

# BenchMarks

THE COMMUNITY NEWSLETTER OF THE ROCKEFELLER UNIVERSITY

FRIDAY, FEBRUARY 11, 2005

## Announcements

**CFC Bake Sale February 11.** The Child and Family Center will be selling baked goods and African violets to raise funds to purchase international percussion instruments for the children. The violet sale is from 9 a.m. to 3 p.m.; the bake sale is from 11 a.m. to 3 p.m. in Weiss Lobby.

**Van Cliburn piano recitals at Caspary.** Screening recitals for the 12th Van Cliburn International Piano Competition will be held in Caspary Auditorium February 10 to 16 from 12 to 2:40 p.m. and 8 to 11 p.m. (no afternoon session on Friday, February 11). All are welcome.

**EAP spring classes begin in February.** The Employee Assistance Program is sponsoring several free workshops:

**>Grief and Bereavement.**

Supportive, interactive discussions focused on coping with the loss of a loved one, supporting those experiencing grief reactions, and effective coping skills. Four sessions beginning February 7.

**>Time management.** A one-session educational and experiential group to help employees manage time more effectively, create important priorities and improve organizational skills at work and home. March 23 and March 30.

**>Communication Skills.** Topics include the significance of communication skills, types of communication, and how to better communicate both professionally and personally. Mondays April 11 to April 25.

All workshops take place during the lunch hour and are held at NewYork-Presbyterian Hospital. Visit [www.eapc.us](http://www.eapc.us) or call (212) 746-5890 for information or reservations.

**Pool and darts winners announced.**

This year's winners of the postdoctoral association's tournaments are James Gomez (McKinney Lab) in the darts tournament and Ru Zhong (R. Darnell Lab) in the pool tournament. Runners-up are Matt Evans (Rice Lab) in darts and Sean Taverna (Allis Lab) in pool. The finalists receive a free lunch for 2 at Abby and the winners get their names engraved on a plaque at the Faculty and Students Club.

Announcements for this space should be submitted at [www.rockefeller.edu/benchmarks](http://www.rockefeller.edu/benchmarks).

## OBITUARY

# Richard B. Fisher, friend and trustee

BY BETSY HANSON

"Dick Fisher was truly excited about the notion of bringing scientists together in new and intellectually challenging ways," says Michael Young, who is Richard and Jeanne Fisher Professor at Rockefeller.

"And I particularly remember a discussion about how a scientific career evolves. Dick was very keen to capture the exploration and energy of young investigators. He wanted to bring new lab heads to Rockefeller who would establish their careers and do their best work here."

Richard B. Fisher, Rockefeller's board chairman since 1998, died December 16, 2004, at Memorial Sloan-Kettering Cancer Center. He was 68.

In the business world, Fisher was known for his 35-year career at Morgan Stanley investment bank, which culminated in the 1997 negotiation of a merger with Dean Witter, Discover & Company. After the merger Fisher, who was educated at Princeton University and the Harvard Business School, became chairman emeritus and increasingly devoted himself to the arts and education.

Fisher joined Rockefeller's Board of Trustees in 1994 and became its chairman four years later. "He was really interested in how scientists think about problems," says Thomas P. Sakmar, Richard M. and Isabel P. Furlaud Professor, who was Rockefeller's act-

