

3-18-1994

NEWS AND NOTES 1994, VOL.4, NO.22

The Rockefeller University

Follow this and additional works at: http://digitalcommons.rockefeller.edu/news_and_notes_1994

Recommended Citation

The Rockefeller University, "NEWS AND NOTES 1994, VOL.4, NO.22" (1994). *News and Notes 1994*. Book 11.
http://digitalcommons.rockefeller.edu/news_and_notes_1994/11

This Book is brought to you for free and open access by the The Rockefeller University News and Notes at Digital Commons @ RU. It has been accepted for inclusion in News and Notes 1994 by an authorized administrator of Digital Commons @ RU. For more information, please contact mcsweej@mail.rockefeller.edu.

University offers free access to Medline

Scientific literature searches have just become easier—and cheaper—for researchers across campus. Starting today (Mar. 18), the university is offering free access to Medline, the National Library of Medicine's computer database containing citations, and often abstracts, of articles appearing in 3,700 journals in the life sciences.

"With increasing competition in science, we need to offer our top-notch investigators the finest tools available," said Frank Lees, director of Information and Computing Services. "In a recent survey of our researchers' library needs, the single most requested item was Medline. As a result, with the strong support of Executive Vice President and Chief Operating Officer Fred Bohen, we made it a top priority to bring this database to campus."

Librarian Patricia Mackey said: "As an information provider, I am thrilled that Frank Lees and Computing Services have brought us this database and brought it to us so quickly. I see this as the first—and perhaps largest—step in creating an electronic library at Rockefeller which is accessible from labs, offices and homes."

To obtain access to Medline, the university has contracted with a New York company, CD Plus Technologies, Inc., which has supplied the university with the Medline database on CD ROM as well as software for high-speed access. The database includes articles from 1966 to Mar. 15, 1994 and will be updated monthly.

According to Lees, CD Plus Technologies has many virtues, including speed, price and usability. The information can be accessed

Left: Carlsson



David Man, educational services librarian, shows Joshua Rubinfeld, research assistant in the Kreek lab, some of the features of the university's new Medline system.

extremely quickly—up to 10 megabits per second on the university's ethernet system and up to 14.4 kilobits per second through a modem. In real time, that means that a search is often done before the user's fingers leave the keyboard. Because users do not log onto the National Library of Medicine line directly, there is no per-minute charge. This frees users to take a more comprehensive and interactive approach in their searches.

David Man, educational services librarian, said: "The software to access Medline, called OVID, is relatively self-explanatory. It uses a simple, pull-down window system. In addition, it has several powerful

features, such as 'mapping' to suggest effective search terms, and help menus that can be adjusted to accommodate all levels of expertise. The software is flexible, powerful and quick."

In addition, the software enables users to save and rerun search strategies, print results locally on their own printers, save search results (including abstracts) to a floppy disk or hard disk (using ftp or kermi) for immediate use or for uploading into other programs such as EndNote or Reference Manager, and e-mail results to themselves or colleagues. In the coming months, Mackey said, library staff will also

See *University*, page 2

RU hosts first annual DeCamp Symposium

The Rockefeller University is hosting the first annual DeCamp Symposium on the Neurosciences in Caspary Auditorium on Tues., Mar. 29. The program, entitled "Mechanisms of Neural Development," will feature three leading investigators: Peter A. Lawrence, professor of molecular biology at the Medical Research Council; Douglas A. Melton, professor of biochemistry and molecular biology at Harvard University; and H. Robert Horvitz, Howard Hughes Medical Institute investigator, professor at the Massachusetts Institute of Technology and geneticist and neurobiologist at Massachusetts General Hospital, Boston.

"The DeCamp Symposium will bring together investigators from the Tri-Institutions to hear lectures on developmental neurobiology, an exciting area of research that can truly be called one of the remaining frontiers in biology," said President Torsten Wiesel.

After introductory remarks by Professor Mary Elizabeth Hatten, chair of the Tri-Institutional DeCamp Symposium Committee, at 2:00 P.M., Lawrence will lecture on "Subdividing the *Drosophila* Embryo." Lawrence's studies of *Drosophila* genetics, conducted over the past 20 years, have produced key results on positional information, polarity, segmentation and cell lineage. He is a co-discoverer of developmental compartments and parasegments. His scientific collaborators have included Francis Crick, Gines Morata and Gary Struhl.

