# The NIH Record

U.S. Department of Health and Human Services

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National Institutes of Health

## Dr. Harvey Pollard Given PHS Commendation Medal

Dr. Harvey B. Pollard, chief, Laboratory of Experimental Pathology, National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases, and chief, cell biology and chemistry section, Laboratory of Experimental Pathology, recently received the PHS Commendation Medal.

The Commendation Medal recognizes sustained high quality work performance in scientific, administrative, or other professional fields; or application of unique skill or creative imagination to the approach or solution of problems; or noteworthy technical and professional contributions that are significant to a limited area.

**Cited for Original Studies**

Dr. Pollard was cited for original studies of exocytosis, the mechanism by which neurotransmitters, hormones, and other cellular products are released from cells.

In exocytosis, the cellular substances are first introduced into secretory vesicles. Subsequently the vesicles move to the surface, fuse with the plasma membrane, and release

*(See DR. POLLARD, Page 9)*

## DEAR NIH'ERS:

NIH has, once again, weathered a severe natural disaster in the form of a near blizzard. The Clinical Center remained open and functioning as did the other buildings on the campus.

I would like to thank the countless NIH and non-NIH employees who worked so hard and long to ensure we could continue to operate. Some examples that come to mind are, of course, Clinical Center patient care staff, as well as the grounds maintenance and housekeeping staffs who plowed and shoveled and then plowed and shoveled again; the GSI cafeteria employees who remained in Bldg. 10 in order to feed staff through the weekend; the police and firemen who helped stranded motorists; the maintenance engineers who stayed on the job long after their shift had ended.

Many more could be singled out for thanks; I won't even attempt a comprehensive list. It is heartening to know that we all worked together, did in many cases more than was required, and rode out the emergency in fine style. Well done.

James B. Wyngaarden

## Measles Vaccine, Awareness Campaign Prove Successful in Combating Illness

Measles, a viral infection, was once a common childhood disease. Almost no child was spared. Today, with the development of an effective measles vaccine and rigorous immunization and surveillance programs, practically all children in the United States can reach adulthood without experiencing this illness.

In fact, the HHS awareness campaign to "keep measles a memory" is beginning to pay off. During 1982, less than 1,800 cases of measles were reported in the U.S. And for the first time, in this country's history, a measles-free week (Jan. 9-15, 1983) was reported.

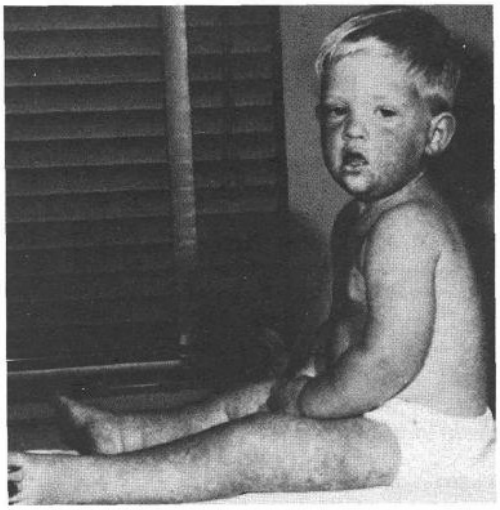
Measles, like other childhood diseases, can cause more than mere discomfort. Initial symptoms resemble those of the common cold—cough, runny nose, and red, watery eyes.

**Complications Noted**

These are followed by a fever, a red blotchy rash, and Koplik's spots (tiny red patches with whitish specks that appear on the inside of the cheeks near the molars and other areas of the mucous lining of the mouth).

Although most people recover from measles in 7 to 10 days, there is the potential for serious complication, such as pneumonia, middle ear infection, and encephalitis, an inflammation of the brain that can leave its victims blind and deaf.

A late, but rare complication of measles, occurring an average of 7 years after initial exposure, is subacute sclerosing panencephalitis (SSPE).



**Children in the United States today can reach adulthood without experiencing the discomfort and possible complications of measles.**

Apparently due to a "slow virus" infection, SSPE begins with mental deterioration and muscle spasms and progresses over months to years to generalized convulsions, coma, and death.

With the isolation of the measles virus in 1954 and the development of an effective live virus vaccine licensed in 1965, there is now a means to control measles.

With the widespread use of the new vaccine, the incidence of measles reached a low level in 1974. However, during the next 3 years, the number of reported cases in the U.S. substantially increased.

**Initiative Announced**

To remedy this problem, HEW announced a nationwide Childhood Immunization Initiative in 1977. This initiative had two goals: (1) to immunize 90 percent of the Nation's children by October 1979, and (2) to maintain these levels thereafter.

Vaccination is routinely done at 15 months of age for maximum effectiveness. Most infants under a year old have a natural immunity to measles from antibodies passed from the mother through the placenta. For this reason children vaccinated earlier than 12 months of age should be revaccinated.

Moreover, anyone who received the less

*(See MEASLES VACCINE, Page 5)*


**A snowman extends his greetings at the entrance to the Clinical Center. (See page 5.)**

# The NIH Record

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## *Training Tips*

The following courses, sponsored by the Division of Personnel Management, are given in Bldg. 31.

| *Office Skills* | *Course Starts* | *Deadline* |
|---|---|---|
| Effective English Workshop | 4/11 | 3/28 |
| Letter Writing for Secretaries | 5/18 | 5/2 |
| *Communications Skills* | | |
| Writing Workshop | 5/2 | 4/14 |
| Effective Listening | 3/17 | 3/1 |
| Human Relations | 5/11 | 4/25 |
| Intermediate Editing | 6/1 | 5/13 |
| *Supervisory and Management* | | |
| Effective Communications | 3/15 | 3/1 |
| Capitol Hill Workshop | 3/31 | 3/10 |

To learn more about these and other courses, contact the Development, Training and Operations Branch, DPM, 496-6371.

### Sailing Club Offers Training Class

The R&W Sailing Association will begin its basic training class on Wednesday, Apr. 20. The course consists of six lecture sessions, an exam, and three on-board sailing lessons on the Chesapeake Bay. Cost is $65.

Register Thursday, Apr. 7, beginning at 9 a.m., at the R&W Activities Desk, Bldg. 31, Rm. 1A18.

Club meetings are held on the fourth Thursday of each month and membership dues are $25.

For further information, contact Sally Stevens, 496-4124. □

# Declare financial independence.

Buy U.S. Savings Bonds

## Earn College Credit Through Examination

Tuesday, Apr. 26, will be the next date when NIH employees can participate in the College-Level Examination Program (CLEP)—a nationally recognized testing program, where individuals can receive college credit for knowledge they have obtained outside of school. Test registration must be made by Friday, Mar. 26.

Almost 30 different tests are available such as English composition, history, French, German, Spanish, psychology, economics, sociology, biology, chemistry, algebra, calculus, analytic geometry, FORTRAN, data processing, and accounting.

Further information about the CLEP tests can be obtained from the Career Education Center, Bldg. 31, Rm. B2B39, or by calling Carrol Daniels, 496-5025. □

## NIH Amnesty International Letter Writing Group Formed

Amnesty International is a worldwide human rights organization (winner of the 1977 Noble Peace Prize) which seeks observance throughout the world of the United Nations Declaration of Human Rights.

An A.I. letter writing group has been recently formed at NIH. Members meet to write letters, in a private capacity, on behalf of people imprisoned for their political or religious beliefs.

The letters are short and courteous, mainly consisting of requests for medical treatment or cessation of torture for imprisoned or detained people.

Meetings are held every Thursday from 12:30 to 1:30 p.m. in Bldg. 10, Rm. B1D25. For further information call Art Pitterman, 496-4393, or David Whyte, 496-9033. □

**Dr. Bernhard Witkop, chief, Laboratory of Chemistry, NIADDK, was recently elected to honorary membership in the Japanese Chemical Society. He was cited for his many scientific contributions in organic chemistry, basic and applied biochemistry, physiology, pharmacology, and neurochemistry. His specific contributions to Japan, which include a term as visiting professor at Kyoto University, several lecture trips to Japan, and the sponsoring of a large number of visiting scientists, are recognized with this award.**

**Michael P. Lockard has been named personnel officer of the National Institute on Aging. He comes to NIA from the Compensation and Classification Branch, Division of Personnel Management, NIH, where he served as position classification specialist. Previously, he held a number of personnel management positions within NIH. Before coming to NIH in 1972, he was a personnel specialist with the U.S. Department of Agriculture. He received his B.S. in psychology from the University of Maryland in 1970.**

## CORRECTION

The caption which appeared on page 8 in the Feb. 1 *NIH Record* incorrectly identified NIDR's Dr. Robert J. Schuellein as chief of the grants management staff. He was special assistant for research manpower. The Institute regrets the error. □

# March is National Nutrition Month—'Eat Well, Be Well'

NIH activities commemorating National Nutrition Month, March 1983, feature many interesting and informative events. Cosponsors of this year's activities are the NIH Nutrition Coordinating Committee and its Subcommittee on Nutrition Education, the R&W Association, the Occupational Medical Service, and the GSI Cafeteria Service.

Included in the month's planned activities schedule are showings of: a film entitled, *Weighing the Choices*, which emphasizes the effect of nutritional choices on overall health and well being, and the videotape series, Eat Well, Be Well II.

Due to the overwhelming success of the original Eat Well, Be Well series, the Metropolitan Life Foundation provided funds to Amram Nowak Associates for production of the sequel, Eat Well, Be Well II.

The sequel exemplifies successful joint collaboration between industry, government, and the scientific community in exploring the role of nutrition in health promotion and disease prevention.

