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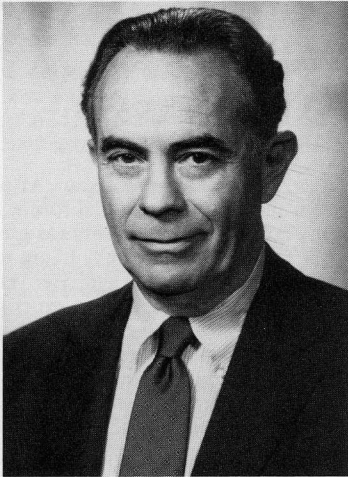
June-July 1987

Volume 18, Number 5

James G. Hirsch 1922-1987

James G. Hirsch, a leader in cellular immunology and physiology at Rockefeller for 30 years, dean of graduate studies at the University from 1972 to 1980, and editor of *The Journal of Experimental Medicine* from 1963 to 1981, died of cancer on May 25 at the age of 64. Since 1981, he had been serving as president of the Josiah R. Macy, Jr. Foundation.

Born in St. Louis, Missouri, on October 31, 1922, Dr. Hirsch received a bachelor's degree from Yale University, which later elected him a trustee, and an M.D. from Columbia University. He came to Rockefeller in 1950; his early research on tuberculosis was conducted in the laboratory of the late René Dubos. His studies revealed that with proper chemotherapy, patients did not require the prolonged bed rest in sanatoria traditionally prescribed for the disease, a finding that radically simplified and accelerated treatment.



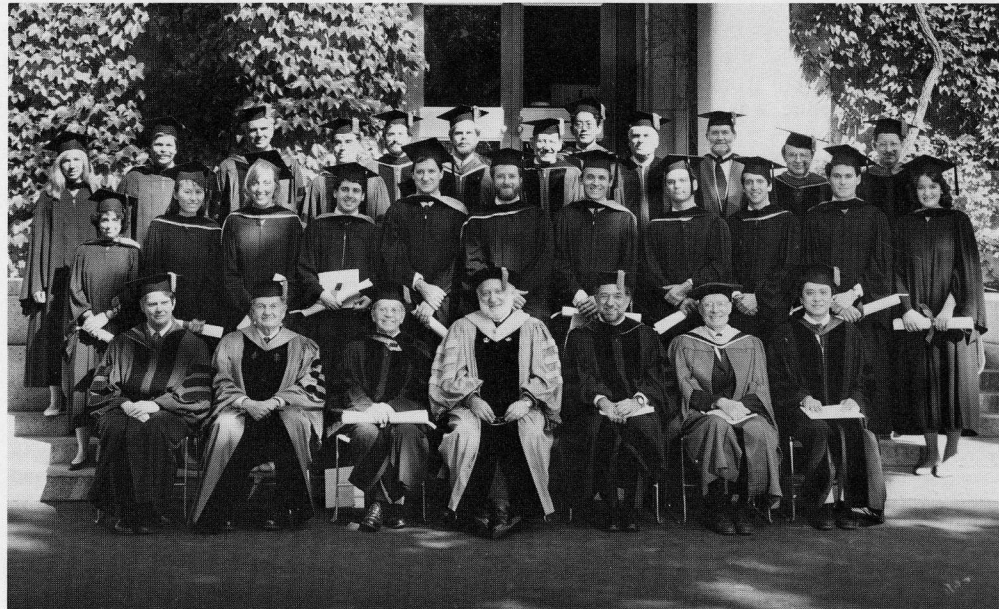
James Hirsch

Through most of his career, Dr. Hirsch's primary quest was to understand how white blood cells recognize, engulf, and kill invading microorganisms. The advances he contributed were both conceptual and technical, including remarkable time-lapse motion pictures of white cells in action. In the words of his laboratory colleague, Professor Zanvil A. Cohn, "his studies laid the groundwork for all that was to follow."

Dr. Hirsch's concerns as a medical scientist were matched by his interest in advancing medical science education, emphasizing its support during his Macy Foundation presidency.

(continued on page 8)

15 Awarded Ph.D.; Trager Receives Honorary Degree



Front row, from left, Emil Gotschlich, David Rockefeller, William Trager, Joshua Lederberg, Anthony Cerami, William O. Baker, Nam-Hai Chua. On the steps, Ph.D. recipients and their presenters.

Professor William Trager was awarded an honorary doctor of science degree and 15 doctoral candidates received the Ph.D. degree at the University's 29th commencement ceremonies on June 10.

As is the University's custom, the proceedings were limited to talks by faculty presenters who explained the significance of the work of the degree recipients to an audience of colleagues, friends, and families of the honorees. The degrees were conferred by President Lederberg.

Dr. Trager, who was honored for his achievements in protozoology, insect physiology, and tropical medicine, was presented by Professor Anthony Cerami, head of the University's laboratory of medical biochemistry.

Dr. Trager's contributions to science span more than half a century, all of it spent at Rockefeller. Among them, he explored the nutritional requirements of disease-bearing insects and the structural relationship between malaria parasites and their host red cells. He developed a method for cultivation of one of the principal parasites of trypanosomiasis in cattle, the sleeping sickness that decimates food herds in Africa. In 1976, he achieved the first test tube cultivation of the parasite responsible for human malaria, a

key step toward vaccine development against the most prevalent disease in the world.

A native of Newark, New Jersey, he re-

(continued on page 2)

John H. Northrop 1891-1987

Professor Emeritus John H. Northrop, Nobel Laureate and a member of the Rockefeller scientific community from 1915 to 1956, died on May 27 in Wickenburg, Arizona, at the age of 95. A feature on his work will appear in the October-November issue of *News and Notes*.

Bunny in Robin Hood's forest in the Children's School play. See photo, page 6.





ABMAYR

15 Awarded Ph.D. (continued from page 1)

ceived a B.S. in 1930 from Rutgers University, which later awarded him an honorary D.Sc., and a Ph.D. from Harvard in 1933. He was elected to membership in the National Academy of Sciences in 1973. Other honors include the 1980 Darling Medal and Prize of the World Health Organization for his work on malaria.

As dean of graduate and postgraduate studies, Dr. Cerami also opened the ceremonies. He expressed The University's sadness at the loss from our community of James G. Hirsch, who died on May 25. Dr. Hirsch served as dean from 1972 to 1980. A moment of silence was observed in his memory.

Professors Nam-Hai Chua and Emil C. Gotschlich served as marshalls, placing the University's blue and gold-trimmed hoods on the graduates' shoulders. Also participating were Dr. William O. Baker, chairman of the University's board of trustees, and David Rockefeller, chairman of the board's executive committee.

Condensations of the presenters' remarks follow. The degree recipient's name appears first.

SUSAN M. ABMAYR

Robert G. Roeder

The flowering of molecular biology in the past decade has resulted in detailed information on the organization and structure of genes, and especially the DNA elements necessary for their transcriptional regulation. Until very recently, however, very little was understood about the nature and mechanism of action of the protein factors that actually mediate the regulation. When Susan Abmayr entered the laboratory, we had already succeeded in getting cloned genes accurately transcribed in cell-free systems in response to the basic transcription factors common to most cells, but we were just beginning to tackle the problem of getting these systems to respond to various regulatory factors. Recognizing the importance of this problem, and accepting the challenge intrinsic to it, Susan chose to study the action of a class of DNA virus-encoded regulatory proteins known to activate various viral, and some cellular, genes. Her analysis focused on the activation of an adenovirus gene by the key regulatory protein of pseudorabies virus (a herpes virus), since the Nevins laboratory had shown that this protein was considerably more effective than the homologous (adenovirus) regulatory protein in activating adenovirus genes *in vivo*. Paying meticulous attention both to biological aspects of host cell-virus interactions and to biochemical properties of the cell-free transcription system, and being completely undaunted by initial failure, Susan first demonstrated the *in vitro* function of the viral regulatory protein in activating transcription of several mRNA-encoding genes, and then proceeded to study its mechanism of action. The latter studies indicated a mechanism of action that involves a modulation of promoter recognition by one of the basic cellular factors—specifically, the factor that binds to a promoter element (TATA) common to most mRNA-encoding genes. This pioneering work, the first to duplicate the *in vivo* action of known eukaryotic regulatory factors *in vitro*, has dramatically demonstrated the potential of the cell-



BESSEN

free biochemical approach and set the stage for more detailed investigations of other viral proteins, including known oncogene products, and related cellular proto-oncogene products whose mechanisms could be analogous. The imagination, insight, experimental rigor, and commitment Susan demonstrated during her thesis project were a pleasure to witness. She will continue studies of eukaryotic gene regulation as a postdoctoral fellow at Harvard University.