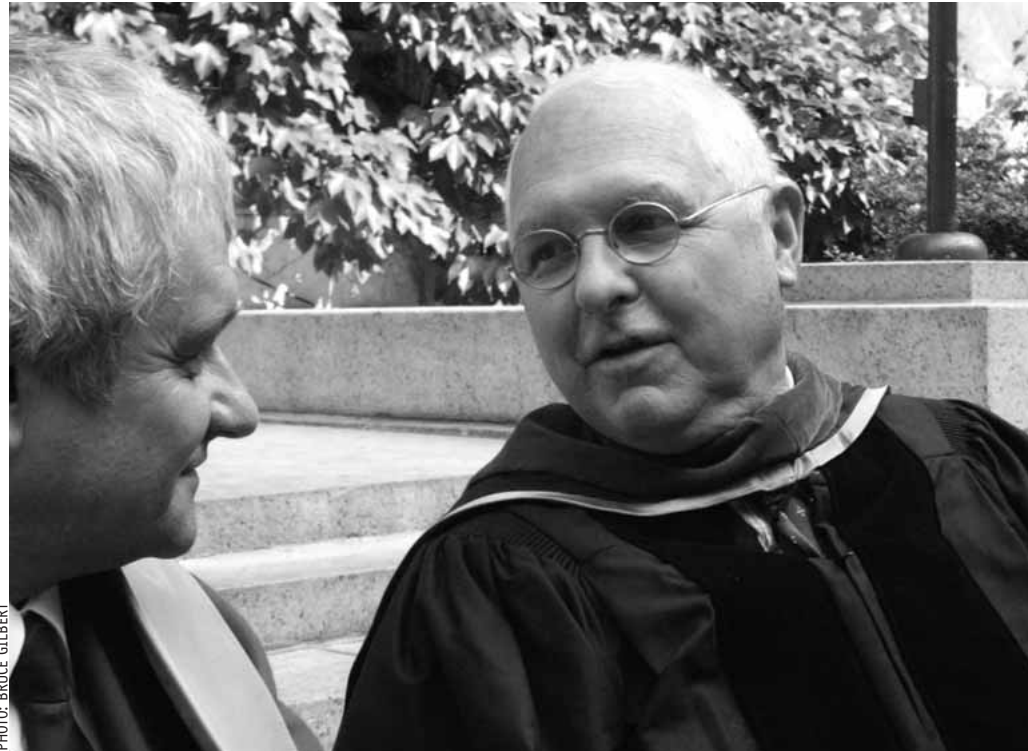


PHOTO: BRUCE GILBERT

ing president in 2002 and 2003. "He was fascinated to hear about the accomplishments of Rockefeller scientists, and he enjoyed interacting with the scientists here."

In addition, Fisher valued education deeply and considered Rockefeller's Convocation to be among the university's most important events. Despite his illness, he attended the 2004 ceremony.

Rockefeller University was one of many institutions to benefit from Fisher's generosity as a leader, advisor and philanthropist. At his death Fisher was chairman of the boards of Bard College and the Urban Institute, in

addition to Rockefeller, and he was chairman of the endowment trust of the Brooklyn Academy of Music.

"Dick possessed a remarkable ability to listen to others and build consensus while encouraging debate and ensuring that all voices were heard," said Paul Nurse in a December 16 letter to the campus. "The university was fortunate to have the benefit of his enormously effective leadership. His quiet strength and integrity meshed beautifully with a generosity and hugeness of heart. Dick led the university through a robust

*continued on page 2*



## Campus mourns Mac McCarty

BY ZACH VEILLEUX

There was never a single eureka flash for Mac McCarty. "Nothing in my memory or in the laboratory notes suggests that there was a moment of sudden revelation, a single experiment that resulted in a flash of insight and reorientation of our thinking," he wrote in his book *The Transforming Principle* in 1985.

Nevertheless, in 1942, several lines of evidence converged leading McCarty and his collaborators, Oswald Avery and Colin MacLeod, to suspect it was not protein but a mysterious assemblage of nucleic acids known as DNA that passed on genetic information from generation to generation. It took two additional years for the scientists to provide the rigorous proof they needed to take their discovery public.

Mac, as he was known to his wide circle

of friends, colleagues and former lab members, went on to enjoy a productive career that spanned more than 60 years. He was a Rockefeller emeritus professor when he died last month at the age of 93.

"It was McCarty's biochemical input that really turned the story around to implicate DNA and not protein as the genetic substance — without him, I think it would have taken longer to arrive at that

*continued on page 2*



**Paul Nurse**, President

**Joseph Bonner**, Director of Communications

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## Rockefeller in the News

Ira Flatow, host of National Public Radio's "Talk of the Nation: Science Friday," interviewed **Jeffrey Friedman** in Caspary Auditorium last Thursday, during a public lecture titled "A War on Obesity, Not the Obese." The conversation centered on the biology and genetics of obesity, and why it is so hard for some people to lose weight.

"There's no question that obesity confers a health risk, and that for most people who are overweight, losing weight can improve their health," said Friedman, head of the Laboratory of Molecular Genetics at Rockefeller and an investigator at the Howard Hughes Medical Institute. "What's important to remember is that you get a disproportionate health benefit for a relatively small amount of weight loss. But that's not what the public wants. ... I'd much prefer to see the dialogue and the issue center on improved health and achievable goals rather than setting up some societal construct that says everybody has to be perfectly wonderfully thin, a wish that really runs counter to everything that science has to tell us about this problem."

