

4-22-1994

NEWS AND NOTES 1994, VOL.4, NO.25

The Rockefeller University

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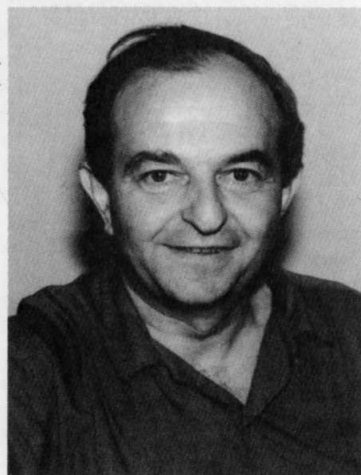
The Rockefeller University, "NEWS AND NOTES 1994, VOL.4, NO.25" (1994). *News and Notes 1994*. Book 8.
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Leading physicist to join RU faculty

Albert Joseph Libchaber, a world-renowned experimental physicist currently at Princeton University and the NEC Research Institute, has been named full professor at the university.

Courtesy of James Ihle



Albert Libchaber has been appointed full professor.

"Albert Libchaber has established an international reputation as a condensed-matter physicist," said President Torsten Wiesel. "He is known for measuring with precision and novelty phenomena that are considered elusive. I am very pleased that he will be joining our faculty."

Until the mid-1970s, Libchaber focused on low temperature studies, especially of Josephson junctions. He then turned his attention to the field of fluid turbulence, where his first published work in fluids drew considerable attention. The results from this study were four to five orders of magnitude better resolved than any prior experimental study in the field. For this work (which confirmed Professor Mitchell Feigenbaum's theory of the onset of turbulence), Libchaber was awarded the 1986 Wolf Prize in Physics.

Libchaber is currently conducting explorations on the temporal

behavior of microtubules.

Libchaber was educated at the University of Paris (bachelor's in mathematics, 1956), University of Illinois (M.S. in physics, 1959) and Ecole Normale Supérieure (Ph.D., 1965). After graduating with his Ph.D., Libchaber worked as a member of the technical staff at Bell Telephone Laboratory for a year before accepting a position at the Ecole Normale Supérieure. In 1983, he went to the University of Chicago as a professor at the James Franck and Enrico Fermi Institutes and the Department of Physics. Since 1991 he has been a professor at Princeton University and fellow at the NEC Research Institute.

Libchaber has received numerous honors, including the Grand Prix de Physique of the French Physical Society, the MacArthur Fellowship, corresponding membership in the French Academy of Science and membership in the American Academy of Arts and Sciences.

Lecturer to speak on cell signaling

James Ihle, chairman of the Department of Biochemistry at the St. Jude Children's Research Hospital in Memphis, will speak on "Tyrosine Phosphorylation in Cytokine Signaling" at the Friday lecture today (Apr. 22).

The growth, differentiation and functional activities of cells are regulated through the interaction of growth factors, cytokines or lymphokines with receptors of the cytokine receptor superfamily. During the past year, Ihle and his colleagues have shown that these receptors associate with and activate a novel family of cytoplasmic protein tyrosine kinases called Janus kinases (JAKs). JAK1, JAK2 and TYK2 have been implicated in the response to a variety of cytokines, including erythropoietin, growth hormone, IL-6, IL-3 and ciliary neurotrophic factor. More recently, Ihle and his col-

See Friday lecture, page 2

Rockefeller alumni meet in Japan for first time in decade

The first Rockefeller University alumni reception in Japan in a decade drew over 80 former faculty and postdocs from across Japan to the Tokyo Hilton Hotel early this month. Chairman of the Board's Executive Committee David Rockefeller, President Torsten Wiesel and Associate Professor Shigeru Sassa flew over 8,000 miles to attend.

"The Rockefeller University exists only in part on its 14-acre campus in Manhattan," said

Wiesel. "It is also composed of the community of scholars all over the world who have ties—either through postdoctoral experience, visiting professorships or research collaborations—to the university

and its scientific endeavors."

Setsuro Ebashi, former director and professor of the National Institute of Physiological Science

See Rockefeller, page 4

Courtesy of Asahi Shimbun



David Rockefeller, (left) chairman of the Board's Executive Committee, and President Torsten Wiesel attend a Rockefeller University alumni reception in Japan earlier this month.

