

the

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NATIONAL INSTITUTES OF HEALTH

## Ceremony for Unveiling Of John Fogarty Bust To Take Place at FIC

The late Congressman John E. Fogarty of Rhode Island—a statesman who was widely known for his interest in health problems—will be honored tomorrow (April 28) when a bronze sculpture of him will be unveiled at the John E. Fogarty International Center for Advanced Study in the Health Sciences.

The Center has been open to foreign scientists and scholars for about a year.

The bust of Mr. Fogarty was created by Robert Berks. It will be dedicated by Mary Lasker, president of the Albert and Mary Lask-



The sculpture of the late statesman was done by Robert Berks.—Photo by Denis Brack.

er Foundation, who commissioned the work.

Dedication ceremonies will be held in the newly renovated Stone House (Bldg. 16) on the NIH campus. Stone House has been furnished to serve as a meeting place and living quarters for foreign and American scholars.

Currently, it is home and office for four Fogarty Scholars-in-Residence who have been invited to work at NIH for periods ranging from 6 months to one year.

They represent three nations and four disciplines which have bearings on international health problems.

## NCI Scientists Discuss Recent Progress In Cancer Study at National Meetings

By Pat Gorman

Developments in cancer causation, treatment, and prevention were discussed by National Cancer Institute scientists and other investigators in Chicago early this month.

Sessions were held by the American Association for Cancer Research, the Federation of American Societies for Experimental Biology, and the American Society of Clinical Oncology.

Recent successes with a three-drug combination treatment in advanced lymphosarcoma (cancer of the lymph system) were reported at the AACR meeting.

### Produces Better Results

Studies by Drs. Charles M. Bagley, Vincent T. DeVita, and George P. Canellos of the NCI Medicine Branch produced results far better than those previously obtained with conventional single-drug therapy.

Although it is still too early to determine the long range effectiveness of the cyclophosphamide/vincristine/prednisone combination in terms of 5-year survival rates, researchers are encouraged by the fact that 26 of the 35 study patients are still free of all evidence of cancer 2 years after treatment.

A number of papers were presented in the field of tumor and immunology and immunotherapy. Animal studies by Drs. Irwin D. Bernstein, Daniel E. Thor, and Herbert J. Rapp suggest that advanced cancer patients may have a deficiency which prevents them from using transferred immunity.

Their studies with guinea pigs indicate that important infection-fighting cells called macrophages are necessary to produce an anti-tumor effect. Present information suggests that these cells are absent or impaired in advanced cancer patients, impeding an immune response.

Mr. Fogarty first proposed the creation of "a great international center for research in biology and medicine dedicated to international cooperation and collaboration in the interests of the health of mankind . . ." late in 1963.

The 90th Congress created the Center shortly after Mr. Fogarty died, Jan. 10, 1967, the opening day of the 90th Congress.

The investigators concluded that stimulation of the macrophages in cancer patients may increase the effectiveness of cancer immunity.

The potential of an anti-tuberculosis vaccine, BCG, in cancer immunotherapy was cited by Institute researchers Drs. Gerald L. Bartlett and Berton Zbar at the 55th annual FASEB meeting.

Studies revealed that guinea pigs inoculated with a mixture of BCG and line 10 liver tumor cells evidenced inflammatory immune reactions at the site and were subsequently able to ward off a challenge injection of up to 1.5 million line 10 cancer cells.

In other experiments with animals already bearing tumors, inoculation with the BCG-tumor mixture produced immune responses fol-

(See *CANCER STUDY*, Page 5)

## Influenza Subcommittee Researches Strategies To Combat Pandemic

To plan research strategies to cope with the influenza pandemic expected in the late 1970's, a subcommittee of the NIAID Infectious Diseases Advisory Committee has been established.

Dr. Dorland J. Davis, Director of the National Institute of Allergy and Infectious Diseases, established the special Subcommittee to work with his office and the administrators of the Institute's extramural, collaborative, and intramural programs.

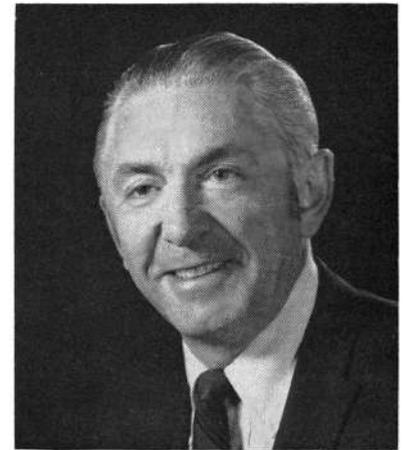
World-wide epidemics (pandemics) of influenza have occurred at 10 to 12 year intervals. Vaccines have been effective in reducing deaths.

However, periodic changes in the virus strains necessitate "tailor-made" preparations for the strain prevalent at a given time.

The most vigorous vaccine devel-

(See *INFLUENZA*, Page 7)

## Green, Noted Virologist, To Deliver Dyer Lecture On Wednesday, May 12



Dr. Green still devotes much of his time to research which centers around human viruses, their replication in cell culture, and viral oncogenesis.

Dr. Maurice Green will present the Twentieth Annual R. E. Dyer Lecture on Wednesday, May 12, at 8:15 p.m. in the Jack Masur Auditorium of the Clinical Center. Dr. Green is Director of the Institute for Molecular Virology, St. Louis University School of Medicine.

His subject will be "Mechanism of Cell Transformation by DNA and RNA Tumor Viruses." He will discuss his recent studies in which these viruses have been used as experimental systems to analyze cell transformation and the regulation of macromolecular synthesis and growth control in mammalian cells.

### Heads Institute

Although Dr. Green has headed the Institute for Molecular Virology since 1964, he still devotes much of his time to research and research training.

His interests center around the various properties of human viruses, their replication in cell culture, and viral oncogenesis.

Earlier in his career, he worked with the chemistry and enzymology of proteins and peptides, and later, with the biochemistry of bacteriophage replication and nucleic acid metabolism.

Dr. Green has been a Research

(See *DR. GREEN*, Page 6)

# the NIH Record

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## Celeste M. Vitto Dies; With NIGMS Since '63



Mrs. Vitto had been secretary to the chief of the Research Fellowships Branch for almost 4 years. She also served as secretary in the Research Grants Branch.

Celeste M. Vitto, a secretary at the National Institute of General Medical Sciences, died on April 1 while undergoing heart surgery at Duke University Hospital, Durham, N.C.

Mrs. Vitto was secretary to Dr. Frederick Ferguson, chief of the Research Fellowships Branch. She began her career with NIGMS in August 1963 in the Operations Section of that branch.

