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The Rockefeller University

news & notes

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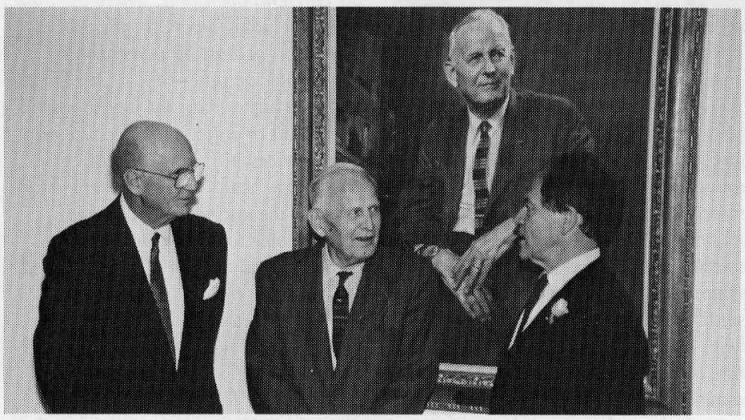

Chairman of the Board Richard Furlaud, Professor Emeritus Maclyn McCarty and President Torsten Wiesel *(left to right)* attend a dinner celebrating eight decades of clinical research at The Rockefeller University Hospital. McCarty was a guest of honor at the dinner.

Hospital celebrates eighth decade

In celebration of eight decades of clinical research, President Torsten Wiesel and Physician-in-Chief Jules Hirsch hosted a dinner for about 80 friends, benefactors and investigators of The Rockefeller University Hospital last week. Professor Emeritus Maclyn McCarty was the featured speaker.

After welcoming the guests, Wiesel said that the Hospital was vital to the mission of the university today: "The decision to create The Rockefeller Institute, as it was called, in 1901 and to build the Hospital nine years later was based on the idea that you need to do basic research in conjunction with the clinical in order to understand, prevent and cure illnesses. The Hospital still embodies this ideal and is an important part of our plans for the future."

The dinner, held Oct. 28, fell 83 years and a day after the Hospital admitted its first patient on Oct. 27, 1910. It was also almost 50 years to the day after Oswald Avery, Colin MacLeod and Maclyn McCarty submitted their historic paper showing that DNA was the substance containing genetic information.

In his address, "The Rockefeller University Hospital: Yesterday, Today and Tomorrow," Hirsch said that an early article by Avery on tuberculosis prompted Rufus Cole, the first physician-in-chief of the Hospital, and Simon Flexner, director of the Institute, to recruit him to Rockefeller.

"Avery had an incredible ability to see the scientific problem and to pursue it," he continued. "Believe me, you can see this and feel this as you read this remarkable paper. Rufus Cole thought that it was so well written and splendid that he brought it to Simon Flexner's attention. Within a few days, Avery was given an appointment. That is what this Hospital is really all about. It is about finding people who are very different, who are very special, to come here and study a human illness or a particular clinical problem, bringing the very best of modern science to bear on it and affecting a solution—and even creating new sciences as they try to find these solutions."

After Hirsch's address, McCarty—whom Wiesel called a "beloved and respected scientist who deserved the Nobel Prize more than many others in the views of many of us"—described the research that led to the discovery of the genetic role of DNA and a revolution in biomedical research. Building on the work of an Englishman, Fred Griffith, the Avery lab was studying a phenomenon that Griffith called "the transformation of pneumococcal types." This involved a predictable and permanent change of one type of pneumococcus induced by a substance extracted from another kind.

"It had all the earmarks of what we would call today the transfer of genetic information," said McCarty. "Gradually a number of pieces of

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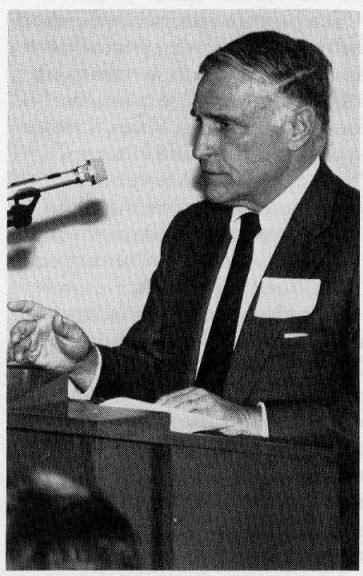

Professor and Physician-in-Chief Jules Hirsch speaks at the Hospital event.

