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The Rockefeller University

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## Wiesel to chair academies' human rights committee

President Torsten Wiesel has been appointed chair of the Committee on Human Rights of the National Academy of Sciences, National Academy of Engineering and Institute of Medicine. The committee is a highly regarded group that defends the human rights of scientific colleagues around the world.

"I was delighted to learn of Dr. Wiesel's willingness to chair the

Committee on Human Rights," said Bruce Alberts, president of the National Academy of Sciences. "It is a committee that has a unique and vital role within the institutional complex. I know that Dr. Wiesel and the committee's members and staff will be challenged by the difficult and increasingly complex science and human rights issues of the 1990s and I look forward with confidence to Dr. Wiesel's help and leadership in addressing them."

Wiesel said: "I am honored by this appointment. At present, the committee is working on more than 500 cases in 62 countries, including Syria, China, Guatemala, Sudan and South Africa. There is much important work to do."

Wiesel will serve a three-year term, from Feb. 1, 1994 through Jan. 31, 1997.

The Committee on Human Rights was created in 1976 in response to increased concern by National Academy of Sciences members about repression of scientists and scientific research in many areas of the world. The National Academy of Engineering and the Institute of Medicine subsequently joined the committee.

The 14-member group works on behalf of scientists, engineers and health professionals anywhere in the world who are believed to be suffering severe repression for the nonviolent exercise of their human rights. These individuals may be in detention, believed to be in danger of torture, held without charges or access to a lawyer, or imprisoned; they may have "disappeared" or been exiled. The committee also looks at selected cases of colleagues who have received death threats.

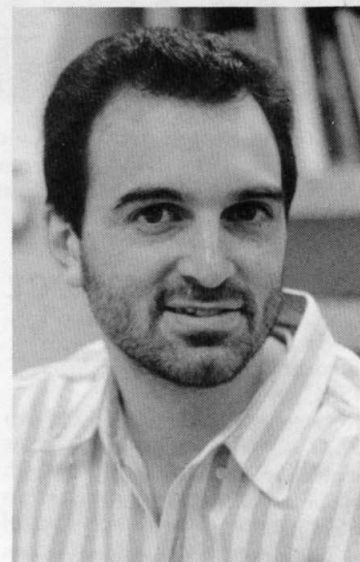
The committee's appeals are based on the international human rights standards embodied in the Universal Declaration of Human Rights that was adopted by the United Nations General Assembly in 1948. Its work is generally carried out through private inquiries from the committee and individual appeals from members of the National Academy of Sciences, National Academy of Engineering and Institute of Medicine. Occasionally, the committee also makes public statements, sends delegations to selected countries, and issues reports. In addition, the group coordinates an international human rights network of science academies around the world.



Peter Perice

**President Torsten Wiesel is the new chair of a highly regarded committee on human rights.**

## Lecturer to discuss how neurotrophic factors work



Courtesy of George Yancopoulos

**George Yancopoulos, vice president of Discovery, will lecture today (Mar. 11).**

George Yancopoulos, vice president of Discovery, a division of Regeneron Pharmaceuticals, Inc., will speak on "Neurotrophic Factors and How They Work" at the Friday lecture today (Mar. 11).

Neurotrophic factors are known to prevent neuronal cell death, a process that occurs either naturally—in normal embryonic development—or as the devastating outcome of a variety of neurodegenerative diseases. Yancopoulos's research involves discovering and characterizing neurotrophic factors, and further understanding both their receptor systems and signal transduction pathways. Yancopoulos will discuss two distinct classes of neurotrophic factors, those related to nerve growth factor, and those related to ciliary neurotrophic factor. Work by Yancopoulos and his colleagues has revealed that these two classes of factors utilize fundamentally different receptor systems and signaling pathways to keep neurons alive. The investigators also found that while the signaling pathways are distinct, they nevertheless influence each other.