In 1966 she was named secretary to Dr. Robert H. McCauley in the Research Grants Branch.

One year later, Mrs. Vitto was promoted to the position she held at her death.

Mrs. Vitto is survived by her husband, Anthony, 11410 Old Georgetown Rd., Bethesda; two sons, Anthony, Jr., and Nicholas; two daughters, Catherine, and Mrs. Ann Carow of McLean, and a granddaughter, Lisa Marie.

## 6 Seminars on Mental Health Problems Given For Personnel Officers

Beginning Wednesday, May 5, and continuing for 5 successive Wednesdays through June 9, six seminars on the occupational mental health problems of employees will be offered to NIH personnel officers.

The Office of Personnel Management and the Employee Health Service will jointly sponsor the series. They will be conducted by Dr. Arthur Strauss, EHS psychiatric consultant. Similar meetings have been held for NIH supervisors.

Seminar lectures and group discussions will cover such topics as: the history of progress in occupational mental health; basic causes, preventions, and treatments of mental illnesses, and consultations with employees.

Also, supervisors, and psychiatrists; community resources for treatment of employee mental problems; morale and motivation; the "mid-life" crisis, and retirement.

## Booklet Lists Scientists Willing to Collaborate

The Division of Computer Research and Technology has prepared a booklet—*DCRT Scientific Consultants*—which lists names and backgrounds of mathematicians and physical and computer scientists at DCRT who are willing to collaborate with other NIH researchers on projects of mutual interest.

The pamphlet will be distributed to all NIH scientists. For a copy, contact the DCRT Scientific and Technical Information Office, Bldg. 12A, Rm. 3011, Ext. 66203.

## Employees Will Receive Honorary, Cash Awards For EEO Contributions

The NIH Equal Employment Opportunity office and the Office of Personnel Management have announced an awards program to encourage effective contributions to the NIH EEO program.

Honorary and cash awards will be made to NIH employees, including supervisors, and managers who excel in such contributions.

### Related Goals Noted

Two types of awards are specified. The first, the EEO Special Achievement Award, may be given to an individual employee or to a group of no more than five employees. This award normally carries a cash benefit.

The award may also be made without monetary reward for those participating in non-Federal activities related to NIH EEO goals, such as solutions to community housing and transportation, or child day care problems.

EEO Special Achievement Awards will be presented at local awards ceremonies throughout the year.

The second type of recognition is the NIH EEO Award of the Year, an honorary award presented to an employee selected from the group receiving the EEO Special Achievement Awards during the preceding calendar year.

The NIH Director will make this selection on the basis of an outstanding EEO contribution. He will present the award at the NIH Annual Honor Awards Ceremony held each May or June.

Personnel offices may be contacted for further information on nominating procedures.

## NIH Television, Radio Program Schedule

### Radio

#### DISCUSSION: NIH

WGMS, AM-570—FM Stereo  
103.5—Friday, about 9:15 p.m.

April 30

Dr. James F. Kavanagh,  
Growth and Development  
Branch, NICHD  
Subject: The Development of  
Early Communication (R)

May 7

Dr. Alfred S. Ketcham, chief,  
Surgical Branch, NCI  
Subject: Surgical Treatment  
of Cancer (R)

Interview takes place during intermission of the Library of Congress concerts.

## New Branch Established In NICHD to Conduct Research on Pregnancy

A new branch—the Pregnancy Research Branch—to start operating in July, has been formed in the National Institute of Child Health and Human Development.

It will conduct basic and clinical research on early intrauterine life, represents the first step toward developing an obstetrical unit as an integral part of NICHD's Intramural Research Program.

The branch will investigate events associated with gestation and delivery. This will further the understanding of the biochemistry, physiology and development of the fetus, and the placenta, and of other pregnancy changes.

Until a new facility for the Branch is built, lab operations will be housed in the Auburn Bldg.



Patients model prize-winning entries in the Easter Hat Contest, sponsored by the CC Patient Activities Section (l to r): Hazel Kessler, Adults Best in Show; Vickie Lail, holding first prize for Children's Best in Show, and Susan Cheek and Judy Denker, who together created the Most Original Hat, modeled by Judy. Gail Janssen (not pictured) designed the funniest hat.

## Minority Group Students Attend First Regional Careers Conference

The first regional health careers conference sponsored by the Bureau of Health Manpower Education was attended by college students, administrators, doctors, dentists, nurses, and other health professionals.

The pilot meeting was cosponsored by the North Carolina Central University.

Its aim was to determine if this was the best way to recruit minority group students into the Nation's health manpower pool.

### 16 Colleges Represented

Students from 16 predominantly black colleges in North Carolina and Virginia attended. They were told by Dr. Lloyd Elam, President of Meharry Medical College, that they were the most sought after people in the country.

Emphasis was placed on the great national need for first rate health care in areas which were deprived of this care in the past.

Joseph Pressig, deputy associate director, BHME, said, "... there is a deliberate and widespread movement on the part of schools in the health professions to seek out and recruit minority students who show promise and interest."

The participants heard from a panel of professionals explaining what the students might expect in training and after entering health occupations.

The conference was developed by Dr. LeRoy Swift, special assistant to the Director, BHME, as one of several methods to attract more black and other minority groups into health careers.

### Participants Listed

Others taking part in the panel and workshop were: Dr. George Spruce, Dr. George E. Forneret, and Dr. Charles Cannon, Division of Dental Health; Dr. Louis Bourgeois, Dr. Fred Payne and William Holland, Division of Allied Health Manpower.

Also, Dr. William Bennett, Division of Physician and Health Professions Education, and Dr. Marie Bourgeois and Julia Brandeberry, Division of Nursing.

Norman Tucker of the DPHPE helped coordinate the conference.

## New Rules on Adverse Action, Grievance Appeals Now in Effect

New Civil Service Commission regulations covering adverse action and grievance appeals became effective on April 1. With supplementary changes, the regulations also went into effect at HEW on the same date.

Copies may be seen at NIH personnel offices. A summary will be distributed to all employees.

## Lt. Thompson's Service Spans 7 Decades —From Wilson Era to Age of Aquarius



Lt. Thompson not only directs traffic, but also employees. He knows all the short cuts across the verdant campus, and is glad to share this knowledge with NIH'ers and visitors asking to be steered in the right direction.

By Bart Waldman

NIH Management Intern

The year was 1919. Woodrow Wilson occupied the White House, post-war prosperity engulfed the country, and the League of Nations promised an end to war.

Along the Mexican border, the U.S. Cavalry, haunted by the memory of Pancho Villa, guarded the infant states of Arizona and New Mexico.