DEBRA BESSEN

Emil C. Gotschlich

Bacteria capable of causing infection as a rule possess molecular mechanisms to anchor to the surface of the cells lining the infection site. Gonococci are no exception and have two distinct adherence factors; i.e. long hair-like projections known as pili, and a class of surface membrane proteins named proteins II. Debra Bessen established *in vitro* models whereby cells originally isolated from human genitourinary tissue were infected with gonococci. She established that gonococci expressing particular proteins II adhered very effectively and then rapidly multiplied. She then sought to define the ligands on the human cells recognized by these proteins II. Generally, such bacterial recognition reactions involve oligosaccharides on the animal cell. However, protein II, instead of reacting with oligosaccharides, bound to many, but by no means all, the proteins in the human cell extracts. Studies with purified proteins indicated that protein II bound avidly and specifically to many proteins. The dilemma of a protein binding very firmly, yet quite discriminatingly, to a large collection of proteins is not unique to this system, but has become a central concern in the study of antigen recognition by T-cells, where a mere handful of histocompatibility antigens each bind a very large number of processed proteins to present them to the T-cell receptor. Debra has become interested in the problems of producing mucosal immunity to infection by streptococci and will be doing these studies with Professor Fischetti as a postdoctoral fellow in our laboratory.

XIAO-JIA CHANG

Gianni Piperno

Xiao-jia Chang came to this University from the Graduate School of the Academy of Science of Beijing, China, with the intent of studying the biology of the cell at the molecular level. After an initial period of training in the laboratory of Dr. Günter Blobel under the direction of Peter Walter, a former student at this university, Xiao-jia changed the focus of her attention from the mechanisms of protein translocation across membranes to an intracellular system of structures called the cytoskeleton. The cytoskeleton is formed by three major components—the microfilaments, the microtubules, and the intermediate filaments—and determines both the shape and movement of a specific cell type. Xiao-jia studied the structure of microtubules and intermediate filaments of vertebrate cells using specific monoclonal antibodies that she had prepared. She performed elegant experiments of microscopy and protein chemistry, discovering that the substructures of axonemal microtubules, called tektin filaments, contain proteins homologous to intermediate filament subunits. Such observation provides the basis for adopting a specialized region of the doublet microtubules as a model for the analysis of microtubule-intermediate filament bonds. These developments and other results of her



CHANG

studies were described in two articles published in *The Journal of Cell Biology*.

Research was only one aspect of Xiao-jia's life on this campus; in fact, she was a kind hostess to many Chinese scientists visiting New York. The fascination deriving from the beauty and the perfections of intracellular structures has continued to influence her decisions. Xiao-jia is a research associate in the Biological Laboratories at Harvard University, where she is continuing the study of the cytoskeleton.

STEPHEN J. CLARK

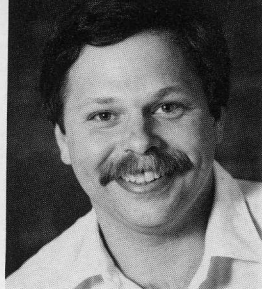
Peter Marler

Stephen Clark came to The Rockefeller with a strong interest in ecology, prowess in mathematic modeling of animal populations, and enthusiasm for studying the behavior of animals under natural conditions. He focused on one of the major problems in evolutionary biology, namely sexual selection, and identified an ideal subject in the common waterstrider. In a long series of ingenious experiments, some in the laboratory and some in the field, he threw light on several classical problems in the evolution of reproductive behavior. He demonstrated the impact of variations in the proportion of males and females in a population upon their reproductive behavior: the importance of sperm storage by females, and the use of extended male coupling to minimize competition by the sperm of other males. As a theoretician, he demonstrated some major errors in previous efforts to apply economic theorizing to understanding the selection pressures to which behavior is subject under natural conditions. With his career as a behavioral ecologist and a mathematical modeller securely launched, Steve is staying at Rockefeller to work in the laboratory of Professor Fernando Nottebohm on problems of mate selection in birds.

LAURA I. DAVIS

Günter Blobel

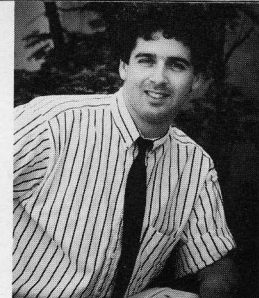
Laura Davis is a native San Franciscan. After graduating from the University of California in San Diego with a B.S., and a one-year stint as a research assistant at Columbia University, Laura entered our Ph.D. program five years ago. Her year as a research assistant gave her a solid experimental background and served as an excellent preparation for the difficult task she chose as her thesis project, namely to break ground with the nuclear pore complex. The nuclear pore complex is a large organelle—about 20 times the mass of the ribosome—associated with the nucleus, or more precisely, the nuclear envelope of all nucleated cells. When Laura started her work, our laboratory had established that the nuclear pore complex consisted largely of proteins. We estimated that there might be as many as 100 different species of proteins associated with this organelle, but none had been identified or characterized. Through ingenious experimental design, patience, and persistence, Laura was able to identify the first couple of proteins of this organelle. Moreover, in characterizing these proteins she discovered that they contain a novel sugar modification which is attached to the proteins within minutes of synthesis, in the cytoplasm and not in the membrane. Laura is also a great sportswoman. She just returned from a bicycle trip through Southern France, cycling from Bordeaux via the Massif Central to Marseille. She is also a runner and can be seen gliding up and down the corridors of our lab faster and more vigorously than anybody else. Laura is staying on in our laboratory for another



CLARK



DAVIS



FISHER

year as a postdoctoral associate to continue work on the nuclear pore complex.

DANIEL Z. FISHER

Günter Blobel

Daniel Fisher was born and raised across the river in New Jersey. He graduated from Swarthmore College with a B.A. five years ago. He then entered the Cornell-Rockefeller M.D.-Ph.D. program, and three years ago he joined our laboratory to do his Ph.D. thesis. He finished his thesis work in a record 2½ years. For his thesis work, in collaboration with Nilabh Chaudhary, a postdoctoral fellow in our laboratory, Dan cloned and sequenced the cDNAs for two structural proteins in the cell's nucleus. These proteins were discovered almost 10 years ago by another graduate student in our laboratory and were termed nuclear lamins. From Dan's work we now know that lamins A and C are identical except for different COOH-terminal tails. Most importantly, lamins A and C showed a striking homology to the large family of intermediate filament proteins which are located in the cytoplasm. Thus, the lamins are the nuclear cousins of the cytoplasmic intermediate filaments. From the recent work of Spyros Georgatos, a postdoctoral fellow in our laboratory, we now know that the intermediate filament proteins that form a skeleton in the cytoplasm are connected to the nuclear lamina that forms a skeleton in the periphery of the nucleus. Thus, Dan's work has greatly enriched our understanding of the structure of the cell. His accomplishments are by no means limited to science. During his graduate studies he continued, on the side, his career as a musician. He is a member of a trio that performed regularly on Sunday mornings at the World Trade Center. Many of us also had a chance to hear him in one of the tri-institutional luncheon recitals. And last, but not least, he got married a few months ago. He is now enrolled in the last year of his medical studies. He is planning a career that will combine molecular cell biology with medicine.

RANDALL C. FURLONG

David J. E. Callaway

Randy Furlong is such a phenomenon at Rockefeller that it is sometimes difficult to remember he is also a student. Nevertheless, he has successfully completed the requirements for his Ph.D. in elementary particle theory, which is probably the most intellectually demanding field in all of science. During the course of his studies he published several noteworthy papers with Professors Bég, Pagels, and myself. He was also a Seitz Fellow. Randy has not contented himself with just doing science, but has become a local legend in the Rockefeller community as well. He has been the longest-serving member of the Student Representative Committee. His efforts on the House Committee of the Faculty-Student Club resulted in the purchase of a VCR and the familiar Saturday night video series. He was also active in the program to recycle newspapers (using his illegally parked car). His friends will remember him for his unique habit of wearing a tuxedo while eating mescale worms at the Cadillac Bar. Moreover, his knowledge of late-night establishments in Queens is unsurpassed. And it will be difficult to forget his most inspirational contribution to Rockefeller miscellany, the Three-Legged Dog joke. After graduation, Randy will start work as a research associate at the Brookhaven National Laboratory. It is too early to predict how he will change Long Island, but we expect that it will never be the same again.