New fund established for scientific exchange

The Yamanouchi Pharmaceutical Company will donate \$300,000 over a period of three years to establish the Yamanouchi Molecular Medicine Research Fund at The Rockefeller University. The announcement was made by Shigeo Morioka, chairman of Yamanouchi, at a meeting with Chairman of the Board's Executive Committee David Rockefeller, President Torsten Wiesel and Associate Professor Shigeru Sassa that took place as part of the group's recent Tokyo trip. Also present at the meeting were Masayoshi Onoda, president of Yamanouchi, Teruhisa Noguchi, executive vice president of the company and adjunct professor at Rockefeller, and Kazuo Komuro, vice president of Yamanouchi U.S.A. "We are delighted that this fund will support research at the Rockefeller University and look forward to a very fruitful relationship and a mutually beneficial scientific exchange," Morioka said. The fund will support investigations in molecular medicine at the University with emphasis on research programs that will bring together scientists from Rockefeller and Japan.

2 Einstein the man revealed

2 Fellowships open for RU postdocs

3 How embryos shape up

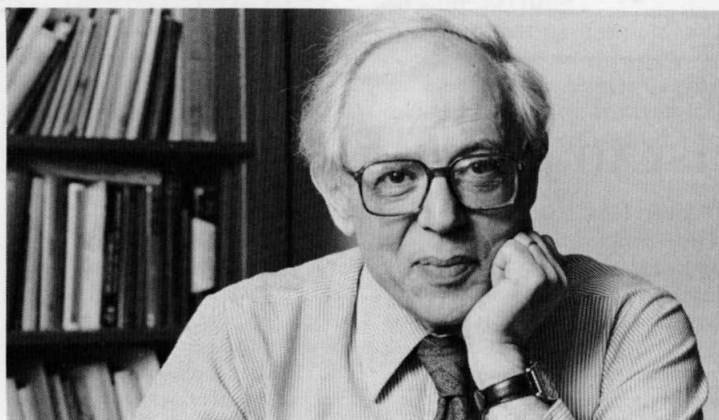
Rockefeller physicist offers new view of Einstein

Rockefeller University physicist Abraham Pais, already considered by many to be the definitive scientific biographer of Albert Einstein, has published a new book on the man, whom Pais knew personally. In *Einstein Lived Here*, Pais provides an intimate and colorful portrait of Einstein, his family and his public image.

"This book is a companion volume to my *Subtle is the Lord* (Clarendon Press, Oxford, 1982), but not its sequel," writes Pais in the preface to his new book. "Earlier I had focused on Einstein's science and his life and had only occasionally included remarks about the way he was perceived by the outside world of non-scientists. The main purpose of the present volume is to enlarge on that last topic, which now becomes the central theme."

Made up of a series of 11 essays, *Einstein Lived Here* presents new material on Einstein's family, including an illegitimate daughter (with his future first wife) and a schizophrenic son. It includes a chapter on how Einstein was awarded the Nobel Prize, and another on his views on religion and philosophy. The book also explores Einstein's close relation-

Ingbert Guttman



Professor Emeritus Abraham Pais paints a vivid portrait of Albert Einstein in his new book, *Einstein Lived Here*.

ship with personalities such as John D. Rockefeller, Charlie Chaplin, Sigmund Freud and Gandhi.

Its principal essay, however, addresses how Einstein was immortalized in the press. Here, Pais traces the media coverage of Einstein from the first small advertisement that Einstein himself placed to attract pupils, to the physicist's fame that grew to mythical proportions. Even today, almost 40 years after his death, the press's fascination with Einstein continues.

Like Pais's book *Subtle is the*

Lord—which received the American Book Award and sold over a quarter of a million copies—*Einstein Lived Here* has already received critical acclaim. Historian Arthur Schlesinger, Jr., commented, "*Einstein Lived Here* is the ideal Einstein book for non-physicists—a collection of charming sketches that brings Einstein to life in a variety of relationships."

Einstein Lived Here is available in most book stores. To order from the publisher, contact Oxford University Press, 1-800-451-7556.

Applications for 1994-95 fellowships now open to RU postdocs

The Faculty Committee for Fellowship Review will meet in June to review nominations for the Charles H. Revson, Norman and Rosita Winston, and C. H. Lee Memorial Scholarship postdoctoral fellowships, to be awarded for the 1994-95 academic year.

This year, eight fellowships are available to Rockefeller applicants through the Revson and Winston Fellowships. Each award provides \$25,000 toward salary support and fringe benefits for a one-year term. Candidates, including junior faculty, may be in any field of research and should be early in their careers at Rockefeller, awaiting other sources of funding, or may be postdoctoral fellows ending their terms and in need of funding for an extra year for the completion of research projects. Renewals for current scholars will be considered only under special circumstances. The term for these annual fellowships runs from July 1, 1994 through June 30, 1995. No more than one application per laboratory will be

accepted.