The event was part of the public event series sponsored by the Office of Communications and Public Affairs. A transcript of the interview is available at [www.rockefeller.edu/benchmarks](http://www.rockefeller.edu/benchmarks).



PHOTO: ZACH VEILLEUX



paul nurse  
2001 nobel prize winner, medicine

Charlie Rose interviewed **Paul Nurse** for an hour-long show on December 20, 2004. Their wide-ranging conversation touched on the genetics of cancer, stem cell research, cosmology, and the role of chance in scientific discovery, as well as communication among scientists, policy makers and the lay public. "Democratic decisions increasingly are influenced by scientific issues, yet they're hugely complex," said Nurse. "How do we deal in a democracy with highly complex issues, which the public have got

to have a position on, or at least a process that they trust? If we can't deal with this, we're going to find that we can't harness science to the benefit of society." To read the transcript in its entirety, visit [www.rockefeller.edu/benchmarks](http://www.rockefeller.edu/benchmarks).

NPR's Talk of the Nation: Science Friday featured **Sarah Schlesinger** in a January 14, 2005 broadcast on the genetics of HIV infection. Describing the HIV vaccine trial beginning at Rockefeller's hospital, Schlesinger said, "What we're hoping is that this vaccine will protect a proportion of people, or that it will protect people from disease, if not infection."

*Wired* magazine reported on new enthusiasm for nuclear power in its February 2005 issue, quoting Jesse Ausubel on renewable energy sources such as wind and solar energy. "Jesse Ausubel...calls renewable energy sources 'false gods' — attractive but powerless," *Wired* wrote.



**Jules Hirsch** commented in the January 28, 2005 *New York Times* on research suggesting that obese people may have an inborn tendency to be less active — even less fidgety — than lean people. Until this phenomenon is understood better, Hirsch said, "we're not apt to understand the overall obesity problem any better."

Newspapers from Los Angeles to London announced the January 2, 2005 death of DNA pioneer **Maclyn McCarty**. An article in New York *Newsday* reported that, "As a professor at Rockefeller University and as a former physician-in-chief at Rockefeller University Hospital, McCarty brought an unmatched level of creativity and inquisitiveness to some of the more profound questions in mid-20th century science, fellow researchers say."

### Fisher continued

period of growth that coincided with the celebration of our Centennial. The board and the campus drew heavily upon his wisdom, astute judgment, and calm and steady guidance during a critical period of transition."

In his philanthropy Fisher was a generous supporter of Rockefeller. He made a leadership gift of \$10 million to build out a floor in the Rockefeller Research Building, and he endowed the chair in his and his wife's name that currently is held by Young. He was a great admirer of the university's Women &

Science initiative and often attended the programs with his wife Jeanne Donovan Fisher.

Fisher also was a patron of the arts. He gave \$25 million to Bard College toward the construction of a performing arts center, named for him, that was designed by Frank Gehry. In October 2004, he and his wife donated \$10 million to the Brooklyn Academy of Music. Other institutions strengthened by Fisher's involvement include Princeton University, Harvard University, the Paris Review and the Tate Gallery.

### McCarty continued

conclusion," says Vincent Fischetti, head of Rockefeller's Laboratory of Bacterial Pathogenesis and Immunology.

After earning his medical degree, McCarty spent three years as a pediatric house officer at the Johns Hopkins Hospital, before pursuing research full time. In his first research position he studied sulfonamide drugs at New York University. He joined Avery's Rockefeller laboratory in 1941.

McCarty's experience treating patients at a time when the first antibiotics were becoming available led him to an interest in bacterial diseases, in particular, rheumatic fever. This disease afflicts mainly children and destroys the heart valve. When, in 1946, he became head of his own Laboratory of Bacteriology and Immunology at Rockefeller, McCarty devoted his research to understanding group A *streptococcus*, the bacterium that causes rheumatic fever. Through chemical analysis his laboratory team identified the components of the streptococcal cell wall. *Streptococcus* remains one of the best-characterized disease-causing bacteria as a consequence of his efforts.

