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The Rockefeller University

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news & notes

October 13, 1995 Volume 6, Number 5

The Rockefeller University

Media enhances services

An autorad or electrophoresis gel on a slide, in half a day?

No problem. In by 11:00 A.M., out by 4:00 P.M.

An eye-catching poster?

Two colors or four?

Fifty copies of a head shot and journal-quality reprints?

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Such queries and replies are common in the Media Resource Service Center, thanks to enhanced capabilities that offer a wider variety of services for digital and traditional photographic preparation and processing of scientific materials.

"In response to our users' demands, we are aiming for a state-of-the-art digital imaging service

center that the Rockefeller community can be proud of," said Ray Aldrete, director. "The demand for digital processing has been increasing by 15 percent a year. Our prices remain lower for similar services available off campus. But equally as important, if not more so, is that our staff understands the graphic, quality, and time requirements of our community. Off campus vendors often don't."

Media has staff and equipment for converting ideas into reality and images into digital information. With its new resources, Media can produce upwards of 300 color slides

See Media, page 2



Greg Vincent

Additions to Media's customer service room in Bronk 114 are areas for consulting, electronic file previewing, and light box viewing as well as displays for products related to publishing, presenting, and communicating. Special offer: Today (Oct. 13) only, visitors may pick up a free 8½ x 11 inch ruled notepad.

November ceremonies honor long-time employees

Two traditional ceremonies next month will honor 63 Rockefeller employees for the longevity of their commitment to the university.

2 Notes of appreciation

3 Viral connections

4 Reviving Sigma Xi

The Anniversary-Retirement Dinner will take place Thurs., Nov. 16 and the Employee Recognition Program will take place Wed., Nov. 29.

The Employee Recognition Program recognizes people celebrating 10 and 20 years of service at Rockefeller. The event will take place from 3:00 P.M. through 5:00 P.M. in the Abby Aldrich Rockefeller Dining Room. Awards will be given, followed by refreshments and hors d'œuvres.

"Everyone on campus is invited to the celebration to join in recognizing those who have given many years of dedicated service to the university," said Virginia Huffman, director of Personnel.

The Anniversary-Retirement

Gene hunter discusses mutations that lead to high blood pressure

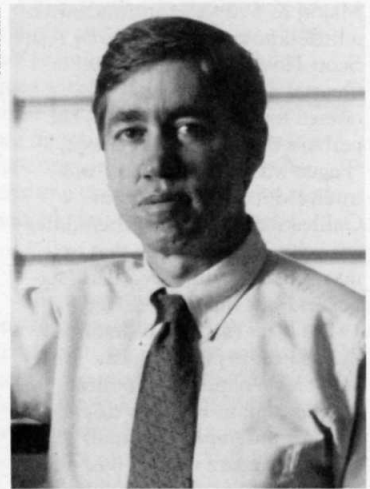
Richard P. Lifton, associate professor at Yale University Medical School and Howard Hughes Medical Institute assistant investigator, discusses "Finding Genes Causing Human Vascular Disease" at the Friday lecture today (Oct. 13).

Lifton studies the genetic causes of hypertension, a disease that affects 50 million Americans and contributes to more than 200,000 deaths annually from stroke, myocardial infarction, and renal failure.

Using the tools of molecular genetics, he and his colleagues identified the first two mutations contributing to the pathogenesis of hypertension. One of these mutations causes dysregulation of mineralocorticoid secretion, resulting in a severe form of hypertension called glucocorticoid-remediable aldosteronism (GRA). This finding led to the development of a simple genetic test to screen for this disorder, use of which showed that GRA is underdiagnosed. The other mutation is a variant of the angiotensin gene. Work in Lifton's lab aims to identify additional mutations leading to hypertension.

"The genetic basis of hypertension, one of the most common risk factors for heart disease, is largely unknown," said Professor Jan L. Breslow, who introduces Lifton today. "Dr. Lifton's work identify-

Robert Lisak



Physician-scientist Richard P. Lifton and his colleagues were the first to identify genetic mutations that contribute to hypertension.

ing genes underlying hypertension susceptibility in humans has relieved some of our ignorance in this important area as well as revealed some of the metabolic mechanisms involved."

