Dr. William Gay Named Assoc. Director, NIAID Extramural Programs

Dr. William I. Gay has been named associate director for Extramural Programs for the National Institute of Allergy and Infectious Diseases.

Dr. Gay will be responsible for development of the six branches of NIAID's extramural programs, and will help coordinate grant programs with the Institute's contract-financed programs.

Dr. Gay will also arrange activities of the National Advisory Allergy and Infectious Diseases Council and will implement their recommendations.

After receiving the D.V.M. degree from Cornell University in 1950, Dr. Gay entered private practice for 2 years and then served at Walter Reed Army Medical Center.

In 1954 Dr. Gay came to the Division of Research Services. Prior to his present appointment, he was acting associate director of the National Institute of General Medical Sciences.

Dr. Gay is a diplomate of the American Association of Laboratory Animal Sciences in 1968.

Computer-Made Films And Talk on Techniques Offered Here Jan. 18

Computers are now in the moviemaking business! Employees at NIH will have an opportunity to see what they can do on Monday, Jan. 18, at 8:30 a.m. when recent computer animation in biology, medicine, and chemistry will be screened in Bldg. 31, Conference Room 10, C Wing.

Motion pictures are produced when the machine follows a series of program instructions which describe moving images. The instructions are given in written, mathematical, or graphical form. Images are then drawn by the computer onto film or video tape.

The technique is valuable as an aid in understanding mathematical relationships and visualizing complex models used in biology, chemistry, and physics.

Among applications which will be represented at the screening are: display of three-dimensional molecular structures, kinetics of chemical reactions, vibrations of the inner ear, the expansion and contraction of a heart model, nerve impulse propagation, and the results of new techniques employing timekeeping and the expansion and contraction of a heart model, nerve impulse propagation, and the results of new techniques employing timekeeping.

NEI Creates Biometry Office in Reorganization

After almost a year of operation, the National Eye Institute has been reorganized to enhance its capability for research aimed at improved prevention, diagnosis, and treatment of visual disorders.

The reorganization includes establishment of an Office of Biometry and Epidemiology within the Office of the Director. Appointment of Harold Kahn as chief of this office was also recently announced by Dr. Carl Kupfer, NEI Director.

As part of the reorganization, the Office of the Director of Intramural Research was established, and a Laboratory of Vision Research and a Clinical Branch created.

The Office of Biometry and Epidemiology will conduct mathematical and statistical research on vision and its disorders.

It will also conduct and analyze field investigations, clinical trials, and population studies on the incidence and prevalence of ocular diseases and associated demographic factors.

Staffs of existing biometric sections conducting related studies have been transferred to the new office.

During 1949-1951 and from 1960 to the present Mr. Kahn has had a (See NEI REORGANIZATION, Page 6)
All 'Essential' Employees Must Report to Work In Hazardous Weather

During this winter season it is possible that hazardous weather conditions may call for early dismissal of employees except for those considered "essential" or for the temporary closing of portions of NIH.

Never Completely Closed

Because of its responsibilities for patient care and protection of experimental work, NIH can never completely close. Officials designate those activities which must continue regardless of inclement weather.

Neither early dismissal nor the temporary closing of NIH apply to employees considered "essential," according to the Office of Personnel Management. Such employees are to report for work despite radio and television announcements to the contrary.

If not certain whether he is "essential," an employee should check with his supervisor.

When a need for early dismissal is determined, employees who can be spared will be dismissed at 15-minute intervals on an announced zone basis.

Help to Combat Alcoholism Offered by EHS Program

As a public health problem, alcoholism is now ranked second—next to heart disease and mental illness—in seriousness. Experts say that it is currently "of epidemic proportions" in this country.

The problem with a drinking problem may be a craftsman, foreman, executive, or fellow worker. He might even be you. Problem drinking may affect the worker. He might even be you.

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Members of carpools should depart according to the zone of the vehicle operator.

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The problem with a drinking problem may be a craftsman, foreman, executive, or fellow worker. He might even be you. Problem drinking may affect anyone.

January is alcoholism month, time to learn about help available in combatting the disease. The NIH Employee Health Service offers a program of assistance for its employees.