The C. H. Lee Memorial Fellowship provides support for a visiting scholar from the People's Republic of China or Taiwan, who is conducting basic research designed to advance knowledge of the chemistry and biology of the hormones of the pituitary gland and its target organs. The grant is not available for support of clinical research, or either commercially funded or commercially directed research. The fund will provide \$30,000 annually toward salary support (and benefits, if the candidate is a postdoctoral associate). The expected starting date for this fellowship is Nov. 1, 1994.

Applications, which must include a description by the candidate of the proposed research project, a letter of recommendation from the head of laboratory, the candidate's curriculum vitae and any materials concerning the candidate's current funding, should be sent to Jackie Keren, Development Office, Box 164 before Mon., May 16.

University provides monitoring for pregnant employees

Pregnant employees can now choose to take advantage of a new university policy on radiation monitoring for pregnant women.

The program, which is entirely voluntary, enables pregnant employees who work in a laboratory, or who go into a laboratory on a regular basis, to be monitored closely for radiation exposure. Laboratory Safety will schedule and implement the counseling and the necessary monitoring program for the employee. Monitoring will help ensure that guidelines set by the Nuclear Regulatory Commission for pregnant women are met.

Contact Employee Health, x 8414, if you are pregnant and interested in radiation monitoring or counseling concerning the potential hazards of laboratory materials to the fetus. Inquiries will be kept confidential.

Friday lecture to focus on cell signaling (continued from page 1)

leagues identified another family member, JAK3, which is uniquely involved in the response of hematopoietic cells to IL-2, IL-4 and IL-7.

"Dr. Ihle was one of the first to identify the importance of JAK kinases in cytokine signaling," said Professor James Darnell, who will be hosting the lecture. "His longstanding interest in how cytokines activate cell growth is very relevant to much research at Rockefeller including our own, and we are very glad to have the chance to exchange ideas with him."

A graduate of Iowa State University (B.S., 1967) and the University of Georgia (M.S., 1969; Ph.D., 1971), Ihle was appointed staff scientist at Oak Ridge National Laboratory in 1973. Two years later, he was named head of the Immunobiology of Viral Carcinogenesis Section at the National Cancer Institute in Maryland. From 1978 to 1988, he was an associate in the Department of Epidemiology at Johns Hopkins University. During this time, he was also an associate in the Department of Biochemistry at George Washington University Medical School as well as head and principal research scientist at the National Cancer Institute. In 1988, he was appointed professor of biochemistry at the University of Tennessee and chairman of the Department of Biochemistry at St. Jude Children's Research Hospital.

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

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.

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From egg to organism: DiNardo lab tracks how embryos take shape

by Susan Blum

Embryologic development consists of a series of choices. The original fertilized egg has the potential to become every type of cell the mature organism will require. But with each round of successive cell division, the options for each daughter cell grow progressively limited, as the cells make choices that nudge them closer to their final, differentiated states as cells in a particular organ or tissue.

These choices are made manifest in the emergence of cellular patterns of ever-increasing complexity within the embryo. At each step, the decisions are dictated by positional information that tells a cell where it is in relation to other cells in the emerging cellular pattern.

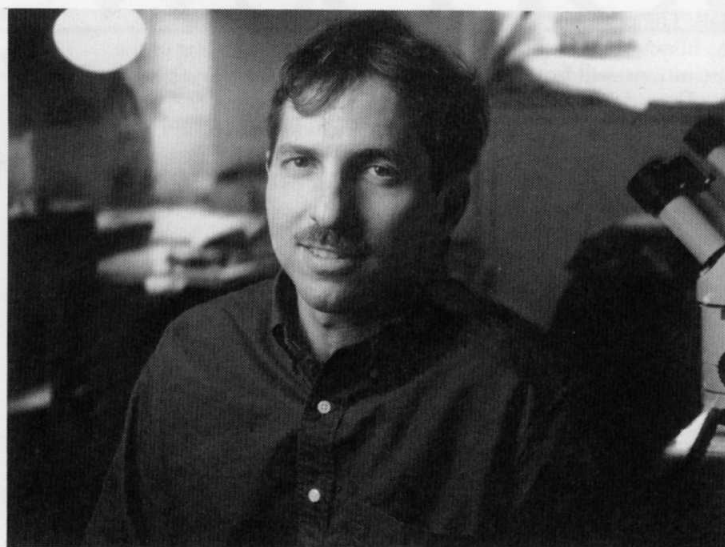
Positional information is conveyed to a cell from "organizing centers," regions that serve as sources of signals directing the differentiation of large numbers of cells into many different cell types. Although scientists have known about the function of organizing regions since the 1930s, the search for the signals they send has long been fruitless.