Lecture to feature clinical researcher

Gary Nabel, Howard Hughes associate investigator and professor of internal medicine and biological chemistry at the University of Michigan Medical Center, will speak on "Molecular Genetic Interventions for Human Disease: AIDS and Cancer" at the Friday lecture today (Nov. 5) at 3:45 P.M. in Caspary Auditorium.

In recent years, the Nabel laboratory has studied the regulation of gene expression and has used insights from this work to devise new gene therapies for diseases such as AIDS and cancer. Immunologists have found that the same genes that turn on the T cells of the body's immune system to fight an infection with HIV—the virus that causes AIDS—stimulate viral replication. Recently, Nabel and his colleagues found a way to inhibit replication of HIV *in vivo* without interfering with normal T cell function.

"Gary's work shows great promise," said Professor Jan Breslow, who is hosting the lecture. "The more we learn about the genes involved in fending off these diseases, the more we will learn about ways to interfere with and treat them."

Nabel will present recent findings from his lab and the results from his initial attempts at gene therapy in humans.

Nabel received a B.A. (1975), Ph.D. (1980) and M.D. (1982) from Harvard University. After completing his internship and residency at Brigham and Women's Hospital, he worked as a research fellow at the Dana-Farber Cancer Institute (1980-84), then as a research associate for Professor David Baltimore at the Whitehead Institute (1985-87). In 1987, Nabel joined the faculty of the University of Michigan as assistant professor in internal medicine and biological chemistry, and was named assistant investigator for the Howard Hughes Medical Institute.

Nabel is a recipient of the 1992 Midwest Young Investigator Award among other honors.

Workshop addresses technology, environment

Thirty leading national and international experts in such diverse fields as physics, biology, engineering, history, economics, ecology and demography gathered for a two-day workshop on "Technological Trajectories and the Human Environment" at The Rockefeller University last week.

The purpose of the workshop, the first event of the year for the university's newly established Program for the Human Environment, was to examine the development of environmentally critical technologies over past centuries and to explore how these technologies relate to the changing habitability of the planet.

"We're trying to understand where future pressures on ecosystems and human health may arise," said Senior Research Associate Jesse Ausubel, director of the program. "Our goal is to determine lines of research to pursue over the next few years so that will help lessen emerging problems."

The workshop, which included 10 members of the National Academies of Sciences and Engineering, posed a series of questions such as: how has the efficiency of resources use changed? what new clusters of technology might define the next phase of industrial growth? and, can we envisage a new "industrial ecology" with

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2 Letter, reply: RU's resources

3 Links between diet and health

Letter to the editor and reply: how to make best use of limited resources

During my three years on staff in the Protein Sequencing Facility, I have witnessed a consistent erosion of employee benefits and salary compensation accompanied by an explanation of the tremendous financial difficulties the university is experiencing. Increases in university-subsidized housing costs, Children's School tuition and healthcare costs have been accompanied by a lengthy pay freeze and a minimal pay raise this year of 4.5 percent. Additionally, we have witnessed a halving of the space provided for exercise facilities and two large price increases at the cafeteria. Simultaneously, a blossoming of questionable renovations has taken place, including constant replanting of shrubbery, repaving of the main driveway, repairing of the marble sidewalks and renovations to the cafeteria, Abby Aldrich Rockefeller Hall and the exercise facilities.

The recent changes at the cafeteria are representative of a disturbing trend taking place at the university. Money was spent on a renovation that was arguably unnecessary, especially in light of the financial difficulties faced by the university, and resulted in only cosmetic improvements. The most significant changes made were in the prices charged, an increase of 25 percent on many items. Prices are now significantly more expensive at the cafeteria than at establishments in the surrounding neighborhood. In light of the fiscal problems faced by the university, should money be wasted on superficial renovations or should the cafeteria be made into a place where an employee can get a quality meal at an affordable price? An affordable meal in a clean setting should be the goal of the cafeteria and its management, not elegant dining experiences.

I can only wonder why, when the university is raising fees, cutting benefits and holding back salary increases due to lack of funding, it is embarking on a series of renovation projects. The university should be trying to compensate for its inability to provide adequate cost-of-living salary increases by providing low-cost housing, an affordable daycare center and a low-cost cafeteria. Recently the university has made a determined effort to attract top-level postdoctoral researchers. If the university is to continue to maintain current staff and attract talented new staff members it must provide a level of benefits that are at least comparable to surrounding institutions. Although the recent announcement of tuition reimbursement is a step in the right direction, the level of support is far below that available from other institutions in the area. I never envisioned gaining financial riches at the university, and sincerely hope that pecuniary conditions do not force my departure. I can only hope that the university realizes that it takes outstanding researchers and research assistants to produce consistent excellence in the scientific community.