Melton speaks next, at 3:00 P.M., on "Embryonic Induction of the Vertebrate Nervous System." Over the past few years, Melton and his research group have shed considerable light on the cascade of molecular and genetic events that control polarity, cell fate and pattern formation during the early development of the frog *Xenopus laevis*.

Horvitz will be the final lecturer, giving his presentation at 4:00 P.M. on "Genetic Control of Neuronal

See *Symposium*, page 2

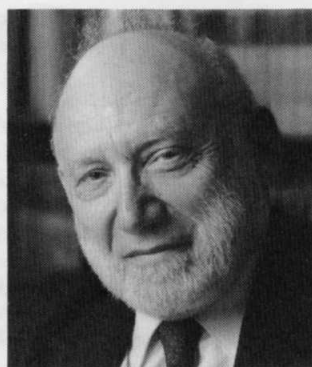
2 Children celebrate '100 Day'

3 Discovery for newborn jaundice

4 Friday lectures for two weeks

Lederberg to inaugurate Cohn Forum

University Professor Joshua Lederberg, former president of the university, will give the inaugural lecture of the Zanol A. Cohn Forum on Health Affairs, Mon., Mar. 21 at 5:30 P.M., in the Faculty and Students Club. He will speak on "The Electronic Collaboratory: New York as a Global Village." Sherry will be served at 5:00 P.M. The presentation will last approximately 30 minutes and will be followed by discussion.



University Professor Joshua Lederberg

Children celebrate '100 Day'

Nearly 100 parents, siblings and support staff gathered to celebrate the 100th day of school at The Rockefeller University Children's School last week.

The Blue Room class, ages four and five, created a long paper chain in preparation for the 100 Day celebration. Each day, a new link was added and a new number incorporated into the day's events. Other activities involved building an elaborate Lego village composed of 100 Lego pieces, and creating numerous collages featuring 100 multi-colored feathers, 100 paper hearts and 100 buttons. On the 100th day, children and guests

feasted on 100 crudités, 100 mini-pizzas, 100 cookies and hundreds of other delicacies.

"We have found that this event and its preparations are an excellent way to teach children about numbers," explained Marjorie Goldsmith, the school's director. "Children are not abstract thinkers when it comes to numbers, but they can see the difference between 100 paper-clips and 100 wooden blocks, and certainly appreciate the difference between 100 lollipops and 100 cupcakes. If they can touch it, or better yet, taste it, they will more likely understand and remember it."



The Blue Room of The Rockefeller University Children's School hosted a party celebrating the 100th day of school.

RU hosts first DeCamp Symposium

(continued from page 1)

Development and Programmed Cell Death in *C. elegans*." Horvitz and his associates have isolated developmental mutants of the roundworm *Caenorhabditis elegans* and used both genetic and molecular genetic techniques to characterize these mutants. In the course of this work, they have identified and analyzed genes that play specific and coordinated roles in cell lineage, cell signaling, cell migration and programmed cell death; several of these genes are offering new insights into the molecular genetics of cancer.

The symposium is the first of five annual events funded by the Ira W. DeCamp Foundation to strengthen and expand the ties among neuroscientists at The Rockefeller University, New York Hospital-Cornell Medical Center and Memorial Sloan-Kettering Cancer Center. The grant also provides funding for the establishment of seminars, lectures and courses for students, postdocs and faculty of the three institutions. Since the fall, Professor Moses Chao and Biomedical Fellow Geoffrey Manly of Cornell University Medical College have organized three student seminars, drawing over 100 participants from the Tri-Institutions.

The Ira W. DeCamp Foundation was created in 1975 under the will of Elizabeth DeCamp McNerny. The foundation provides grants to support medical research and education, as well as health care facilities and equipment.

University offers free access to Medline database

(continued from page 1)

establish a link to the university's library holdings, allowing users to identify the items from their search that are available in the Rockefeller library.

Medline can be accessed from networked terminals, PCs and Macs on campus, as well as by modem at x7690 (see box for instructions). One terminal on the first floor of the library has been dedicated exclusively for Medline searches. The university's license allows up to five users to access the database at one time outside the library.

Workshops, which will be led by Man, will provide training on accessing the system and conducting effective searches. Lees said, "I encourage everyone who plans to use Medline to sign up for the classes and to consult with David Man about their searches. Even

experienced users can improve the efficiency and effectiveness of their searches with professional advice." Workshops will be held in Smith Hall A21 on Tuesdays, from 10:00 A.M. to noon, and Wednesdays, from 2:00 to 4:00 P.M. Contact Man, x8907 or e-mail *mand*, to register.