Here, an 18-year-old volunteer named Harry L. Thompson began a career of Federal service which has spanned 7 decades.

### Serves Over 50 Years

Today, Harry Thompson is a lieutenant in the NIH Guard Force. After more than 50 years of public service, he enjoys the serene, congenial atmosphere of the Bethesda campus.

But Lt. Thompson's "beat" was not always so peaceful. His duties during 26 years with the D.C. Metropolitan Police included motorcycle detail and service on the hit-and-run squad.

Besides his border patrol experience with the Cavalry, Lt. Thompson served 7 years with the Marine Corps.

### Recalled to Active Duty

Recalled to active duty during World War II, he served in the Pacific as a "Grave Registration Officer" for the 4th Marine Division.

Lt. Thompson currently holds the rank of Chief Warrant Officer, Marine Corps Reserve.

The veteran guard first came to NIH 12 years ago, after retiring from the Metropolitan Police Force. His responsibilities here extend far beyond the obvious directing traffic and issuing parking tickets.

While enjoying his many duties, Lt. Thompson finds the warm relationship between the Guard Force and the NIH employes to be espe-

## NIH Savings Bond Drive Officially Opens May 1; Goal 80% Participation

The 1971 NIH Savings Bond Drive will open May 1 and will run through June 18, Dr. Robert Q. Marston, NIH Director announced today.

"During this period, I urge all employees to consider the many advantages of participating in this worthwhile program," Dr. Marston said.

"Especially for people who have not developed the knack of systematic savings, the payroll savings plan provides a painless, automatic means of setting aside a portion of their income, however modest, for any number of desirable goals.

### Advantages Noted

"These may include an education fund for their children, extra retirement income, or the accumulation of funds for major purchases, such as a new car or home. Moreover, should the need arise, bonds are easily converted to cash anytime after the first two months.

"The interest rate on bonds is the highest ever — 5½ percent on bonds held to maturity," Dr. Marston said, "and this interest is exempt from state and local income taxes. Bonds offer Federal tax advantages too, especially if bought for retirement or educational purposes."

Dr. Theodore Cooper, NHLI Director, will serve as Chairman for this year's drive.

"Our goal is 80 percent employee participation in the payroll savings plan," Dr. Cooper told Institute and Division chairmen and vice chairmen at a recent meeting.

"Savings bonds and the payroll savings plan have so many features to recommend them that I see no reason why we should not reach or exceed our quota . . .," he said.

Dr. Cooper asked Institute and Division chairmen to give special consideration to the selection and appointment of canvassers.

Keymen will contact NIH employees personally during the next few weeks.

## Project Control Reviews Record-Breaking Number Of Research Proposals

With the Ides of March behind them, the Project Control Staff of DRG's Research Grants Review Branch has time to talk about the record-breaking number of proposals received by the January-February deadline.

Study section members are still reviewing the 3,458 research proposals that were processed through the Division of Research Grants Referral Office. In addition, 1,192 applications were assigned to other bureaus of the PHS outside NIH, establishing the record total of 4,650.

### Previous Total Noted

The previous record, according to Irene Mathsen, chief of Project Control, was 4,406 applications reviewed in May and June 1965.

When asked why there was such a rise in the number of grant applications, Dr. Samuel Schwartz, assistant chief of Referral, RGRB, suggests a more optimistic financial situation as a possibility.

Increasing public awareness of national health problems is another important factor, he said.

cially satisfying.

Harry Thompson decided that he was interested in police work during the early years of his public career. After more than one-half century of Federal service, he has never regretted his decision.



Dr. Robert Q. Marston, NIH Director (r), and Dr. Theodore Cooper, NHLI Director, meet to kick off the 1971 NIH Savings Bond Drive.

## DCRT Plans Computer Systems to Fit Biomedical Research Program Needs



The Hybrid computer is a combination analog-digital machine which aids in the design of specialized computer hardware.

Many computers function at NIH. Although some Institutes support their own machines, most of the equipment here is designed and maintained by the Division of Computer Research and Technology.

Some people are aware of the large IBM-360 computers housed in Bldg. 12. These four machines, maintained by the Division's Computer Center Branch, grind night and day completing nearly 3,000 jobs daily.

Requests come from other institutes, divisions, and DCRT. Scientific and administrative data are continually processed.

Remote terminals—teletypes, typewriter-like terminals, or graphic terminals—enable users to send jobs from the laboratory or office.

On completion the results are sent back to the terminal. Lengthy reports can be printed in the Computer Center and placed in an assigned box in the Production Unit.

Another computer, the Digital Equipment Corporation PDP-10, is located in the basement of Bldg. 12A. It primarily supports research and development.

Several graphics display terminals are associated with it. The user can follow the progress of computer programs on a screen and make any necessary changes.

Because of sophisticated graphics terminals, the PDP-10 can be used for biomedical image processing. Chemists may now draw structural diagrams of molecules on a RAND tablet which encodes it into Wiswesser Line Notation (WLN).

### Resources Pooled

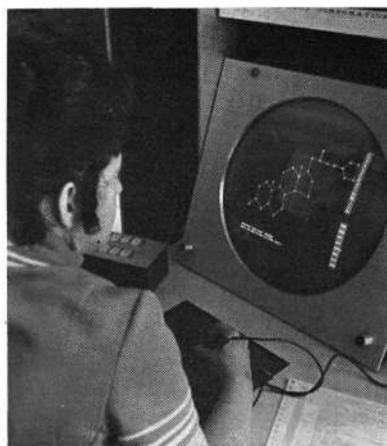
Once encoded, WLN can match information the computer holds to literature citations dealing with the molecule quickly and easily.

Sometimes several users decide to pool resources and install a computer system which they share. DCRT aids in design, helps with the purchase specifications, and oversees installation of the system.

Such a system was devised for the National Institute of Arthritis and Metabolic Diseases. Spectrometers, spectrophotometers, and a

spectropolarimeter have been connected to a computer to collect, analyze, and display data.

DCRT-designed equipment connects instruments to computers. A Remote Operators Console allows



Deena Koniver draws the structure of a steroid on the RAND tablet for display on the screen.

communication with the computer from the laboratory.

DCRT helped automate laboratories at the National Institute of Mental Health, National Institute of Dental Research, and the National Institute of Child Health and Human Development's Gerontology Research Center in Baltimore.

Another machine, a Hybrid Computer, is found useful by DCRT and the Heart and Lung Institute. This joint analog-digital machine, located in Bldg. 10, is used widely for Division research projects.