A graduate of Columbia

## New study projects greener, well-fed planet by 2050 A.D.

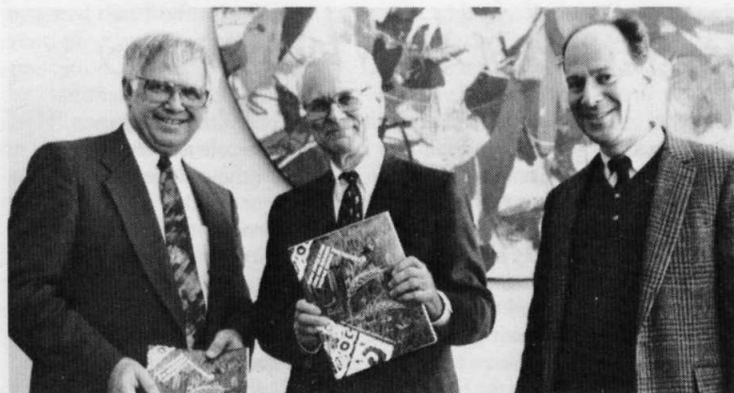
Can the world's fast-growing population continue to feed itself in the next 50 years without encroaching on ever-diminishing tracts of land? A provocative new report commissioned by The Rockefeller University's Program on the Human Environment proposes that the outlook for agricultural land

use is more optimistic than many have assumed.

Existing cropland currently feeds five billion people on a tenth of the

planet's acreage. The report, issued by the Council for Agricultural

See *Study*, page 2



Leif Carlsson

Jesse Ausubel (right), director of the Program for the Human Environment, hosted a press luncheon last week where a new report on land use in 2050 A.D. was released. The report was written by Paul Waggoner (center) and issued by the Council for Agricultural Science and Technology, whose president, Deon Stuthman (left), also attended the luncheon.

**2 Senator honors discovery at RU**

**2 Students select SRC members**

**3 Researcher reveals lives of protozoa**

See *Lecturer*, page 4



Student Representative Committee members for the coming year include (left to right): Darren Orbach, Xiao-Feng Qin, Julie Miwa, Adrian Rothenfluh, Rasika Sowmyalakshmi and Firdaus Dhabhar.

## Students select representatives

Several new members of the Student Representative Council (SRC), which represents Rockefeller's 150 Ph.D. and M.D.-Ph.D. candidates on issues of common concern, were officially appointed at the SRC meeting Mar. 3.

The new SRC representatives are:

- For first-year students: Adrian Rothenfluh;
- For third-year students: Xiao-Feng Qin;
- For fifth-year students: Julie Miwa;
- For M.D.-Ph.D. students: Darren Orbach;
- Married-student housing representative: Sabine Hilfiker-Rothenfluh.

SRC members serving the second year of their two-year terms are:

- For second-year students: Rasika

Sowmyalakshmi;

- For fourth-year students: Firdaus Dhabhar;
- Single-student housing representative: Jonathan Dworkin.

SRC representatives discuss issues such as housing, graduate studies, student events and special student facilities. Recently, for example, the SRC participated in the planning of the new student center, which is currently being built on the second floor of Sophie Fricke Hall.

SRC meetings, which are open to all graduate students, are held on the first Thursday of every month, at 9:00 A.M. on the 17th floor of Tower. The agendas are posted in the student residences before the meetings. Students are encouraged to attend meetings and to contact their SRC representatives with comments, suggestions and concerns.

## Study projects land use in 50 years

(continued from page 1)

Science and Technology (CAST) at a press luncheon at Rockefeller last week, suggests that the same cropland could support the world's projected population of 10 billion in 50 years if farming is conducted more efficiently and diets continue to change. The demand for food in 2050 A.D. could actually be met by using less rather than more land for agriculture, the report states, freeing some cropland for wilderness use.

"This study suggests we can have both a better-fed population and a greener planet," said Jesse Ausubel, director of the Program on the Human Environment. "If we maintain our current rate of technical progress in farming, we could spare 30 percent of the land now used globally for agriculture—an area larger than Alaska—and still produce enough food for the world's growing population."

In addition to its relevance to wildlife preservation issues, the report has implications for government policies on agricultural research, farm subsidies and international trade.