On a cautionary note, Lees commented: "Because of the great demand, we've elected to make the system available to users before all the documentation is ready, and before the consultants have had an opportunity to prepare for the inevitable questions users will pose. We ask everyone's indulgence and understanding while we all get to know the system better. Also, since we've provided a system that can accommodate virtually any user's existing hardware, we ask that people be patient while we all discover the configurations that work best. That may mean software upgrades

for some communications programs, including free versions of Kermit, for example, and new ethernet connections for those interested in the fastest and most efficient network access."

All Rockefeller University faculty, students and staff and Population Council researchers on campus are eligible to use Medline. Those who wish to use the database should apply for a Computing Services account or have an existing account activated for Medline use. Drop by or call Computing Services, Smith Hall B4 or x8925, to obtain application forms. Those with questions about logging onto Medline should contact the computer consultant, x8940. Those seeking advice on searches should contact Man, x8907.

How to log onto Medline

Once you have a Rockefeller University Computing Services account activated for Medline use, you are ready to log on:

- If you are on campus,
- use the public access terminal in Welch Hall or any other networked terminal or PC;
 - connect to the machine LIB2 (e.g., telbin, PC telnet, mac telnet). If you need help doing this, call the consultant, x8940;
 - enter your login and password as prompted.

- If you are off campus using a computer with a modem,
- dial Computing Services at (212) 327-7690;
 - note that release levels for Kermit must be 3.12 or 3.13; earlier versions may not work;
 - type OPEN LIB2 <return>;
 - enter your login and password for the system.

News&Notes is published each Friday throughout the academic year by The Rockefeller University, 1230 York Avenue, New York, NY 10021. Phone: 212-327-8967.

Torsten Wiesel, President
Ingrid Reed,
Vice President for Public Affairs and
Corporate Secretary
Doron Weber, Director of Communications

Mika Ono Benedyk, Editor
Jennifer Horne King, Assistant Editor
Heather Leahy, Design
Robert Reichert, Photography
Media Resource Service Center, Processing

Ideas and submissions can be sent interoffice (Box 68), by electronic mail (newsno), or by fax (212-327-7876).

The Rockefeller University is an equal opportunity/affirmative action employer.



Discovery holds out new hope for control of infant jaundice

by Susan Blum

Neonatal jaundice, a yellowing of the skin and other tissues common in newborn babies, is the outward sign of hyperbilirubinemia, a buildup in the blood of a toxic substance called bilirubin. When infants' bilirubin levels rise too high, the lifelong consequences for the central nervous system can be serious, including mental retardation, lowered IQ, hearing problems and cerebral palsy. In some cases, infant death can even result.

Currently, the most common treatment for hyperbilirubinemia is phototherapy, during which the baby is exposed to ultraviolet light for long periods of time. But phototherapy is far from problem-free. Babies undergoing the treatment must be separated from their mothers at a time when bonding is important. They must be carefully watched, frequently turned, and outfitted with a mask to protect their eyes from the ultraviolet rays. Phototherapy boosts the costs of newborn care, and can complicate other needed medical care.

But perhaps the major problem with phototherapy is knowing exactly when to undertake it. Doctors initiate phototherapy when bilirubin levels reach, or approach, blood levels considered potentially dangerous. But because this "danger zone" is the subject of considerable debate, "the time when the treatment is introduced, and its duration, are largely subjective," said Rockefeller University Professor Atallah Kappas. Uncertainties about phototherapy have only increased with the new realities of American health care, which mandate that most mothers and newborns must go home from the hospital soon after birth—usually 36 hours after—and before bilirubin levels typically peak.

RU researchers take different approach

Discoveries made in the Kappas lab may ultimately resolve these perplexing problems by taking a radically new approach to dealing with hyperbilirubinemia. "A great deal of the uncertainty about treating hyperbilirubinemia with phototherapy could be circumvented by preventing the problem in the first place, rather than waiting for bilirubin levels to approach levels considered potentially dangerous," said Kappas. Now, he and his colleagues, including Associate Professor George Drummond, have demonstrated that bilirubin levels can be

successfully controlled by a substance that blocks the production of bilirubin. This substance, synthesized in the Rockefeller lab, is called Tin Mesoporphyrin, or SnMP for short.