Hedgehog proteins are involved

This past winter, however, researchers from a number of labs identified the first such signaling molecules in vertebrates and found they were all members of the "hedgehog" family of proteins. The reports showed that one protein, sonic hedgehog, serves as a signaling molecule in mice, zebra fish, and chickens, where it functions in regions responsible for patterning of the limbs, spine, and central nervous system. Other hedgehog molecules seem to have more limited activity in development.

The recent discovery of hedgehog proteins in vertebrates was loudly trumpeted in the press. But the initial identification of the hedgehog gene, and of the crucial role it plays in development, was actually accomplished earlier in work done in the fruit fly, *drosophila*. That hedgehog genes are proving important in so many different species comes as no surprise to biologists, who keep finding that the fundamental principles—and molecules—controlling development are the same, or conserved, in all animals.

Many significant findings about hedgehog in *drosophila* are being made in the lab of Rockefeller scientist Stephen DiNardo. There, researchers are investigating how positional information specifies the ten or so different epidermal cell



Associate Professor Stephen DiNardo and his colleagues explore how a cell "chooses" its fate.

types in the fruit fly embryo. Each differentiated cell type has a different shape (outlined by a hard cuticle cover) and boasts a particular surface appearance. Some cells are smooth, while others sport a little hair, or denticle, of a characteristic length, thickness, color, and orientation. The variously differentiated cells always form the same pattern in relation to one another, and this pattern is repeated identically throughout each of the fly embryo's fourteen parasegments, or divided regions.

Researchers in the DiNardo lab are focusing on how proteins made by cells flanking the borders between adjacent parasegments affect the differentiation of the epithelial cells within each parasegment. One of these proteins is a signaling protein called wingless; the other protein is hedgehog, which is also a signaling molecule.

Since the late 1980s, researchers in the DiNardo lab and elsewhere have learned much about hedgehog and wingless. For instance, they found that early in development, the wingless signal reinforces the expression of hedgehog in neighboring cells across the border; likewise, the hedgehog signal reinforces wingless expression. They also learned that, later in embryological development, wingless serves as a signal that specifies the differentiation of many different cells in the epidermis. In fact, because mutations in the wingless gene abolish most epidermal patterning within the parasegment, some researchers hypothesized that wingless was the sole signal directing epidermal cell fate.

But is wingless truly the sole actor? Or might it be that, by blocking early reinforcement of hedgehog

expression, mutations in wingless also block a later signaling role for hedgehog, as well?

Roles of proteins are explored

DiNardo and Jill Heemskerk, a collaborator at Columbia University, recently answered this question. Using a novel combination of genetic and molecular biological techniques, for the first time they were able to distinguish the direct effects of hedgehog from those due to the lack of wingless. "The results showed that hedgehog is as important an organizing molecule as wingless is, responsible for about half the cell fate decisions in the epidermis," DiNardo said. Their paper further showed that in dictating epidermal cell fate, hedgehog works a classic morphogen—a molecule that forms a concentration gradient. Cells at different distances from the morphogen's source "see" different levels of the signal, and differentiate accordingly into distinct cell types.

The paper, published in a recent issue of *Cell*, presents a model that integrates the role of the hedgehog and wingless signals in establishing the segmental array of cell type diversity. In this model, there are two distinct periods in which signaling is important for epidermal patterning. Early in development, wingless and hedgehog signal over short distances to stabilize each other's expression. This stabilization creates two organizing centers that serve as the sources of two signaling molecules—hedgehog and wingless—that later act over a distance to specify the fate of distinct sets of cells within the parasegment.

DiNardo believes this two-phase model will prove to be a general one, not only in flies but in verte-

brates, too. But while the overall plot line may stay the same, the players—that is, the molecules—will vary. In vertebrates and flies, a limited number of conserved families of signaling molecules keeps turning up (hedgehog-type molecules, wingless-type molecules, and growth factor-type molecules) but they interact with each other in various combinations. Moreover, even the same molecular player may act differently at different times. For instance, while hedgehog seems to perform as a classic morphogen to pattern fruit fly epidermis, in the fruit fly limb it may signal adjacent cells to set off a cascade of cell-cell interactions.