The series consists of 14 segments featuring interviewer Helen Hatton examining the role of nutrition and illustrating this role through recipes. Eight of these segments will be shown in March.

In order to emphasize the importance of exercise, a program of employee office exercises will be presented Mar. 15 and 16, compliments of the R&W and the Maryland Commission on Physical Fitness. These exercises are designed to improve flexibility, minimize lower back pain, and help to relieve muscular tension common to the work setting. Take home charts of the exercises will be made available.

| *EVENT* | *DATE* | *PLACE* | *TIME* |
|---|---|---|---|
| FILMS: | *MARCH* | | |
| *Weighing the Choices* | 7 | Shannon Bldg./Wilson Hall | 11:30 a.m. |
| | 8 | Federal/Rm. B1-19 | 11:30 |
| | 9 | Bldg. 13/Rm. G 313 | 10:00 |
| | 10 | Masur Auditorium | 11:30 |
| | 11 | Westwood/Rm. 503 | 11:30 |
| | 15 | Lister Hill Auditorium | 11:30 |
| "Eat Well, Be Well II" | 14 | Bldg. 31/Conf. Rm. 4 | 12:30 p.m. |
| | | Shannon Bldg./Rm. 114 | " |
| | | Lister Hill Auditorium | " |
| | | Landow/Conf. Rm. A | " |
| | | Federal/Rm. B1-19 | " |
| | | Bldg. 36/Rm. 1B07 | " |
| | 18 | Bldg. 31/Conf. Rm. 4 | 12:30 p.m. |
| | | Shannon Bldg./Rm. 114 | " |
| | | Lister Hill Auditorium | " |
| | | Federal/Rm. B1-19 | " |
| *FITNESS:* | | | |
| *Employee Office Exercise Program* | 15 | Bldg. 10/Cafeteria | 12:00 p.m. |
| | 16 | Bldg. 31/Cafeteria | " |

Nutrition information on certain food items and a number of new nutritious food selections will be offered in cafeterias of Bldgs. 10, 31, 37, and the Shannon Bldg. GSI's special features during the month will offer National Nutrition Month "Specials of the Day" listing calories per food item; salt-free vegetables; the Nutrition Month salad bar complete with 12 toppings; and a health food promotional program with natural drinks, cheeses and fresh fruit, such as strawberries and various melons.

NIH nutrition pamphlets available to the public at special tables in the various cafeterias are: *Questions About Weight, Salt and High Blood Pressure* (NHLBI); *Age Page-Food: Staying Healthy After 65* (NIA); *Snack Facts* (NIDR); *Good Teeth For You and Your Baby* (NIDR); and *Nutrition and Your Health, Dietary Guidelines for Americans* (DHHS/USDA).

Information on all National Nutrition Month Activities will be distributed desk-to-desk to all NIH personnel.

**The Eat Well, Be Well II topic, featured recipe, and commentator for four segments scheduled for Mar. 14 are:**

| *Segment Topic* | *Recipe* | *Commentator* |
|---|---|---|
| Ideal Body Weight | "Lucky Seven Tuna" | Dr. Artemis P. Simopoulos<br>Chairman, NIH Nutrition Coordinating Committee<br>Dr. Paul S. Entmacher<br>Vice president and chief medical director<br>Metropolitan Life Insurance Co. |
| Protein | "London Broil Pomadora" | Helen Hatton and<br>Denny Dolmach<br>Cattle farmer<br>Grundy Center |
| Milk and Dairy | "Better Blintz" | Dr. Lawrence Riggs<br>Mayo Clinic<br>Rochester, Minn. |
| Diet and Exercise | | Richard S. Schweiker<br>Secretary, Department of Health and Human Services<br>Helen Hatton |

**Segments scheduled for Mar. 18 are:**

| *Segment Topic* | *Recipe* | *Commentator* |
|---|---|---|
| Vegetarianism | "Garden Curry" | Dr. Albert Mendeloff<br>Professor of Medicine<br>Johns Hopkins University<br>Editor, *American Journal of Clinical Nutrition* |
| Cholesterol | "Snappy Snapper" | Dr. Virgil Brown<br>Mt. Sinai School of Medicine, N.Y. |
| Prenatal Diet | "Strawberry Rice Parfait" | Dr. Roy Pitkin<br>Professor of Obstetrics and Gynecology<br>University Hospital, Iowa |
| Ethnic | "The Real Tabouli" | Helen Hatton |

## Tickets Available for Kennedy Center

R&W has discount tickets available for the following performances at the John F. Kennedy Center for the Performing Arts, Washington, D.C.:

Mar. 13—Dresden Philharmonic, Herbert Blomstedt, music director; $17.25.

Mar. 19—*Jean-Pierre Rampal, flute*; $15.50.

Mar. 26—Irish Chamber Orchestra, James Galway, flute; $18.25.

Orchestra tickets may be ordered at the R&W Activities Desk, Bldg. 31, Rm. 1A18. □

## Federal Almanac on Sale

The 30th annual edition of the Federal Employees Almanac is now available to R&W members at all gift shop locations and the Activities Desk. Important information including detailed coverage of social security, injury compensation, income tax tips, merit pay, overseas job opportunities and statistical charts are featured. R&W price is $2.70. □

## Walking/Hiking Club Plans Trips

The following trips are being planned by the R&W Walking/Hiking Club: Saturday, Mar. 5, Sugar Loaf Mountain, Md.; Saturday, Mar. 12, Great Falls, Md.; Sunday, Mar. 20, Old Rag Mountain, Va.; Saturday, Mar. 26, Paddy Mountain, Va., blue trail. Contact R&W Activities Desk, 496-6061. □

# Visual Deficits Resulting From Abnormalities of Brain Function Subject of Unique NEI Collaborative Research Project

A unique collaborative research effort, combining neuroscience and clinical ophthalmology, has been launched by the National Eye Institute in its new quarters on the 10th floor of the Ambulatory Care Research Facility. Here investigators from NEI's Laboratory of Sensorimotor Research (LSR) and the NEI Clinical Branch will work together to gain a better understanding of visual deficits that result from abnormalities of brain function.

Dr. Wurtz

This effort offers hope for improved management of patients suffering from stroke, brain trauma, and sensorimotor disorders of vision. These disorders include strabismus (misalignment of the two eyes), amblyopia (reduced vision from disuse of one eye), and nystagmus (involuntary, rhythmic eye movements).

They are believed to arise from failure of the brain to coordinate the workings of the visual system's key components—the subsystems that control eye movements and process visual information. A major goal of the team effort is a better understanding of as yet unexplored or unexplained disorders of this type.

Dr. Robert Wurtz, LSR chief and a neurophysiologist, has made important contributions to understanding the organization and function of the parts of the brain involved in vision. His coworkers include Drs. Michael Goldberg, Frederick Miles, David Robinson and Lance Optican.

They will work with scientists in the neuro-ophthalmology section, NEI Clinical Branch. Researchers there, who have studied eye disorders arising from neurological disease, will be able to provide clinical perspective.

Dr. Wurtz' group will bring to the ACRF a battery of advanced neuroscience techniques and concepts. Over the past several years, the LSR has carried out basic research on the visual system, acquiring knowledge and methods that permit sensorimotor deficits to be characterized with greater precision than ever before.

For example, the investigators have recorded the responses to specific visual stimuli of single cells in the sensory and motor areas of the brain. Through these experiments with animals, they traced the functional pathways from one visual processing center in the brain to another, determining how various groups of specialized cells react to stimuli and interact with one another.

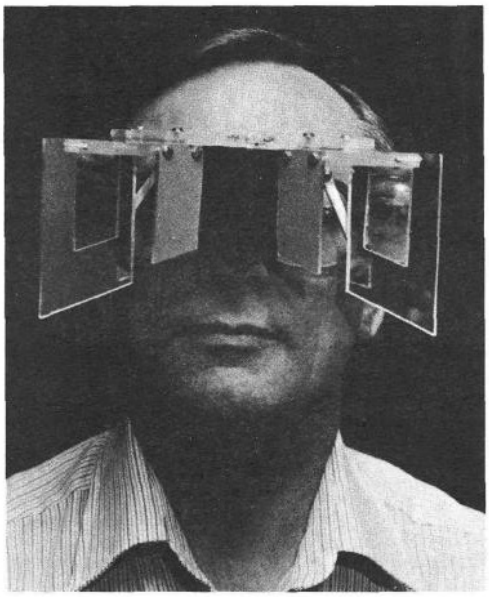
Current knowledge of how visual processing provides cues to guide eye movements, and how eye movements in turn modify visual processing, is largely derived from studies like these by Dr. Wurtz and his LSR colleagues, according to NEI Director Dr. Carl Kupfer.

Another aspect Dr. Kupfer considers of clinical importance is research on how injury to specific groups of brain cells affects eye movements.

Dr. Goldberg and visiting fellow Dr. Deng Shu-yi use a computer to monitor and analyze eye movements.

LSR scientists are also studying sensorimotor adaptation—the process by which the brain self-corrects or compensates for malfunctions in the sensorimotor apparatus, which includes various brain centers, nerves, eye muscles, and ocular tissues.

Adaptation allows most people to maintain optimal vision even though disease or injury may have slightly impaired some component of the system. The task of devising treatments for patients with major sensorimotor impairments would be simpler if it were possible to determine how much of the patient's problem requires medical or surgical correction, and how much is potentially self-correcting by these natural adaptive processes.



LSR's Dr. Miles demonstrates periscopic spectacles he designed to study the role the brain plays in eye alignment.

Drs. Miles and Optican have obtained information on the role of adaptation in some of the sensorimotor processes of greatest interest to clinicians. One of these is alignment—the process by which the two eyes move in unison enabling them to fixate and produce a coherent visual image.