Engineers use it to design pre-processors—small, especially wired devices—which save the computer time and money. The Hybrid tests programs before selection for pre-processor use.

The principles involved are "hard-

## Scientists From NIMH Win Bennett Awards For Research Papers

National Institute of Mental Health scientists at Saint Elizabeths Hospital have won the A. E. Bennett Clinical Science Research Award and the A. E. Bennett Basic Science Research Award.

They are in the Division of Special Mental Health Research.

The awards will be presented at the annual meeting of the Society for Biological Psychiatry to be held April 30 through May 2.

Dr. Richard J. Wyatt won the Clinical Research Award for his paper, *The Serotonin-Catecholamine Dream Bicycle: A Clinical Study*.

Another NIMH paper, *Norepinephrine Mediated Cerebellar Synapses: A Model System for Neuropsychopharmacology*, won the Basic Science Research Award.

It was submitted by Dr. Floyd Bloom, chief of the Laboratory of Neuropharmacology, together with two of his co-workers, Dr. Barry Hoffer and Dr. George Siggins.

### Award Shared

They shared the award with Dr. Boyd Hartman, Washington University School of Medicine, who also entered a paper.

The awards by the A. E. Bennett Neuropsychiatric Research Foundation, are given each year for the best unpublished research papers by young investigators.

Dr. Wyatt's paper reports on a study relating the REM (dreaming) stage of sleep to the nervous system substances serotonin and catecholamines in 62 mental patients and 15 normal control subjects at Saint Elizabeths Hospital and the Clinical Center.

Dr. Wyatt found the amounts of serotonin present related in direct proportion to the time spent in dreaming sleep, while the catecholamines were inversely related to dream activity.

The paper by Drs. Bloom, Hoffer, and Siggins identifies for the first time a complete norepinephrine-mediated nerve-cell pathway for transmission of impulses.

It also suggests that identified norepinephrine-triggered synapses in the central nervous system can serve as a model system for evaluating the cellular basis of action on drugs that affect brain function.

wired" into the pre-processors if proven successful on the Hybrid.

Preliminary analysis allows less data to be put into larger and more expensive computers saving computation time.

DCRT attempts to make available services based on the concept, the right type of computer should be available for the kind of work individuals do.

## 4 Members Join Council On Health Professions Educational Assistance

Four new members have been appointed to the National Advisory Council on Health Professions Educational Assistance. They are: Dr. Victor H. Duke, Missoula, Mont., Dr. Joseph N. Fields, Chula Vista, Calif., Dr. Robert S. Stone, Albuquerque, N.M., and Dr. Robert M. Wagner, Minneapolis, Minn.

The new members will advise on Health Professions Educational Assistance and Scholarship programs, administered by the Division of Physician and Health Professions Education, BHME.

Dr. Duke is professor of Pharmacology at the University of Montana School of Pharmacy. His teaching and research activities there have been in the field of drug abuse research and education.

Dr. Fields is a private practitioner who has been involved in health care planning in California. He is chairman of the San Diego and Imperial Counties Peer Review Committee for Health Care Services and a member of the Comprehensive Health Planning Association for the two counties.

He is also a consultant to the United Foundations for Medical Care, as well as a past president of the California Podiatry Association.

Dr. Stone is Dean of the School of Medicine and Vice President for Health Sciences, University of New Mexico. For the past several years he has been a consultant to the Los Alamos Scientific Laboratory, Atomic Energy Commission.

Dr. Wagner is a private practitioner in Gynecology with extensive experience in the field of medical education. He is assistant clinical professor of Obstetrics and Gynecology at the University of Minnesota and an attending consultant on the staff of the Hennepin County General Hospital.

## 2 Medical Journal Issues Dedicated to Researcher

Dr. Wade Marshall, who retired last July from the National Institute of Mental Health, will be honored by his scientific colleagues by having two issues of a professional journal—the *International Journal of Neuroscience*—dedicated to him.

The issues will be made up entirely of papers submitted by colleagues who were members of his laboratory at NIMH or who collaborated with him there. More than 40 papers, each representing original research, were submitted.

The first issue of the Marshall tribute appears this month, the second will be published in June.

Before his retirement, Dr. Marshall was chief of the NIMH Laboratory of Neurophysiology.

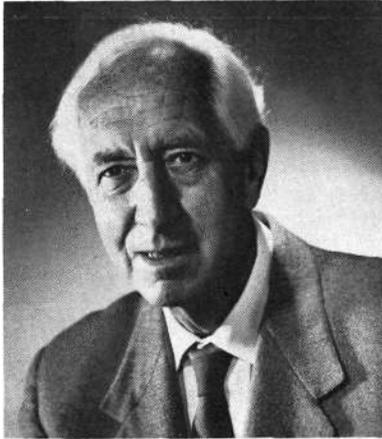
## Fogarty Scholar Holds Biochemistry Seminars

Dr. Jeffries Wyman, who was recently appointed a Fogarty Scholar-in-Residence, is presenting a series of seminars on "Advanced Physical Biochemistry."

Dr. Wyman is a professor of Biology and a member of the Research Unit in the Instituto Regina Elena, University of Rome.

He received his B.A. from Harvard and his Ph.D. in Physiology from the University of London. From 1927 through 1952, he was on the faculty of Harvard College, Department of Biology.

Later, he became the first Scientific Attache at the U.S. Embassy



**Dr. Wyman, formerly Director of the UNESCO Field Science Cooperation Center for the Middle East, is Secretary-General of the European Molecular Biology organization.**

in Paris. In 1956 he was named Director of the UNESCO Field Science Cooperation Center for the Middle East, Cairo. Four years later he accepted his current faculty appointment.

Professor Wyman is a member of the National Academy of Sciences, and is on the editorial board of the *Journal of Molecular Biology*. In 1970 he was named Secretary-General of the European Molecular Biology Organization.

He and Mrs. Wyman are residing at Stone House, the official residence for Fogarty Scholars.

## Lazarus J. Ramelli Dies; With Personnel Branch

Lazarus J. Ramelli, a personnel staffing specialist, died Sunday, April 18, in a Boston nursing home. He was with the Personnel Staffing Branch, Office of Personnel Management, and had been there since 1956, the year he came to NIH.

Mr. Ramelli had been with the Government for 24 years. Before coming here he had served in the Executive Office of the President at the White House, the Department of Interior, and the Department of

## CANCER STUDY

(Continued from Page 1)

lowed by complete regression of the primary cancers. However, in some unexplained instances, the vaccine encouraged growth of the immunizing tumor.

Dr. Bartlett also reported incidence of tumor relapse after a long cancer-free period.