For information, call Mrs. Hubbard or Mrs. Hill, Ext. 64411. All inquiries will remain confidential.
Get in the Picture by Donating Blood; January Is 'National Blood Donor Month'

Most of the blood used at NIH comes from the Clinical Center's Blood Bank. Last year, 14 percent of the NIH employees, many of whom are repeat donors, gave through the Blood Bank compared to 3 percent of eligible donors nationwide.

Because of the low national percentage of donors, a number of commercial blood banks are less stringent in their health standards and, consequently, attract derelicts and drug addicts—persons with poor medical histories—who need cash. A transfusion of commercial blood is ten times more likely to result in hepatitis than that of voluntary blood.

A Clinical Center study revealed that half of the 82 patients transfused with commercial blood during open heart surgery developed hepatitis but those receiving voluntary blood from NIH employees and friends did not.

Commercial Sources Barred

As a result, the CC Blood Bank discontinued buying whole blood from commercial sources in early 1970.

Whole blood has a refrigerator life of only 21 days, and 125 donors are required each week to maintain a fresh, adequate supply of blood for CC patients. NIH donors are especially important now that the Blood Bank no longer purchases commercial blood.

January is traditionally a month of shortages in the nation's blood banks. Bad weather and the holidays combine to discourage would-be donors while accidents and post-holiday operations increase the demand.

Recognizing this dilemma, Congress has designated January 'National Blood Donor Month' and the Post Office plans to issue a commemorative stamp to honor blood donors.

Barbara Kuroda makes a stained glass ornament under the watchful eye of teacher Janice Davis and "classmate" Dr. Robert Straube.

Suggestion made last June at the Division of Research Grant's Equal Employment Opportunity conference has caught on, bringing the Division's employees together during their lunch hour to share common interests and, consequently, to establish better communications.

What began as a remote possibility became reality through what employees call "Project Dialogue." Classes for various hobbies meet once a week at 11:30 on a designated day for each craft.

...continuing story...
Dr. Cuatrecasas Is Cited As Outstanding Scientist For Findings in NIH Lab

Dr. Pedro Cuatrecasas, formerly with the National Institute of Arthritis and Metabolic Diseases, has won the “Outstanding Young Scientist Award,” presented by the Maryland Academy of Sciences.

Dr. Cuatrecasas’ award is based on the work he did while at the NIH Laboratory of Chemical Biology, which he left last July.

He is currently Director of the Division of Clinical Pharmacology at the Johns Hopkins University School of Medicine. He is also associate professor of pharmacology and therapeutics and of medicine.

Will Divide Award

Dr. Cuatrecasas will divide the $500 award with Dr. Herbert S. Bennett, honored for theoretical work on ferromagnetism at the National Bureau of Standards.

Dr. Cuatrecasas has contributed to the understanding of the mechanisms of action of important enzyme systems and hormones through use of a new technique, affinity chromatography, developed in the NIAMD laboratory.

Of special significance are his recent findings concerning insulin. While at NIAMD he provided the first substantial evidence that insulin exerts its effects on glucose transport and other metabolic activities by interaction with cell membrane structures without entering the cell.

BEIB Offering Course On Ultracentrifugation

A short course on analytical ultracentrifugation is again being offered by the Biomedical Engineering and Instrumentation Branch, Division of Research Services.

The course will cover basic operational techniques, relevant calculations, and interpretation of results.

American Dental Ass’n Awards Certificate to DDH for Exhibit

The American Dental Association has awarded the Certificate of Honor for 1970 to the Division of Dental Health, DHMS, for its exhibit, “Toward Better Dental Health.”

The exhibit, which describes the Division’s programs, was chosen from a large number of entries at the ADA’s annual session of Scientific and Educational Exhibits Program.
Several aspects of the chemical structure of the parathyroid hormone have been recently determined by NIH scientists. The complete structure of parathyroid hormone has been defined, for the first time, by National Heart and Lung Institute scientists.

Determination of the amino acid constituents and their precise arrangement in the complete parathyroid hormone molecule culminated a year of intensive research by Dr. H. Bryan Brewer, Jr., head of the NHLI's Section on Peptide Chemistry, and his research associate, chemist Rosemary Ronan.