Jeffrey Mathers
Assistant for Research

Reply:

The letter from Jeffrey Mathers argues, in essence, that the university administration has lost sight of the importance of providing competitive and fair compensation and benefits for our most valued resource—the faculty and staff who are building their careers here—while also spending money unnecessarily, even foolishly, on projects like the recent refurbishing of the cafeteria and improvements to a limited number of heavily used places on campus.

All decisions involving the investment and commitment of university resources involve hard choices as we live through difficult economic times. Over the last five years of economic recession and slow recovery nationally and regionally, income from all sources to pay salaries, benefits, energy bills and all other costs of daily operations at the university increased from $96.6 million to only $102.6 million—an average rate of increase of only 1.5 percent yearly. Income from our principal source of support—federal support of research—actually declined over the same period, though it has stabilized at about $37 million annually over the last two years.

Faced with comparable economic circumstances, many private, public and charitable employers—including universities and colleges—have not merely frozen wages for one year, as RU did in 1991-92, but reduced salaries and benefits, and imposed major layoffs. In some cases, they simply went out of business, which helps explain why the unemployment rate in the New York area has remained stubbornly close to 10 percent, even as the national rate of unemployment gradually improved.

Faced with these realities, three distinct administrations at RU over the last five years have done everything they could think of to use limited resources to support the faculty and staff who have centered their work lives here. Of course,when you have only 1.5 percent more each year for operations, it doesn't stretch very far. However, over that five-year period, including the year of the freeze, salaries and wages have gone up about four percent per year, about one percent per year higher than increases in cost of living over the same period. During that five-year period, RU has not only not reduced either the coverage or the range of fringe benefits, but has also absorbed increased costs of more than $1,000 per employee to sustain a very high quality program of health and related benefits and now spends $3,000 each year for health coverage for each of our employees. And we have also introduced modest improvements, including the new tuition reimbursement program for staff wishing to strengthen their educational preparation.

More generally, we believe we continue to offer highly competitive compensation arrangements—traditionally and currently. There simply is no evidence that people leave RU for the same job elsewhere for reasons of better compensation or for better work conditions.

To be sure, as everyone knows, we have also had to reduce university expenses and services in a whole range of ways over this period to provide the employment and income supports we have offered, and more generally to make ends meet. This has involved a lot of change and sacrifice for everybody and as Mr. Mathers has argued, no one has truly prospered during these tough times even though we believe everyone has more than kept pace with the cost of living and, as indicated above, we also believe RU remains an appealing place to work.

Mr. Mathers also singled out the recent facelift of the cafeteria and food services for especially pointed criticism. Even through these difficult economic times, the university has now and in the past heavily subsidized the cafeteria operation, where the total costs, including labor, for the typical meal costs at least 50 percent more than people actually pay. (Our labor costs are higher than the neighborhood restaurant or coffee shop because our food services staff is paid much better and enjoys health and other benefits.)

Over the last years, fewer and fewer people took their lunch at the cafeteria, and the complaints centered not on prices but on food quality. We brought in a new and experienced food provider, and readily agreed to proposals to improve both the character and quality of the food. Price increases on some items have also been instituted, but it is still possible to buy a complete lunch for $4.00 to $5.00—a meal that continues to be significantly subsidized by the university.

As for the recent facelift, we invested in a complete cleaning of the cafeteria and kitchen, a good paint job and the replacement of floor covering—at a one-time cost of only $50,000—a facelift that was at least a decade overdue. We think the environment and atmosphere matters—especially where one eats and also where one works. Even though resources are scarce, we can't let things run down. It is inefficient and costly in the long run. It also erodes morale and spirit.

Time will tell whether what we feel are improvements in the cafeteria will also satisfy the university community. As always, we all welcome constructive suggestions to improve any aspect of operations and activities. But resources remain very tight and lunch, unfortunately, can never be free.

Frederick M. Bohen
Executive Vice President

Workshop discusses technology and environment

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dramatically less waste and lower environmental impact?