The investigators feel that these experiments provide an animal-model system for more thorough study of these negative factors. They believe this will enable them to achieve total tumor-cell destruction or maintenance of permanent remission through immunization.

Increasing interest in pesticides provided the framework for the research of Dr. Anthony M. Guarino and Jacqueline Call involving DDT in crustaceans. In his presentation to the FASEB, Dr. Guarino reported that when DDT was injected into the pericardial sinuses of lobsters, the pesticide had concentrated in the liver within 48 hours.

### Man Stores DDT

Based on the prior knowledge that man stores DDT in his body fat and that the lobster liver is 60 percent fat tissue, the scientists hope that through this animal model of liver absorption, they may be able to predict the storage of anticancer drugs in the fat of man.

NCI Drs. George P. Canellos, Vincent T. DeVita, Jacqueline Whang-Peng, and Paul Carbone reported on remissions achieved in the advanced stages of chronic granulocytic leukemia with a combination of two drugs, vincristine and prednisone.

The results, presented to the American Society of Clinical Oncology, are significant, not only in terms of the remission rate, but also in that the investigators have demonstrated a possible means of predicting the response of patients to this treatment.

Cell studies performed during the course of the disease revealed chromosomal abnormalities in the leukemic cells which disappear at complete remission but reappear at relapse.

This condition, called aneuploidy, in which the cells do not have the normal number of chromosomes, was present in five of the six patients who achieved complete remission after drug therapy.

The scientists concluded that certain abnormal patterns in the cells of patients in the "blastic" phase of chronic myelocytic leukemia may predict a favorable response to the vincristine-prednisone therapy.

the Army.

Mr. Ramelli, who was on leave from NIH, had planned to retire this coming August. He leaves his wife, Jane, and a daughter, Mrs. Judith Guzzi.

## Rocky Mountain Lab Scientists Develop Techniques to Analyze Marijuana, Hash

A new chromatography technique, originally designed for tuberculosis research, has proved valuable in analyzing the chemical makeup of marijuana and hashish samples.

Scientists of the Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases, and the Ivan Sorvall Company, Hamilton, Mont., reported this technique at the annual meeting of the Federation of American Societies for Experimental Biology in Chicago.

They described it as "simple, reproducible, rapid and low in cost."

Chromatography, a method of chemical analysis, involves separation of constituents of a solution by differentiating rates of flow through an adsorbent filter material.

The solution to be analyzed is poured through columns containing the adsorbent material, the dissolved materials move at different velocities and produce identifiable concentrations at different levels on the columns.

Employing centrifugal force to accelerate passage of the marijuana samples through the columns, the Montana scientists used an ultra-fine silica gel as the adsorbent.

Use of the gel resulted in a sharp separation of the marijuana components. This permitted the scientists to estimate the concentration of major components of the sample.

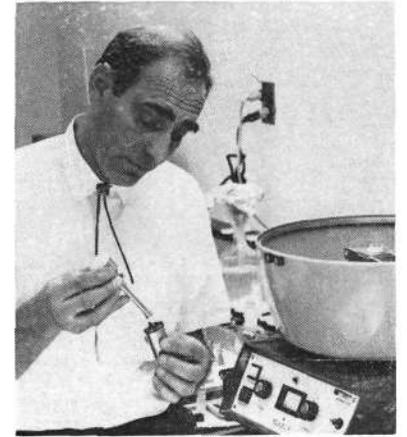
The idea for using the technique was conceived by Dr. Edgar E. Ribi, an RML chemist.

In this use of the Centi-chrom, as the modified chromatograph is called, he collaborated with Dr. D. G. Petcoff of Sorvall and S. Michael Strain, a college student whose participation was supported by the Montana Tuberculosis Association.

The instrumentation was first developed for use in separating certain microbial fats (lipids) and steroid hormones, substances previously impossible to assay.



**Shirley Fletcher represented NIH at the Southern District Recreation and Park Conference in Atlanta, Ga., where she participated in seminars on hospital recreation. Mrs. Fletcher is a recreation therapeutic specialist in the CC Patient Activities Section.**



**Dr. Ribi holds stainless steel container in which special silica gel and marijuana samples are packed before being placed in Centi-Chrom.**

When the investigators learned that methods for identifying cannabinoids (the physiologically active components of marijuana and hashish) were not satisfactory, they applied their new technique to the study of these substances.

The scientists first chromatographed six synthetic cannabinoids—individually and as a mixture—to establish color band standards.

In this study, it was found that the intensity and width of a color band paralleled the quantity of a cannabinoid in the mixture.

### Components Separated

They then chromatographed extracts of marijuana and hashish samples for cannabinoids and identified them in all samples.

Separation of the components was achieved within 12 minutes. When sprayed with a staining agent the bands had a different and characteristic color.

Estimates of the amount of a compound required to produce a band—together with yields of extraction—enabled the scientists to calculate the percentage of a specific cannabinoid in an extract and the plant sample from which it originated. The entire process was accomplished within 30 minutes.

Extracts of several herbs and other plants, often used to dilute marijuana, were also chromatographed to determine whether their patterns would interfere with those of the cannabinoids.

When mixed with synthetic standards, thyme, oregano, sage, alfalfa and clove each formed a single band. Caraway seeds, rosemary, tobacco, rhubarb leaves and menthol produced no bands. In no case was there interference with identification of the cannabinoids.

## Medical School Honors Gillette With Visiting Professorship, Medal



During his stay at the Canadian university Dr. Gillette conducted laboratory demonstrations to explain the role of drug metabolism in drug toxicity.

Dr. James R. Gillette, National Heart and Lung Institute, recently served as the Claude Bernard Visiting Professor at the University of Montreal's Institute of Experimental Medicine and Surgery. He was also awarded the Claude Bernard Medal.

Dr. Gillette is acting chief of NHLI's Laboratory of Chemical Pharmacology.

The visiting professorship is named in honor of the renowned French physiologist. Postgraduate students of the Institute, mostly young physicians preparing for a medical research career, choose the scientists for this honor.

During his visit, Dr. Gillette lectured and conducted laboratory demonstrations to explain the role of drug metabolism in drug toxicity.

Research undertaken by Dr. Gillette and colleagues at NIH during the past 15 years, has shown that drug metabolism—what the body does to the drug—has a profound influence on what the drug does to the body including the toxic effects.

The NHLI scientists found that tiny subcellular structures called microsomes, located in the liver, are a major means by which the body metabolizes drugs, usually inactivating them.

The microsomes contain enzyme systems that can change drugs and other foreign compounds into forms which the kidney can excrete.

Without these microsomal enzyme systems, the effects of many drugs might persist too long.