Lifton received both his medical degree (1982) and his doctoral degree (1983) from Stanford University. After completing a residency at Brigham and Women's Hospital in Boston, he joined the faculty of Harvard Medical School as an instructor in medicine in 1987 and was promoted to assistant professor in 1991. He became assistant professor of medicine and genetics at Yale University Medical School in 1993. In 1994, Lifton was promoted to associate professor of medicine (nephrology) and genetics and received his HHMI appointment.

Lifton, who was a clinician-scientist of the American Heart Association (AHA) from 1991 to 1993, received the SmithKline-Beecham Young Investigator Award from the International Society for Hypertension in 1994. Among other commitments, he serves on the AHA Council for High Blood Pressure Research Task Force on Science.

The lecture will be held at 3:45 P.M. in Caspary Auditorium and preceded by tea at 3:15 P.M. All are welcome.

See November, page 2

Lively playing noted at first evening concert

by Associate Professor
George Reeke

The Shanghai Quartet opened the 37th season of The Rockefeller University Concerts Thurs., Sept. 28 with Wolfgang Amadeus Mozart's familiar Quartet in F Major, K. 590 and continued with a little-known masterpiece by Alan Scott Hovhaness, his "Jupiter" Quartet. No explanation was offered for the celestial title, but perhaps the second movement, a "Fugue with four subjects," was intended to suggest the four Galilean satellites with their different orbital rhythms. Be that as it may, the work displayed Latin flavor and was warmly received.

The *New York Times* described the quartet as playing in the aristocratic style of prewar European quartets, but at RU they displayed a more contemporary sound, with each instrument distinctive. This style continued after intermission in the Brahms Opus 67 Quartet, although the group achieved a bigger, more conventional sound appropriate to the piece, with evident joy even in the contemplative slow movements.

The next performance in the evening concert series, by *Camerata Bern* Thurs., Oct. 26, is sold out. *Daniel Smith with Michael Rabinowitz and Jazz Combo*, will perform Wed., Nov. 15. For ticket information, contact Cathy Rogers, x8437.

Courtesy of the artist



Bassoonist Daniel Smith will perform with Michael Rabinowitz and Jazz Combo at the evening concert Wed., Nov. 15.

Reed to depart for New Jersey Project

Ingrid Reed, vice president for public affairs and corporate secretary for the Board of Trustees, will leave Rockefeller toward the end of the calendar year to direct on a part-time basis the New Jersey Project, an initiative of the Rutgers University Eagleton Institute of Politics.

Accepting her resignation, President Torsten Wiesel wrote of his "deep personal regret and great respect for your many contributions and accomplishments in the ser-

vice of the university."

"This was a very difficult decision," Reed said, "I found my three and a half years here wonderfully challenging and gratifying. I am enormously respectful of, and will miss, the scientists, staff members, and trustees with whom I have been fortunate to work. However, it makes sense for me to spend time more flexibly on my personal and professional pursuits closer to my home in Princeton."

"Ingrid has worked tirelessly to

assure that important matters get the attention they merit from faculty, administration, and trustees. Her departure is a great loss," said Fred Bohlen, executive vice president.

Wiesel will lead the effort to find Reed's successor.

November ceremonies

(continued from page 1)

wish to attend and we will send an invitation."

In addition to this year's honorees, Professor Philip Siekevitz, who could not attend last year to celebrate his 40th anniversary, will attend.

For information, contact Josefina Poniente, x8303. *News&Notes* will list honorees next week.



At the Employee Recognition Program last year, Anne-Marie Scully, executive assistant to the President, anticipated opening her gift.

Media tailors services to scientists

(continued from page 1)

per day from digital files. They can receive those files via disk or the RU computer network. Various file formats from either Macintosh, Windows, or other operating systems can be imaged to slides. Media provides lists of supported file formats and other useful information in its customer service room.