HOWARD A. GUTOWITZ

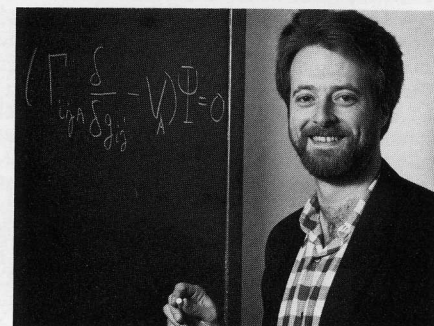
Bruce W. Knight

Howard Gutowitz completed a long and successful project in experimental neuroscience, which resulted in a distinguished publication. He then expressed his desire to do thesis research on the theory of cellular automata. A cellular automaton is a mathematical model; it is a large, orderly array of cells each of which may be colored black or white. The only thing a cell can do is look at its near neighbors, note the color pattern of its neighborhood, and decide whether to change color by a simple rule. All cells do this in step, repeatedly. Different simple rules yield different cellular automata. This economical choice of starting materials gives a simple-looking prescription which nonetheless shows all the same mathematical hallmarks as do very sophisticated and subtle systems of dynamical equations, such as those that model embryonic differentiation, the geographical spread of an epidemic, or the progress of the nerve impulse. Huge computer simulations of cellular automata confirm this close kinship of dynamical behavior. The great hope in the study of cellular automata has been that their apparent simplicity would yield insight into deep structure, and from that insight enlighten the currently obscure behavior of realistic dynamical models which arise in important applications. But as Howard knew when he took up the challenge, cellular automaton theorists have remained frustrated in this hope, and foremost of them have even argued, on the basis of a result from mathematical logic, that the quest for concise theory is hopeless in principle. They further suggest that this hopeless situation may be carried along, with the common family traits, to practical applied dynamics, whose past triumphs may stem from avoiding the hard problems. They suggest the twilight of direct theoretical progress in dynamics is upon us. Against this somber backdrop, Howard's entry in the field shows some heroism, and his research results bring news of good cheer. He assigned probabilities to patterns, and through probability theory showed how the theoretically intractable dynamics of a cellular automaton yields a tractable dynamics of pattern probabilities. Through lucid and brief theoretical formulations, he has accounted in great detail for features that current wisdom suggested could emerge only from massive computer simulations. This exciting work continues at an undiminished pace. In a promising area, he has moved the boundaries of understanding.

LOUIS HERLANDS

Vincent G. Allfrey

Louis Herlands had few doubts about his plans for a career in science. At the age of 15 he was working with Professor H. J. Li at Brooklyn College on the thermal denaturation and circular dichroism of polylysine-DNA complexes. At 17, he entered Yale University and within a year joined Dr. Donald Crothers for studies of the electric dichroism and thermal stability of the fundamental subunits of chromosome structure, the nucleosomes. In 1978 he graduated from Yale, a Scholar of the House, and embarked on a scientific grand tour of laboratories specializing in marine biology. This began at Woods Hole, Massachusetts, and progressed through five laboratories in south Australia and four marine biological stations in Japan. By that time, he was clearly convinced that marine organisms were wonderful objects for study, and that sea urchins, in particular, were a superior form of life—with the good sense to spend it at the beach.



FURLONG



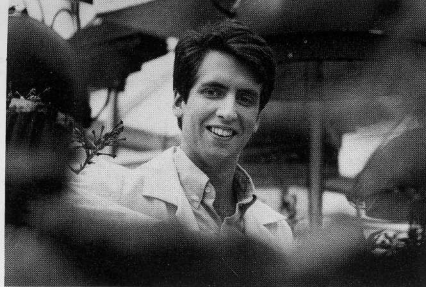
GUTOWITZ



HERLANDS



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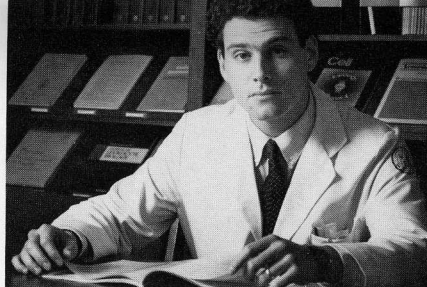
KEITH

His background in chromosome structure, bolstered by research experience in excellent laboratories at Woods Hole and Amherst, was extraordinary. He arrived at Rockefeller with a detailed knowledge of chromosomal proteins and of the methods best suited to their separation and analysis that few professionals in that area could have rivalled. In addition, he made contacts with several outstanding investigators who welcomed his collaboration in studies of the molecular events that follow fertilization of the sea urchin egg. But which of these events would he choose to investigate for his thesis research? When he and I first discussed this problem, he was so eager to try everything that I was reminded of a quote from Stephen Leacock: "The King jumped on his horse and rode off madly in all directions!" His enthusiasm was firmly based on his knowledge of the advantages of the sea urchin as a test organism. Among these are the ability to simultaneously fertilize many thousands of eggs, which immediately begin a program of rapid and synchronous divisions, and the ability to recover the sperm nuclei after polyspermic fertilization of the egg, thus permitting studies of the restructuring of the paternal chromosomes by the incorporation of histones and other DNA-binding proteins donated by the egg cytoplasm. Louis developed sensitive and reproducible techniques for the separation and quantitation of chromosomal proteins. He combined these techniques with immunochemical methods for a systematic study of the program of histone replacements that take place during early embryogenesis. He made the important discovery that the synthesis of a major class of histone proteins—the α -variants—is regulated by the availability (rather than by the *de novo* synthesis) of the corresponding messenger RNAs. The RNAs were already present but sequestered in the egg nucleus where they were nonfunctional. They were released into the cytoplasm after fertilization where they direct the synthesis of the new α -histone molecules that ultimately appeared in the chromosomes at later stages in embryogenesis. Louis is now a postdoctoral associate in the department of biology at Indiana University—far from the sea, but not from the sea urchins.

HILBERT J. KAPPEN

Anthony I. Sanda

Quantum mechanics predicts that there is a small but non-zero probability that two cars colliding head on can run past each other unharmed. More surprisingly, Heisenberg's uncertainty principle tells us that the fundamental law of classical mechanics, the conservation of energy, can be violated when the observation time is limited. So an electron may turn itself into a W boson and a neutrino, a state times heavier than an electron, as long as it turns itself back to an electron within 10-26 seconds. The fact that such transformation is possible influences the property of an electron. Thus, by studying an electron very carefully, one can deduce various properties of the W boson. After nearly 20 years of such study and much anticipation, a W boson, or W, was produced in an accelerator. Its deduced properties have been verified and further details are being studied. Bert Kappen took this technique a step further and speculated: suppose there are yet undiscovered heavy elementary particles that interact with W. If so, their existence will influence properties of W just as the existence of W influences properties of the electron. Can we say anything about the properties of these new elementary particles from the detailed properties of W? This is extremely complicated analysis and there are



LUSTER

only a handful of physicists who can perform its tedious computations. Bert decided to apply the power of symbolic manipulation programs, which became available very recently. This allowed him to do the computation single-handedly. He was able to prove that if a new heavy elementary particle were to exist, and if it satisfied a certain set of conditions, such a particle must be no heavier than about twice the weight of the W boson. This type of result is helpful not only in the search for such particles, but also for a deeper understanding of nature. The second part of Bert's thesis dealt with whether W mass can be computed from basic principles of physics. He has formulated a method to compute the mass within the framework of grand unified supergravity models. The fact that yet another branch of physics, the study of radiative corrections, can be revolutionized by new technology in computer science must have impressed Bert a great deal for he is now deeply involved in computer science research for Philips in his native Holland.

BRIAN D. KEITH

Nam-Hai Chua

Brian Keith joined the laboratory of plant molecular biology in 1982. At that time, several exciting new techniques for studying plant gene function had recently become available. Specifically, it was now possible to transfer isolated plant genes into foreign plant species by exploiting a naturally occurring gene-transfer system. After assisting in the structural analysis of a wheat gene, encoding the small subunit of the photosynthetic enzyme ribulose 1,5-bisphosphate carboxylate/oxygenase (rbcS), Brian used a variety of approaches to demonstrate that this gene was, in fact, active in wheat, and that its expression is regulated by both light and organ-specific factors. Convinced of its activity, Brian introduced the wheat gene into tobacco in order to delineate functional promoter sequences. He was surprised to discover that the gene was not expressed in transgenic tobacco under the control of its own promoter. In an effort to pinpoint the nature of this incompatibility, he found that if the wheat promoter was replaced by a strong viral promoter, multiple wheat transcripts accumulated in transgenic tobacco. These transcripts result from accurate but inefficient RNA processing events. In contrast, pea rbcS transcripts have processed accurately and efficiently in tobacco. Brian extended these results to show that processing of *ia* maize transcript also occurs inefficiently in tobacco. His data suggest that genes and transcripts from monocotyledonous species such as wheat and maize may not function properly in the genetic background of dicotyledonous species such as tobacco and pea: it is possible that the reverse may also be true. Wheat and maize are representative of the cereals, which are likely to be the desired recipients of new traits introduced by genetic engineering. Brian's work has provided an important contribution to our understanding of the types of problems which may need to be overcome to improve crop species through genetic engineering. He will remain in our lab for another year to continue his research as a postdoctoral fellow.