Ten papers were discussed over the two days, focusing primarily on issues of land, energy and materials as they relate to these questions. For example, Robert Kates, director emeritus of the World Hunger Program at Brown University, spoke on the long-term interactions of population and resources. Paul Waggoner of the Connecticut Agricultural Experiment Station presented a new analysis of how much land would be needed to feed the projected doubling of the human population to 10 billion people and proposed that large tracts of land could still revert to wilderness. Ausubel and his group presented two papers, one on energy technologies and another on material flows.

The papers from the workshop will be published in book form by the National Academy Press in 1994.

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Researchers discuss links between nutrition and health

By Susan Blum

Food—obtaining it, preparing it and savoring it—has always been a central issue in people's lives. But though food's importance has remained constant, its characteristics have changed. As The Rockefeller University Hospital's Physician-in-Chief Jules Hirsch told a recent gathering of The Rockefeller University Council, "Whatever you had for breakfast today is very different from what your ancestors ate."

Just *how* different depends on how far back the ancestry is traced. Hirsch pointed out that humans evolved as hunter/gatherers who "dashed about, had limited food resources, and frequently came near to starvation." Since the industrial revolution, most denizens of developed countries have no longer faced the threat of imminent starvation. Until very recently, though, their range of food choices remained quite limited. "Our grandparents might have been presented with the choice of 40 to 60 foodstuffs per year, but we have 125,000 to select from in any medium-sized market," Hirsch said.

Speakers at The Rockefeller University Council's fall meeting were *(left to right)*: Associate Professor Rudolph Leibel, Assistant Professors/Clinical Scholars Lisa Hudgins, Steven Shiff and Naomi Fukagawa, Medical Director and Associate Professor Richard Galbraith and Professor and Physician-in-Chief Jules Hirsch.

Nutrition Studies Evolve

Along with this evolution in what and how we eat has come an evolution in how nutrition is studied, Hirsch said. Phase one of nutrition studies started just after the French Revolution, when the research of Lavoisier showed that energy inflow and outgo in humans can be studied in the same way as any other chemical reaction.

By the mid-19th century, phase two of nutrition studies had arrived. In this phase, scientists intensively studied already identified food components such as sugars, amino acids and fats, and discovered the existence of others, such as minerals, that are also vital to health. One question emerging from these studies was whether the list of essential foodstuffs was complete. The definitive answer to this question was found here at the Hospital in the late 1940s and early 1950s. Professors Emeritus Vincent Dole and Edward Ahrens administered precisely formulated liquid diets containing all the known necessary nutrients to volunteers over long periods of time, and the volunteers not only survived but thrived on the formula diets.

Those experiments at Rockefeller paved the way for the third phase of nutrition studies, which are still under way. "After we felt confident that we knew all the basic substances required for general health and development, we started to wonder: might small dietary modifications over a lifetime steer a person into one disease pattern or another?" Hirsch recalled.

The answer to that question is probably "yes," Hirsch reported. Epidemiological studies have already highlighted associations between diet and diseases, notably heart disease and cancer. But while these epidemiologic studies are crucial, they are not sufficient to unravel the links in detail, Hirsch said. For this deeper understanding, it is vital to conduct intensive, individualized studies with humans. Furthermore, these studies must cover a wide range, from the metabolic to the biochemical to the level of individual genes. It is for these kinds of studies, Hirsch stressed, that Rockefeller's Hospital is uniquely suited.

Presentations by a number of Rockefeller researchers at the Council meeting highlighted the scope of the nutritional studies currently under way at the Hospital.

Rudolph Leibel discussed obesity, the most common nutritional disturbance in the United States. Leibel's research indicates that obesity results from powerful biological processes that determine a particular "set point" for the body's fat composition. Using rigorously controlled formula diets and sophisticated measuring techniques available only at the Hospital, he and his colleagues compared the energy expenditures of obese and never-obese people. They found that obese people who lost weight thanks to a formula diet used energy 20 percent more efficiently than never-obese people at the same weight—a finding that helps explain why obesity is so hard to treat. In addition to looking at the metabolic pathways underlying the differences between the obese and the never-obese, Leibel and his colleagues are studying the genes that contribute to obesity and the diabetes that so often accompanies it.

Cancer Studies Probe Links

Next at the podium was Steven Shiff, who discussed his work on nutrition and colon cancer. Shiff pointed out that much is now known about the dietary factors that are associated with colon cancer, such as diets high in fat and meat, and low in fiber. Much is also known about the stepwise, genetic mutations that occur in colon cells as they progress toward full-blown malignancy. Nonetheless, he said, "Despite this increased understanding, relatively little is known about how the nutritional and genetic aspects are interrelated." These interrelationships are his subject of study at the Hospital. Specifically, he is looking at one of the earliest steps in the progression to colon cancer, to see if the dietary constituents known to influence colon cancer development can affect colon cell division in human beings. Shiff is also exploring the potentially protective effects of drugs such as aspirin and ibuprofen on the development of colon cancer.