Also new is an Encad plotter system, which creates posters 36 inches wide by 8 feet long, and full color posters cost no more than black and white. In addition to creating high quality color prints, Media staff can now output fast, inexpensive color images via inkjet printers, at one-seventh the cost.

"If people have questions about how to prepare materials for output, they should call our computer graphics staff. They'll advise you, free of charge, on how to prepare your files," said John Sholtis, associate director. "And we still offer all the traditional services for design and illustration for scientific and medical research."

To accommodate the high-tech work, Media has streamlined rou-

tine tasks. One timesaver is a black and white microprocessor controlled film processor. "It gives repeatable accuracy and consistency. We can also do custom development," said Sholtis.

More upgrades are on the way. Testing is now under way on campus for an automatic, on-line slide production service. People will be able to prepare slides at their desktop computers, then send their slide materials (saved as postscript files) via e-mail to the Media server. Software there will automatically route the files to a machine that prints slides.

"A researcher will be able to finish his or her presentation at 2:00 A.M., use this service, and pick up slides at 10:00 A.M. on the way to the airport," said Sholtis.

In describing the upgrades, Sholtis reflected, "When Louis Schmidt established this department in 1910, he guided it through the revolution from hand-done illustration to photographic illustration. Now, 85 years later, we are experiencing the digital revolution, so we are again transforming ourselves. History is repeating itself."

Letter to the Editor

Culture lesson

Among many wonderful items contributed to the Children's School and Infant-Toddler Center silent auction last June was a gift of time and expertise: Five Japanese mothers offered to share their knowledge of sushi preparation to benefit the School and Center.

On September 29, we, the successful bidders for this prize, met at the Faculty House home of Naoko Takamiyagi for sushi lessons. Joining Mrs. Takamiyagi as "sensei" were Megumi Harigae, Kanako Ito, Mayumi Nagai, and Yuka Ishimaru. For over an hour, they instructed us in the finer points of seasoning rice for sushi and rolling maki, providing many samples to taste along the way.

While it would take a lifetime to acquire the skill of these women, we left with full stomachs and insights into a culture that values the aesthetics of food as much as the taste.

How nice that our university community affords us such pleasant opportunities to learn about other cultures!

With appreciation,
Odete da Cruz e Silva, postdoctoral associate; Philip DiMauro, assistant director, Development; Elizabeth de Oliveira e Silva, research associate; Karen Smith, director, Major Gifts; and Giovanna Zampaglione (mother of a Children's School member).

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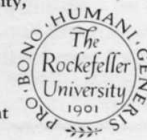
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Researchers track disease-causing retroviruses in New York and around the world

by Susan Blum

The AIDS-causing human immunodeficiency viruses (HIVs) are the world's most notorious retroviruses—pathogens whose RNA genes are copied into DNA and then integrated into the infected cell's genes. But other disease-causing retroviruses also exist. These are the human T cell leukemia viruses, or HTLVs for short.

Like HIVs, the HTLVs infect T cells, one arm of the immune system's defense repertoire. Also like HIVs, the HTLVs are under study in the laboratory of Associate Professor William Hall, clinical director of The Rockefeller University Hospital. His studies, which span the globe, are tracking the prevalence of infection with HTLVs and pursuing the ways the viruses cause disease.

There are two types of HTLVs. HTLV-I infects a subset of T cells known as CD4+ helper cells, as do the HIVs. But while infection with HIV kills CD4s, infection with HTLV-I produces cellular proliferation. Eventually, the cells become transformed and a cancer called adult T cell leukemia develops. HTLV-I also causes a progressive neurologic disease that bears many similarities to multiple sclerosis.

HTLV-I is especially prevalent in southern Japan. It is also endemic in Africa, the Caribbean, parts of South America, and in the US African-American population. "The virus probably originated in Africa and then was carried to most locations except Japan by means of the slave trade," Hall explained.

Unmasking a little-known virus

Since its discovery in 1979, HTLV-I has been the focus of great research interest, largely due to the virus' ability to cause leukemia. But

much less was known about the other virus, HTLV-II, until Hall started to study it, first at the North Shore University Hospital and then, since 1993, in his lab at RU.