Their findings were formally presented at the Symposium on Sequence Determination of Proteins and Peptides, Oct. 27, in Madison, Wis., and published in the December issue of the Proceedings of the National Academy of Sciences.

Dr. John T. Potts and co-workers at the Massachusetts General Hospital, in collaboration with Dr. Gerald D. Aurbach of the National Institute of Arthritis and Metabolic Disease, announced at the Symposium on Cyclic AMP and Cell Function, Nov. 10, 1970, in New York, the synthesis of a biologically active 84 amino acid fragment of the parathyroid hormone.

The synthetic fragment, like the native hormone, activated the enzyme adenyl cyclase in both bone and kidney, and this in turn increased the formation of cyclic AMP (short for cyclic 3', 5' adenosine monophosphate) which is responsible for both renal and bone effects.

They also reported on the completion of the hormone's amino acid sequence, which is identical to the sequence which was first proposed by Dr. Brewer and Miss Ronan. Dr. Potts' and Aurbach's studies appeared in the December issue of Hoppe-Seyler's Zeitschrift für Physiologische Chemie, and is planned for the January issue of the Proceedings of the National Academy of Sciences.

More Definitive Studies Seen

The elucidation of the complete amino acid sequence of parathyroid hormone will now enable more definitive studies on the chemistry and physiology of the hormone, as well as the chemical synthesis of the complete hormone and chemical analogues (altered forms of the molecule). This will increase understanding of calcium metabolism and metabolic bone disease.

Parathyroid hormone's vital role in maintaining blood calcium concentrations has been known for some 45 years. When the blood calcium level falls below normal, nerve and muscle cells activate spontaneously, and muscles go into continuous contractions, a condition known as tetany.

Parathyroid hormone, secreted by Dr. H. Bryan Brewer, Jr., head of NHLI's Section on Peptide Chemistry, places a stop on the release of calcium from bone. How it does this is shown in the schematic drawing above.

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Inherited Cancer Gene Could Play Role In Embryonic Growth, Dr. Huebner Says

An inherited cancer gene could be a growth factor in the developing embryo, according to the theory of Dr. Robert J. Huebner of the National Cancer Institute and colleagues, reported in a recent issue of the Proceedings of the National Academy of Sciences.

This inherited genetic material, which is common to a group of viruses (type-C RNA viruses) causing certain cancers in mice, chickens, hamsters, and cats, was detected as a group-specific (gs) antigen in healthy embryos of both laboratory-breeding and wild mice.

Collaborating with Dr. Huebner were Dr. Gary J. Kelloff, Dr. Padman S. Sarma, W. T. Lane, and H. C. Turner, all of NCI.

Also, Drs. Raymond V. Gilden and Stephen Oroszlan of Flow Laboratories, Rockville, Md.; Drs. Hans Meier and David D. Myers, the Jackson Laboratory, Bar Harbor, Me., and Dr. Robert L. Peters, Microbiological Associates, Bethesda, Md.

Since an animal does not normally produce antibodies against parts of its own body, the discovery of viral genetic information (gs antigens) in one or more tissues in most of the mouse embryos studied is another indication that the RNA tumor virus may be present at the earliest stage of development.

Thus, viral material is believed to be part of the animal’s genetic inheritance.

Moreover, detection of such a “footprint” of the virus early in the embryonic life of an animal which may develop cancer only later in life suggests that the type-C RNA virus gene may be a necessary factor in normal growth.

It might, for example, provide the basic message to cells to divide and multiply.

Evidence of the viral genetic material also seems to be present in mouse tissues which continue to grow after birth—ovaries, testes, thymus, liver, and parts of the intestinal walls. This might give further support for the virus genes role as a growth factor.

Dr. Huebner, who is chief of NCI’s Viral Carcinogenesis Branch, and Dr. George Todaro, now chief of the Viral Leukemia and Lymphoma Branch, first proposed their so-called oncogene (tumor gene) theory of the origin of cancer in 1969. The current paper presents evidence to extend the original hypothesis.

The Huebner-Todaro theory rests on the premise that the gs antigen is present from the beginning of life, even though inactive as a cancer agent during most of it.