Richard Galbraith, medical director of the Hospital and program director of its General Clinical Research Center, discussed his studies of the chemicals—many of them harmful—that "come along for the ride" with the foods we eat. Some of the toxic chemicals are natural, such as those evolved by plants to ward off predators. Many others are synthetic, 10 million of them having been manufactured in the past 162 years. Galbraith and his colleagues study a family of proteins—the cytochrome P450s—which detoxify many of these harmful chemicals. The genes for these proteins are induced when the chemicals are present in the body, and the researchers are investigating the mechanisms of this process. They are also studying "neutriceuticals"—chemical components of foods that may prove useful in treating or preventing disease.

Fats and Sugars are Studied

The relationship of fats and sugars in the diet is the subject of study by Lisa Hudgins. Although many experts have advised that people reduce the amount of fat in the diet, and correspondingly increase the intake of carbohydrates, a crucial question has remained, Hudgins said. That is, are the extra carbohydrates subsequently converted in the body to the dangerous saturated fats we have been advised to avoid? Using novel techniques developed here at Rockefeller, Hudgins and her colleagues discovered that simple carbohydrates—such as those that make up sugar—when fed in sufficient amounts can increase the amount of saturated fat in the body. On the other hand, complex carbohydrates (specifically those that make up starch) are not so readily converted to saturated fat. The researchers are now trying to learn how much dietary starch is needed to reduce the formation of saturated fat in the body, and to find the molecular mechanisms underlying these events.

Naomi Fukagawa concluded the program with a discussion of her studies of the relationship of nutrition to aging. Her particular interests lie in understanding the changes that occur during aging in proteins—vital molecules that play diverse roles in the immune system in muscle and as carriers for many vital substances in the body. It is well-known that changes in proteins occur with advancing age, and studies have indicated that these changes may be detrimental to health. In Fukagawa's studies at the Hospital, elderly persons consume specially formulated diets or engage in specially designed exercise programs for several weeks. The researchers then study how these changes in diet or exercise affect protein synthesis in muscle and organs such as the liver. Fukagawa's ultimate aim is to understand the changes that occur in protein synthesis and utilization with advancing age, in order to find ways to improve the health status of the elderly.

Potpourri

Tri-Institutional Noon Recital
Before award-winning pianist David Korevaar gives a recital at Lincoln Center this month, he will play two works of orchestral music by Franz Liszt transcribed for piano (one of which he personally transcribed) at the Tri-Institutional Noon Recital today (Nov. 5). The concert, to be held at noon in Caspary Auditorium, is free and open to the public.

Sunday film
The American Soldier (Germany, 1970, English subtitles), directed by Rainer Werner Fassbinder, will be shown at 7:30 P.M. on Sun., Nov. 7 in Caspary Auditorium. The story centers on several murders carried out by Ricky, a charismatic, well-dressed gunman recently returned to Germany from post-Vietnam War America. Admission is free. All are welcome.

Health Fair
Members of the Rockefeller University community will have the opportunity to change their health insurance plans at an open enrollment health fair Wed., Nov. 10. Representatives from the university's health insurance companies and the Flexible Spending Account will be on hand to answer questions. The event, organized by the Personnel Office, will take place in the Tower lobby between 11:00 A.M. and 2:00 P.M.

New number for Prudential
The new number for Prudential medical insurance claims dated prior to Oct. 1 is: (518) 783-1838. The new number for dental claims is: 1-800-282-0555. Questions may be directed to the Personnel Office, x8300.

New York City marathon
News&Notes would like to hear from all Rockefeller University participants in the New York City Marathon to be held Sun., Nov. 14. Call Jennifer King, x8998.

The Employee Recognition Award Program Oct. 28 honored members of the community for 10- and 20-year anniversaries at the university. Here, President Torsten Wiesel and Personnel Assistant Theresa Thompson present Laboratory Helper Violetta Matthew with her gift. A list of those celebrating milestones at the university will run in an upcoming issue of *News&Notes*.