The report's author, Paul E. Waggoner, an agronomist at the Connecticut Agriculture Experiment Station in New Haven, emphasized that human factors will ultimately determine whether farmers will be able to spare land for nature. According to Waggoner, scientists must continue to furnish farmers with a steady stream of better tools. In addition, governments must set policies that encourage agricultural innovation and adaptation rather than depressing production through disorder and price controls.

Agronomist Deon Stuthman, president of CAST, added, "A significant portion of the world's population currently remains hungry due to inadequate food distribution. The challenge is to improve the distribution while increasing, or at least maintaining, the current food supply level."

Established in 1972 as the result of a meeting sponsored by the National Academy of Sciences-National Research Council, CAST is a nonprofit consortium comprised of 30 member scientific societies in food and agricultural science and many individual, student, company, nonprofit and associate society members. "Our primary purpose in producing this report is not to advocate a certain strategy regarding the complex problems that will result from an increasing population, but rather to initiate serious and intense public discourse on the options that are still available to us," Stuthman said.

The report, entitled *How Much Land Can Ten Billion People Spare for Nature?*, is available for \$15.00 plus \$3.00 shipping and handling from CAST, 4420 West Lincoln Way, Ames, IA 50014-3447, (515) 292-2125. It is part of a broader study, *Technological Trajectories and the Human Environment*, to be published in 1994 by the National Academy Press. This study was organized by Rockefeller's Program for the Human Environment as part of a workshop it held in October. For more information, contact Ausubel, x7917.

## Senator honors anniversary of Avery lab discovery

Senator Daniel P. Moynihan honored Rockefeller University investigators Oswald Avery, Colin MacLeod and Maclyn McCarty on Feb. 2, reading a laudatory statement into the Congressional Record. Excerpts of the statement follow:

*Avery, McCarty and MacLeod revolutionized medicine by their discovery.*

*Without their work Watson and Crick would not have worked out the structure of DNA in 1953. Without their work we would not have those techniques now in use daily in research and medicine to diagnose infectious diseases, identify those who carry heritable genetic diseases, and assist infertile couples to bear children.*

*The medical research work of Avery, McCarty*

*and MacLeod conducted at Rockefeller University during World War II changed the course of the world, reduced suffering and contributed immeasurably to the quality of life as we know it.*

*This type of pioneering research continues every day at The Rockefeller University, at its fellow research centers and at teaching hospitals in New York City and New York State as well as elsewhere in our great country. The modern-day counterparts of Avery, McCarty and MacLeod are concerned that the President's health care reform proposal will adversely affect their ability to conduct cutting-edge research. We must ensure that any health care plan we enact strongly supports biomedical research and a lifetime of continuing education for the medics. There is no better preventative medicine.*

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# Researcher delights in exploring lives of one-celled organisms

By Mika Ono Benedyk

When Professor Emerita Maria Rudzinska describes protozoa, she uses words that could apply to works of art. "I was taken away by the beauty and performance of these organisms," she said of *Tokophrya*, a free-living protozoan. "I am overwhelmed by the varied and sophisticated ways these one-celled creatures perform their functions."

Rudzinska, who has contributed significantly to the fields of protozoology, parasitology, cell biology and gerontology, has worked on *Tokophrya* throughout much of her career. She first encountered the organism by chance in the early 1940s, while working as an assistant in the Department of Anatomy of Jan Kazimierz University in the city of Lvov, where she and her husband had fled after the Germans invaded Western Poland (Lvov fell under Soviet control a few days after they arrived).

"The Germans were not too far away and events were unpredictable," Rudzinska explained. "People in the department were more interested in the war than in teaching or research. As an assistant I had a lot of free time. I was rooting around and there were some organisms on the walls of the aquarium which I scraped off. I found a very interesting protozoan and I started to work on it. It was fascinating."

Using primitive equipment, a monocular microscope and a hand centrifuge, Rudzinska painstakingly collected data for a paper on the feeding of *Tokophrya*. Two years later, it was virtually complete.