Kappas and his colleagues have just completed four years of studies on the use of SnMP in premature babies. Over the course of these studies, conducted in the Metera Maternity Hospital in Athens, Greece, a total of 517 premature babies received a single, small dose of SnMP shortly after birth. As reported in the Jan. 10 issue of *Pediatrics*, this strategy substantially reduced bilirubin levels in preemies overall, and markedly diminished the extent of phototherapy required in those babies who still needed treatment. Studies initiated more recently in full-term infants are showing that a single dose of SnMP can completely eliminate the need for phototherapy in babies for whom doctors would ordinarily have prescribed prolonged light treatment.

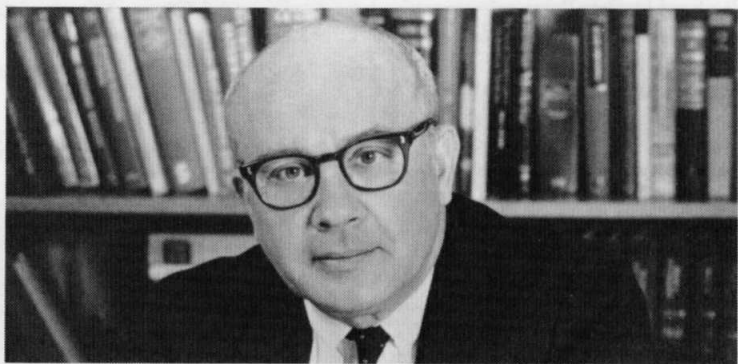
These results with full-term and premature babies provide hope that a simple, safe, rapidly effective and inexpensive strategy may soon be available to relieve the uncertainty faced by doctors and the anxiety faced by parents about neonatal hyperbilirubinemia.

Hyperbilirubinemia has many causes

The bilirubin that causes parents and doctors so much concern is a breakdown product of heme, the iron-containing pigment in the hemoglobin protein that endows red blood cells with their ability to transport oxygen throughout the body.

Ninety percent of all newborns have blood bilirubin levels higher than those considered normal for adults. Often, this elevation is simply due to the normal physiologic switchover from a fetal form of hemoglobin to the adult form better suited for life outside the womb. As a result of this switch, fetal red blood cells are destroyed more rapidly than red cells normally are. The baby's still-immature liver is unable to process all the resulting bilirubin for excretion, and it builds up in the blood.

Potentially dangerous levels of bilirubin are even more common in certain other groups of newborns, such as premature babies, those who have received poor prenatal care, and those who suffer from certain blood disorders such as Rh or ABO blood group incompatibilities.



Joyce Ravid

The laboratory of Professor Atallah Kappas has taken a radically new approach to the problem of treating infant jaundice.

About 75 percent of the four million babies born annually in the United States show some visible jaundice due to hyperbilirubinemia, and from five to ten percent of them (or about 200,000 to 400,000) have bilirubin levels considered high enough to warrant treatment with phototherapy.

Phototherapy and SnMP work differently

Phototherapy works by inducing a shape change in bilirubin molecules that enables the liver to process more, but not all, of the substance. (Some of the bilirubin re-enters the bloodstream even with prolonged phototherapy.) In contrast, SnMP prevents bilirubin from being produced in the first place, by throwing a monkey wrench into the metabolic pathway by which heme is converted to bilirubin.

The first step in that pathway is the binding of heme to an enzyme called heme oxygenase. SnMP, a chemical cousin of heme, binds to the enzyme far more avidly than does heme, thanks to the tin (chemical symbol: "Sn") that lies at the heart of the synthetic molecule. When heme's binding to the enzyme is thwarted, heme's breakdown to bilirubin is prevented. The heme is simply secreted intact by the liver into the intestine, and is ultimately excreted.

Work derives from lab's longstanding focus

Work on the synthesis and potential therapeutic uses of SnMP is part of the Kappas lab's longstanding research on the regulation of heme metabolism for clinical purposes. Having already learned much about the normal role of heme oxygenase, Kappas and Drummond synthesized a number of heme analogues that could boost or diminish the enzyme's function as required in various abnormal conditions. When studies with adults demonstrated the safety and efficacy of various

heme oxygenase inhibitors (including SnMP, the most potent blocker), the researchers also began to consider using SnMP to control neonatal hyperbilirubinemia.