McCarty's laboratory was based in Rockefeller's hospital, and his research depended on studies with patients. He was the hospital's physician-in-chief from 1960 to 1974, and a university vice president from 1965 to 1978. McCarty also contributed to the university as an editor of the *Journal of Experimental Medicine* from 1963 nearly until his death. He was committed to the education of young scientists, and for several years chaired the board of the Helen Hay Whitney Foundation, which awards postdoctoral research grants. He performed a vital service for the people of New York City as chairman of the Public Health Research Institute from 1985 to 1992.

McCarty, who was awarded the 1994 Albert Lasker Award for Special Achievement in Medical Science — America's highest scientific honor — for

his contribution to biology, was also a member of the U.S. National Academy of Sciences and a charter member of the Institute of Medicine. Rockefeller University granted him an honorary degree in 1982, and, in 2001, presented him with the Centennial David Rockefeller Award for Extraordinary Service at the Centennial Convocation. McCarty was also a recipient of the Wolf Prize in Medicine.

"Mac has always been such a modest person that even when this unfolded and came to be known, he acted just like the rest of us, as if he hadn't discovered one of the things that has changed the course of the world and world history," said Rockefeller University life trustee David



Rockefeller at a 1994 celebration to recognize the 50th anniversary of McCarty's discovery.

"Even if nothing else had been done at this great university, this great discovery has, in my judgment, more than justified all by itself the great hope and aspiration of my grandfather and father when they established this institution, in 1901," said Rockefeller.

McCarty is survived by his wife, Marjorie; sons Richard McCarty and Colin Avery McCarty; daughter, Dale Dinunzio; and eight grandchildren and five great grandchildren.

# Guarding Rockefeller's network

*To keep Internet traffic flowing smoothly, the university relies on cutting-edge hardware, up-to-date software and technologists like Jens Matthes*

BY BETSY HANSON & ZACH VEILLEUX

Two to three times a month, Jens Matthes gets an alert from one of several hardwired network monitoring devices located at the entry points to Rockefeller's network connections. The alerts, which mean that "suspicious" patterns of network traffic have been detected, could signal the attack of a Trojan horse.

Unlike the e-mail viruses that most of us know to watch for, Trojans don't require clicking an attachment or launching a program to be activated. Once they've installed themselves on a computer, they take over its processing power and network bandwidth in order to carry out their creator's instructions. Typically that means launching a spam attack or bombarding a specific server with bogus requests — what's known as a denial-of-service attack.

"With many Trojans, there's no way to tell that your machine has been infected, even for the most sophisticated and computer savvy users in the world. There's no adverse effect on its performance and no trace of any suspicious processes," says Matthes, Rockefeller's network security chief, who monitors Rockefeller's network from his desk in the Smith Hall offices of Rockefeller's Information Technology department.

For the network, however, the impact can be severe. When a handful of computers devote all of their resources to creating network traffic, it can quickly overwhelm the routers and switches that serve it. Before long, there's no room for legitimate data. Even Rockefeller's fast one-gigabit network backbone will get clogged.

In fact, it was a single Trojan-infected computer that brought down the entire university's Internet access on October 1, 2004. For several hours, staff in the Information Technology department combed through the traffic patterns of the university's computer network — a task made difficult because of the Trojan designer's use of camouflage techniques that disguise its whereabouts — before they found the compromised machine.

It wasn't until that machine was isolated and disconnected that things returned to normal. Then, the computer's hard drive had to be wiped and entirely reconstructed to ensure the Trojan's removal.

There's more than one way to run a network. On one end of the spectrum, an open model, a computer is plugged into the network and the users have free reign. Without constant vigilance, however, open networks tend to get clogged with undesirable traffic (often from illegal file sharing as well as Trojans and viruses). In addition to slowing things down, this creates a greater risk that sensitive or proprietary data could be compromised, or even that the comput-

er could be taken over completely.

At the opposite end of the spectrum, tightly controlled networks, such as those in corporate environments, require that each user be issued standard computer equipment and software. In the most restrictive environments, such as at financial institutions, users are not given administrative access to their own machines, floppy drives and USB ports are banned, and all non-pertinent Web site are blocked.

"Obviously, neither of these scenarios is well suited to Rockefeller's needs," says Jerry Latter, Rockefeller's chief information officer. "Our challenge is to maintain a high-speed, high-quality, secure connection to the Internet while allowing a free, open and collaborative environment and allowing our scientists flexibility in choosing equipment."