The LSR scientists have demonstrated that alignment is under adaptive regulation—a fact that may have great significance for people who undergo surgery for strabismus.

Each year 56,000 operations are performed to correct the problem of eye alignment, and in many instances surgeons cannot be certain how much a patient's eye muscles need to be altered in order to achieve the desired outcome. LSR studies offer hope that this problem may eventually be solved.

Other sensorimotor disorders now under study in the LSR are abnormalities in rapid eye movements. These disorders, arising from damage to certain areas of the brain, limit the victim's ability to shift his or her gaze from one visual target to another. Reading and other visual activities can be severely affected by these disorders.

Eventually, the LSR in collaboration with NEI's clinical staff may be able to develop treatments for these abnormalities and possibly for other eye movement problems which clinicians are now unable to quantify or characterize.

An important aid to understanding many sensorimotor disorders is LSR's computerized testing system for measuring eye movement. The patient is fitted with a special contact lens attached to an electronic monitor, then seated in front of a screen.

Computer-generated signals are flashed

(Continued on Page 5)

(Continued from page 4)

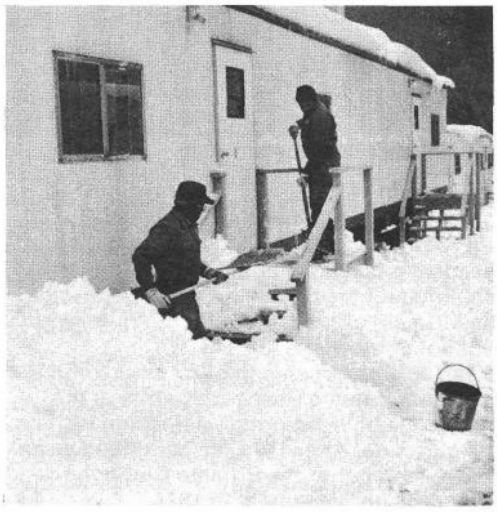
on the screen. Eye movements made in response to each signal are detected by the monitor, which automatically conveys the data to the computer for analysis. This procedure yields clues to the site and cause of a patient's visual deficit.

In addition to conducting studies on sensorimotor disorders, LSR and Clinical Branch researchers will seek a better understanding of the mechanisms underlying certain unusual visual deficits often observed in people with stroke or brain injury.

In some stroke victims, for example, sight is limited to one-half of the visual field of each eye. It is hoped that the analytical methods developed and refined by the LSR will yield information that can be used to develop treatments for such deficits.

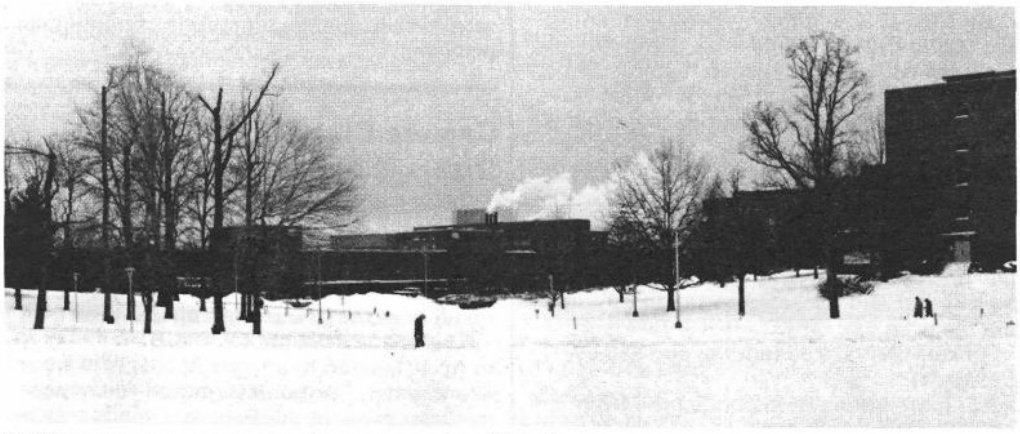
The LSR-Clinical Branch collaboration also provides clinical ophthalmologists with training in the neurosciences. Ophthalmologists who come to the NEI on clinical fellowships will have a chance to work with the LSR scientists and learn advanced neuroscience techniques.

Carrying this knowledge with them when they return to clinical research positions, the physicians will also help to disseminate the latest research advances to a large portion of the medical community for the benefit of many patients. □



**NIH workmen dig out from the big snow, Feb. 11.**

**Photos by Lew Bass**



**Walking around a snow-covered campus can be difficult.**

# New Live Flu Vaccine Effective When Given to Squirrel Monkeys

**By Marian S. McGrath**

A new flu vaccine tested in squirrel monkeys was highly effective, according to a recent study led by Dr. Brian Murphy of the National Institute of Allergy and Infectious Diseases. If the vaccine behaves similarly in man, it could offer better protection against influenza than the vaccines now used.

Current vaccines are made with killed flu virus. The new vaccine, however, contains live virus. The virus infected the respiratory tract of the monkeys but grew at low levels that caused no illness. This harmless infection caused the production of antibodies that protected the monkeys against a second flu infection.

The live virus in the vaccine is actually a hybrid that was created in the laboratory. Scientists chose a human flu virus and a bird flu virus to be the parents of the new hybrid. By itself, the human flu virus stimulates protective antibody production in humans and monkeys but also causes illness. The bird flu virus will grow harmlessly in monkeys but does not elicit antibodies.

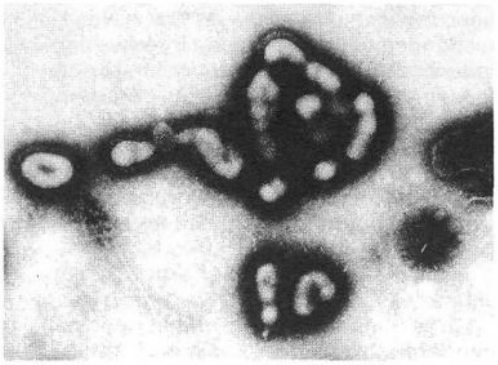
The investigators mated the human and bird viruses and pinpointed a daughter, or "reassortment," virus that had the desirable traits of each parent virus. The new virus elicited protective antibodies like the human virus but was harmless like the bird virus.

This mating was possible because the eight flu virus genes exist as separate pieces of RNA, rather than as a single linear strand of RNA or DNA as in most viruses. The separate genes are readily exchanged between flu virus particles when they reproduce.

Gene swapping between two different flu viruses thus produces a great variety of hybrid viruses. When this happens in nature, some of the daughter viruses may be new variants that populations have never been exposed to and therefore have no immunity to. A severe global epidemic may be the result, the Asian flu of 1957 and the Hong Kong flu of 1968 being notable examples.

Preliminary testing of the new vaccine in humans is now being done at the University of Maryland Hospital in Baltimore. If subsequent clinical trials show that the vaccine works as well in humans as it did in monkeys, it will offer more effective and longer lasting protection than the current killed vaccines, which need to be given annually and may leave 25 percent of the vaccinees unprotected.

This study was reported in a recent issue of *Science*.



**Live influenza A virus, magnified here 118,000 times, has been found to protect squirrel monkeys from a subsequent challenge with virulent human influenza virus in experiments by NIAID scientists and others. If the virus behaves similarly in man, it would offer safer and longer lasting protection against influenza A than the "killed" vaccines now used.**

## MEASLES VACCINE

(Continued from Page 1)

effective killed vaccine licensed in 1963 should also be revaccinated. Unimmunized people exposed to measles should be vaccinated immediately; data suggest that vaccination within 72 hours of exposure may protect against the disease.

Because schools are the primary site of measles transmission, special emphasis is placed on identifying school children who have not had the live measles vaccine or physician-diagnosed measles.

All 50 states plus the District of Columbia have passed laws requiring adequate protection as a condition of entry to schools, kindergartens, and day-care centers.

The measles vaccine is highly effective, producing antibodies in at least 95 percent of those who receive it. Protection appears to be long lasting and no booster is needed.

Some people, however, should not be vaccinated: pregnant women; people who have a fever-producing illness other than a cold; patients with leukemia, lymphoma, generalized cancer, or immune-deficiency diseases; and those receiving certain drugs or radiation therapy. Because the vaccine virus is grown in chick embryo cells, people with life-threatening allergy to eggs should also avoid vaccination.

Immunization, surveillance, and control of outbreaks must be enforced if measles is to be eliminated. The benefits of 20 years of vaccine use are striking.

According to the Centers for Disease Control, 48 million cases of measles have been averted, 4,800 measles deaths avoided, and 16,000 cases of mental retardation prevented. □

# Anticancer Activity of Interferon Modest, Scientists Say; More Research Required

The National Cancer Institute and the American Cancer Society are among several institutions that are supporting or carrying out clinical trials to test the effects of several kinds of interferon in the treatment of patients with various types of cancer.

The effects of interferon as a clinically useful antiviral and anticancer agent have been modest. Viral diseases that have responded to interferon and interferon inducers include hepatitis, certain respiratory viruses, papilloma (warts), herpes simplex, and herpes zoster or shingles.

Patients treated with interferon typically experience illnesses that are somewhat less intense and shorter in duration than expected. Interferon's anticancer effect has been seen primarily when interferon was given at the same time or shortly after an animal was inoculated with a tumor.

Large tumors have responded poorly to interferon, but it should be noted that the preparations used have been quite impure. It is very difficult to base expectations for human therapy on data from animal tumors.