### CC Blood Bank Reports Units Received in March

The Clinical Center Blood Bank reports that 554 units of blood were received from NIH donors in March, and CC patients received 2,067 units.

More donors are needed. Call the Blood Bank, Ext. 64509.

## Dr. Temin Believes 'Protovirus' Discovery Missing Link Between Virus and Gene

A new concept of differentiation in the body's cells is explored by Dr. Howard M. Temin in the first guest editorial published by the *Journal of the National Cancer Institute*.

Dr. Temin elaborates on his hypothesis concerning a "missing link" between virus and gene. He calls this a "protovirus" and says it may play a role in both cancerous and normal development in cells.

Dr. Temin, a virologist at the McArdle Laboratory, University of Wisconsin, has a research career development award from NCI and receives grant support from the Institute.

### Opens Research Avenues

His report, last June, of an RNA-dependent DNA polymerase, the "Temin enzyme," opened new avenues of cancer research.

The cell chemical DNA, deoxyribonucleic acid, usually directs the synthesis of RNA, ribonucleic acid. RNA-dependent DNA polymerase is an enzyme that reverses the process, synthesizing DNA from an RNA blueprint.

The account explains how RNA tumor viruses could reverse the order of transferring genetic information in cells—transferring it from RNA to DNA thus causing a heritable change in the DNA.

Dr. Temin now proposes the existence of a protovirus which can transmit information from DNA through RNA and back to DNA, passing from cell to cell as free RNA or coupled with protein as ribonucleoprotein.

### Predetermination Likely

The protoviruses may contain genes for reproducing themselves and controlling cell multiplication. They may be capable of alteration in a predetermined way, moving from cell to cell, and from one chromosomal site to another.

Dr. Temin sees the protovirus arising while the body's cells are still undergoing changes which determine the specific kinds of cells they are to be.

He suggests these protoviruses may interchange genetic information, using the RNA molecules, to vary the genetic potential of cells. The protovirus may allow flexible transfer without disrupting the stability of the germ line.

### Stability Needed

An organism needs to identify cells in a stable way, says Dr. Temin, and the most stable storage place for such information appears to be the cellular DNA molecule. At the same time, continual interchange allows for variation of genes without altering the entire organism.

In his editorial, Dr. Temin contrasts his hypothesis with the "oncogene" theory of Drs. Robert J.

## Reorganization at OAS Establishes 11 Branches Within 3 Components

In order to streamline its functions the Office of Administrative Services, under the direction of James B. Davis, recently announced a reorganization among several of its components. The reorganization became effective on March 22.

The present components are now: Office of the Assistant Director for Materiel Management; Office of the Assistant Director for General Services Management, and Office of the Assistant Director for Protection and Safety Management.

Eleven branches have been established within these components. The May edition of the NIH telephone directory will list the location of the new components and their units.

Huebner and George J. Todaro.

In 1969 the two NCI scientists proposed that a potential cancer gene is present in all normal cells from conception, and awaits triggering to cancerous growth by a virus, hormonal changes, chemical irritants, or the aging process.

By contrast, Dr. Temin suggests that a potential cancer gene is formed in body cells by protovirus transfer during development.

In a previous article Dr. Temin proposed that the protovirus hypothesis could explain the occurrence of C-type RNA viruses in some cancers that occur without apparent cause in experimental animals.

In the *JNCI* editorial he suggests that some evidence may be found in the discovery by NIH scientific teams and others of an RNA-di-

## DR. GREEN

(Continued from Page 1)

Career Awardee of the National Institute of Allergy and Infectious Diseases since 1963.

He is a consultant in molecular virology at the M.D. Anderson Hospital and Tumor Institute in Houston, and a consultant to the Solid Tumor-Virus Segment of the National Cancer Institute.

He is also a member of the Cancer Special Program Advisory Committee, NIH, and of the Biophysics Group Viral Carcinogenesis Branch, NCI.

Dr. Green is serving on the American Cancer Society's Advisory Committee on Personnel for Research.

### Editorial Advisor

He is editorial advisor to *Biochemical Pharmacology*, *The Journal of Virology*, and *Virology*.

Before joining St. Louis University School of Medicine as an assistant professor of Microbiology in 1956, Dr. Green was an instructor in Biochemistry at the University of Pennsylvania School of Medicine.

He received his B.S. degree in Chemistry in 1949 from the University of Michigan in Ann Arbor, and he earned both his M.S. (1952) and Ph.D. degrees (1954) from the University of Wisconsin, Madison.

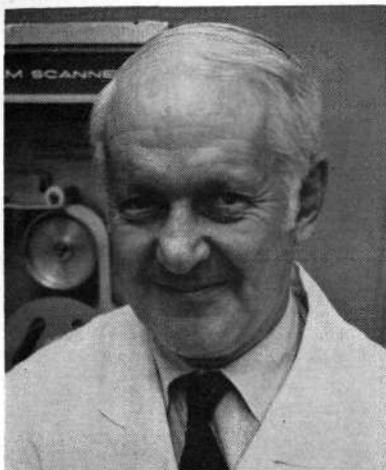
The Dyer Lecture was established in September 1950 to honor Dr. Rolla Eugene Dyer, a former NIH Director.

Each year the Dyer Lecturer is selected by the NIH Director—with the advice of his senior scientific staff—from among scientists who have made important contributions in either medical or biological research, particularly in the field of infectious diseases.

rected DNA polymerase in both the visna virus which causes a neurologic disorder in sheep and "foamy" virus in monkeys.



Dr. William A. Lybrand, Director of the new Division of Manpower Intelligence, BHME, greets his staff during one of a series of get-acquainted gatherings in his office, (R to l) Dr. Lybrand, Clifford Allen, Alice Peterson, Gladys Wells, Adolph Scolnick, Grace Snyder, Frank Morrone, and Lynn Brewster.



**Dr. Frederic C. Bartter**, chief of the Endocrinology Branch, NHLI, since 1951, is the subject of a cover story in the April 5 issue of "Modern Medicine," a national medical journal. His research methods and goals are described in the article. The eminent scientist also teaches at both Georgetown University School of Medicine and Howard University College of Medicine.

## INFLUENZA

(Continued from Page 1)

opment and application have not been sufficient to prevent spread of the disease and excess mortality.

At an organizational meeting, the subcommittee, chaired by Dr. Edwin D. Kilbourne, Mt. Sinai School of Medicine, N.Y.C., made plans for a series of working conferences.

Scientists will review new information on antigenic composition of the influenza virus and techniques for determining the significance of these antigens.