Before Hall's investigations, only four cases of HTLV-II infection had been identified. But while studying a group of HIV-infected injection drug users, Hall and his colleagues found that as many as 25 percent were co-infected with HTLVs. Using sophisticated molecular tests developed in their lab, the scientists determined that the culprit was HTLV-II.

"This population provided a unique opportunity to work on HTLV-II," Hall said. "Suddenly, we had a large enough number of infections to begin looking at the virus' molecular and immunologic properties, and to determine what type of clinical disorders the virus might cause."

The opportunity rapidly resulted in a number of discoveries. In 1992, for instance, the researchers discovered that there were two different subtypes—Ila and IIb. They also found that HTLV-II infects CD8+ T cells, a different class of immune cells than the CD4 cells targeted by HTLV-I.

To better understand HTLV-II, Hall and his colleagues subsequently expanded their study of the virus into many different populations. Their research, along with work of other investigators, showed that the virus is prevalent in numerous native Indian groups throughout the Americas. In North America, these include the Navajo and Pueblo Indians of New Mexico and the Seminole Indians of Florida. Infection is also endemic in a number of geographically and culturally distinct groups in Panama, Colombia, and the Amazon region of Brazil.

"HTLV-II very likely was brought to America 20,000 to 40,000 years ago during the migrations of the ancestors of the present-day Indians across the Bering Strait," Hall said. He speculates that North American drug users were most likely infected through contact with Native Americans, and then spread the virus through shared needles.

Unlike injection drug users, who are predominantly infected with type IIa, most

Courtesy of William Hall



Many Indian groups in North, Central, and South America are infected with HTLV-II. Hall and his colleagues discovered that the Kayapo Indians of the Brazilian Amazon are infected with a viral subtype called HTLV-IIa. Here, a young Kayapo girl prepares to have blood drawn as part of Hall's studies.

Indian groups are infected with type IIb. But Hall and his colleagues recently found that infection with type IIa is extraordinarily high in Brazil's Kayapo Indians. They have also recently identified a third subtype, now designated HTLV-IIc, in Brazilian injection drug users.

Taxing questions

With viral samples from many populations in hand, Hall is investigating the molecular characteristics of HTLV-II. For instance, he is studying a viral protein called tax, which can activate a large number of cellular genes. Among these genes are those that code for substances—such as growth factors and cytokines—that contribute to proliferation of the infected cells and perhaps to the development of leukemia.

The Rockefeller scientists are exploring tax's action by dissecting the viral gene that codes for the tax protein. Comparing the gene in the three subtypes—Ila, IIb, and IIc—the researchers discovered that subtype IIb codes for a protein that is 25 amino acids longer than the tax of IIa. This protein, Hall says, is a "tremendously more potent" activator of cellular genes—a fact

that may prove significant for the medical consequences of infection with various subtypes. The researchers found that type IIc's tax gene also codes for an extended protein, although the virus' overall genetic structure is much closer to IIa than IIb.

Other studies in the lab aim to identify the specific regions of the tax protein involved in cellular gene activation. In addition to these test-tube studies, the scientists are investigating the tax protein's functions in living organisms by creating transgenic mice with engineered versions of the tax gene.

Seeking the receptor

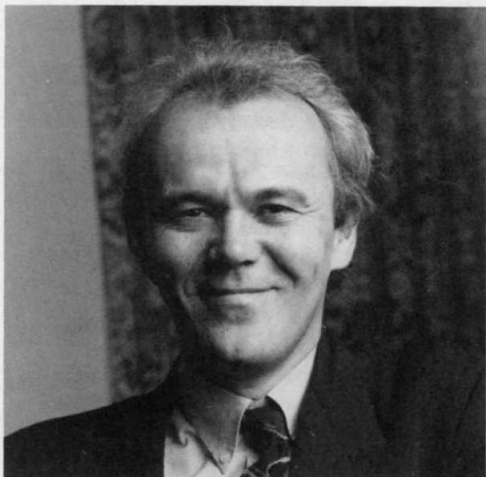
The researchers are also conducting immunologic studies. They wish to identify the virus' receptor on T cells—reported to be the same for both HTLV-I and HTLV-II—and to learn why HTLV-I targets only CD4 cells while HTLV-II infects CD8s. In addition, the scientists are investigating the effects of HTLV-II infection on CD8 cell function.