Protein roles vary

DiNardo is not disconcerted by these variations. "There will be perhaps three or four different ways in which molecules like hedgehog can act, and nature will use them at different times and in different places in the development of different organisms."

One current aim of the DiNardo lab is to understand how hedgehog and wingless signals evoke different responses in the early and late stages of epidermal cell differentiation in fruit flies. Take, for example, the case of a particular smooth epidermal cell whose fate is specified by wingless. "In the early stage, the wingless signal tells the cell to maintain hedgehog expression. But in the later stage, the wingless signal tells the cell, 'You're in this particular position within the parasegment. When you differentiate, stay smooth on your surface.' Something has really changed in that cell to alter its response. We don't yet know what has changed, but we want to find out."

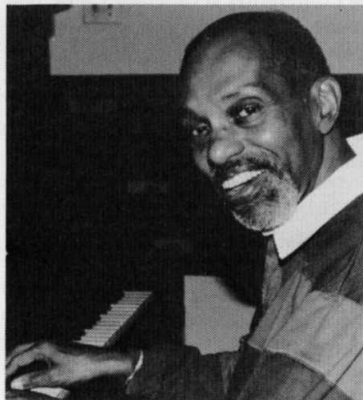
The researchers' studies have already turned up some novel genes in both wingless- and hedgehog-responding cells that appear to help mediate the read-out of fate determination commands. And, DiNardo predicts, "the genes that are important for the specification of these individual cell types are going to be genes that act in vertebrates, too"—including humans.

This prediction's proof would provide yet another example of evolution's remarkable conservation of the mechanisms underlying embryologic development. So in the warm days that approach, think twice about dispatching a bothersome fly. Its journey from egg to adult holds clues to your own remarkable voyage from a single, fertilized cell to a complex human with many specialized parts—including a hand that can swat away insects.

Potpourri

Tri-Institutional Noon Recital

The Walter Bishop, Jr. Quartet, consisting of pianist Walter Bishop, Jr., bassist Paul Brown, Al Harewood on drums and soprano saxophonist Hassan Williams, will perform at the Tri-Institutional Noon Recital today (Apr. 22). The quartet has made appearances at New York City clubs as well as at Carnegie Hall, the Hollywood Bowl and Lincoln Center's Alice Tully



Pianist Walter Bishop, Jr. (above) will perform with the Walter Bishop, Jr. Quartet at the Noon Recital today (Apr. 22).

Hall. The program, sponsored by the library staffs of the Tri-Institutions, will feature works by Ray Depaul and John Stone, George Gershwin, Walter Bishop, Jr., and Charlie Parker. The concert, to be held in Caspary Auditorium at noon, is free and open to the public.

Spraying

Weather permitting, the trees and shrubs on campus will be sprayed Sat., Apr. 23 from 6:00 A.M. through noon. The Grounds Department recommends that those on campus that day stay out of direct contact of the spray, close windows, turn off air conditioners and keep pets inside. The rain date is Sat., Apr. 30. For more information, call James Sullivan, x8001.

Sunday film

The Magnificent Ambersons (U.S.A., 1942), directed by Orson Welles, will be shown in Caspary Auditorium at 7:30 P.M., Sun., Apr. 24. Welles's second film, based on the novel by Booth Tarkington, is the story of the declining magnificence of an American dynasty. Admission is free.

Tenant meeting

A general meeting of the Rockefeller University Faculty Housing Tenants Association, to include the election of officers for 1994-95, will take place Mon., Apr. 25 at 8:00 P.M. on the 38th floor of Scholars Residence.

Daughters' Day

RU parents and their daughters will meet for Take Our Daughters To Work Day Thurs., Apr. 28 in Cohn Library at 9:00 A.M. For more information call Teri Smiling, x8580.

Barbecue

The Faculty and Students Club will hold its ninth annual barbecue Fri., June 10 at 5:30 P.M. (rain date, Fri., June 17). Tickets, \$10 in advance or \$12 at the door, will go on sale Mon., May 2 at the Faculty and Students Club, on the B floor of Abby Aldrich Rockefeller Hall, and in the Purchasing Office, Plaza A5. Contact Angie Dohnert, x8201, for more information.