Other collaborators in the studies with infants include Timos Valaes, professor of pediatrics at Tufts University School of Medicine (who supervised the clinical trials at the Metera Hospital), Sophia Petmezaki, director of the Special Care Nursery at the hospital, and Claudia Henschke of Cornell University Medical College, who coordinated all the data analysis.

The babies in the initial studies will be followed up until they reach five years of age. So far, all have remained perfectly healthy and normal at their three- and eighteen-month checkups. Kappas reports that in view of these promising initial studies, and with the knowledge that further, larger-scale studies will be undertaken within the next few years, "pediatricians are beginning to feel that it may eventually be possible for them to give infants an injection of SnMP to prevent hyperbilirubinemia before the infants go home from the hospital."

Such a preventive strategy would greatly reduce the problems currently associated with the treatment of neonatal hyperbilirubinemia in developed countries, where phototherapy is an option for virtually all newborns should they need it. But, Kappas said, the benefits of such prevention might be especially valuable in developing parts of the world, where sophisticated medical equipment is not available and where infants are especially prone to developing hyperbilirubinemia due to poor prenatal care. Indeed, he said, "helping infants in the developing world was a major goal in developing this new agent for controlling one of the most prevalent, insidious and potentially severe risks that infants born in deprived circumstances face in the days immediately after birth."

Mar. 18: Friday lecturer to speak on synapse formation

Richard H. Scheller, professor and Howard Hughes Medical Institute associate investigator at Stanford University, will speak on the "Molecular Mechanisms Regulating Synapse Formation" at the Friday lecture today (Mar. 18).

Nerve cells communicate with other cells through the regulated release of chemical messengers, or neurotransmitters, across the gulfs, or synapses, that separate them. One type of synapse of particular interest to Scheller is that between motor neurons and muscle fibers, across which the neurotransmitter acetylcholine is released. Scheller and his colleagues have found that an extracellular matrix protein called "agrin" is responsible for orchestrating aspects of neuromuscular junction development, including the accumulation of acetylcholine receptors at the neuromuscular synapse.

"Richard's work on synapse formation and on the regulation of vesicular traffic across the synaptic junction has opened new vistas in our understanding of brain function," said Associate Professor Alan

Courtesy of Richard Scheller



Richard Scheller of Howard Hughes Medical Institute and Stanford University will give the Friday lecture today (Mar. 18).

Aderem, who is hosting the lecture with Professor Mary Elizabeth Hatten. "His insights could very well lead to effective therapeutic strategies for brain injury."

A graduate of the University of Wisconsin (B.S., 1975), and the

California Institute of Technology (Ph.D., 1980), Scheller completed his postdoctoral studies at the California Institute of Technology (1980-81) and Columbia University (1981-82). In 1982, he joined the faculty at Stanford, where he was appointed assistant professor in the Department of Biological Sciences; associate professor (1987-90); associate professor in the Department of Molecular and Cellular Physiology (1990-93); then, professor in both departments (since 1993). Scheller was named associate investigator of the Howard Hughes Medical Institute in 1990.

Scheller has received numerous honors, including the Presidential Young Investigator Award (1985), the Alan T. Waterman Award from the National Science Foundation (1989), the Merit Award from the National Institute of Mental Health (1992) and the W. Alden Spencer Award, from Columbia University (1993).

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

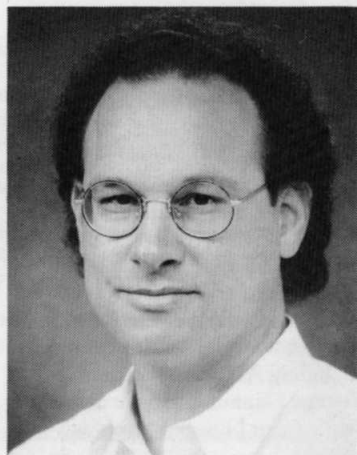
Mar. 25: Friday lecturer to speak on transcription

Arnold J. Berk, professor in the Department of Microbiology and associate director of the Molecular Biology Institute at the University of California, Los Angeles (UCLA), will address the question: "How Do Transcription Activation Domains Work?" at the Friday lecture Fri., Mar. 25.