Studying injection drug users in The Rockefeller University Hospital, the researchers found that HTLV-II invades a diverse range of CD8 cells, and that those infected cells proliferate. "We see in these cells at least an asymptomatic proliferative disorder, or perhaps even a pre-leukemic stage," said Hall. Research in the lab is now investigating which growth factors or cytokines might cause the proliferation—work which, in turn, may shed light on the role of the tax protein.

Medical studies are another component of Hall's work on HTLV-II. This work, under way with both the Kayapo Indians and with injection drug users in the United States and Brazil, tracks the development of disease in infected people.

"HTLV-II has always been considered to be nonpathogenic, because we hadn't identified a large enough population to see the outcome of the infection. The prospective medical surveys will give us a better appreciation of the true pathogenesis of HTLV-II," Hall said.

Already, the researchers have found two cases of an ATL-like cancer involving CD8 cells and seven cases of a neurologic disease similar to that seen with HTLV-I. As more data come in, the combined molecular, immunologic, and clinical approaches will help the Rockefeller researchers illuminate not just the extent of HTLV-II pathogenesis, but the cellular mechanisms that underlie it, as well.



Associate Professor William Hall studies retroviruses.

Intersection of science and society is theme of series planned by honorary society

First speaker will discuss Rockefeller scientist Alexis Carrel

Members of the university community are reviving the Rockefeller chapter of Sigma Xi, the international honorary association for scientists and engineers. For their first event this year, the chapter will host Father Stanley Jaki, a Templeton Prize recipient and professor at Seton Hall University, who will speak on "Two Lourdes Miracles and Rockefeller's first Nobel laureate, Alexis Carrel" Tues., Oct. 17.

The talk is the first in a series planned by the chapter. "We would like to maintain the Sigma Xi tradition of wide-ranging lectures on intersections between science and the arts, the environment, history, and religion," said Frank P. Murphy, vice president of the RU chapter and a Rockefeller postdoctoral fellow and associate physician. "Our mission is to provide a forum for views that are both informative about and challenging to current science." Chapter members are also seeking to renew participation on campus. President Detlev Bronk formed the RU chapter of Sigma Xi in the 1950s, after



Spearheading the revival of Sigma Xi at Rockefeller are (left to right) Lisa Austin, chapter secretary and RU postdoctoral fellow, Frank Murphy, chapter vice president and associate physician, Michael Anzelone, chapter president since 1994 and volunteer investigator in the Laboratory of Investigative Dermatology, and Michele Blum, membership coordinator and postdoctoral fellow.

Rockefeller became a university.

"Bronk brought extraordinary lecturers to campus," remembered Professor Jules Hirsch. "It was the opening wedge for bringing to Rockefeller speakers working in other fields. Sigma Xi enriched

campus life."

Early lecturers at RU included Lloyd Berkner, who spoke on science and space in 1959, Donald Griffin, who lectured that same year on the natural history of communication, the famous archeolo-

gist William F. Albright, who gave a talk in 1962 on fixing historical dates by Palestinian archeology, and Loren Eiseley who discussed pre-Darwinian history in 1960.

Jaki, who entered the Benedictine Order in 1942 and became a priest in 1948, holds doctoral degrees in physics and theology. He has authored many monographs and books on the history of science and the relation between theology and cosmology, has given named lectures at Oxford and Yale universities, and published papers in the *American Journal of Physics*, *The National Review*, *Sky and Telescope*, and *Thought*, among other periodicals. In 1987, Prince Philip, Duke of Edinburgh, conferred on Jaki England's Templeton Prize, which honors world leaders in religion.

The lecture will take place at noon in Nurses Residence 110B. All are welcome. Murphy is organizing a lunch for Jaki, to take place immediately after the lecture. To join the lunch or find out more about Sigma Xi activities on campus, contact him at x8476.