ANDREW D. LUSTER

Jeffrey V. Ravetch

Andy Luster received his undergraduate education at Duke University, earning distinction in zoology through his studies of the cellular interactions determining nerve cell development. Upon arriving for The Rockefeller M.D.-Ph.D. program, his in-



MONTGOMERY

terests were directed toward understanding the complexity of cellular immunity at the molecular level. He quickly allied himself with the laboratory of cellular physiology and immunology, drawn to the Fc receptor studies being carried out by Jay Unkeless. I, too, was attracted by those studies, and had begun a collaboration on defining the gene organization and regulation of this family of receptors. Andy arrived in my lab at Sloan-Kettering one day to learn how to prepare RNA, and to my great delight stayed for four years. He chose a daunting problem: to define a complex cellular phenotype, the activation of macrophages, at the molecular level. Through persistence, elegance, and outstanding ability, he succeeded in establishing an *in vitro* model and identifying genes induced during macrophage activation. Isolation of a gene has become commonplace in today's science; the assignment of a function is far more difficult. In the best tradition of a Rockefeller student, Andy sought out the laboratories where he could gain expertise and insight into the function of a protein whose existence he predicted based on his molecular biological studies. He produced monoclonal antibodies with Jay Unkeless, synthetic peptides with Tom Kaiser, and carried out collaborations with many members of the laboratory of cellular physiology and immunology. These efforts were rewarded by the identification of a secreted protein induced during the cellular immune response. The characterization of this gene and protein has resulted in the realization that a new gene family had been discovered whose members modulate both cell growth in normal and transformed states as well as aspects of the inflammatory response. Through Andy's studies a new area of investigation has been opened, which will undoubtedly prove important in our understanding of basic cellular responses. In addition to these biochemical studies, Andy was equally interested in understanding the molecular signals that activate this gene as a model for studying how surface receptor-ligand interactions result in new cellular phenotypes. Using his *in vitro* model, he had begun to define those genetic elements that respond during the activation of a macrophage. Many students and postdoctoral fellows have been attracted to the efficiency of this approach; Andy's studies have provided ample work for them to study. Like the best of students, Andy brought new insights and approaches into my lab, sharing generously of his superior abilities and intellect. He will be completing his medical training at Cornell University Medical College in the next year.

RUTH R. MONTGOMERY

Carl F. Nathan

Few graduate students have so distinguished themselves by an emphasis on family as has Ruth Montgomery. I'm referring not only to her wonderful, supportive, close-knit clan of relations by birth and marriage, but more generally to Ruth's special ability to create a network of constructive relationships anywhere: in an institution, and among scientists—not all of whom, after all, can match her knowledge of opera or her rapier-like repartee. I soon got used to taking calls for her in my lab: from other students, seeking advice; from the deans office, asking permission to change the windows in the student dorms; from the guards at the 66th street gate, inquiring how party A might get in touch with party B. The campus depended on Ruth to know what was going on and to help it happen smoothly. Ruth's warm working relationships with people here stood her in good stead in her research, where

she asked an important biomedical question that required mastering techniques from several labs. Ruth wanted to know how the macrophages that accumulate in atherosclerotic plaques interact with the lipid-carrying proteins that set the stage for heart attacks and strokes. Scientifically, she saw the Cohn lab as her nuclear family, Rockefeller and Cornell as the extended family, and she called on us all to good effect. Scientific families help one feel sure of one's ground. Ironically, as a scientist, you often have to go it alone, chronically uncertain. However much you learn, your thoughts turn to what you don't understand—there to endure and enjoy a perpetual perplexity, a kind of treasured tumult. The self-confidence Ruth has built up enables her to do this. Ruth will go on to a postdoctoral fellowship at Yale University with Professor Hans Furthmayr.

HONORARY DEGREE WILLIAM TRAGER

Anthony Cerami

In thinking about presenting Professor William Trager for an honorary degree, I was faced with a dilemma. What could I possibly say in a few minutes that would adequately convey 54 years of contributions to the University, to the advancement of parasitology, and to the people he has worked with all over the world? In fact, many of you won't believe that he is a day over 54 years old. I could take a typical approach to presentations of this kind and list his scientific achievements, such as his highly acclaimed success in developing a method for continuous cultivation of the parasite responsible for human malaria, a disease that currently afflicts 300 million people: a method that is ingenious and remarkably simple—so simple it is now used throughout the world, including the Third World, where this disease runs rampant. But that is not all I want to convey about Bill Trager. I could mention the breadth of his scientific knowledge and his prolific writing ability, which communicates the excitement for research in a direct, highly readable style. As a result, when I first read the title of Bill's latest book, *Living Together*, I thought he had become a pop writer. It was only when I read in smaller print "The Biology of Animal Parasitism" that I realized that it was a book on Bill's first love—parasitism. I could mention all the international honors that Bill has received, and how as president of key scientific societies he has long been an esteemed leader in parasitology. But that is not necessarily what I want to say about Bill Trager. I could mention his reputation as a teacher who has established associations with members of his lab which span not years but decades. People who have worked with Bill uniformly agree: he shares information, stimulates ideas, and gives freedom for independent thought and development. But that is not all I want to say about Bill. What I do want to say about Bill Trager is how very rich a man he is. To quote Shakespeare, "He is well paid, what is well satisfied." In that definition of wealth, Bill has a richness that can be envied and emulated. With all of his prestigious accomplishments and honors, what is striking about this exceptional man is that he truly loves his work. And with this dedication has come an unusual persistence and patience to uncover many of the intriguing problems of parasitic relationships. One of the reasons Bill was able to accomplish the difficult malaria cultivation, a problem that had always eluded others, is because his steadfast satisfaction with his work is so intrinsic to his character. In a talk in 1977, soon after this great accomplishment, Bill spoke in his usual humble way about his com-



William Trager

mitment and said simply, "I have always enjoyed growing things." Well, this enjoyment has given us a whole new body of knowledge on parasites and could eventually alter the course of life for the hundreds of millions who are suffering from malaria. Bill Trager's accomplishments are now impacting on a wide international community of scientists who are currently reproducing his procedure. Bill Trager's need to work in an area that gave him so much intellectual satisfaction and fulfillment has in turn given us some of the most important advancements in science. To borrow from Bill's work, I would call this a symbiotic relationship of the highest order. As a fellow New Jersey and Rutgers alumnus, I am particularly pleased to present Bill Trager. At last we have someone in addition to Bruce Springsteen to be proud of.

LIBBE LIPKIN ENGLANDER

(Degree granted in absentia)

The topic of Libbe Englander's thesis was "Acetylcholine receptor clustering and nuclear movement in muscle cells in culture." Her research advisor was Lee Rubin.

ROBERT E. SOODAK

(Degree granted in absentia)

The topic of Robert Soodak's thesis was "The spatial organization of visual receptive fields in the geniculostriate system of the cat." His research advisor was Robert Shapley.

Honors and Awards

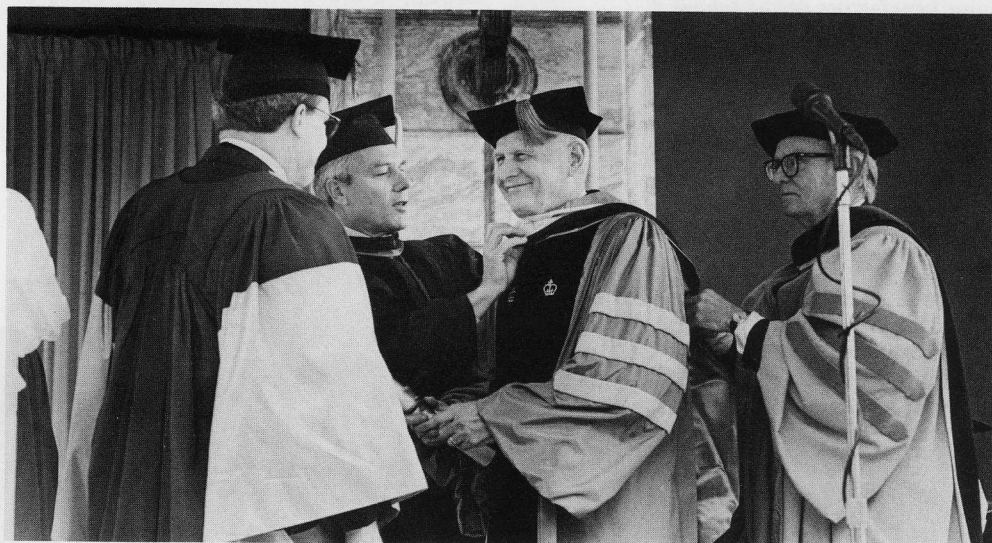
Professor **Jan Breslow**, Biochemical Genetics and Metabolism, was elected vice-president of the American Society for Clinical Investigation at its annual meeting, held May 2-5 in San Diego, California.

Professor **Zanvil A. Cohn**, Cellular Physiology and Immunology, was awarded an honorary doctor of science degree by his alma mater, Bates College, in Lewiston, Maine, at its 121st commencement on May 18.

Patricia Gadsby, medical editor of *Good Housekeeping* and wife of Professor David Gadsby, Cardiac Physiology, was a first place winner of the Seventh Annual William Harvey Awards, sponsored by the American Medical Writers Association, National High Blood Pressure Education Program, and Squibb Corporation.

Professor **Paul Greengard**, Molecular and Cellular Neuroscience, was awarded an honorary doctor of medicine degree by the Karolinska Institute, in Sweden, June 2.