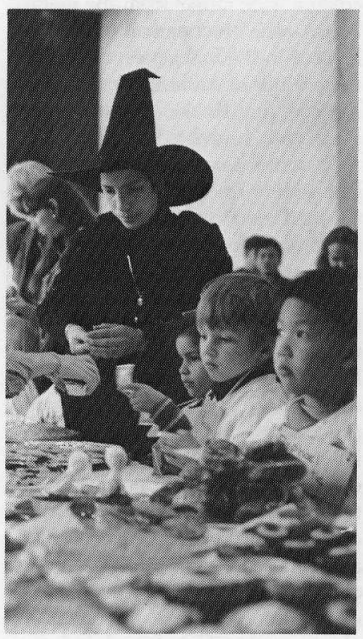
Art award
Postdoc Kelvin Davies received an honorable mention for three black and white drawings at the Third Annual Medical Complex Art Show at Cornell University library.

Bug in anti-virus program
A serious bug was detected in the most recent version of GateKeeper 1.2.8, the Macintosh anti-virus program, which will only affect users running the Tune-up utility with Systems 7.0.0 and 7.0.1. Computing Services recommends using the previous version of GateKeeper, 1.2.7, or the latest version of Disinfectant (3.2) and the Disinfectant INIT as alternative anti-virus software for Macs which are using Tune-up.

To check the Macintosh system version and verify that Tune-up is running, select "About This Macintosh" from the Apple menu in the Finder. If a large dot is seen next to the version number, then the Macintosh is running Tune-up, an indispensable program for Systems 7.0.0 or 7.0.1. Tune-up is not required for computers with System 7.1 or earlier versions of the system software (6.0.x).

Disinfectant 3.2 can be copied from the Freebies folder together with the file called "install.instructions," located on all Macs in the Users Area, Smith A21. For more information, contact the consultant, x8940.

Jennifer Horne King



Children, dressed in costumes they made for Halloween at the Children's School, purchased goods at a bake sale benefitting the school Oct. 29. In an event the following week, the school held an open house to introduce teachers and parents of other institutions to its new facilities.

Beate Hirsch dies

Beate Hirsch, former member of the Cohn-Steinman lab and former assistant in the Deans' Office, died in New York on Oct. 31. She was instrumental in helping Günther Schwerin, grandson of Nobel laureate Paul Ehrlich, to establish the collection of his grandfather's papers at Rockefeller; she also reviewed and cataloged the Ehrlich papers. Hirsch was the widow of Rockefeller Professor and Dean James G. Hirsch. She is survived by their daughter Rebecca, her mother and her brother. A memorial service will be held at a later date.

Dinner celebrates eight decades of clinical research

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evidence emerged from the experimental work that all pointed to DNA as the active substance."

By late October 1943, as they were putting the finishing touches on the paper describing this ground-breaking finding, they realized that they had neglected to get a photograph showing the dramatic difference of the bacterial colonies before and after they were transformed. McCarty obtained the historic illustration exactly 50 years before the Hospital dinner—on Oct. 28, 1943. The paper was submitted Nov. 1, 1943.

"The story of pneumococcal transformation is perhaps the clearest demonstration that mission-oriented medical research—research directed at a serious medical problem—can at times bring forth unexpected dividends that enrich basic biological knowledge," McCarty said. "I think one can hardly regret that the phenomenon did not live up to its early promise of being useful in the treatment of pneumonia, since today DNA biology as it has developed in the 50 years since its genetic role was first discovered is contributing in a major way to a variety of medical problems."

A number of important friends and benefactors of the Hospital were acknowledged at the dinner. Chairman of the Board Richard Furlaud named Trustee Theresa Lang, chair of the board's Hospital Committee, an honorary member of the Hospital staff, presenting her with a special gift—a lab coat with her name on it. Furlaud also thanked the committee's current members: Alexander Bearn, Edward Cooper, Eugene Grisanti, Evelyn Lipper, Ernest Mario and Richard Rockefeller.

In addition, Furlaud acknowledged the many who have helped support the university and its Hospital, including: Ralph Ablon; Alan Batkin; Peter Bentley and The Reverend Sydney Woodd-Cahusac of the Herzog Foundation; Russell and Judy Carson; Gustavo Cisneros; former Rockefeller Professor Jack Fishman; Louis Hector of the Lucille P. Markey Charitable Trust; Irving and Suzanne Karpas; Jane Burke O'Connell of the Altman Foundation and her husband, Ralph O'Connell; Howard Pack; Frederick Rose; Jerome Siegel; and Herbert Singer.