Hence viral genetic information must be transmitted vertically at conception, from parent cell to daughter cell, rather than horizontally, from neighbor to neighbor, as in most infectious diseases.

According to the concept, the genetic activity is somehow switched on” again by the aging process itself or environmental agents.

NIH Golf Team Wins Federal League Championship

The NIH golf team, sponsored by the NIH Recreation and Welfare Association, now retains permanent possession of the trophy. Each member of the team also receives an individual trophy.

Next year’s schedule will be similar to past years”—18-hole weekly matches begin in May and end with the play-offs in October.

Courses at Montgomery Village, Breton Woods, and University of Maryland were used this year.

Oscar Young, team captain, also served as director of golf for the LFRA.

1st Guide to Literature On Neurological Nursing Designed as Study Aid

The first comprehensive guide to literature concerning nursing care for neurological and neurosurgical patients is now available.

Literature Relating to Neurological and Neurosurgical Nursing is a publication of the Division of Nursing, Bureau of Health Manpower Education.

It reflects an 8-year search through American and European scientific literature dating back to 1800. Intended as a study resource for nurse practitioners, the guide lists more than 1000 items.

This 100-page bibliography may be purchased for 60 cents from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

A single free copy may be requested from the Division of Nursing, Ext. 61143.

NEI REORGANIZATION

(Continued from Page 1)

Chosen Medalist for "Dedicated Leadership" Award

Dr. Robert J. Huebner, NCI (left), one of five Rockefeller Public Service Award winners, chats with John D. Rockefeller III (center) and NCI Director Dr. Carl G. Baker prior to the presentation luncheon and ceremonies last month.—Chese Ltd. Photo.

Mr. Kahn, recipient of a PHS award for outstanding performance, will direct statistical program studies.

Med. Students’ Expenses Revealed in Publication

Results of a survey studying the expenditures of medical and osteopathic students in this country has been released by the Division of Physician and Health Professions, NIH, where he served as advisor on the statistical aspects of management studies.

In the NEI reorganization the Office of the Director of Intramural Research replaces the Office of the Associate Director for Research Programs.

Serving as a principal advisor to Dr. Kupfer, the Director of Intramural Research will administer the Institute’s laboratory and clinical research activities.

He will coordinate intramural research and training programs.

The Laboratory of Vision Research and the Clinical Branch replace the Ophthalmology Branch.

Laboratory studies range from the biochemistry and physiology of the visual process to investigations of the pharmacology of new drugs for treating visual disorders.

Patient studies under the direction of Dr. Vernon G. Wong, NEI clinical director, include the development of new ways of preventing, diagnosing, and treating glaucoma, uveitis, and various retinal and corneal disorders.

Mr. Kahn, in the back row are: Art McIntire, Nat White, Erv Lessel, Herb Stickney, George Bennett, Errett Straley, Mike Dieter, Oscar Young (captain), and Frank Sordyl. In the front row are: Joe Corliss and Roy Bradley were not present.
With Indians’ Help, NIAMD Starts Study
In 200-Bed Medical Center at Phoenix

When Dr. G. Donald Whedon, Director of the National Institute of Arthritis and Metabolic Diseases, shook hands in Arizona with Dr. Ernest C. Siegfried, Director of Indian Health Service’s new 200-bed Phoenix Indian Medical Center, at recent dedication ceremonies, the two medical administrators marked the beginning of a cooperative effort.

IHS will provide the best modern medical care at this referral center for tribes of the Arizona-California-Nevada-Utah area, and NIAMD will utilize the fifth floor for research on diseases prevalent among the Indians and other Americans. The Institute has conducted epidemiological studies among some of these tribes since 1965.

Crowds attending the hospital open-house that preceded traditional Indian ceremonial dances could envision a time when research here will help find answers to such problems as diabetes, gallbladder diseases, or arthritis.

Since 1955, when the Public Health Service took responsibility for the health of the Indians, one of the main objectives has been to stop doing things “for” them and to start doing things together “with” them.

In NIAMD’s plan, Indian patients are part of the medical research team. While their well-being is the foremost consideration, the research programs should benefit millions of people through improved understanding of the causes, treatment, and prevention of the diseases under study.