Professor Emeritus **Maclyn McCarty**, Bacteriology and Immunology, received an honorary doctor of science degree from Emory University at its 142nd commencement ceremonies, held May 11 in Atlanta, Georgia. (See photo.)



Professor Maclyn McCarty receives an honorary doctor of medicine degree from James T. Laney, president of Emory University (back to camera), and John M. Palms, the university's vice president for academic affairs, left. Far right, Adjunct Professor Richard M. Krause, dean of Emory University School of Medicine.

Second Founders Ball Celebrates 75 Years of Rockefeller Nobel Prizes



Brooke Astor and David Rockefeller



At the Founders Ball, from left, George Palade, Brooke Astor, Bruce Merrifield, Torsten Wiesel, Gerald Edelman, David Rockefeller, Anne E. Reed, David Baltimore, Christian de Duve, Joshua Lederberg.

In 1912, the first Nobel Prize in Medicine awarded to a scientist working in the United States went to Alexis Carrel, a French surgeon who spent 34 years at what was then The Rockefeller Institute for Medical Research.

In the 75 years since, 18 other scientists associated with Rockefeller have received Nobel Prizes. On the evening of May 5, seven of them—Rockefeller alumnus David Baltimore, director of the Whitehead Institute at

MIT; Professors Christian de Duve, Gerald M. Edelman, Bruce Merrifield, Torsten Wiesel, and George E. Palade (now at Yale) and President Lederberg—were honored at the University's second Founders Ball.

Trustees David Rockefeller and Brooke Astor served as honorary chairmen and Trustee Anne E. Reed as chairman of the benefit, which raised funds to support a postdoctoral fellowship and a clinical fellowship at the University.

"We are delighted that the ball provided a festive occasion for building support for the University and for introducing new friends to its work," says President Lederberg. "I extend the University's thanks to the energetic chairpersons and members of the Founders Ball committee, the charming surprise guest who graced us with song, Miss Peggy Lee, and the many members of the Rockefeller staff who worked so hard to make the evening memorable."

Alumni Briefs

Stephen M. Anderson (1981), assistant professor of pathology, State University of New York at Stony Brook, received the 1987 Young Investigator Award for Cancer Research, presented by the Catacosinos family, major benefactors of the school.

Born April 3 to **George Barany** (1977), associate professor of chemistry, University of Minnesota, Minneapolis, and his wife, Dr. Barbara L. Goldenberg, a son, Michael Jeremy.

Richard E. Zigmond (1971), associate professor of pharmacology, Harvard Medical School, has been awarded a Javits Neuroscience Investigator Award from the National Institutes of Health and a Klingenstein Fellowship in the Neurosciences from the Esther A. and Joseph Klingenstein Fund. The awards are in support of his research on the effects of increased and decreased nerve activity on the regulation of neurotransmitter biosynthesis and on the role of neuropeptides in this process. He is also studying the pharmacology, distribution, and regulation of neuronal nicotinic acetylcholine receptors.

RU Women's Association

A Rockefeller University Women's Association has been started. At a planning meeting on May 12, eleven committees were formed: Welcome and Orientation for New Residents, Community Service, International Cooking, Programs for Teenagers, Walking Tours, Lectures, Conversation Groups (in several different languages), Networking Group, Child-Oriented Group, Cultural Events, Social Get-Togethers.

Each committee has an active schedule for the coming months. Information on events, including an evening tea and coffee party in the fall, will be posted on bulletin boards. The association, whose organizing members include Jill Carter, Audrey Cohen, Alice Gottlieb, Mary Hemperly, Elizabeth Merrifield, Louise Pfaffmann, Ida Trager, and Yumiko Ueno, can be reached at Box 171.

Archives Wins Award

The Rockefeller Archive Center, in Pocantico Hills, New York, administered by the University, houses the records—including 200,000 photographs from all over the world—of the various organizations with which the Rockefeller family has been associated over the past century.

The Center's 37-page guide, "Photograph Collections in the Rockefeller Archive Center," prepared by Archivist Claire Collier, received a 1986 Finding Aid Award for excellence from the Mid-Atlantic Regional Archives Conference, presented at its spring meeting in Baltimore on May 8. The Awards Committee particularly noted "the excellent descriptions and superb typography and appearance of the publication, which contribute significantly to its ease of use."



Members from the cast of the Children's School production of "Robin Hood" on May 29.

Briefs

Professor **David Cowburn**, Organic Chemistry and Physical Biochemistry, presented an invited lecture, "Biochemical Application of Indirect Detection NMR," at the 28th Experimental NMR Conference, held in Asilomar, California, April 5-9.

Professor **James E. Darnell, Jr.**, Molecular Cell Biology, has been elected to the board of trustees of the Worcester Foundation for Experimental Biology.

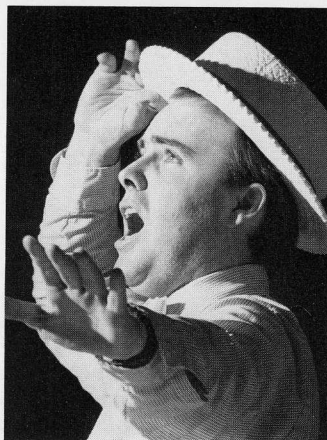
Vice President **Barry W. Dress**, University Relations, was a featured speaker and panelist on "Critical Issues Facing Senior Fund-Raising Managers" at Fund Raising Day in New York, a statewide conference on philanthropy and volunteerism held June 5 at the New York Hilton.

Professors **Hidesaburo Hanafusa**, Viral Oncology, and **Shigeru Sassa**, Metabolism-Pharmacology, were two of the seven invited speakers for the special lecture at the 22nd General Assembly of the Japan Medical Congress, held April 4-6 in Tokyo. Dr. Hanafusa spoke on "Molecular Genetics and Cancer" and Dr. Sassa on "Heme and Hemoproteins: Their Biological and Clinical Significance."

Bradley Hundley, director of The Rockefeller University Press, was co-chairman of the 9th annual meeting of the Society for Scholarly Publishing, held May 26-29 in New Orleans. At the meeting, **Martha Kellar**, production-editorial manager, Journals Office, was moderator of a roundtable on Production and Computers.

President Lederberg was moderator of a forum, "A Rational Approach to the AIDS Crisis," sponsored by the American Nobel Committee and the Forum for World Affairs, held in Stamford, Connecticut, May 26.

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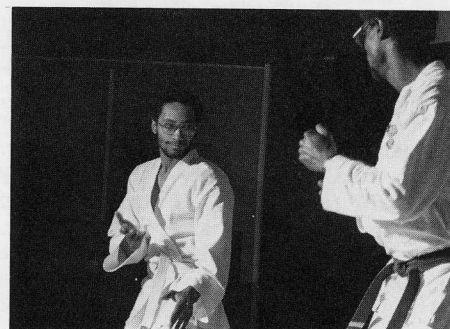
Charles Mobbs, a "Rockefeller Dandy."

Broadway Bound

The First Annual RU REVUE debuted on May 15, filling the Caspary stage with song and dance, comedy and karate. The REVUE was conceived by Yvonne Holland, directed by Carrie Henderson, and MCed by Elisabeth Goyvaerts and Charles Mobbs. Other committee members were Nina Casciano, Marie Grossi, Anthony King, Rita Nash, Karen Reue, and Jaime Zung. Thanks to their hard work, a talented cast, and the technical assistance and moral support of various spouses and friends, the evening brought pleasure to the audience and some welcome funds to the Children's School.



From left, show director Carrie Henderson and organizer and performer Yvonne Holland, at the dress rehearsal.



Anthony King, left, and black belt Isaiah Curry demonstrate karate.



Bluegrass fiddler Karen Reue.

Handicrafters

No sooner had the dust settled from the RU REVUE when more Rockefeller talent blossomed. The handicrafts exhibition, held June 3 to 12 in Founder's Hall Lobby, included dollhouses and doilies, miniatures and macrame, ceramics and crewel, not to mention hand-bound books and a breadbox. The exhibition was organized by Kate Cameron and committee members Nina Casciano, Edward Clarke, Oliver Farley, Batya Fox, Erminio Gubert, Yvonne Holland, Robert Keiber, Odi Kloesman, Rachel Kolb, David Lyons, Sonya Mirsky, Manuel Vargas, and Mary Wagner. The entries were arranged by Cynthia Altman, the University's art curator, and committee members.



Barbara Sutphin, wool latch hook rug, "Carnations."



Christian Gillespie, needlepoint pillow.

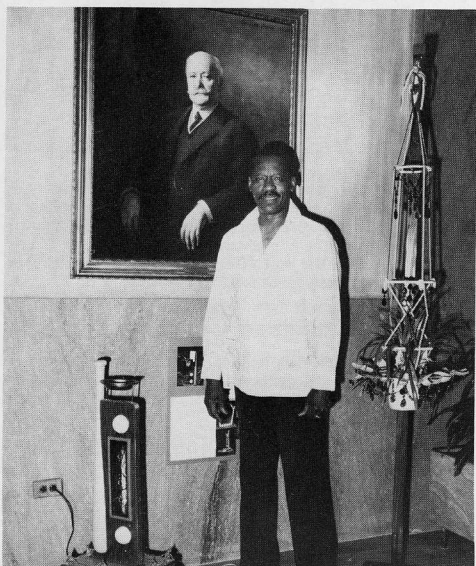


Odi Kloesman, left, and his furnished dollhouse complete with working lights. Looking on, from left, fellow exhibitor Francisca Iohan, and Gabriel Trilla and Ira Woods.