Some animal tumors are caused by viruses and may not be comparable to human cancers. Tumors transplanted from one animal to another are regarded as foreign by the immune system of the recipient animal and may not be similar to spontaneous tumors that arise in man.

Oncologists' experiences with interferon so far are limited, and continued research may identify ways that this new drug can improve treatment for the cancer patient.

The National Cancer Institute reported at the 1982 meeting of the American Society for Clinical Oncology that natural and synthetic interferons have been tolerated by most patients with advanced cancers in phase I trials.

These tests are designed to determine the maximum safe dose level, the dose at which the maximum biological effect occurs, and the best schedule of administration. They are also designed to test toxic effects in humans.

Patients in these phase I trials frequently had flu-like symptoms, including chills, fever and fatigue. Other side effects were decreased white blood cell count and abnormal liver function. All of these side effects were usually reversed when treatment was stopped.

Objective tumor responses, indicated by at least a 50 percent decrease in tumor size, have been seen in patients with breast cancer, melanoma, lymphoma, myeloma, and a few miscellaneous solid tumors. More than half of the lymphoma patients had tumor regression.

Phase I studies are performed in small numbers of patients with a wide range of cancers. The great variations in stage of disease, in doses used and in previous therapy for cancer are aspects of phase I design that hinder specific evaluation of anticancer effect.

The biologists are selected for clinical testing on the basis of highest probability of producing an anticancer effect and shrinkage of tumor is monitored during the course of a phase I trial. Phase I trial results are then used to select several appropriate doses for the phase II studies.

Duration of tumor reduction and how long the patient survives are critical elements for evaluating anticancer effect and are best assessed in phase II trials specifically designed for that purpose.

Interferon is clearly beneficial in some respects. It may not be directly toxic to cancer cells, as conventional drugs are; but it may slow their rate of growth and division so they become sluggish and die.

Some animal studies have shown interferon to be a better anticancer agent when it is combined with an anticancer drug such as BCNU (carmustine). Also, mixtures of different kinds of interferon may possibly be more effective against cancer than a single kind.

Thus, interferon may indeed prove to have a place in cancer therapy, perhaps as an adjuvant to other modes of therapy rather than as a single treatment. It may prove most helpful in treating cancer that remains after surgery, radiotherapy and/or chemotherapy.

A summary of the Clinical Trials of Interferon may be obtained from the Office of Cancer Communications, 496-6641. □

### Women's History Week Planned

The Federal Women's Program and NIH Women's Advisory Committee have planned the following activities in honor of Women's History Week, Mar. 6-12:

Monday, Mar. 7, Dr. Olive Taylor, Howard University, will discuss Five Against the Odds, The Black Woman from Africa to America in the ACRF Auditorium, Bldg. 10, at noon.

Thursday, Mar. 10, Johnnie Griffin, president of the Secretaries Evaluation Clinic, will discuss Professionalism for Support Staff, in the Shannon Bldg., Wilson Hall, at noon.

For further information, contact Women's Advisory Committee delegates and alternates or the Federal Women's Program Office, 496-2112.

Sign language interpretation will be provided. □

### R&W Offers 'Patriot's Pass' To Visit Colonial Williamsburg

By special arrangement, R&W is offering the "Patriot's Pass," an annual ticket for Colonial Williamsburg which features 1 year's unlimited admission to all of the historic areas' exhibition buildings and craft shops.

This includes the Royal Governor's Palace; Bassett Hall, the 18th century house that Rockefellers occupied during the restoration; Carter's Grove plantation; orientation film and evening programs at the Information Center and bus transportation throughout the area.

Tickets cost $20.50 (adults) and $10.50 (children).

For more information contact the R&W Activities Desk, 496-6061. □

## Primate Center Director, Dr. Theodore Ruch, Dies

Dr. Theodore C. Ruch, the first director of the DRR-funded Regional Primate Research Center at the University of Washington, Seattle, died Feb. 6 in Santa Barbara, Calif., of a heart attack.

Dr. Ruch received his bachelor of arts degree in psychology from the University of Oregon in 1927. One year later, he received a master's degree in psychology from Stanford University. He then went on to study physiology at Oxford University as a Rhodes

**Dr. Theodore C. Ruch**

Scholar. In 1933, he received his Ph.D. in physiology from Yale University.

From 1933 to 1946, Dr. Ruch held several academic positions at Yale before becoming chairman of the physiology and biophysics department at the University of Washington School of Medicine in 1946.

In 1961, he became the first Director of the Regional Primate Research Center at the University of Washington, a position he held for a decade. After 1971, he continued as an active member of the Primate Center core staff until his retirement in 1976.

Dr. Ruch was the author of more than 100 articles and four books, including *Diseases of Laboratory Primates*, a 1959 work which was the first attempt to review comprehensively in English the growing body of literature concerning the afflictions of nonhuman primates.

## Camera Club Displays Photos

Each month, prizewinning photographs of the NIH Camera Club will be exhibited in the wall cases off the ACRF main lobby. These examples of club members' work are the result of monthly competitions.

The annual NIH photo contest, coming up in April, is open to anyone at NIH who would like to enter. Further informaton will appear in a later issue of the *Record*. Details may be obtained from Lois Kochanski, 496-7976. □

# International Symposium on Polio Control To Be Held Mar. 14-17 in Washington, D.C.

Paralytic poliomyelitis, once afflicting tens of thousands of individuals in the United States, has been reduced through effective immunization to an annual incidence of about 10 cases. Worldwide, however, paralytic polio is far from under control.

Lameness surveys have highlighted the enormous tolls that polio takes in many parts of the world. In India, it has been estimated that 200,000 children develop polio paralysis each year.

Many developing countries without poliomyelitis immunization programs have a yearly incidence of paralytic polio equaling or exceeding the U.S. experience prior to the introduction of polio vaccines.

The Fogarty International Center and several NIH Institutes, working in collaboration with the World Health Organization and other groups, will convene an International Symposium on Poliomyelitis Control.

Scientists and public health officials from 35 nations plan to attend this meeting, which will be held at the Pan American Health Organization headquarters in Washington, D.C., Mar. 14-17.

Recent developments make this a particularly timely symposium. Scientific advances include development of an inactivated polio vaccine of greatly increased potency, the cloning of poliovirus cDNA, the discovery of new and highly sensitive ways of characterizing poliovirus isolates, and improvements in standardization of vaccines and neutralizing antibody assays.

For additional information, including preregistration, please contact Nancy Shapiro (496-2516), Fogarty International Center, Bldg. 16A, Rm. 203, National Institutes of Health, Bethesda, MD 20205. □

# Melanocyte Cells Allow NIMH Scientists To Study Neuronal System Interactions

Drug-injected rats so smart that they figure out how to open their cages and escape to form their own advanced civilization was the theme of the book on which the recently released animated feature film, *The Secret of NIMH,* was based.

In real life on the NIH campus, National Institute of Mental Health scientist Dr. Thomas O'Donohue and his colleagues have been experimenting with the effects of alpha MSH (melanocyte-stimulating hormone) on different laboratory animals.

The real "secret of NIMH" is that the cell on the skin of the chameleon lizard which turns from green to brown holds the key to understanding the cell in the brain that secretes not only alpha MSH but also the brain's own opiate, beta endorphin.

"The chameleon skin cell (melanocyte) serves as a model for the neuron because it is embryonically derived from the same source and contains alpha MSH and beta endorphin receptor," explained Dr. O'Donohue. He works on NIMH's Laboratory of Clinical Science with his wife, Dr. Gail Handelmann, and Dr. David Jacobowitz.

"In the brain you have billions of neurons," Dr. O'Donohue said. "It's very hard to look at a specific one. An isolated cell like the chameleon's melanocyte allows you to study the molecular mechamisms without all the interfering interactions of other neuronal systems."

Melanocyte research has demonstrated the first clear-cut example of a transmitter being fine tuned by a moleculator. In this and related studies with rats, the researchers have also identified enzymes that unlock the secret of the neuron's ability to transform itself.

The work is pointing the way to possible development of a new kind of addiction-free painkilling drug.

Neuroscientists drastically revised their theories about how neurons work within the past decade. They used to think each brain cell secreted just one chemical messenger, or neurotransmitter, which carried the nerve impulse across the synapse to an adjoining neuron.

Work on the opiomelanotropinergic neuron adds to mounting evidence that neurons actually release more than one such neurosecretion. One substance, the neurotransmitter, serves as the primary carrier of the message.

Others may serve as neuromodulators, potentiating or inhibiting the postsynaptic action of the neurotransmitter by binding to related receptor sites on the receiving neuron.

The NIMH scientists have shown that in the melanocyte (and perhaps in the neuron) beta endorphin serves as the neuromodulator, while alpha MSH acts as the neurotransmitter. Alpha MSH stimulates the darkening of the chameleon's skin, subject to some fine tuning by beta endorphin.

In mammals, alpha MSH has been shown to produce additional effects. When injected in rats, it stimulates states of heightened arousal and improves performance on a number of learning and memory tasks. It has been shown to similarly improve performance on tests of visual attention in humans. At high doses, it causes hyperarousal or anxiety.

Beta endorphin plays a major role in the control of pain and at higher doses can cause catatonia, a depressed state which is conspicuously opposite that observed with high doses of alpha MSH.

In his studies with rats, Dr. O'Donohue uncovered the mechanism by which the opiomelanotropinergic cell can serve as an alpha MSH-secreting neuron stimulating arousal and learning, while at the same time serving as a beta endorphin neuron capable of inhibiting pain.

The key point in this elusive process turns out to be an enzyme (opiomelanotropin acetyltransferase) which at once activates alpha MSH and inactivates beta endorphin. This is accomplished via a chemical process called acetylation.

