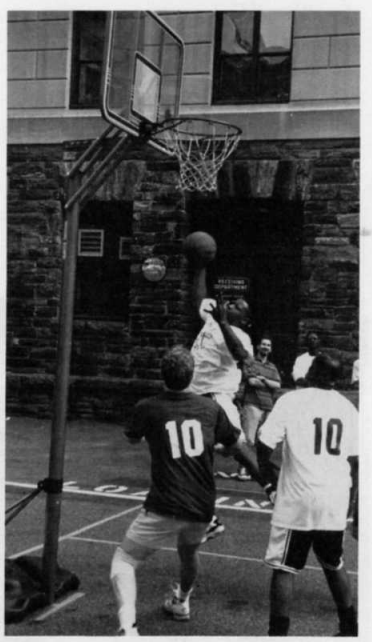
Gil A. Cu, clinical scholar and research associate in the Zabriskie lab, will discuss "Streptococcal Pyrogenic Exotoxin B in Post-streptococcal Glomerulonephritis" at the Clinical Research Seminar Wed., June 28 at noon in Nurses Residence 110B.

Health and Wellness Lecture

Steven K. Magid, associate professor of clinical medicine at the Hospital for Special Surgery and New York Hospital, will discuss "Lyme Disease: What We All Need to Know" at the Health and Wellness Lecture, Thurs., June 29 at noon in Caspary Auditorium. All are welcome.

Dining room

The Abby dining room will close Fri., June 30 and reopen Mon., Sept. 11.



Tony Smith, porter at Scholar's Residence, grabs a rebound for his team, the X-Men, who won RU's Hoop It Up basketball tournament.

MassMutual claims

Beginning Sat., July 1, MassMutual will transfer claim processing and customer service to the Bolingbrook, Illinois Regional Service Center, (800) 404-3377. For further information, contact the Personnel Office, x8300.

July holiday

Monday, July 3 has been added to the university's holiday schedule.

Grants deadline

All N.I.H. grant applications must be received Mon., July 3. The university mailroom will be closed this day. Quick offers a pick-up by midnight for a 9:00 A.M. next day delivery at half the cost of same day service. For further information contact the Mail Room, x8296.

Summer in the city

The Abigail Adams Smith Museum, 421 East 61st Street, is sponsoring summer events Thursday evenings through July. An art historian will present a free slide lecture on the changing New York cityscape Thurs., June 29. A dulcimer player will sing old American ballads Thurs., July 6. For information, contact the museum at 838-6878.

New high speed dial up

Computing Services is offering a new service for RU Macintosh and P.C. users. High Performance Remote Access provides access to the Rockefeller network and the Internet from off campus, allowing the use of Eudora, Netscape, and other network applications. For information on computer requirements and costs, contact the consultant, x8940.

Honors

Professor Jules Hirsch has received the 1995 Joseph B. Goldberger Award in Clinical Nutrition from the American Medical Association, an award of appreciation from the National Institutes of Health for serving on the National Task Force on Prevention and Treatment of Obesity, and two certificate awards from the American Society for Clinical Nutrition.

Award

Professor Attallah Kappas received the University of Chicago's Professional Achievement Citation at the university's 1995 alumni reunion this month. Kappas received an M.D. with honors from the university in 1950.

Honorary degree

RU trustee John Whitehead received an honorary degree from Harvard University last month.

News&Notes schedule

Weekly publication of *News&Notes* will resume in September.