Though security has been an issue for as long as personal computers have been around, it's become particularly critical in the past few years. Worldwide, the costs to business of network security breaches have been doubling every year since 2000, according to data from antivirus software maker TrendMicro.

"It used to be kid hackers trying to have fun — today it's about money," says Matthes. "For instance, you have companies attacking their competitors in order to disrupt their revenue or drive them out of business." While Rockefeller is not typically a target of such attacks, its computing resources (processing power and network bandwidth) have been hijacked to assist with it.

In response, IT has been making new investments in infrastructure and launching new initiatives to curb the impact of network disturbances on the university's computing systems. Among them:

**Redundant e-mail servers.** To protect the campus from e-mail disruptions in the event of an attack, in 2003 IT added a second e-mail server. Like the engines on an airplane, each server can operate the entire e-mail system on its own even if the other one fails. "In addition to protecting from outages, this allows us to perform routine security maintenance without disrupting



**Inside the fortress.** Jens Matthes, network security specialist in Information Technology, in the Smith Hall Annex server room that is the university's first line of defense against network threats.

the community," says Armand Gazes, director of IT operations and network security. Thanks to robust new e-mail antivirus software and increased vigilance by individual users, e-mail borne viruses now cause the least amount of disruption of all the security threats.

**Attack mitigator.** This specialized firewall — a piece of hardware that sits adjacent to the main network routers in IT's Smith Hall Annex server room — monitors patterns of network traffic headed between the Rockefeller network and the Internet at large. When it detects activity indicative of a worm or denial of service attack, IT is alerted and the suspicious traffic is blocked.

**Intrusion protection system.** Like antivirus software for an entire network, the recently installed intrusion protection system looks at individual packets' data for signatures of known worms and Trojans that it has been programmed to watch out for. If it finds something it recognizes as problematic, it will discard the packet before it can even be delivered to a user's desktop.

**Patch management.** Though antivirus software performs a valuable service by scanning e-mails and monitoring Internet traffic, a well-designed Trojan can work around antivirus software by exploiting specific weaknesses in the operating system. To be effective, antivirus software must get regular virus definition updates and new operating system security patches must be promptly installed on each computer on campus.

Microsoft released 45 security-related updates and patches in 2004. Because keeping up with all that patching is a nuisance, IT is now using a centralized patch management system for its Windows computers, which quietly applies the necessary patches to subscribers' machines during

overnight hours.

**Additional firewalls for scientific equipment.** About 100 of the university's roughly 3,000 computers are connected to scientific or medical equipment. Because they use specialized proprietary software, it is often not possible for them to be upgraded or patched. In a few cases, these machines are still running Windows 3.5, which has been obsolete since 1995. "These vendor-maintained machines pose an enormous challenge for us in terms of network security," says Latter. In cases where it's simply impossible to bring these older machines up to date, IT is now equipping some of them with small hardware firewalls (similar to the consumer grade routers that are often used on home networks) to block traffic to all but the necessary ports.

**Education.** After the 2002 attack of the "Blaster" worm that brought down several hundred Rockefeller computers, people started getting better about maintaining their own machines. For a while. "Then, gradually, people revert back to their old habits," Matthes says. It only takes one vulnerable computer to take the network down, Latter says. Even if your everyday computer is up-to-date, check your laptop, any shared machines in your lab or office, and especially home computers that you may use to connect to campus over a virtual private networking (VPN) connection.

"Machines using VPN are especially critical, since they function just like computers that are physically at Rockefeller, yet they are frequently used by non-Rockefeller people, like spouses and kids, for any number of purposes," says Latter. It's for this reason that IT makes antivirus software available free of charge for faculty, staff and student personal home computers. See [it.rockefeller.edu](http://it.rockefeller.edu) to download.

## ADMINISTRATION

### Yarbrough leaves Rockefeller for Salk Institute

After nearly three and a half years as the university's chief internal and external communicator, Cathy Yarbrough has stepped down from her position as vice president for communications and public affairs and has taken a new position at the Salk Institute for Biological Research in La Jolla, California.