"When the enzyme is turned off, the neuron will secrete active beta endorphin and inactive alpha MSH, so its role will be in producing analgesia," explained Dr. O'Donohue. "If the acetylating enzyme is on the neuron's role is to induce arousal and perhaps anxiety."

The scientists are now trying to develop a drug that will block the enzyme, thereby enhancing analgesia and calming anxiety via presynaptic intervention.□

# Lt. Col. T. J. Heavey, DCRT, Dies Suddenly

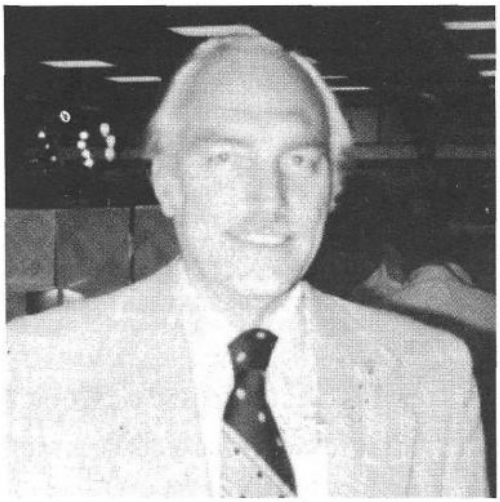
Lt. Col. Thomas Jackson Heavey, Jr., (Ret.), 61, died of a sudden heart attack. Col. Heavey had been a computer programmer with the Data Management Branch of the Division of Computer Research and Technology.

At the time of his death, he had been involved in a project studying the scientific background of all principal investigators awarded grants from NIH.

During his 15 years at DCRT, Col. Heavey was in consultation with many Federal agencies. He assisted the General Accounting Office in using the NIH Computer Utility in producing the 1976 and 1977 budgets of the United States for President Carter.

Before coming to NIH in 1967, he worked 2 years for the Army Map Service where he assisted in writing information retrieval and personnel accounting programming, and taught programming languages.

Prior to his government service, Col.



**Lt. Col. Thomas J. Heavey, Jr.**

Heavey served 22 years in the military including 14 years as a USAF pilot flying numerous combat missions during World War II and the Korean War.

He spent several years conducting research for the U.S. Army Artillery and Missile School and also worked on computer defense research simulations for the Army.

He was former vice-president of the D.C. Department of the Retired Officers Association and was active in the Association for Computing Machinery and the American Meteorological Association.

# New Computer Method Compares Sequence Of One Molecule to Other Known Sequences

Living organisms have a coding system to transmit messages, not unlike a biological "morse code." Biological messages are stored in the genetic material deoxyribonucleic acid, or DNA. The code is composed of a 4-letter language of nucleic acids which translates into a 20-letter language of proteins.

Proteins are the most abundant molecules in cells. They are located in every part of each cell, and are specialized for different biological functions. Most of the genetic information in a cell is expressed by proteins.

Proteins are used for transport (hemoglobin), for nutrient storage (egg albumin), for muscle contraction (actin and myosin), for body protection (blood clotting factors), and as structural elements (collagen). Enzymes and many hormones are also proteins.

As scientists work to unravel genetic codes and protein structure, they need a quick, easy, inexpensive method to compare a nucleic acid or protein sequence produced in their labs to other known sequences.

By performing this comparison, the scientist can get important clues to the function of the molecule, or may be able to modify a structure chemically to change the function.

Recently, Drs. W. John Wilbur and David J. Lipman, of the Mathematical Research Branch, NIADDK, developed such a method. It is a computer program used to search specialized data banks, and compares one sequence of a molecule or part of a molecule to other known sequences, to point out similar segments between the sequences compared.

The program developed by Drs. Wilbur and Lipman uses the NIH DEC-KL-10 computer system and can compare the test sequence to all sequences in the entire Protein Data Bank of the National Biomedical Research Foundation or the Los Alamos Nucleic Acid Data Base.

**Time Saved**

When compared to other techniques of similarity analysis, their method results in a substantial reduction in the time required to search a data bank, and it does so with minimal loss in sensitivity. The reduction in time is also a reduction in cost.

The four-letter genetic code consists of the letters A, T, G, and C which corresponds to the nucleotides adenine, thymine, guanine, and cytosine. Certain combinations of these nucleic acids code for specific amino acids, such as the codes for the amino acids lysine, AAA, and leucine, CUC.

Proteins are made of a series of amino acids. A portion of a protein sequence may look like this: DIVMTQSPSS. Proteins similar in function often have similar sequences of amino acids.

The program looks for matches of successive amino acids (for protein) or successive nucleotides (for nucleic acids). The number of successive amino acids (or nucleotides) needed for a "match" can be set by the investigator, and is usually a low number like 2, 3, or 4.

This series of matches rather than single matches is critical for the increased efficiency of the method, and may possibly be more important to the biological function of the molecule.

The program will also automatically insert a gap area in the sequence, if it will allow for more overall matches between two sequences. Even the insertion of a gap has biological significance. A gap may represent a genetic mutation.

Based on a mathematical scoring system, "+" points for matches and "-" points for gaps, the "best" match can be made between two sequences.

This program has been used by several NIH components, including NCI's Laboratory of Biochemistry and NICHD's Laboratory of Molecular Genetics.

It is useful to anyone who has a molecule sequenced and wishes to relate it to previously known sequences. Detailed information is available by typing file RBSA.DOC-[14,21,LIPMAN], or by calling Drs. Wilbur or Lipman at 496-4325.

While all sequences are not entered in the data banks, the number so entered is increasing rapidly. This program allows the computer search of existing information to become a powerful tool in understanding the mysteries of biological function.

**Linda Stalvey** □

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 X 30         40         50         60         70         80         90
 AACGTCAAGGCCGCCTGGGGTAAGGTCGGCGCGCACGCTGGCGAGTATGGTGCGGAGGCCCTGGAGAGG
    ***      :   ***** *****   : :  : :  :       *****  **********  ***
TGCTGTCTCTTGCCTGTGGGGAAAGGTGAACTCCGATGAAGT------TGGTGGTGAGGCCCTGGGCAGG
X          40         50         60         70                 80         90

   100        110        120        130        140        150        X
ATGTTCCTGTCCTTCCCCACCACCAAGACCTACTTCCCGCACTTC---GACCTGAGCCACGGCTCTG
 :: :  :   :: ***    *** ::   *****       ***    *****   :   : *****
CTGCTGGTTGTCTACCCTTGGACCCAGCGGTACTTTGATAGCTTTGGAGACCTATCCTCTGCCTCTGCTA
      100        110        120        130        140        150        160X
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# Careful Monitoring of Medicines by Older Adults Reduces Risk of Drug Use

People over 65 make up 11 percent of the American population, yet they take 25 percent of all prescription drugs sold in this country. As a group, older people tend to have more long-term illnesses—such as arthritis, diabetes, high blood pressure, and heart disease—than younger people. And because they often have a number of diseases or disabilities at the same time, it is very common for them to be taking many different drugs.

Some substances, including vitamins, laxatives, cold remedies, antacids, and alcohol, can also lead to serious problems if used too often or in combination with certain other drugs.

Some basic rules for safe drug use are:

- Take exactly the amount of drug prescribed by your doctor and follow the dosage schedule as closely as possible. If you have trouble or questions, call your doctor or pharmacist.
- Medicines do not produce the same effects in all people. Never take drugs prescribed for a friend or relative, even though your symptoms may be the same.
- Always tell your doctor about past problems you have had with drugs (such as rashes, indigestion, dizziness, or lack of appetite). When your doctor prescribes a new drug, be sure to mention all other medicines you are taking—including those prescribed by another doctor and those you buy without a prescription.
- Keep a daily record of the drugs you are taking, especially if your treatment schedule is complicated or you are taking more than one drug at a time. The record should show the name of the drug, the doctor who prescribed it, the amount you take, and the times of day for taking it. Include a space to check off each dose as you take it. Keep a copy in your medicine cabinet and one in your wallet or pocketbook.
- If child-proof containers are hard for you to handle, ask your pharmacist for easy-to-open containers. Always be sure, however, that they are out of the reach of children.
- Make sure you understand the directions printed on the drug container and that the name of the medicine is clearly printed on the label. Ask your pharmacist to use large type on the label if you find the regular labels hard to read.
- Discard old medicines; many drugs lose their effectiveness over time.
- When taking a new drug, ask your doctor or pharmacist about side effects that may occur, about special rules for storage, and about foods or beverages, if any, to avoid. Pharmacists are drug specialists and are able to answer most questions about drug use.
- Always call your doctor promptly if you notice unusual reactions.
- New information about drugs and about how they affect the older user is coming to light daily. You should occasionally review with your doctor the need for each medicine.

Remember that a chemical agent strong enough to cure an ailment is also strong enough to cause harm if it's not used wisely. Although you should never stop taking medicines without medical advice, if you feel any drug is doing more harm than good, don't be afraid to discuss the matter with your doctor. He or she may be able to substitute another medicine that will be effective.