Before the paper could be published, however, the Germans invaded Lvov, forcing Rudzinska and her husband once again to flee. The couple left their luggage, which included the paper, with friends. As the Russians and Germans fought for control over the territory, the luggage was pilfered and the paper lost.

## Looking for *Tokophrya*

After the war, Rudzinska's husband became a member of the Polish delegation to the newly formed United Nations, and Rudzinska accompanied him to New York. Her first priority was to find *Tokophrya* and repeat her experiments and observations.

She wrote to many protozoologists, asking whether they had any *Tokophrya*. At last, Daniel Lilly, professor at St. John's University, sent her a bacteria-free culture of *Tokophrya infusionum*, a smaller

species than she had used for her research in Poland.

Working at New York University, Rudzinska quickly found that *Tokophrya infusionum* was too small for the replication of her previous studies. Undaunted, she set about making an entirely different set of observations.

Working conditions were far from satisfactory. Flies would occasionally land on her hand while she performed sterile procedures; she would have to stay still, waiting to see whether they would crawl into her culture tube and contaminate it. In addition, there was no equipment or staff to maintain the cultures while she was away.

"All my vacations, *Tokophrya* was with me," she said. "I had a zipper bag in which I used to carry containing tubes with the media for the *Tokophrya*. I had a little school burner for sterilizing the needles used in my work. When someone offered to carry my bag I would refuse. They would ask 'Oh, what do you have there—gold?' To me, the cultures were more precious than gold."

Soon, Rudzinska noticed that *Tokophrya* have an identifiable life span—an unusual feature among protozoa—due to their method of reproduction by budding in which a small portion of the parent is cut off to form a daughter organism. The parent survives and produces a succession of daughter organisms. Each daughter organism grows and becomes an adult. As each ages, the reproduction rate decreases. It finally stops reproducing and dies. In addition, Rudzinska found that a heavy diet can shorten the organism's life span from over two weeks to one to two days. These features of *Tokophrya* attracted the attention of prominent gerontologists, who suggested that Rudzinska apply for a grant, promising to support her application. She received one from the National Institutes of Health (NIH) to support four years of work on the difference in ultra-structure (structure visible through the electron microscope) of young and old *Tokophrya* as well as those on a moderate or ample diet.

## Electron microscopy, an instrument of discovery

In 1951, Rudzinska joined the lab of Keith Porter and George Palade at The Rockefeller University, then The Rockefeller Institute for Medical Research, to work on her project. Because Rockefeller would not accept government grants at the time, a policy designed to ensure that the institution remained

independent, she wrote to the NIH, and the grant was assigned to her personally.

"Those were the days at the beginning of electron microscopy, which opened a window to a magnificent new world by magnifying up to one million times," said Rudzinska. "However, it required proper fixatives and ultra-thin sections of the material. I was lucky to be in one of the most active labs concerned with developing the preparatory stages for this technique."

One day after beginning her work at Rockefeller, Rudzinska happened to sit next to William Trager, an expert on malaria who is now professor emeritus, in the faculty dining room. In the course of their conversation, Rudzinska agreed to use electron microscopy to try to shed light on how the malaria parasite feeds on red blood cells.

"In the very first sample of the malaria parasite I looked at, I made a real discovery," she said. "I found a place where the section was thin enough. And there I could see a piece of the red blood cell inside the parasite as well as other pieces still connected with the host cell!"

With repeated observation, Rudzinska confirmed that malaria parasites fed on human red blood cells by endocytosis, engulfing pieces of the red blood cell. This discovery generated a great deal of excitement in the field.

After Rudzinska's NIH grant ran out, she joined the Trager lab. There, Rudzinska's research projects ranged among a variety of protozoa: a number of *Plasmodium malaria* species; *Babesia*, a tick-borne, intra-erythrocytic parasite of rodents that also infects humans; and *Leishmania donovani*, an intracellular parasite.