Oliver Farley, macrame and cut glass hanging basket stand and "deluxe trophy," a fluorescent light and ashtray stand. Mr. Farley, a recognized artist and musician in his native Cuba, has exhibited in a number of New York shows and recently received patents for the items shown here.



Marie Grossi, velvet vest with bargello needlepoint.



Hirsch (continued from page 1)

Among his numerous writings, Dr. Hirsch coauthored with Dr. Dubos a classic text, *Bacterial and Mycotic Infections of Man*. More recently, he and his wife, Beate, his assistant in the laboratory and the dean's office, had been working on a study of the pioneer German bacteriologist Paul Ehrlich. Dr. Hirsch was also the subject of a book, *Secret in the White Cell*, coauthored by Don Herbert, better known as television's "Mr. Wizard," and Fulvio Bardossi, later the University's director of public information.

He was a member of the National Academy of Sciences, which he served as chairman of its Division of Medical Sciences, and chairman of the board of the Trudeau Institute, which he helped to mold into a major center of tumor immunology research. In 1984, The Rockefeller University awarded him an honorary degree.

In addition to his wife, Dr. Hirsch is survived by their daughter, Rebecca, and two children from a previous marriage, Ann and Henry. A memorial tribute and symposium in Dr. Hirsch's honor will be held at the University on December 7.

McEwen on Stress

Professor Bruce S. McEwen, head of the laboratory of neuroendocrinology, delivered the University's spring Public Lecture. The subject was stress, a matter of broad concern judging by the audience turnout. Addressing the matter of what the brain tells the body and the body tells the brain, and drawing largely on studies from his own neuroendocrinology laboratory, Dr. McEwen explained how response to stress is influenced by hormones, chemical messengers that communicate between the cells of the nervous system and the rest of the body. On a practical level, he reported recent findings coming out of a number of clinical studies concerning simple but effective measures that can be adopted to cope with stress.

Personals

Born April 23 to Pharmacist **Philip Manning**, Hospital, and his wife, Carolyn, a daughter, Christine Anne.

Biomedical Fellow **Anne Hermanowski Vosatka**, Cellular Physiology and Immunology, was married on March 7 to Robert J. Vosatka, an M.D.-Ph.D. student at New York University.

David R. Friedlander, Developmental and Molecular Biology, and **Moshe S. Weintraub**, Human Genetics, to assistant professor, effective July 1.

Briefs (continued from page 7)

Professor **Abraham Pais**, Theoretical Physics, was a speaker at a ceremony in honor of the publication of *The Collected Papers of Albert Einstein, Volume I: The Early Years 1879-1902*, held at the National Academy of Sciences, May 22.

Trustee **Steven Stamas**, formerly president of the American Assembly, a public policy affiliate of Columbia University, has been elected president of the Wallace Funds, established by DeWitt and Lila Acheson Wallace, founders of Reader's Digest.

Professor **Henry Wood**, Plant Biochemistry, was an invited speaker at The Torrey Botanical Club of The New York Botanical Garden, the oldest such society in the United States, on April 21, where he spoke on "Biochemistry of Cell Division in Higher Plants."

Sapolsky Wins MacArthur Award

Rockefeller alumnus Robert M. Sapolsky was among 32 "outstandingly talented and promising individuals" to be selected MacArthur Foundation Fellows this year.

He is the fifth scientist from the Rockefeller community to have received the so-called "genius award," which provides support for five years. Professor Joel E. Cohen became a MacArthur Fellow in 1982 and Professor Jay M. Weiss, now at Duke University, in 1984, while still a member of the Rockefeller faculty. Professor Robert Shapley, another Rockefeller graduate, was honored last year, and Professor Mitchell Feigenbaum, who joined the Rockefeller faculty in 1987, received the award in 1984.

In April, Dr. Sapolsky was also one of 90 young scientists from the United States and Canada to receive a \$25,000 grant from the Alfred P. Sloan Foundation of New York.

Currently an assistant professor at Stanford University, Dr. Sapolsky earned his Ph.D. in 1984 in the neuroendocrinology laboratory of Professor Bruce McEwen for research on the influence of aging on the brain's response to stress.

Deaths

Rockefeller Council member **Baron Leon Lambert**, 58, a prominent Belgian banker and art collector, on May 28.

Rockefeller Council member **Arthur M. Sackler**, 73, a research psychiatrist, publisher of Medical Tribune, and a leading philanthropist in medical science and the arts, on May 26.

Lab Animals in China

Professor Dennis M. Stark, director of the University's Laboratory Animal Research Center and president of the American Association for Laboratory Animal Science, was invited to address the first annual convention of the Chinese Association for Laboratory Animal Science, held in Beijing in April, and to tour a number of local laboratory animal facilities.

He visited and consulted at the Institute of Medical Laboratory Animal Science, a shared facility of The Chinese Academy of Medical Sciences and the Peking Union Medical College, and also the Beijing Agricultural University, Beijing Medical University, and the Academy of Military and Medical Sciences.

"As with most aspects of Chinese science," says Dr. Stark, "the past decades of political turmoil have not been kind to laboratory animal specialists." The new association and invitations to Western leaders in the field are indications, he says, of the current government's awareness that "the lack of healthy animals and quality animal care has been a major impediment to improving biomedical research and testing in China."

Trager's Pipette Washer

The honorary degree the University awarded on June 10 celebrates William Trager the parasitologist. But what about William Trager the inventor?

Forty years ago, Dr. Trager put together for his own use "an automatic pipette washer made of such readily available materials and based on so simple a principle that I felt certain that the identical apparatus must have been constructed independently by many workers." When a considerable number of scientists assured him that it "appeared original," he reported it, in the unassuming words quoted, in the February 13, 1948 issue of Science.

According to his former graduate student Michael Yamin, Dr. Trager's pipette washer, with some minor design changes made over the years, "has been used in virtually every laboratory in the world."

Continuing its long-standing policy to actively support equality of opportunity for all persons, The Rockefeller University forbids discrimination on the basis of race, color, religion, sex, age, national origin, or handicap. The Administration has an Affirmative Action Program to increase the employment of women and members of minority groups in all areas of the University's activities.

News and Notes is published five times a year from October through July. This is Volume 18, Number 5. Suggestions for articles are welcome and may be sent to News and Notes, Box 68, phone extension 8967. Photographs, page 1, left, Bachrach; top, George Byron and John Sholtis, right and pages 2, 3, 4, 5, top, 6, bottom, and page 7, John Sholtis; page 5, bottom, Emory University; page 6, top, Star Black. © 1987 The Rockefeller University, New York 10021-6399. Printed in the United States of America.

A View from the Dean's Office

MARC Programs Make Their Mark

In an effort to seek a diverse group of qualified applicants for the graduate program, the Dean's Office is participating in a number of MARC symposia.

MARC, the Minority Access to Research Careers program, is a part of the National Institute of General Medical Science of the National Institutes of Health. The program was established in 1977 to increase the number and capabilities of minority scientists in biomedical research.

MARC's core program is the Honors Undergraduate Research Training Grant. This grant supports the studies of approximately 500 undergraduates in over sixty institutions to enable juniors and seniors to compete successfully in graduate Ph.D. programs. According to Edward Bynum, director of the MARC programs, "Over 80% of these students are able to enter professional or graduate schools."

While at their undergraduate institutions, students have the opportunity to present an overview of their work in national or regional symposia and meet administrators from various graduate institutions. A major program of this kind will be held in October in Washington, and Dr. Miki Rifkin, associate dean, will be attending.

In April, Dr. Rifkin also attended a MARC program symposium sponsored by the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) of the National Institute for Mental Health. The program is similar to the NIH MARC program differing only in its emphasis on preparing minority students for a career in mental health research. During the April meeting, 66 students in the behavioral and social sciences presented summaries of their research to a number of top administrators. Dr. Rifkin thought it was an excellent opportunity to meet students and discuss the goals of Rockefeller's graduate program.

This summer a MARC fellow, Hsila Bates, will be participating in the summer undergraduate research program at Rockefeller. Dr. Bynum of NIH believes that this summer's experience is a critical aspect in the training of MARC fellows.

Correction

Through an oversight in the profile of Dr. Martin Burschka in the previous issue, his one-year stay in the laboratory of Professor E.G.D. Cohen was omitted. It was during this year that Dr. Burschka decided to realize his long-cherished wish to combine statistical physics with biology by spending his second year at the Rockefeller University in the laboratory of Professor B. W. Knight, to work on the statistical physics of nerve networks.