For more information, write to *Age Page* NIA, Bldg. 31, Rm. 5C36, Bethesda, MD 20205; (301) 496-1752. □

## *Visiting Scientist Program Participants*

12/27 **Dr. Jia Min,** China, Laboratory of Developmental Neurobiology. Sponsor: Dr. Phillip Nelson, NICHD, Bg. 36, Rm. 2A21.
1/1 **Dr. Marita King,** West Germany, Laboratory of Biochemistry. Sponsor: Dr. Earl Stadtman, NHLBI, Bg. 3, Rm. 222.
1/1 **Dr. Richard Needleman,** United States, Arthritis & Rheumatism Branch. Sponsor: Dr. Jesse Roth, NIADDK, Bg. 10, Rm. 9N218.
1/1 **Dr. Deepak Kumar Agarwal**, India, Carcinogenesis and Toxicology Evaluation Branch. Sponsor: Dr. William Kluwe, NIEHS, Research Triangle Park, N.C.
1/1 **Dr. David John Cavalla**, United Kingdom, Laboratory of Preclinical Pharmacology. Sponsor: Dr. Erminio Costa, NIMH, St. Elizabeths Hosp.
1/1 **Dr. Karsten Lundgren**, Denmark, Epidemiology Branch. Sponsor: Dr. Richard Everson, NIEHS, Research Triangle Park, N.C.
1/1 **Dr. Graeme Milligan**, United Kingdom, Laboratory of General and Comparative Biochemistry. Sponsor: Dr. Werner A. Klee, NIMH, Bg. 36, Rm. 3A19.
1/3 **Dr. Kandiah Sivarajah**, Sri Lanka, Laboratory of Pulmonary Function and Toxicology. Sponsor: Dr. Thomas E. Eling, NIEHS, Research Triangle Park, N.C.
1/3 **Dr. Petr Klein**, Canada, Laboratory of Theoretical Biology. Sponsor: Dr. Charles DeLisi, NCI, Bg. 10, Rm. 4B43.
1/3 **Dr. Bryan O'Hara**, Ireland, Laboratory of Molecular Oncology. Sponsor: Dr. George Van de Woude, NCI, FCRC, Bg. 560, Rm. 2189.
1/3 **Dr. Timo A. Seppala**, Finland, Clinical Psychobiology Branch. Sponsor: Dr. William Potter, NIMH, Bg. 10, Rm. 4S239.
1/3 **Dr. Carlo Tacchetti**, Italy, Laboratory of Molecular Biology. Sponsor: Dr. Seymour Wollman, NCI, Bg. 37, Rm. 1E16.
1/4 **Dr. Frederick Wai Kwong Kan**, Canada, Laboratory of Pathophysiology. Sponsor: Dr. Pedro Pinto da Silva, NCI, Bg. 10, Rm. 5B47.
1/6 **Dr. Asit Kumar Nandi**, India, Laboratory of Biology of Viruses. Sponsor: Dr. Norman Salzman, NIAID, Bg. 5, Rm. 326.
**1/6 Dr. Ferenc Uher,** Hungary, Immunology Branch. Sponsor: Dr. Howard Dickler, NCI, Bg. 10 Rm. 5B15.
1/9 **Dr. Maurizio D'Incalci**, Italy, Laboratory of Molecular Pharmacology. Sponsor: Dr. Kurt Kohn, NCI, Bg. 37, Rm. 5D19.
1/9 **Dr. Claudio Marcocci,** Italy, Laboratory of Biochemical Pharmacology. Sponsor: Dr. Leonard Kohn, NIADDK, Bg. 4, Rm. B131.
1/9 **Dr. Jean-Claude Jamoulle**, France, Laboratory of Chemistry. Sponsor: Dr. Paul Torrence, NIADDK, Bg. 4, Rm. 126.
1/9 **Dr. Pavol Kovac**, Stateless, Laboratory of Chemistry. Sponsor: Dr. C. P. J. Glaudemans, NIADDK, Bg. 4, Rm. 205.
1/10 **Dr. Desirazu N. Rao**, India, Laboratory of Neurochemistry. Sponsor: Dr. Seymour Kaufman, NIMH, Bg. 36, Rm. 3D30.
1/10 **Dr. Masako Tomita**, Japan, Developmental Endocrinology Branch. Sponsor: Dr. Mortimer Lipsett, NICHD, Bg. 31, Rm. 2A03.
1/11 **Dr. Bernard Louis Rossi**, Italy, Laboratory of Molecular Biology. Sponsor: Dr. Ira Pastan, NCI, Bg. 37, Rm. 4B27.
1/12 **Dr. Yehuda Gutman**, Israel, Laboratory of Preclinical Pharmacology. Sponsor: Dr. Erminio Costa, NIMH, St. Elizabeths Hospital.
1/12 **Dr. Tamas Szabolcsi**, Hungary, Macromolecular Chemistry Section. Sponsor: Dr. Josef Pitha, NIA, Gerontology Research Center, Baltimore, Md.
1/13 **Dr. Nobuhiro Harada**, Japan, Developmental Pharmacology Branch. Sponsor: Dr. Masahiko Negishi, NICHD, Bg. 10, Rm. 5B10.
1/13 **Dr. Paul Kitts**, United Kingdom, Laboratory of Neurochemistry. Sponsor: Dr. Howard Nash, NIMH, Bg. 36, Rm. 3D30.
1/13 **Dr. David C. Parish**, United Kingdom, Laboratory of Developmental Neurobiology. Sponsor: Dr. Y. Peng Loh, NICHD, Bg. 36, Rm. 2A21.
1/14 **Dr. Martine Flament**, France, Laboratory of Clinical Studies. Sponsor: Dr. Judith Rapoport, NIAAA, Bg. 10, Rm. 3N204.

1/17 **Dr. Peter Avgerinos**, Greece, Biological Psychiatry Branch, Sponsor: Dr. Phillip Gold, NIMH, Bg. 10, Rm. 4S239.
1/18 **Dr. Alberto Podjarny**, Argentina, Laboratory of Molecular Biology. Sponsor: Dr. David Davies, NIADDK, Bg. 2, Rm. 316.
1/19 **Dr. Antonio D. G. Procopio**, Italy, Biological Therapeutics Branch. Sponsor: Dr. Ronald Herberman, NCI, FCRF, Bg. 560, Rm. 31-930.
1/20 **Dr. German Naharro**, Spain, Laboratory of Cellular and Molecular Biology. Sponsor: Dr. Keith Robbins, NCI, Bg. 37, Rm. 1A07.
1/21 **Dr. Stefan Karlsson**, Iceland, Clinical Hematology Branch. Sponsor: Dr. Arthur Nienhuis NHLBI, Bg. 10, Rm. 7D19.

1/23 **Dr. Arturo Leone**, Italy, Laboratory of Biochemistry. Sponsor: Dr. Dean Hamer, NCI, Bg 37, Rm. 4A17.
1/23 **Dr. Junichi Ohara**, Japan, Laboratory of Immunology. Sponsor: Dr. W. E. Paul, NIAID, Bg. 10, Rm. 11N309.
1/25 **Dr. Paul Jean Guglielmi**, France, Metabolism Branch. Sponsor: Dr. Thomas Waldmann, NCI, Bg. 10, Rm. 4N117.
1/28 **Dr. Argante Bozzi**, Italy, Laboratory of General and Comparative Biochemistry. Sponsor: Dr. Giulio Cantoni, NIMH, Bg. 36, Rm. 3A19.
1/30 **Dr. Kiyoo Nakayasu**, Japan, Laboratory of Vision Research. Sponsor: Dr. Toichiro Kuwabara, NEI, Bg. 6, Rm. 211.
2/1 **Dr. Maria Moretti**, Italy, Laboratory of Technical Development. Sponsor: Dr. Theodore Kolobow, NHLBI, Bg. 10, Rm. 5D15.
2/1 **Dr. Laura Beguinot**, Italy, Laboratory of Molecular Biology. Sponsor: Dr. Ira Pastan, NCI, Bg. 37, Rm. 4B27.
2/1 **Dr. Apurba K. Bhattacharjee**, Bangladesh, Laboratory of Chemistry. Sponsor: Dr. C. P. J. Glaudemans, NIADDK, Bg. 4, Rm. 205.
2/1 **Dr. Henryk Eisenberg**, Israel, Laboratory of Molecular Biology. Sponsor: Dr. Gary Felsenfeld, NIADDK, Bg. 2, Rm. 301.
2/1 **Dr. Gunnar C. Hansson**, Sweden, Laboratory of Pathology. Sponsor: Dr. Kenneth Schroer, NCI, Bg. 10, Rm. 2A27.
2/1 **Dr. Minoru Koi**, Japan, Laboratory of Pulmonary Function & Toxicology. Sponsor: Dr. J. Carl Barrett, NIEHS, Research Triangle Park, N.C.
2/1 **Dr. Maria de Lourdes Munoz Moreno**, Mexico, Laboratory of Parasitic Diseases. Sponsor: Dr. Eugene Weinbach, NIAID, Bg. 5, Rm. 124.
2/1 **Dr. Yvonne Rosenberg**, Australia, Arthritis and Rheumatism Branch. Sponsor: Dr. Alfred Steinberg, NIADDK, Bg. 10, Rm. 8D19.
2/1 **Dr. Hiroshi Suzuki**, Japan, Laboratory of Immunology. Sponsor: Dr. Ira Green, NIAID, Bg. 10, Rm. 11N314.
2/1 **Dr. Yasuhiro Tomooka**, Laboratory of Reproductive and Developmental Toxicology. Sponsor: Dr. John A. McLachlan, NIEHS, Research Triangle Park, N.C.
2/1 **Dr. Allan Watkinson**, United Kingdom, Diabetes Branch. Sponsor: Dr. Jesse Roth, NIADDK, Bg. 10, Rm. 8S243.
2/1 **Dr. Kyohito Yagi**, Japan, Laboratory of Genetics. Sponsor: Dr. Steven Li, NIEHS, Research Triangle Park, N.C.
2/3 **Markkus T. Koulu**, Finland, Unit on Clinical Psychopharmacology. Sponsor: Dr. William Potter, NIMH, Bg. 10, Rm. 4S239.
2/7 **Dr. Anil Jaiswal**, India, Developmental Pharmacology Branch. Sponsor: Dr. Howard Eisen, NICHD, Bg. 10, Rm. 8C412.
2/7 **Dr. Lung-An Li**, Taiwan, Biometry and Risk Assessment Program. Sponsor: Dr. Joseph Haseman, NIEHS, Research Triangle Park, N.C.
2/7 **Dr. Barbara Zmudzka**, Poland, Laboratory of Biochemistry. Sponsor: Dr. Samuel Wilson, NCI, Bg. 37, Rm. 4D23.
2/8 **Dr. Satoru Ito**, Japan, Laboratory of Chemical Physics. Sponsor: Dr. Herman Ziffer, NIADDK, Bg. 2, Rm. 118.
2/8 **Dr. Hiroto Okayama**, Japan, Laboratory of Molecular Genetics. Sponsor: Dr. Igor Dawid, NICHD, Bg. 37, Rm. 4D06. □

## DR. POLLARD

*(continued from page 1)*

their contents to the cell exterior.