## *Tokophrya* revisited

In addition, Rudzinska continued research on *Tokophrya*, which had become a topic of interest for a number of graduate students at Rockefeller and elsewhere. By luck, she found a steady—and free—supply of *Tokophrya infusionum* in a pool adjacent to some fountains on the campus, only a few yards from her lab.

Together with L. Millecchia and G. Hascall, two Rockefeller students preparing their dissertations, Rudzinska elucidated the sophisticated life cycle of the organism, in particular two difficult-to-understand processes, embryogenesis and metamorphosis. When *Tokophrya* reproduces by endogenous budding, a part of the parent organism is cut off, forming a ciliated embryo rotating within a brood pouch, a space



Professor Emerita Maria Rudzinska has studied protozoa throughout much of her long career.

inside the parent. After about half an hour, the embryo escapes from the brood pouch and swims in the surrounding medium for several hours. Finally, it stops swimming and forms an attaching disc and supporting stalk. Cilia disappear and tentacles start to grow. Within three to five minutes, the embryo undergoes a complete metamorphosis, acquiring all the features of the parent organism.

"The speed of metamorphosis was almost impossible to comprehend," said Rudzinska. "The electron microscope showed that the miraculous speed was possible because all the new structures and chemicals needed for metamorphosis were already present in the embryo."

In the end, the paper on feeding in *Tokophrya* that Rudzinska lost in Poland was replaced by 15 publications on this subject using electron microscopy techniques as well as over 140 publications on the ultra-structure of aging and functions in *Tokophrya* and other protozoa. Many of the papers on intracellular parasites focused on the unusual relationship between host and parasite, especially the parasites' subtle methods of entry into the host cell. In 1975 Rudzinska received the New York Alfred Jurzykowski Foundation award for her achievements as an outstanding biologist.

It has been over 40 years since Rudzinska, now 90, first came to Rockefeller, and even though her eyesight is weak and her movement impaired, her quest to understand protozoa continues. She is currently investigating the biochemistry of stress-induced reproduction in *Tokophrya*.

## Profiles

### Geraldine Donaldson

**Job at The Rockefeller University:** Switchboard operator. Also receives and sends out faxes; collates and distributes telephone and fax bills; updates the telephone database system.

**Arrived at Rockefeller:** Two and a half years ago after working the Lord & Taylor switchboard. "I'm sure I answered my first Rockefeller calls with 'Hello, Lord & Taylor,' instead of 'Rockefeller University, may I help you?' Telephone greetings become very automatic. Sometimes I just have to get a grip and ask myself, 'Wait a minute, where am I?'"

**Number of calls each day:** Over

200. "I guess it's a good thing I like to talk!"

**Greatest challenge:** "Being a phone operator at a place like Rockefeller means knowing who the current hospital patients are, what rooms they're staying in, as well as who's on call for emergencies. Meanwhile, people aren't always terribly clear about what they want—only I can't exactly put them through to an operator, can I?"

**Favorite part of the job:** Answering the telephone. "I do so much of it, though, that when I get home I can't face calling my friends. And they all wonder why!"

**Drawback:** Cannot wear bulging or round earrings.

**Funniest call:** "I once got a call from a woman in Minnesota who wanted me to tell her about the bacteria causing her son's infection and why a drug developed by someone here wasn't working for her son. When I get these kinds of calls I try to stay calm and put myself in her shoes. After all, I'm a mother. I understand that kind of distress. But, for some reason, people think the operator has all the answers. I wish I did."

**Favorite pastimes:** Spending time with her children, one son and two daughters. Reading, especially mystery novels. Also likes to browse through street fairs across the city.

**Favorite ear:** "The right ear; no question about it."



Geraldine Donaldson is the university's switchboard operator.

## Potpourri

### Tri-Institutional Noon Recital

The Bartos-Levin-Hanani Trio—composed of pianist Samuel Bartos, violinist Ida Levin and cellist Yehuda Hanani—will perform at the Tri-Institutional Noon Recital today (Mar. 11). The program will feature a piano sonata by Ludwig van Beethoven, a rhapsody by Béla Bartók for violin and piano, and the "Archduke" Beethoven trio. The concert, which will be held in Caspary Auditorium at noon, is free and open to the public.