Yarbrough, who came to Rockefeller

with over 20 years of experience in journalism and public relations, including stints at Novartis Pharmaceuticals, the National Human Genome Research Institute, and the American Heart Association, served as the university's spokesperson to the community, the media and the public at large. She will take on a similar role in her capacity as vice president for communications at Salk.

"Under Cathy's leadership, the Communications and Public Affairs office strengthened and improved the university's communications with the external public and our internal communications as well," says President Paul Nurse. "Amongst many initiatives, Cathy has provided leadership as she and her staff worked more closely and effectively with the university's scientists to

present scientific discoveries and advances to the public with greater clarity and accuracy. We wish her great success in her new position."

In the wake of Yarbrough's resignation, Joseph Bonner, director of communications at Rockefeller since 1998, is serving as acting head of the Office of Communications and Public Affairs.

# milestones

## PROMOTIONS, AWARDS AND PERSONNEL NEWS

### Hired:

**Bethzaid Alvarado**, custodian, Plant Operations Custodial Services.

**Angel Bacabac**, mechanic II, Housing Faculty House.

**Catherin Bernstein**, supervisor, LARC.

**Paul Bieniasz**, Aaron Diamond Associate Professor, head of the Laboratory of Retrovirology.

**Bryan Cardenas**, animal attendant, LARC.

**Peter Chahales**, research assistant, Fischetti Laboratory.

**Elizabeth Conley**, laboratory administrator, Allis Laboratory.

**Alicia Couraud**, clinical research nurse, Kreek Laboratory.

**Priya Gogia**, research assistant, Gilbert Laboratory.

**Evan Greene**, office assistant, Development.

**Margaret Hogan**, assistant archivist, Archive Center.

**Richard Hunter**, postdoctoral fellow, McEwen Laboratory.

**Christopher T. Jones**, postdoctoral associate, Rice Laboratory.

**Magdalena Kartvelishvi**, research assistant, George Cross Laboratory.

**Kristine Kelly**, science writer/media relations specialist, Communications and Public Affairs.

**Uri Lavi-Gefel**, visiting professor, Friedman Laboratory.

**Bruce P. Lee**, postdoctoral associate, Hatten Laboratory.

**Gregory Lee**, postdoctoral associate, Bargmann Laboratory.

**Jose F. Leon**, gardener, Plant Operations Grounds.

**Jennifer Lew**, immigration and academic appointments assistant, Human Resources.

**Raquel Martin Palomeque**, postdoctoral fellow, Chua Laboratory.

**Christie McPherson**, research assistant, McEwen Laboratory.

**Kyle Miller**, postdoctoral fellow, de Lange Laboratory.

**Maria Soledad Miranda-Rottmann**, postdoctoral associate, Hudspeth Laboratory.

**Mark Nocito**, receiving clerk, Purchasing.

**Jose Pagan**, research assistant, Ravetch Laboratory.

**Claudia Peissert**, scientific database programmer, Hospital Informatics.

**Angela Plowden-Ward**, assistant director for stewardship, Development.

**Melissa Rosado**, skilled laboratory helper, Nottebohm Laboratory.

**Marcus Carl Stensmyr**, postdoctoral fellow, Mombaerts Laboratory.

**Sarah Tobey**, research assistant, Karayiorgou Laboratory.

**Richard Torres**, assistant project archivist, Archive Center.

**Anja Zeigerer**, postdoctoral associate, Friedman Laboratory.

**Anton Zilman**, postdoctoral associate, Magnasco Laboratory.

### Promoted:

**Keith Akama**, from postdoctoral associate to research associate, McEwen Lab.

**Gavin Bart**, from research associate to assistant professor of clinical investigation, Kreek Lab.

**Giulia B. Celli**, from postdoctoral associate to research associate, de Lange Lab.

**Kavita Dhodapkar**, from instructor in clinical investigation to assistant professor of clinical investigation, Steinman Lab.