Dr. Pollard used the secretion of catecholamines from chromaffin cells of the adrenal medulla as a model system. There is evidence that this model may apply to other physiologically important systems, such as the secretions of parathyroid hormone by the parathyroid cells, or serotonin by platelets, or of insulin from pancreatic islets.

**Dr. Pollard received his undergraduate degree from Rice University in Houston, Tex., and his Ph.D. and M.D. degrees from the University of Chicago. He came to NIH in 1969, and has held positions at NICHD and NIADDK.**

### Bicycle Club Holds Open House

The R&W Bicycle Club will hold its "Think Spring Meeting" and open house on Wednesday, Mar. 9, from 5:30 to 8 p.m., at the FAES house on Old Georgetown Road and Cedar Lane.

Cycling films will be featured including "Vermont Bicycle Touring"; a racing film on the 1981 Coor's Classic; a film on long distance touring; and a film on bike safety.

Nonmembers will be charged $1—club membership ($2) is available at the door.

All NIH'ers and guests are invited.

For more information call Carl Frasch, 496-1920, or Al DelGrasso, 496-4883. □

### See the Greatest Show on Earth!

R&W is offering discount tickets to see the Ringling Brothers and Barnum & Bailey Circus, for the following performances: Thursday, Mar. 31, 7:30 p.m.; Monday, Apr. 4, 1:30 p.m.; Thursday, Apr. 7, 7:30 p.m.; and Saturday, Apr. 9, 11 a.m., at the Starplex Armory, Washington, D.C.

Ticket prices are $7 and $5.50.

Orders are being taken at the Activities Desk, Bldg. 31, Rm. 1A18. □

# Obsessive/Compulsive Patients and Families Studied by Team of NIMH Scientists

Families of obsessive/compulsive patients typically include members who exhibit eccentric behaviors and exaggerated concerns for cleanliness and perfection. But, no others in the family manifest the ritualistic behaviors and irrational thinking found in the patients, said Dr. Carol Hoover, chief, unit on family assessment, Clinical Neuropharmacology Branch, NIMH.

In an informal report on a study of obsessive/compulsive patients and their families, Dr. Hoover said: "I have searched for the right word to describe the haunted quality of the irrational type of thinking found in these patients, and I believe the word is 'presentiment.' These patients have a presentiment that something awful will happen if they do not continue these acts."

**Behaviors Repetitive**

"These acts" are repetitive behaviors that may include endless handwashing and showering or constant checking and rechecking of whatever—doors, windows, clothes, self, others—a particular patient feels is necessary to guard against harm.

Carrying out these acts eventually preoccupies the patients to the point where they can no longer function normally. "They are severely ill," Dr. Hoover said, describing the 10 patients participating in the study she is conducting with fellow researcher, Dr. Thomas Insel.

**Characteristics Contribute**

From data collected on 174 family members, the scientists found family characteristics that probably contribute to the patients' pathology, but "surprisingly," the scientist said, "we found no other family members that fit the classic obsessive/compulsive diagnosis."

Nor did they find a "continuum of illness," whereby other family members display varying levels of symptoms. "I found a dichotomy," she said.

"Cleanliness and perfection were highly valued by family members, some of whom overreacted to situations that would not bother most people, but they never practiced rituals or developed a bizarre rationale for their high standards. They remained functional."

**Communication Poor**

The scientists did find that parents of the patients typically had marriages characterized by unfulfilling relationships and poor communication. To fill the marital void, the parents focused their yearnings for intimacy on the patient when he or she was just a child, one parent developing the more symbiotic relationship.

"I had expected that the mother would more often seek symbiosis, but in half the cases, it was the father who overwhelmed the child," Dr. Hoover said.

Another characteristic shared by families of obsessive/compulsive patients was a dominant grandparent. "If the family moved to another community, the grandparent often moved with them. Even after death, the grandparent's influence lived on in the family culture," she reported.

Families also tended to keep to themselves and generally remained uninvolved in religious or community activities. Even when a formal religious commitment existed, the parents had little personal dependence on religious figures who might have offered support, she said.

However, observed a meeting participant, the ritualistic behaviors of the patients often seem to have a religious quality, as if the patient is performing a private religious ceremony.

Family members recall that as young children, the patients seemed a little odd, but were just thought of as terribly good youngsters. Not until patients reached early adolescence or older did family members become "painfully aware" that there was something terribly wrong.

**Connection Admitted**

Unlike families of schizophrenic patients, who tend to deny connection with the illness, Dr. Hoover noted that families of obsessive/compulsives will admit "with utmost poignancy" their role in the patient's life. Nevertheless, they appear powerless to change anything.

"It was striking how parents could not alter the situation. They would allow themselves to be bullied by patients in incredible fashions even though they did not believe in the rationales offered by patients."

Dr. Hoover described how some patients would not allow anyone to touch them or come into their rooms. Some patients flooded the bathroom following hours of showering and then insisted that a parent clean up the mess.

Others appropriated a particular place in a living room that no one else in the family could occupy. Some never ate with the family.

**Parents Give In**

"While obsessive/compulsive symptoms served as a barrier between patients and their families, they also kept the patients entrapped within the family, for without assistance from family members, the patients could not get through the day," said Dr. Hoover.

Parents succumbed to the patients' demands because of their own excessive needs for intimacy combined with an absence of marital closeness, and because they perceived the patients as completely unable to cope with the outside world. Between patients' tantrums and their own exhaustion, they found it easier to give in to the patients' demands, commented Dr. Hoover.

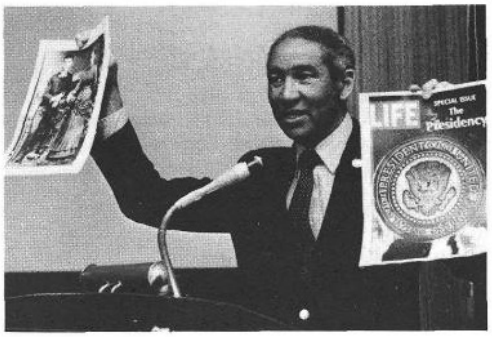
In conclusion, Dr. Hoover said that finding family characteristics which seem to contribute to or worsen the patient's pathology does not rule out genetic or biologic factors in the illness, although such factors have not been identified as yet.

**—Marilyn Sargent** □

# Dr. Nichols Talks to NICHD Employees About Cultural Differences

Understanding other cultures helps people to be more comfortable with themselves and their relations with people in America's multiethnic and pluralistic society. This message was delivered by Dr. Edwin J. Nichols at NICHD's recent annual Equal Employment Opportunity meeting. Dr. Nichols is chief of the special populations section in the National Institute of Mental Health.

In his presentation, Understanding Cultural Differences in the Work Force, Dr. Nichols, a clinical and industrial psychologist, said there is a philosophical basis for




**Dr. Nichols shows NICHD employees a picture of the parents of President Dwight D. Eisenhower from a 1968 issue of *Life* magazine. He said the President's mother was of black ancestry and graduated from Lane College in Jackson, Tenn., an historically black institution.**

cultural differences. Differences between people affect behavior and thought processes. As people accept this fact, he said, the work force's productivity will significantly increase.

The seminar was designed to help develop an awareness of and an openness toward cultural differences, and to demonstrate unconscious cultural bias that governs decisionmaking.

Dr. Nichols stressed the importance of the socialization process and its effects on perception and subsequent behavior.

"When working in multiethnic, pluralistic society," said Dr. Nichols, "it is important, not only to understand, but to appreciate and work within the framework of the value systems of those individuals with whom you work."

Dr. Nichols' cross-cultural theory was formulated 10 years ago. Since then, he has conducted numerous workshops and executive seminars for government and private agencies, both in the U.S. and abroad. □

## Separation Seminar Planned For Commissioned Officers

A separation seminar for all officers planning to separate in the next 6 months will be held Thursday, Mar. 17, in the 14th floor auditorium, Bldg. 10, from 2 to 3:30 p.m.

Separation forms and advice on procedures will be provided. Administrative personnel are invited to attend.

For additional information, contact Diane Rose, 496-4212.

# Diets of Elderly Found Low in Calcium But Adequate in Other Nutrients

Many older people may not be getting enough calcium in their diets. This, together with other factors, can result in thinning of the bones which then increases the likelihood of fractures of the hip, spine, and other weight-bearing parts of the skeleton. The condition, called osteoporosis, is responsible for much suffering and disability among the elderly, especially women.