### Sunday film

*The Cotton Club* (U.S.A., 1984), directed by Francis Ford Coppola,

will be shown in Caspary Auditorium at 7:30 P.M., Sun., Mar. 13. The film, which depicts the New York jazz club scene during the years of the Great Depression, features Richard Gere as Dixie Dwyer, a musician who walks the line between his music and the mob, and Gregory Hines, who stars as a talented hoofer who fights to make his way to the top. Admission is free. All are welcome.

### On-Line Requisitioning

Next week is an ideal time to take a workshop on On-Line Requisitioning if you have not already done so. Classes are as follows:

- Mon., Mar. 14;
- Wed., Mar. 16;
- Fri., Mar. 18.

Call x7768 to register. When you come to class, please bring a floppy diskette, an old purchase requisition to practice on, and your access codes and login information (if you have received them). If you still need these codes, send a request-for-authorization form, signed by your lab head, to Toby Fishman, Accounting Department, Box 219, before the workshop.

### St. Patrick's Day Raffle

Food Services is sponsoring a raffle for two free lunches in Abby Aldrich Rockefeller Hall dining room on St. Patrick's Day, Thurs., Mar. 17. To enter, submit your name in the jar in the Tower cafeteria by Tues., Mar. 15.

### Clinical Research Seminar

H. Franklin Bunn, professor at Harvard Medical School and research director of Hematology and Oncology at Brigham and Women's Hospital in Boston, will speak on "Erythropoietin: Structure-Function and Regulation" at the Seminar in Clinical Research, Wed., Mar. 16. The seminar, to be held at noon in Nurses Residence 110B, is free and open to the public.

### Computer workshops

Space is still available in the following Computing Services workshops:

- **Introduction to Sequencing, Part I:** Thurs., Mar. 24, 2:00 to 4:00 P.M.;
- **Introduction to Sequencing, Part**

**II:** Thurs., Mar. 31, 2:00 to 4:00 P.M.;

- **Introduction to Windows:** Mon., Mar. 28, 3:00 to 5:00 P.M.

To register, leave voice mail at x7768 stating your name (please spell your last name), extension, lab or department name, and the class for which you wish to register.

### Correction

To order Professor Emeritus Bruce Merrifield's memoirs, *Life During a Golden Age of Peptide Chemistry*, call the American Chemical Society at (202) 872-4564, rather than the number listed in last week's issue of *News&Notes*.

## Lecturer to speak on neurotrophic factors

(continued from page 1)

University (A.B., 1980; Ph.D., 1986; M.D., 1987), Yancopoulos remained at Columbia to complete his postdoctoral studies, first as a Howard Hughes Medical Institute Fellow (1987-88), then as a Lucille P. Markey Scholar (1988-89). He joined Regeneron Pharmaceuticals in 1989 as senior scientist. He became head of Discovery in 1991 and was appointed vice president in 1992. He is also adjunct assistant professor at Columbia University and adjunct associate professor at New York Medical College.

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

## In memoriam: Bruce Voeller

Bruce Voeller, alumnus and former associate professor of The Rockefeller University, died of AIDS-related causes last month at the age of 59.

A graduate of Reed College, Voeller earned his Ph.D. at Rockefeller, where he went on to become a research associate (1961), assistant professor (1963) and associate professor (1966). Voeller published four books while at Rockefeller, including *Basic Biology* (1970) with Alfred Elliott and *Three Centuries of Botany in North America* (1967) with Rockefeller University

Professor Paul Cranefield.

In 1973, Voeller founded the National Gay Task Force, an influential lobbying group for gay rights based in Washington, D.C. (now the National Gay and Lesbian Task Force), and was its executive director until 1978. That year, he founded the Mariposa Education and Research Foundation in Topanga, California for research on human sexuality and sexually transmitted diseases. Voeller, president of the foundation until his death, was at the forefront of the fight against AIDS.