**Diego Loayza**, from postdoctoral fellow to research associate, de Lange Lab.

**Kevin J. O'Donovan**, from postdoctoral fellow to research associate, R. Darnell Lab.

**Uta-Maria Ohndorf**, from postdoctoral associate to research associate, MacKinnon Lab.

**Matteo Ruggiu**, from postdoctoral associate to research associate, R. Darnell Lab.

**Xiaozhou Ryan**, from postdoctoral associate to research associate, Greengard Lab.

**David J. Solecki**, from postdoctoral associate to research associate, Hatten Lab.

**Mihaela Stavarache**, from postdoctoral associate to research associate, Pfaff Lab.

**Kristin Tarbell**, from postdoctoral associate to research associate, Steinman Lab.

**Francis Valiyaveetil**, from postdoctoral associate to research associate, MacKinnon Lab.

### Awarded:

**Walter Chen** (Pfaff Lab), **Alexander Dubbs** (Magnasco Lab), **Zachary Einzig** (Goulianos Lab), **Avril Johnnidis** (Vosshall Lab) and **Josh Silverman** (Tuschl Lab) — all high school students participating in Rockefeller's Science Outreach program — semi-finalists in the 2005 Intel Science Talent Search, which recognizes outstanding science projects contributed by high school seniors. Two additional high school students in the Rockefeller program, **Ashish Bakshi** (Reeke Lab) and **Lee Cooper** (Allis Lab) are semi-finalists in the 2004 Siemens Westinghouse Science Talent Search competition.

### Honored:

Former Rockefeller University President **Frederick Seitz**, for initiating the Rockefeller Hospital's Clinical Scholars Program in 1976. During a December 15, 2004 symposium Seitz was presented with an award, Attallah Kappas and Jules Hirsch spoke about the program's founding and the history of clinical research, and four former clinical scholars gave presentations of their research.

**Mitchell J. Feigenbaum**, on the occasion of his 60th birthday, with the Numbers and Nature Symposium. Twenty-four physicists and mathematicians presented papers at the symposium, held December 17 and 18, 2004. Feigenbaum is Toyota Professor and head of the Laboratory of Mathematical Physics.

### Retired:

#### Patricia Mackey

"I want to catch up on all my reading," says Patricia Mackey, who retired as university librarian at the end of January. Mackey joined the staff of Rockefeller's library as an interlibrary loan assistant in 1972. She rose through the ranks to become librarian in 1981 and university librarian in 1991, earning a bachelor's degree and a master's degree along the way.

Mackey's mission has been to "move the library into the 21st century and make it user-friendly," she says. In the 1990s, working with a faculty committee, Mackey led a major transformation of Rockefeller's library from a traditional academic library to a specialized biomedical research collection. Holdings of 300,000 volumes were pared down to about 95,000, and the streamlined catalog was entered into the worldwide database known as OCLC. In 1995 tri-institutional borrowing privileges took effect. The security system that allows 24-hour access, installed in 1999, was the first in the country for a university library. This system also allows users to check out books themselves, and it gathers statistics on library usage.

Information technology continues to change the way the library is structured and used. Since 2001 the number of electronic journals has grown from 11 to 458. "The Rockefeller library is a wireless zone," adds Mackey. "More people come with laptops now."

But less paper does not mean less work for library staff. "Having a digital collection is three times the work," says Mackey. "It used to be a matter of ordering, cataloging and binding journal issues. Now you have to evaluate and negotiate site licenses, maintain different points of access, and make sure Web links are active."

Mackey will retire to her home in York, Pennsylvania. Among other projects, she plans to combine her passions for reading and for high tea. "I'm going to start a book club," she says. "That's a great way to have your high tea — discussing a book."

"I can't imagine a more professionally and personally satisfying place to work than Rockefeller," adds Mackey. "It always felt like family. And it's almost like reading a novel. New faculty come, you meet new characters. Relationships develop and evolve. Every day is like starting a new chapter."

### Obituaries

**Rollin D. Hotchkiss**, emeritus professor, died on December 12, 2004, at his home in Lenox, Massachusetts. He was 93.



Hotchkiss was a biochemist and geneticist best known for his contributions to DNA research. In 1946 he joined the laboratory of Oswald T. Avery, where, two years before, Avery, Colin Macleod, and Maclyn McCarty had identified DNA as the material of heredity. Research by Hotchkiss provided conclusive evidence that DNA — and not proteins, as maintained by some skeptics — makes up genes.

Over the next 30 years Hotchkiss's pioneering work left its mark on a broad range of fields from analytical chemistry through microbial cell biology to molecular genetics. Through the introduction of drug-resistance traits as genetic markers, Hotchkiss formulated genetic transformation as a quantitative process in which a number of DNA molecules interact with receptors in the recipient bacterial cells. Similar work is now the basis of gene transfers in the modern biotechnology of DNA.