Potpourri

Tri-Institutional Noon Recital Douglas Webster, baritone, Carol Wincenc, flute, Jon Kliftonoff, piano, and David Grossman, bass, perform at the Tri-Institutional Noon Recital today (Oct. 13). The concert, at noon in Caspary Auditorium, is free. All are welcome.



Baritone Douglas Webster is among the performers at the noon recital today (Oct. 13).

Lecture

Professor Mitchell J. Feigenbaum will discuss "1st Order PDE's, Geometrical Optics, etc." Mon., Oct. 16 at 3:00 P.M. in the Smith Hall Annex B-level conference room. All are welcome to attend the lecture, which is the first in a series, but familiarity with calculus

in n dimensions and ordinary differential equations is recommended.

Computer course

The Electronics Shop, a unit of Information and Computing Services, is offering a six-to-eight-week course entitled "Use of the Personal Computer in the Laboratory," Tuesdays at 9:30 A.M. in Weiss 305 beginning Tues., Oct. 17. For further information contact Paul Rosen, x8750 or e-mail ros.

Protein folding lecture

Harold Scheraga, professor emeritus of chemistry at Cornell University in Ithaca, discusses "The Protein Folding Problem" at the Center for Studies in Physics and Biology Seminar Tues., Oct. 17 at 4:00 P.M. in Weiss 305 (note room change).

Clinical Research Seminar

Helen Vlassara, professor and head of the Laboratory of Diabetes and Aging at the Picower Institute for Medical Research, will discuss "Recent Progress in the Vascular Complications of Diabetes and Advanced Glycation" Wed., Oct. 18 at noon in Nurses Residence 110B.

Boiler plant shutdown

The university's power plant will be shut down for upgrading from 8:00 A.M. Mon., Oct. 23 through approximately Sun., Oct. 29. The shutdown should not affect equipment because low and medium pressure steam will be available from

Con Edison. In the unlikely event that Con Edison experiences problems during this shutdown, fluctuations in the medium pressure steam supply might affect such laboratory equipment as autoclaves, washing machines, and sterilizers. Call Brendan Bolger, x8425, with any questions.

Benefits fair

Members of the university community will have the opportunity to change their health insurance plans at an open enrollment benefits fair Wed., Oct. 25 where representatives from health insurance companies will be on hand to answer questions. Also, representatives from TIAA-CREF will discuss retirement annuities and long term care plans. Open enrollment ends Fri., Nov. 17. The fair will take place in Weiss lobby from 11:00 A.M. to 2:00 P.M. For further information, contact Kristin Gross, x8297, or Ginny Hansen, x8299.

Call for mentors

The Science Outreach program needs volunteers to mentor teachers and students this summer, to visit schools, and to give workshops and lab tours. Contact Bonnie Kaiser, x7431 or e-mail bonnie.

Children's School applications

The RU Children's School and Infant-Toddler Center are accepting applications for the academic

Computing Services Workshops

Spaces are available in the following workshops. To register, please call x7768.

Excel for the Macintosh and Windows, Part I: Thurs., Nov. 9, 10:00 A.M. to noon;

Excel for the Macintosh and Windows, Part II: Thurs., Nov. 16, 10:00 A.M. to noon.

year beginning September 1996 for children from three months to five years old. Priority for the university community ends Weds., Jan. 31. For further information contact Marjorie Goldsmith, x8580.

Honor

Professor Vincent Fischetti spoke on "Expression of Foreign Proteins on the Surface of Gram-positive Bacteria for Mucosal Vaccine Delivery" during the symposium "Vaccines, 100 Years after Louis Pasteur," held at the Institut Pasteur in Paris last month as part of the international celebration of the Year of Louis Pasteur.

Etymology lesson

People experiencing anxiety due to today's date (Friday the 13th) suffer fear of the number 13, a syndrome with two names: triskaidekaphobia (from the Greek: treis three + kai and + deka ten + phobos fear) and tridecaphobia.