The subcommittee also includes: Drs. Bernard C. Easterday, University of Wisconsin; Walter Dowdle, WHO Influenza Information Center, Communicable Disease Center, Atlanta, and John P. Fox, University of Washington.

Also, Robert Couch, Baylor University College of Medicine, and Purnell Choppin, Rockefeller University.

Dr. Julius A. Kasel, Laboratory of Clinical Investigation, NIAID, will serve as Executive Secretary.

## New Test Detects Tumor Cell Immunity; Could Clarify Human Response to Cancer

By Hedy Shpritz

Does cancer develop because the immune system has failed to protect the patient against the disease? Is the person without cancer healthy because his immune system is successfully warding off the disease? A new assay developed by NIH scientists will help answer these questions.

The test tube assay which detects immunity to a specific guinea pig tumor cell line could be used to monitor varying degrees of tumor immunity in man. But first the scientists must obtain blood and tumor samples from cancer patients who have not been given anti-cancer drugs.

It is important that the patients have not been taking such drugs because most of them have the side effect of suppressing the immune system.

### New Assay Described

Describing the new assay in the *Proceedings of the National Academy of Sciences* were Dr. Joost J. Oppenheim, a National Institute of Dental Research immunologist concerned about oral cancer and other oral health problems, and Drs. Berton Zbar and Herbert Rapp of the National Cancer Institute.

The NCI scientists have shown that guinea pigs inoculated with tumor cells from other animals of the same inbred strain can develop a protective immune response that destroys existing small tumors and prevents formation of new tumors. The immune response is called delayed hypersensitivity (dh).

In those experiments tumors are induced by adding the carcinogen diethylnitrosamine to the animals'

drinking water. When guinea pigs of the same strain are immunized with a specific cell line (line 1) cultured from these tumors, they develop dh reactions which can specifically inhibit line 1 tumor growth.

Dr. Oppenheim has now developed a way to measure the degree of this immune response *in vitro*. He found that tumor cells growing alone in culture incorporate considerable amounts of labeled thymidine, a DNA precursor.

However, when the tumor cells are incubated with white blood cells from immune guinea pigs, the tumor cells take up much less of the radioactive label. White blood cells from nonimmunized guinea pigs inhibit the tumor cell growth less dramatically.

This simple, yet sensitive, assay accurately reflects the animal's immunity to a specific tumor cell line.

The scientists are just beginning to test the effect of human cancer patients' white blood cells on their own tumor cells in culture. However, additional samples from patients not on chemotherapy are needed for studying the role of the human immune response in cancer.

The largest enrollment in modern times, 37,669 students, was recorded by the Nation's medical schools in the 1969-70 school year.—*JAMA*.

## Animal Brain Investigations May Develop Methods for Helping Handicapped People

Somewhere locked in the brain of man is the vague and undefined concept of understanding. Once a situation is understood, it can often be modified.

Similarly, there are those who believe that once human actions are understood at a neurochemical and neurophysiological level, they too can be modified.

Recently, one of the most staunch advocates of this philosophy, Dr. Jose Delgado, Department of Physiology, Yale University, addressed NIH scientists on that subject at the invitation of the NINDS Laboratory of Neural Control.

Dr. Delgado described his experiments with animals in which stimulation of certain areas of the brain produced marked changes in their activity.

### Drug Increases Activity

The experiments indicate, according to Dr. Delgado, that by directly stimulating certain areas of the brain scientists may be able to develop effective sensory prostheses for deaf, blind and muscularly handicapped persons; therapy for intractable pain, and therapy for severely affected mental patients.

Dr. Delgado found that after injecting a drug into an area of the brain known as the medial fore-brain bundle, there was a dramatic increase in activity (lever pressing).

This change lasted about 10 days. Although he doesn't yet know why the drug produced such a lasting effect in the animals, he feels further studies may lead to eventual application of modifying behavior by administering drugs to a target area.

Among the many questions still to be answered are: where are the inhibitory areas of the brain, and, how specific are they and what are their mechanisms?

He also found that he could both increase and decrease the amount of aggressive behavior exhibited by the test animals through direct stimulation of the brain.

But, according to Dr. Delgado, this temporary change did not interfere with the animals' knowledge from past experience. An animal with increased aggression was still submissive to another animal in the colony known from past experience to be more aggressive and dominant.

### Brain 'Pacemaker'

Also, animals in a colony seemed to sense when the dominant member of the colony was made passive through brain stimulation.

Dr. Delgado has also monitored responses from his test animals through implantation of a brain "pacemaker," designed in much the same way as a heart pacemaker.

This device enables him to record changes in the chemistry of

## Dr. Kuffler to Receive Annual Passano Award For Medical Research

Dr. Stephen W. Kuffler, an internationally known neurologist and a National Institute of Neurological Diseases and Stroke grantee, was selected for the \$7,800 Passano Award for 1971.

The Passano Foundation, which presents the award, is a non-profit organization which encourages medical science and research.

The prize was formally presented to him on April 15, at a dinner held during the FASEB meeting.

Dr. Kuffler is a professor of Neurobiology and chairman of the Department of Neurobiology at the Harvard Medical School. He delivered the NIH Lecture this past October (see *NIH Record*, Oct. 13).

The renowned scientist spoke on "Viewing Living Synapsis and Exploration of the Chemosensitivity of the Neuronal Surface."



**Dr. Tibor Borsos**, with the National Cancer Institute since 1962, has been named associate chief of the Biology Branch, Carcinogenesis area of Etiology. He will also continue his duties as Immunochemistry Section Head.

the brain under different types of stimulation and also enables him to control many responses of the animals.

According to Dr. Delgado, studies such as these are opening up new possibilities of understanding human personality through a better understanding of the neurochemical and neurophysiological properties of the brain.

Dr. Karl Frank, head of the Laboratory of Neural Control, NINDS, and his associates, are vitally interested in the potentials of direct brain stimulation and recording, especially its application to the development of prosthetic devices.

The laboratory currently has five contracts for studying the feasibility of developing a sensory prosthetic device.

## Departmental Ceremony For Honor Awards Held In Masur Auditorium

The National Institutes of Health served as hosts for the DHEW Annual Honor Awards Ceremony held in the Jack Masur Auditorium, Clinical Center, on April 15.

After the ceremony, a reception was held in the Center's 14th floor auditorium for officials, award recipients, and their families.

Seven NIH scientists were among those honored.

### Dr. Allen Also Honored

Honorees included Dr. Ernest M. Allen, former NIH Associate Director for Research Grants and presently HEW Deputy Assistant Secretary for Grants Administration, as well as other outstanding Department employees.