Hotchkiss also broadened studies on genetic transformation to include aspects of microbial cell biology: he showed that bacterial cells spontaneously release transforming DNA molecules into the medium and was also the first to synchronize cell division in a bacterium by cyclic shifts in temperature.

Known for his playful manner of explaining complex ideas, Hotchkiss reflected on his work, at the age of 83, with a short poem: "And so, for three score years or so, I wrestled with an ancient quiz: struggling so we all could know what makes life the way it is."

Hotchkiss received the B.S. degree in 1932 and a Ph.D. in 1935, both from Yale University. He joined the Rockefeller Institute for Medical Research in 1935 as an assistant. He became head of his own laboratory in 1955 and retired as an emeritus professor in 1982. After his retirement, he also held an appointment as a research professor at the State University of New York at Albany. Hotchkiss was a member of the U.S. National Academy of Sciences, an honorary member of the Hungarian Academy of Sciences and a foreign member of the Royal Danish Academy of Sciences.

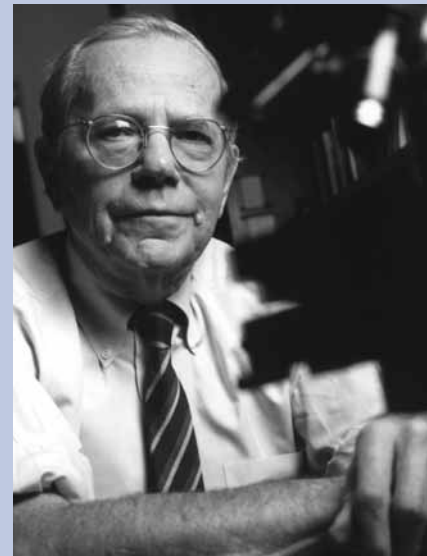
He is survived by his wife, Magda Gabor Hotchkiss; his first wife, Shirley Dawson; the children of his first marriage, Paul Hotchkiss and Cynthia Hotchkiss Lydgate; three grandchildren and five great-grandchildren.

**William Trager**, emeritus professor, died January 22, 2005. He was 94.

In more than 60 years of research at

Rockefeller, William Trager led the way to today's understanding of malaria, a disease that kills 1 million people annually. One of his most significant achievements was to cultivate the mosquito-borne parasite *Plasmodium falciparum* — the most lethal of the four species of malaria parasites that infect people — in a test tube. Before this discovery, made in 1976 with James B. Jensen, the lack of a means to cultivate the malaria parasite outside of a living host was the major roadblock to making an effective vaccine. His culture methodology, now used in laboratories throughout the world, led to the identification of the parasite's antigens, the molecules that incite immune-defense reaction in the human host.

Among the campus community he is remembered for his generosity. "He was extremely welcoming when I came to Rockefeller," recalls Joel Cohen, head of the Laboratory of Populations. Adds emeritus professor David Mauzerall, "What impressed me first about him was that he was willing to listen. Whenever he talked with anyone it was on a perfectly equal basis. His gift was to



present his work in an unassuming way."

A world-renowned authority on parasitic diseases, insect physiology and tropical medicine, Trager studied the complex life cycles of parasitic protozoa, the ways in which parasites move from host to host, how they infiltrate particular organs and cells within host organisms, their genetics, nutritional needs and the defenses they and their hosts mount against one another.

In the 1990s, Trager and his group cultivated the malaria parasite in a nonliving medium, extracts of red blood cells, and showed that the parasite could invade living red cells after cycling through this medium. He also studied another parasite infectious in the red-blood stage, *Babesia*, which is carried by ticks and causes serious disease in mammals, including domestic animals and sometimes in human beings.

Trager came to Rockefeller in 1933 as a National Research Council Fellow. Although he spent his entire career at the university, his research took him to Africa in the 1970s, where, on a Guggenheim Fellowship, he worked at the Nigerian Institute for Trypanosomiasis Research. Trager was a member of the U.S. National Academy of Sciences. Among many honors, his research was recognized with Thailand's Prince Mahidol Award in Medical Science in 1995. He also authored two books and was the first editor of the *Journal of Protozoology*.

Trager is survived by his son, Leslie, his daughters Carolyn Burr and Lillian Trager, and three grandchildren.