To one of the tribes, long studied by NIAMD, helping people is nothing new. The Pimas, who live along the Gila River near Sacaton about 35 miles from Phoenix, gave food and protection to early settlers. A member of an 1846 expedition led westward by the famous scout, Kit Carson, described the hospitality of the Pimas in glowing terms.

Diabetes Prevalent in Pimas

No one knows why the Pimas now have a prevalence of diabetes found by NIAMD’s Phoenix-based Southwestern Field Studies Section to be 15 times higher than that of the general population or why this tribe and others suffer an unusually high incidence of gallbladder diseases.

This group represents a stable and cooperative population well-suited to epidemiological and clinical research.

Now, NIAMD’s recently established Clinical Research Section is employing the fifth floor research facilities at the Phoenix Indian Medical Center to intensify research with patients.

Useful Nutrition Guide Establishes Standard Terminology for Indexing

A recently issued publication, A Guide to Nutrition Terminology for Indexing and Retrieval, establishes standard terms for this complex field.

The book was prepared under a contract with Vanderbilt University awarded by the National Institute of Child Health and Human Development and the National Institute of Arthritis and Metabolic Diseases. It includes information on subjects traditionally related to nutrition and also is concerned with behavioral and social results of malnutrition.

A few single free copies are available to persons working in the nutrition field through the NICHD Information Office.


Crowds begin to gather for ceremonies dedicating the Phoenix Medical Center. Fountain (right foreground) incorporates Indian symbols from tribes served by the hospital. Winds revolve panels on central staff.
Dr. Wineman to Assist Bioengineering Aspects of NIAMD's Program

Dr. Wineman has been instrumental in innovating a number of processes and in product developments that have led to the award of 26 patents.

Appointment of Dr. Robert J. Wineman to the position of assistant chief of the Artificial Kidney Program, National Institute of Arthritis and Metabolic Diseases, was recently announced.

Dr. Wineman will coordinate the research and development contracts of NIAMD's Artificial Kidney-Chronic Uremia Program with emphasis on bioengineering aspects.

Until his present appointment, he was Director, Biomedical Research Laboratories, American Hospital Supply Corporation, Everett, Mass.

Earlier Dr. Wineman was employed, from 1949 to 1969, by the Monsanto Company where he held various positions in research, the latest as Director, Technical Operations, Boston Laboratory, New Enterprise Division.

Dr. Wineman was awarded the B.A. degree from Williams College, the M.S. degree in Organic Chemistry from the University of Michigan, and his Ph.D. degree in Organic Chemistry from Harvard University.

He attended Princeton University and the Massachusetts Institute of Technology while serving in World War II as an aircraft electronics officer, U.S. Navy.

His training also included studies in research and development administration at Northeastern University and M.I.T.

Shubik and Gilmore Appointed To Nat'l Advisory Cancer Council

Two new members have been named to 4-year terms on the National Advisory Cancer Council.

The appointees are Dr. Philippe Shubik, Director of the Eppley Institute for Research into Cancer, University of Nebraska, Omaha and James S. Gilmore, Jr., President of the Gilmore Broadcasting Corporation, Kalamazoo, Mich.

Dr. Shubik has spent over 20 years in research, particularly in the area of viral infections in nonhuman primates. His recent efforts have been concentrated in investigating the nature of tumors and viral infections in monkeys.

Dr. Gilmore has worked extensively in the field of medical research and administration, particularly in the areas of cancer and cardiovascular diseases.

On Dec. 15 Dr. John Folio (I), NIDR, received the grand prize of the Credit Union's Share Promotion Contest, a 23-inch color TV-stereo phonograph-AM/FM radio, from Herbert C. Christopher, President, CU. Also purchased by the Directors, A. Kenneth Akin, NINDS, won the second prize, a portable black and white TV, and Cecilia M. Conner, NIAMD, won the third prize portable cassette player.

Director of NINDS Projects Future Aids To Blind Persons Via Brain Stimulation

Development of aids for helping blind persons recognize basic outlines of objects, such as buildings or streets, is being explored, according to Dr. Edward F. MacNichol, NINDS Director.