Opening the ceremony, John G. Veneman, HEW Under Secretary, praised the Department's accomplishments.

Secretary Elliot L. Richardson spoke next, stressing the important role of the small employee and how much he is contributing to NIH.

Secretary Richardson presented the awards as PHS Surgeon General Jesse L. Steinfeld read the citations.

HEW awards the Distinguished Service Medal to commissioned officers of the Public Health Service whose achievements deserve the highest recognition.

This medal was presented to Dr. Dorland J. Davis, PHS Assistant Surgeon General and Director of the National Institute of Allergy and Infectious Diseases; Dr. Herbert G. Stoenner, Director of the NIAID Rocky Mountain Laboratory, and Dr. Robert M. Chanock, chief of the Laboratory of Infectious Diseases, NIAID.

The Distinguished Service Award, honoring the achievements of civilians in HEW, was presented to Dr. John F. Sherman, Deputy Director of NIH, and Dr. Donald S. Fredrickson, Director of Intramural Research, National Heart and Lung Institute.

Two NIH employees—Drs. Rob-

## TV Show Details Male Health Habits; Factors That Lengthen or Shorten Lives

"How to Stay Alive," a television documentary produced by Alan Landsburg Productions with the cooperation of the Division of Research Resources Clinical Research Centers, will be shown on Tuesday, May 4, at 10 p.m. (EDT) on the ABC-TV network.

The documentary, narrated by Robert Young, TV's "Marcus Welby, M.D.," reveals how men may lead longer, healthier lives, and also produces evidence of factors which may shorten lives.

For several months, teams of cameramen filmed the lives of five American men—a dress salesman, a taxicab dispatcher, a cab driver, a business executive, and a junior high school principal. Cameras recorded details of their health habits, activities, and customs.

Three of the medical experts on the show are program directors of NIH-supported clinical research centers. They are specialists on cardiovascular diseases, and conducted complete medical examinations of the five men.

### Chart Lists Facts

The DRR information office gathered the data and statistics which are included in the film.

A chart, developed by Dr. Robert S. Lees, will enable viewers to roughly estimate their life expectancy by comparing such facts as family history, diet, obesity, exercise, smoking, and stress.

Dr. Lees is program director of the DRR Clinical Research Center at the Massachusetts Institute of

Technology. Dr. Ernest J. Huebner and George J. Todaro—who won major awards this past year, were also recognized at the ceremony. They had been nominated through the Department for the honors they received earlier.

Dr. Huebner was one of five recipients of the 1970 Rockefeller Public Service Award, and Dr. Todaro received the Junior Chamber of Commerce Award as one of Ten Outstanding Young Men of America.

Musical entertainment during the ceremony was furnished by the U.S. Marine Corps Band.

### Brown Named to Cancer Council

Dr. Arnold L. Brown, Mayo Clinic, has been appointed to the National Advisory Cancer Council.

He is chairman of the Clinic's Department of Experimental and Anatomic Pathology.

### Technology.

The other program directors who are with NIH-supported Clinical Research Centers are: Dr. E. Lovell Becker, Cornell University Medical Center, and Dr. Edward G. Biglieri, San Francisco General Hospital.

Dr. William R. DeCesare, chief of the DRR General Clinical Research Centers Branch, introduces the scientists.

Dr. Nevill Grant, a St. Louis physician, also appears on the program. Dr. David M. Kipnis, program director of the Washington University Clinical Research Center, acted as special consultant.

The medical experts evaluate the health of the five men and also pinpoint detrimental habits common to American males.

"As a people Americans are fat," said Dr. Lees. "The most important wrong in our diet is too many calories. Men should be thin looking, even skinny."

According to the doctors, no one should smoke more than five cigarettes a day. "It puts a great strain on the heart," Dr. Grant noted.

"Furthermore," explained Dr. Becker, "unknown to many men, excessive smoking can interfere with virility and satisfactory sexual performance."

At least 20 million Americans have hypertension—and half, experts say, don't know it. "Hypertension if undiagnosed and untreated, said Dr. Biglieri, "can shorten life expectancy by at least 20 years."

"How to Stay Alive" will be televised on approximately 200 ABC-TV affiliate stations.

### Enforcement Here to Stay; Cold Cash May Be Penalty For Parking Rule Violators

In spite of improved compliance with parking rules by most employees, a number do not believe that enforcement is here to stay.

These misguided souls may soon end up paying for their "sins" in cold cash.

Too many employees have failed to display parking permits, and a great number are trying "to get by" as visitors. Guards have methods to identify bona fide visitors.

Over a thousand courtesy traffic notices have been issued, according to Willard S. Vincent, assistant director for Protection and Safety Management, OAS.

In addition, a number of vehicles have been ticketed with Violation Notices calling for \$5 to \$10 forfeiture of collateral.

Any employee who does not have his parking permit, or needs a new one for any reason, should visit Bldg. 31, Rm. B1-C-11, to obtain a permit.

## Research Lab at Dacca Under Caretaker Status

Because of the unsettled political situation in Pakistan the Pakistan-SEATO Cholera Research Laboratory in Dacca has been placed on caretaker status.

It is being operated by three Americans and the Pakistani staff.

Most of the Americans associated with the NIH-managed laboratory in East Pakistan were airlifted to Teheran on April 6 and 7.

Americans remaining with the lab are: Dr. Wiley Mosley, head of the Epidemiology Division; Patrick Talmon, executive officer, and Mark Tucker, maintenance officer.

### Evacuees Listed

Those evacuated to Teheran—where they will remain while awaiting State Department instructions—are: Dr. Kenneth Bart (EIS Officer from CDC) and family; Dr. Lincoln Chen and family; Dr. George Curlin and family, and Mr. George Eddy and family.

Also, Drs. Doyle and Dolores Evans; Dr. Richard Guerrant and family; Mrs. Wiley Mosley and children; Dr. Jon Rohde and wife; Dr. Al Sommer (EIS Officer from CDC) and family; Dr. John Stoeckel and family; Mrs. Patrick Talmon; Mrs. Mark Tucker and daughter, and Lillian Wall.

Dr. Kendrick Hare, Director of the Laboratory, and his wife, also were evacuated from Dacca and have returned to the United States for consultations.



Following the awards ceremony (from l to r) Surg. Gen Steinfeld, Dr. Davis, Secretary Richardson, Dr. Stoenner, and Dr. Chanock pause for some picture taking.



Dr. Sherman, Secretary Richardson, Dr. Fredrickson, and Dr. Robert Q. Marston, NIH Director, enjoy a moment of relaxation at the reception.—Photos by Sam Silverman.