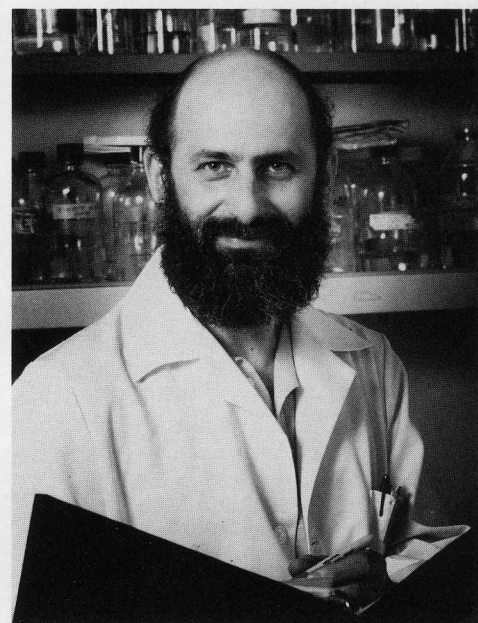
Profile

Rockefeller University is a long way from Budapest, but Imre Kovesdi is a very determined man. In 1968 he left Hungary, made his way at night across the border, and spent eight months in Italy waiting for his refugee status papers before eventually arriving in Vancouver, Canada.

"When I look back, I am always surprised that I managed to do so well later on in my studies, because as a child I was dyslexic and could barely read or write until grade three. Therefore, I suffered through grade school and high school." Imre shakes his head and grins: "Since I graduated from high school I have had all sorts of odd jobs. I was a waiter, a carpenter, and an electrician. Later on, I started a small construction company that survived for three years." Again smiling he adds, "finally unemployment drove me to the University."

In 1975 Imi obtained a degree in electrical engineering from the University of British Columbia. He later took a few biology courses in the evening, in addition to teaching computer science. It was around this time that he began the studies in molecular biology that led to his Ph.D. in 1984 from Simon Fraser University in British Columbia. In deciding where to do a postdoctoral fellowship, Imi says that he chose Rockefeller because he was very interested in the work of the Darnell laboratory.

For the past two years Imi has been working with Associate Professor Joseph R. Nevins on the gene regulation of human adenoviruses. Imi says, "This is a very attractive system for the study of gene control, as several viral genes and at least three cellular promoters are activated by a regulatory gene, E1A. I am particularly interested in identifying and characterizing cellular factors which interact with the viral genome and are induced by E1A." According to Imi, an understanding of the mechanisms for this stimulation becomes particularly important since the E1A gene is also an oncogene. Imi enjoys the work that he does at the University. "I think



Imre Kovesdi

that my work has been going well here, and I am getting some good results."

Imi is also content with life outside the lab. "I like New York City very much. I live in Sutton Terrace with my wife, Cyndy, and it is really quite nice." Cyndy is Canadian and an actress here in Manhattan. "I get to see a lot of plays for free through my wife, and I also usher for off-broadway plays in the village, which is another way to see shows. When I'm not in the lab, I also enjoy hiking, playing tennis, and going to aerobic classes." Imi, who has a black belt in Judo, has taught self-defense to children. At Rockefeller, he attends Seven Springs weekends, concerts, thesis presentations, and Friday afternoon colloquia.

In the fall, Imi will be seeking new opportunities in private industry, and will be taking a position as a senior research scientist at Lederle Industries in Pearl River, New York. "I suspect I will get a place to live close by in New Jersey, but I certainly will miss Manhattan and, of course, Rockefeller."

Summer Undergraduate Research Program

For a college student whose interest in science has not yet shaped a specific career path, a summer working in a laboratory at Rockefeller could prove to be a pivotal experience.

This is the thinking behind the successful summer undergraduate research program at Rockefeller University, instituted four years ago by an anonymous donor. The aim is to expose college students to a meaningful research experience and this idea has proved sound.

The nineteen students who have participated in the program in the past agree: the experience has opened up new possibilities in their lives and given them insight into their potential as scientists.

Students spend nine weeks working in labs; after which they write up a report of their research and receive an evaluation from their advisor. At times, continuing working relationships have been established with the stu-

(continued on next page)

Junior Faculty Retreat at Seven Springs

by Research Associate Sandy Simon

Dr. Beate Eberhard finished drawing a chalk Miró-like molecule, turned away from the board, and faced her audience. Preternaturally shy, even when speaking her native German tongue, she had been uneasy about giving this talk—in public and in English, a language with which she was not exactly familiar.

But now Eberhard was standing by a blackboard on a terrace that overlooked a small lake and several acres of woods. She had planned to use slides in her talk. But that would have meant moving her audience into a darkened room. Away from the sun. Away from the breezes. A move that would not be well received. So at the last moment Eberhard opted to rearrange her presentation and improvise a talk without slides. Thus the Miró-like molecule on the board.

She knew that the geese flying overhead, the deer occasionally peeking out of the woods off to her right, and the acres of manicured lawns would not help her gain the attention of an audience that had been so long accustomed to urban living. Eberhard did not consider her work to be in the mainstream of research at the University. The deer would be tough competition. However, the thirty people on the veranda were concentrating on the board and the words of the Rockefeller University postdoc, as she explained why she was studying analogues of insulin (in the Laboratory of Organic Chemistry and Physical Biochemistry).

Later that night, as she danced to the music of Talking Heads, Eberhard confessed that participating in the weekend was the most enjoyable experience she had had since arriving in New York the year before. The second conference for the Junior Faculty at Rockefeller University's Seven Springs retreat in Mount Kisco, held last May 9th and 10th, was apparently a success.

The Junior Faculty retreats serves to increase both the social and the scientific interactions among the junior faculty. Either purpose, if well served, should make the university more enjoyable and stimulating. Extensions of the Tuesday noon scientific exchange lunches, these new retreats are the brainchild of Deans Tony Cerami and Miki Rifkin.

The weekend retreat in May was loosely organized. In the mornings and evenings the participants gave ten-minute overviews of the scientific issues they were addressing, the approaches they were taking to address the issues, and why they were taking that particular approach. Each talk was followed by five or ten minutes of discussion. The afternoons were free for wandering around Seven Spring's lush grounds, hiking on the nature trails, sunbathing, playing tennis, swimming in the indoor pool, and having discussions on

politics, philosophy, and, of course, science. At night some people sat around the main house relaxing or playing piano. Others headed down the road to a too-large-to-be-quaint cottage where they attempted to use rock and roll to generate a unified field theory for brownian motion and endorphin release.

Beate's husband, Martin Burshka of the Knight lab, went to the first Seven Spring's retreat for the Junior Faculty last November (Burshka was profiled in the April-May issue of *A View from the Dean's Office*.) He made a number of friends there and at least one has led to an active inter-lab collaboration. Now that Eberhard is also a veteran of a Seven Springs retreat she suspects that she, too, will have a better idea of whom to call when she needs to find someone with expertise in a particular literature or technique. And as a result of getting to know thirty additional members of the Rockefeller community while at Seven Springs, she sees thirty fewer abstract Miró-like figures on campus.

The next weekend at Seven Springs will be October 17th and 18th. For further information, contact Beverly Burnett at the Dean's Office, extension 8086.

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dents returning the next summer to work in the labs. A number of these students also apply to the graduate program.

Six students will begin the summer program on June 15, and each will receive a stipend of \$1800. The students are: Hisla Bates, a senior at Hunter, who will work with Dr. Alice Gottlieb in the Laboratory of Investigative Dermatology; Jennifer Baum, a senior at Brown University, who will work with Dr. Bruce McEwen in the Laboratory of Neuroendocrinology; Dara Brodsky, a senior at Cornell, who will work with Dr. Jules Hirsch in the Laboratory of Human Behavior and Metabolism; Neil Friedman, a senior at Dartmouth, who will work with Dr. James Darnell in the Laboratory of Molecular Cell Biology; Linda L. Hermer, a junior at Harvard, who will work with Dr. David Vicario in the Laboratory of Animal Behavior; and Maria Lee, a senior at New York University, who will work with Dr. David Cowburn in the Laboratory of Organic and Physical Biochemistry.