Gene transcription in eukaryotes is regulated by interactions between a large, multi-component preinitiation complex at the transcription start site, and activators and repressors bound to DNA and located tens to thousands of base pairs away. Berk's research has helped to delineate some of these complex molecular interactions. In his lecture, Berk will discuss the results of his recent studies. One study addresses how a viral activating protein—the 289R E1A protein of adenovirus—forms a complex with the TATA box-binding protein (TBP) to stimulate transcription. A second examines the function of TBP-associated factors (TAFs). The results suggest that TAFs, in cooperation with a specific activation domain, are necessary for activator proteins to stimulate formation of an early intermediate in preinitiation complex assembly.

A graduate of the University of California, Berkeley (A.B., 1971) and Stanford University School of Medicine (M.D., 1976), Berk worked as a fellow at Stanford (1971-76), then at MIT (1977-78). In 1979, Berk joined UCLA as assistant professor, and was subsequently named associate professor (1982), then professor (1986). A recipient of an NIH Merit Award among other honors, Berk became associate director of the Molecular Biology Institute in 1992.

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



Arnold Berk of UCLA will lecture Fri., Mar. 25.

Potpourri

Tri-Institutional Noon Recital
In celebration of Women's History Month, pianist Stella Simakova will perform at the Tri-Institutional Noon Recital today (Mar. 18). A native of Russia, Simakova has won numerous honors, including the 1993 East & West Artists International Auditions. The program will include works by Frédéric Chopin, Franz Liszt, Maurice Ravel and Robert Schumann.

A second recital honoring Women's History Month will feature the Kit McClure Big Band, Fri., Mar. 25. The band, made up of 17 women jazz musicians, has toured extensively and performed with a number of high-profile artists, including Robert Palmer. Among the artists is saxophonist Maria Lazzaro, assistant in Faculty Administration. The program will feature works by Duke Ellington, George Gershwin, James Brown, Count Basie and Kit McClure. Both concerts will be co-sponsored by the Rockefeller Women's Association and the Cornell University Medical College's student chapter of the American Medical Women's Association.

Pianist Benedetto Lupo, winner of the 1992 Terence Judd International Award for Pianists, and bronze medalist at the Eighth Van Cliburn International Piano Competition, will perform works by Frédéric Chopin, Claude Debussy and Isaac Albeniz, Fri., Apr. 1.

The concerts, which are held in

Caspary Auditorium at noon, are free and open to the public.

Sunday film

Tokyo Story (Japan, 1953), directed by Yasujiro Ozu, will be shown in Caspary Auditorium at 7:30 P.M., Sun., Mar. 27. Ozu tells the touching story of an elderly couple's journey to Tokyo, where they are received with little enthusiasm by their children and are then shunted from family to family in a pattern that will only be stilled by death. Admission is free. All are welcome.

Club hours

The Faculty and Students Club will open at 8:00 P.M. instead of 4:00 P.M., on Mon., Mar. 21.

Social work seminar

In honor of Social Work Month, a consortium of social work departments from The Rockefeller University Hospital and neighboring institutions, will hold a special program entitled "Visions for the Future, Health Care Professionals and the Giuliani Administration: Partnership for Change," Mon., Mar. 21, in Uris Auditorium at Cornell University Medical College. For more information, contact Lanie Fleischer, x8415.

HHMI exhibit

An exhibit, entitled "Advancing the Frontiers of Knowledge" and designed to increase public awareness of the Howard Hughes Medical

Institute, will be on display in the atrium of the Rockefeller Research Building from Thurs., Mar. 31 to Tues., Apr. 12. Everyone is welcome. For more information, contact Dorothy Silver, x7925.

Clinical Research Seminars

Dwight Matthews, associate professor of biochemistry at Cornell University Medical College, will speak on the "Effect of Insulin Upon Protein Metabolism in Humans: Lessons Learned From Kinetic Modeling" at the Seminar in Clinical Research, Wed., Mar. 23. Carl F. Nathan, professor of medicine, also at Cornell University Medical College, will speak on "Nitric Oxide: Regulating a Two-Edged Sword," Wed., Mar. 30. The seminars will be held at noon in Nurses Residence 110B.

Birthday promotion

Food Services is offering a birthday special in the Abby Aldrich Rockefeller dining room. Beginning Mon., Mar. 28., birthday celebrants dine free with a party of four or more. A free birthday cake will be prepared for the occasion with 48 hours notice. For more information, contact Alzatta Fogg, x8894.

News&Notes schedule

News&Notes will not be published over the Passover and Easter holidays. The next issue will be Fri., Apr. 8.