**Findings Published**

Two other nutrients, however, appear to be generally adequate in the diets of most healthy older Americans. These are folate, a B-vitamin that is important for growth of body tissues, and thiamin (vitamin $B_1$), which is necessary for a healthy nervous system. Those who are poor, ill, or alcoholic, however, may have deficiencies of these two vitamins.

These findings were among those reported by five panels of experts who examined scientific data related to the status of six nutrients in the elderly population at a recent symposium on nutrition and the elderly, published in the November, 1982 supplement to the *American Journal of Clinical Nutrition.*

**Project Conducted**

The project was conducted by the American Society for Clinical Nutrition in Bethesda, Md., under a conference grant awarded by the National Institute on Aging.

The other three nutrients examined were vitamin D, iron, and zinc. Scientists found that most elderly people have adequate levels of vitamin D, but those who are ill and live in institutions may be deficient. Vitamin D is needed along with calcium to maintain healthly bones.

The study showed that the mineral, iron, generally is obtained in adequate amounts by most older people. In fact, iron deficiencies are much more likely to be found in children and young women than among the elderly.

**Dietary Intake Noted**

Dietary intake of zinc among some older people may be less desirable, but the data supporting this impression are limited. Insufficient zinc can impair wound healing, immune response, and other functions.

Although more research is needed, the study suggests that women of all ages need more calcium than they generally are getting. Throughout life, women's calcium intakes are usually less than those of men. But it is women who face the greatest risk of osteoporosis in later life, since the drop in estrogen levels following menopause also affects bone metabolism.

**Other Factors Cited**

Several other factors also play a role in the development of osteoporosis. Beginning at about age 40, the body's ability to absorb calcium begins to decline. Decreased levels of physical activity aggravate the situation further, since exercise aids bone renewal.

Chronic illness and the use of certain drugs such as laxatives, diuretics, and anticonvulsants are major contributors to nutritional deficiences among the elderly. These factors often interfere with the ability to eat properly and to absorb the nutrients from foods.

Although their findings apply to most older people, the experts caution that certain segments of the population are more likely to have deficiencies than others. These include the sick, the poor, those who live in institutions, and alcoholics. □

**The NIH Fraternal Order of Police recently presented a check to the Patient Emergency Fund. Handing the check to Charlotte Berg, administrator of the Patient Emergency Fund is Tommie Musgrove, treasurer. Sharing in the presentation are (l to r): Sheila Tillman; Larry Harley, Federal State vice president; Mr. Musgrove; Jim Koerber; Pat Roberson; Jim Pickett; Ms. Berg; and Jim Cook, Federal State president.**

# Herpes-like Virus Stimulates Secretion That Attacks Body's Own Tissues

A herpes-like virus stimulates the secretion of autoantibodies—proteins that attack the body's own tissues—by B lymphocytes from bone marrow, reported a team of immunologists from Scripps Clinic and Research Foundation in La Jolla, Calif. Their work was supported by the National Institute on Aging.

The virus is called Epstein-Barr virus. It has been found in cell cultures of Burkitt's lymphoma, a kind of lymphatic cancer scientists suspect may have a viral cause, and in cases of infectious mononucleosis.

The Scripps team noted that the amount of autoantibody produced in response to viral stimulation increases with the age of the donor from which the bone marrow is taken.

The bone marrow is important for the production of B lymphocytes and the antibodies these immune cells secrete. But few experiments have examined directly the autoimmune function of bone marrow in man.

Scripps investigators Drs. Sherman Fong, John H. Vaughan, Constantine D. Tsoukas, and Dennis A. Carson published the results of their bone marrow study in the November 1982 *Journal of Immunology.*

In their study, the team compared the production of several autoantibodies, including one designated rheumatoid factor because of its association with rheumatoid arthritis, by cultured bone marrow cells and peripheral blood cells after activation by Epstein-Barr virus.

The blood and bone marrow samples were taken from patients of various ages. All the patients suffered from degenerative arthritis and were undergoing elective knee or hip replacement surgery.

The investigators found that virus-stimulated bone marrow cells secreted significantly more autoantibody than blood cells. Autoantibody secretion increased with the age of the donor.

Bone marrow cultures from women over the age of 60 secreted more rheumatoid factor than those from elderly men or from younger patients of both sexes, an interesting observation in light of the fact that women are more susceptible to arthritis.

The Scripps immunologists speculated that the age-related increase in autoantibody production may be related to a primary loss of the normal immunoregulatory mechanisms controlling the outgrowth of self-reactive B lymphocytes. Viruses, the researchers added, might accelerate the loss of control.

The investigators concluded that human bone marrow acts as a reservoir for autoantibody-producing B lymphocytes that can be stimulated by Epstein-Barr virus. The size of that reservoir apparently increases with age. Now scientists need to find out how important this reservoir is in certain age-related diseases that appear to involve the production of autoantibodies.

Eventually, scientists may learn how to block this secretion or identify people who, because of a high B cell reservoir in their bone marrow, have a substantial risk of developing autoimmune disease. □

## Dr. Koloman Laki, Factor XIII Discoverer, Dies

Hungarian-born scientist, Dr. Koloman Laki, chief of NIADDK's Physical Biochemistry Section, died Feb. 12 at the age of 74.

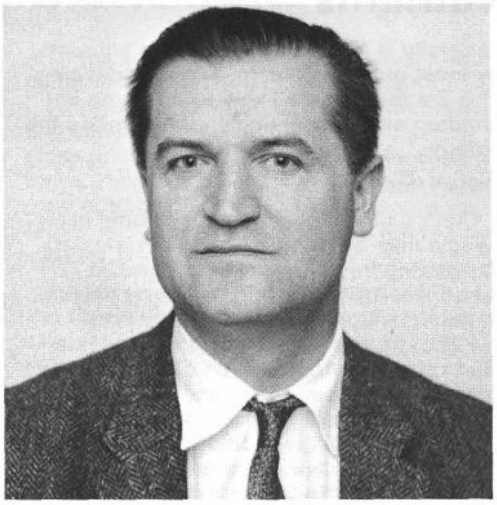
Dr. Laki was well-known for his research on blood clotting mechanisms. Among his more important contributions was the purification of fibrinogen, the protein in blood that produces coagulation. He was also the first scientist to discover the mode of action of thrombin, one enzyme that acts on fibrinogen to produce coagulation.

He discovered factor XIII in the clotting process. This is a protein now known to be a transglutaminase, which stabilizes the fibrin clot. At the time of his death, he was actively investigating the role of factor XIII in both embryogenesis and tumorigenesis.

Dr. Laki attended the University of Szeged receiving a Ph.D. in organic chemistry and biochemistry from that institution in 1936. He taught and performed research at Szeged from 1933 to 1944 with a 1-year absence in 1938-1939 to serve as a fellow of the Rockefeller Foundation at the University of Manchester, England.

From 1945 through 1947 he served on the faculty of the Institute of Biochemistry at the University of Budapest. In 1947 he became a member of the Hungarian Academy of Sciences and received the highest Hungarian award, the Kossuth Prize, for scientific accomplishment.

Dr. Laki spent most of 1948 as a visiting professor at the University of Leeds, England. Later that year he came to NIH as a special research fellow in the Laboratory of Physical Biology, NIAMD. He became chief of that laboratory in 1964. In 1970 he left his post as laboratory chief and was named chief of the physical biochemistry section.



**Dr. Koloman Laki**

Over the span of his scientific career, he authored or coauthored more than 150 scientific papers, and edited 3 books. He was a member of several professional societies.

Dr. J.E. Rall, director, Division of Intramural Research, NIADDK, said of Dr. Laki, "The NIH has, in the death of Dr. Koloman Laki, lost a leading investigator in such diverse areas as muscle physiology and blood clotting. At an age when many investigators have retired, Dr. Laki was as interested and excited about science and his own work as our best young postdoctoral scientists. We shall miss him."

Dr. Laki is survived by his wife, Elizabeth, and son, George, both of Bethesda; a brother, Arno Laki, and sister, Iren Nagy, both of Hungary.

## Four New Members Appointed to NIEHS Advisory Council

Four new members have been appointed to the National Advisory Environmental Health Sciences Council.

The council is a citizens advisory group from outside the Federal Government which advises the Institute on policy questions and reviews applications for research grants, research center grants, and training grants supported through the Institute.

Dr. Kurt W. Deuschle, is chairman, department of community medicine, and Ethel H. Wise professor of community medicine at Mt. Sinai School of Medicine in New York City.

**Research Noted**

His research has focused on clinical investigations of antituberculous chemotherapeutic agents and cross-cultural medical research in areas of low economic development.

John W. Moran, is director of the Moran Foundation of Houston, Tex. His company developed many of the reagents now employed in clinical laboratories. Mr. Moran has extensive background in clinical chemistry and toxicology and is founding member of the American Association of Clinical Chemists and a founding board member of the National Council on Clinical Laboratory Standards.

Dr. Toshio Naraharshi, professor and chairman of the pharmacology department at Northwestern University, is an internationally recognized researcher. His work has included investigations of electrophysiology and pharmacology of nerve and muscle membrane and synaptic junctions; basic insect neurophysiology; neurotoxicology of insecticides; and neurotoxicity in general.

He is the recipient of the Japanese Society of Applied Entomology and Zoology Prize and a member of many professional organizations. He is a fellow of the New York Academy of Sciences.

**Background Highlighted**

Dr. Stata E. Norton, a professor in the department of pharmacology at the University of Kansas Medical Center, Kansas City, Kan., is an internationally recognized researcher on the effects of exposure to toxic substances on development and behavior, neuropharmacology, animal behavior and brain development.

She is a member of the American Society of Zoology, American Society of Pharmacology and Experimental Therapeutics, Biometrics Society, and Ecology Society of America. □

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