Call for linguists

The Rockefeller University is compiling a list of volunteers who can be called on to interpret for patients

at the hospital. Of special interest are persons who can communicate in sign language or who speak, read and/or write a language other than English comfortably. To volunteer, contact Jean Dooner, x8405, and leave your name, work schedule and hours of availability.

Award

President Torsten Wiesel was awarded the Scientific Achievement Award by the National Eye Institute, National Institutes of Health, last week, in recognition of his "pioneering research and important contributions to our understanding of the underlying workings of the human body."

Lecture

Adjunct Associate Professor Sarah Leibowitz spoke recently on "The Neurobiology of Alcohol and Nutrient Ingestion" at the 25th Annual Conference of the American Society of Addiction Medicines held in New York, and also at a recent meeting on the Regulation of Alcohol Consumption, sponsored by the National Institute on Alcohol Abuse and Alcoholism.

Rockefeller University alumni attend reception in Japan

(continued from page 1)

and president of the university's Japanese Alumni Association, welcomed the guests. Rockefeller then spoke about his family's long relationship with Japan and presented slides giving a brief historic overview of the university. Wiesel continued the presentation, focusing on the tradition of academic excellence at Rockefeller and current and future programs for expansion.

Helping arrange the reception were: Teruhisa Noguchi, executive vice president of Yamanouchi Pharmaceutical Co., Ltd. and adjunct professor at Rockefeller; Fumiko Mitani, assistant professor at Keio University, formerly of the Kappas laboratory; and Sassa. Also present at the event were Shigeo Morioka, chairman of Yamanouchi Pharmaceutical Co., Ltd., Trustee Heisuke Hironaka, and Mr. Hideo Sekiyama, manager of The Hideyo Noguchi Memorial Association.

Carl Pfaffmann, physiological psychologist, dies

Carl Pfaffmann, a physiological psychologist who was Vincent and Brooke Astor Professor Emeritus of The Rockefeller University, died in Middletown, Connecticut on Sat., Apr. 16. He was 80 years old and died of complications from a stroke.

Pfaffmann was a pioneer in studies of taste and smell and their neural pathways in the brain. He also explored the impact of past experience, diet and hormonal states upon taste and odor preferences. His findings constituted an important advance in the understanding of the biological basis of behavior.

Pfaffmann joined The Rockefeller University in 1965 as professor and vice president and was responsible for helping the university establish major laboratories in physiological psychology, neurobiology and animal behavior. He retired as vice president in 1978. Two years later, he was appointed the first Vincent and Brooke Astor Professor, a position he held until becoming emeritus in 1983.

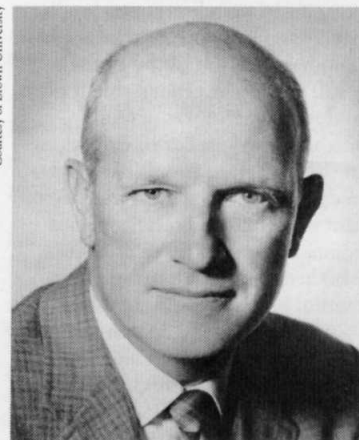
Pfaffmann was born on May 27, 1913, and attended Richmond Hill High School in New York City. A 1933 graduate of Brown University, Pfaffmann received an A.B. from Oxford University in 1937 as

a Rhodes Scholar and a Ph.D. from Cambridge University in 1939. He then spent a year as a research associate in biophysics at the Johnson Foundation of the University of Pennsylvania and four years as a psychologist in the United States Navy, from which he retired with the rank of commander. Shortly thereafter, Pfaffmann returned to Brown University and, in 1952, was appointed professor of psychology. In 1960, he was named Florence Pirce Grant University Professor of Psychology and was awarded a John Simon Guggenheim Memorial Foundation Fellowship.

Pfaffmann was a recipient of numerous awards, including the Warren Medal from the Society of Experimental Psychologists, the Distinguished Science Award from the American Psychological Association, the Kenneth Craik Research Award of St. John's College, Cambridge, as well as several honorary Doctor of Science degrees. He was a member of the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts and Sciences, the Eastern Psychological Association (president), the Society of Experimental

Psychologists, the American Association for the Advancement of Science and the American Psychological Association. In addition, he served as chairman of the Division of Behavioral Sciences of the National Research Council and was a founding member and chairman of the International Symposium of Olfaction and Taste.

Pfaffmann is survived by his wife of 54 years, Louise, a daughter, Ellen, a son, William, and a sister, Anna, and four grandchildren.



Carl Pfaffmann, 1913-1994, was a leader in chemosensory research.