CONVOCATION '87



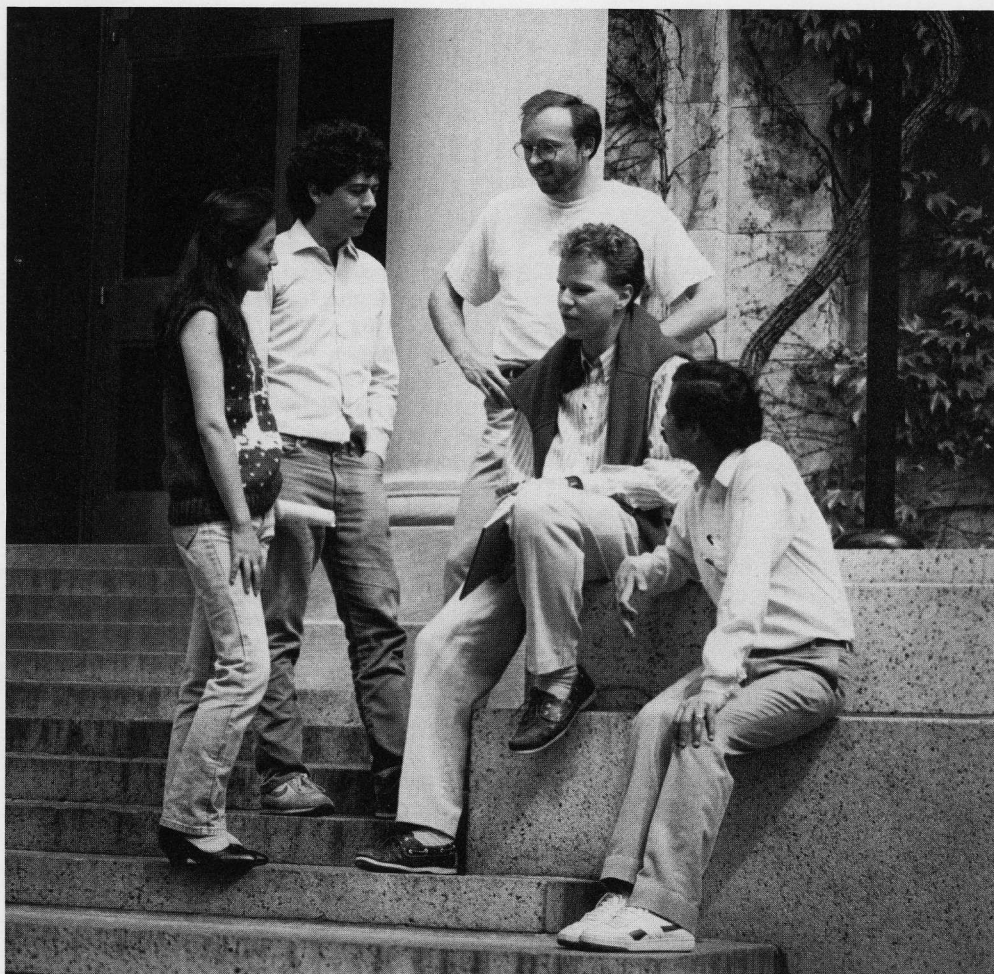
Our Man from Oxford

When Ian Flitcroft met Associate Professor Robert Shapley who was visiting at Oxford last year, he never expected that he would have an opportunity to work with him so soon. "I was very interested in Bob Shapley's research because we are working in a convergent direction on a similar problem, and I welcomed the chance to spend a summer working with him," states Ian Flitcroft, the first Oxford student to participate in the new Rockefeller-Oxford exchange program.

Ian, who is working with Dr. Shapley in the laboratory of Professor Bruce Knight, is investigating the visual system in monkeys and humans. He is in his fifth year at Oxford working on a Ph.D. in physiology, having completed half the requirements for an M.D. degree. After he receives his doctorate, Ian plans to continue his studies in medicine.

This summer at Rockefeller will be Ian's first experience living for an extended time in the U.S. The small Rockefeller community appeals to him. "It's been a pleasant surprise living on campus," he says. "Rockefeller is slightly larger than one single college at Oxford."

Ian Flitcroft surrounded by students and postdoctoral fellows outside Founder's Hall. From left: Kathy Fang, Sandy Simon, Thomas Meier, Ian Flitcroft, and Ashwani Khanna.



New M.D.-Ph.D. Students

On July 1, five talented individuals will begin the M.D.-Ph.D. Program starting with a summer of research in the labs at the University. The new group of M.D.-Ph.D. students defy the stereotype that scientists are people with narrow interests.

Ethan Bernardete enters the program after a year of working as a research assistant in the department of physiology and biophysics at Harvard Medical School. A 1986 cum laude graduate of Harvard, Ethan would like to apply molecular biology to the study of protein structure and function especially in microorganisms. At Harvard, Ethan devoted his thesis to integrating molecular biology with protein chemistry in the study of ATP-dependent proteases in bacteria and eukaryotes. Ethan also found time to pursue an avid interest in sailing, earning a varsity letter in the sport at Harvard. Someone will have to tell Ethan that sailing is not a frequent activity on the East River.

Victor Neel, a 1987 graduate of Princeton University, comes to the program with an interest in molecular approaches to neurobiology and extensive research experience. He worked at the Wistar Institute in Philadelphia with Dr. Peter Wettstein. At the Institute, Victor worked on a problem involving site-directed mutagenesis and gene replacement in prokaryotes. He coauthored a paper on the subject which was presented at the 1986 annual meeting of the American Society for Microbiology. Victor also spent a summer volunteering part-time at the Eden Institute, a school for autistic children. In addition to his interest in science, Victor also loves Japanese language and culture. He has been studying the language for several years and no doubt would like the opportunity for some actual conversation at Rockefeller.

Una O'Doherty, originally from Schenectady, New York, is a 1987 graduate of Barnard College. Her interest is in molecular biology. While at Barnard, Una was also a teaching assistant in biochemistry at Columbia. She has been studying transcription in front of the major initiation sites of the ribosomal RNA gene. She has spent a summer working in the toxicology department at Eli Lilly Research Laboratories. While at Barnard, Una took the initiative to organize an undergraduate journal club and to develop a scientific lecture series for Columbia's bicentennial.

For the past year, **Marcia Simpson** has worked as a research technician in the department of pharmacology at the New York University Medical Center. She is a 1986 summa cum laude graduate from Amherst with a bachelors degree in biology and research interests in cell biology and biochemistry. Her senior thesis work was on a detailed

cytological study and partial characterization of the transition during sea urchin spermatogenesis. Her thesis won an award for the best biology thesis at Amherst. She has also spent summers working at labs at the NYU Medical Center and the Marine Biological Laboratory in Woods Hole. Marcia enjoys the theater and works in her spare time on stage management and lighting design. She is a volleyball enthusiast and has played on the varsity team at Amherst. Marcia is also certified in scuba diving.

William Swiggard has been working as a research technician in the enzyme chemistry section in the Laboratory of Oral Biology and Physiology at the National Institutes of Health since 1985. During this time, he also earned a B.S. degree in chemistry from George Mason University. He is interested in protein structure and function relationships with an eye toward the potential clinical applications of molecular design and gene therapy. His interest in science took a circuitous route. In the 1970s, William was an actor, singer, and guitarist, performing in three Broadway shows, four national tours, and several radio and television shows. After a stint of unemployment, he began work as a clinical lab technician in California. This experience opened up a whole new life and career. He subsequently worked for three years as a research technician at the New York

Bargemusic Ltd.

The ambience could not be better—a warm summer night, a spectacular view of the Manhattan skyline and the Brooklyn Bridge, wine and cheese, and lovely music.

Every other week, on a small covered barge moored to the Fulton Street Ferry landing under the Brooklyn Bridge, chamber music is played while the sun sets over the city. The concept was originated six years ago by Olga Bloom, a New York musician who wanted music to be heard on the interborough waterways. Her idea has become a "Big Apple" success.

Professor Anthony Cerami, dean of graduate and postgraduate studies, is a supporter of the arts and classical music. This summer he plans to invite students and postdoctoral fellows to join him twice a month when he attends the barge concerts. The first such outing was held on June 4th. It is a way of thanking those people who contributed to the community by organizing a function, participating in a University activity, or helping to teach a course.

Blood Center, before returning to college and completing his degree. Broadway's loss is Rockefeller's gain.

And You Thought They Could Only Do Science . . .

by Michel Ledizet, Graduate Fellow

Apprehension and excitement were running high on May 12, as fourteen students from Rockefeller University and Cornell Medical School made their New York debuts in the Student Concert, hopefully the first of many.

The two-hour concert, made possible by the untamed enthusiasm of Barbara Kazmierczak, a student at Rockefeller, revealed lots of talent hidden under white coats: three pianists (Robert Bauchwitz, Barbara Kazmierczak, and Michel Ledizet), two violinists (Susan Kessler and Zenta Walther), two flutists (Mark Benedyk and Seth Lloyd), five (yes, five) cellists (David Edwards, Carolyn Field, Christina Luedke, Clay Reid, and Stephanie Singer), one clarinetist (Steve Devoto), and one soprano (Sarah Stackpole) were unmasked for the night of their student disguises.

The capacity audience, many of whom stood for lack of enough chairs, were treated with pieces by Prokofiev, Telemann, Schubert, Mozart, Chopin, Villa-Lobos, Brahms, Genin, and Mendelssohn. Most were decidedly surprised by the virtuosity of the performers, which greatly exceeded the expected "good amateur" standard.

After the concert, a small reception allowed the public to "Meet the Artists," and for the artists to fill their stomachs (finally free of knots). Only one spectator was disappointed: he was unable to find Combos . . .



Miki Rifkin

First-year student Mark Benedyk warms up before the concert.