Speaking to engineers at the 23rd Annual Conference on Engineering and Medicine and Biology last month, Dr. MacNichol evaluated the state of the art of this field.

He emphasized that extensive feasibility studies should first be made before construction and implantation of a practical device is undertaken.

To accomplish this, he said, NINDS has awarded five contracts to determine the best way to stimulate the brain, whether prolonged continuous electrical stimulation will damage the brain, and whether the brain will tolerate the implanted materials and vice-versa.

Experiments using laboratory animals with human volunteers undergoing brain surgery for tumors and other diseases are already under way. An NINDS committee will review the findings.

Dr. MacNichol predicted that perhaps in the very distant future it may be possible to implant embryonic retinas in the eye cup so that they will grow and develop functional connections with the brain.

He based this on studies indicating that some cold-blooded vertebrates have been shown to accept an implanted retina which then forms functional connections with the optic cortex.

Current research is concentrated in two main approaches for designing greatly improved prosthetic devices.

One involves tactile stimulation—projection of images on a person's skin via light sensors. The other involves direct stimulation of certain parts of the brain by implanted electrodes, which would be stimulated in a pattern representing the object being looked at.

Dr. MacNichol reviewed some preliminary successes by researchers using these techniques, and told the engineers that development of devices for directly stimulating the brain, impractical only a few years ago because equipment was not sophisticated or refined, is now quite feasible.

"Modern engineering has developed TV cameras which occupy only a few cubic inches, and tiny integrated electronic circuits occupying less than one thousandth the space and much less power than the transistor devices of only 10 years ago.

"The construction of any array of up to 5,000 stimulating electrodes and the necessary circuits for switching them in sequence in a form that can be implanted completely within the head, though difficult appears to be entirely feasible," he said.

Team of 6 Veterinarians At New England Center Receive Research Award

Six veterinarians from the New England Research Center, supported by the Division of Research Resources, received the highest scientific award of the American Association for Laboratory Animal Science at the association's recent annual convention in Chicago.

The AALAS Research Award was presented to the team for work which is believed to have produced the first experimental model of virus-induced lymphoma in primates.

The team of Drs. Luis V. Melendez, Ronald D. Hunt, Muthiah D. Daniel, Felix G. Garcia, C.E.O. Fraser, and Norval W. King, Jr., reported their work in a paper entitled "Herpesvirus Saimiri. I. Further Characterization Studies of a New Virus from the Squirrel Monkey. II. Experimentally Induced Malignant Lymphoma in Primates."

The paper was published in the AALAS journal, Laboratory Animal Care in 1969.

Since 1964 all six scientists have pursued studies concerning natural viral infections in nonhuman primates as a team.

Their geographic background is quite diverse: Dr. Melendez is a native of Chile; Dr. Daniel, a native of Ceylon; Dr. Fraser, from Guiana; Dr. Garcia, Cuba; Dr. Hunt, from California, and Dr. King from Maryland.

Let others predict what will happen in 1971. We're still trying to figure out what happened in 1970.

—Changing Times.

James E. Pierce Named NHLI Personnel Officer

James E. Pierce, Jr., has been appointed as personnel officer to the National Heart and Lung Institute. He has been employed by NIH since 1961, first as a chemist in the intramural research programs of NIAMD and NICHD until 1966, when he entered the Management Intern Program. From 1967 until he accepted his present post, he was a Personnel Management and Employee Relations Specialist in the Office of Administrative Management.

Mr. Pierce received his B.S. degree from the Hampton Institute in 1949 and a diploma from the Century College of Medical Technology, Chicago, in 1950.

He was subsequently employed as a medical technologist at the Mount Sinai Hospital, Chicago, and with the Kaiser Foundation Hospitals, Oakland.

Later he served as an associate in Health Education with the Pittsburgh City Health Department.

Awarded M.P.H. Degree

In 1955 Mr. Pierce entered North Carolina College, where he was awarded his M.P.H. degree in 1957.

Prior to joining NIH, he was employed as a medical technologist at the George Washington University Hospital.

Mr. Pierce's affiliations include the Registry of American Medical Technologists, American Public Health Association, and the Society for Personnel Administration.