the NIH Record

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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NATIONAL INSTITUTES OF HEALTH

NCI To Collect, Analyze Case Records of Cancer Patients Using Laetrile

The National Cancer Institute is beginning a nationwide collection of case records from cancer patients who believe they have benefited from Laetrile therapy, according to a recent announcement by Dr. Guy R. Newell, deputy director of NCI.

The records will be analyzed in an attempt to document anticancer responses to Laetrile with or without "metabolic therapy" (the use of special diet, vitamins, enzymes, and chelating agents). NCI will use the data to decide whether controlled studies of Laetrile therapy should be undertaken.

Laetrile, an extract derived from apricot seeds, has been promoted widely as an effective anticancer agent. The compound has been introduced into clinical practice in the United States, Mexico, and abroad. It is estimated that 75,000 Americans now use the drug for the prevention or treatment of cancer.

The NCI began animal tests of Laetrile in 1957 and has continued to screen the substance for anti-

(See LAETRILE RECORDS, Page 9)

NIH Wins Three Awards In STC Annual Competition

Two NIH publications were honored at the Society for Technical Communication, D.C. chapter, awards luncheon on Jan. 17 at the Bolling AFB Officers Club.

The NIH Record received a dual honor. Two separate issues—one submitted by Heather Banks, the *Record's* associate editor, the other, by Frances W. Davis, *Record* editor—each won top honors, Awards of Distinction, in the House Organ category.

Also, an Award of Excellence was presented for the NHLBI's publication, *Detection, Evaluation, and Treatment of High Blood Pressure* in the Reports category.

It was prepared by the National High Blood Pressure Education Program staff.

Dr. Cornblath Appointed Special Ass't at NICHD

Dr. Cornblath is co-author of a monograph on disorders of carbohydrate metabolism in infancy, and a member of the editorial board of the American Journal of Diseases of Children.

Dr. Marvin Cornblath has been appointed to a 2-year term as special assistant to Dr. James Sidbury, scientific director of the National Institute of Child Health and Human Development.

He is on detail from the University of Maryland School of Medicine, where he has been chairman of the pediatrics department since 1968.

At NICHD, Dr. Cornblath, a specialist in carbohydrate metabolism, will develop intramural research programs in the diagnosis, treatment, and mechanisms of infant and childhood diseases.

These include endocrine disorders, inborn errors of metabolism, and congenital malformations, as well as the effects of maternal conditions such as diabetes and drug addiction on the developing fetus.

Dr. Cornblath will also assist Dr. Sidbury in directing the Institute's clinical research programs.

A graduate of the Washington University School of Medicine, St. Louis, Mo., Dr. Cornblath has held positions in neonatal and pediatric medicine at hospitals in St. Louis, Chicago, and Baltimore, and academic appointments at the medical schools of Johns Hopkins University, the University of Illinois, Northwestern University, and Washington University.

He has published more than 100 scientific articles.

Medical College of Virginia Researchers Find Way to Eliminate Kepone From Body

A way to greatly speed up elimination of the pesticide Kepone from the body has been found by clinical researchers at the Medical College of Virginia, Richmond, according to an article in the February edition of the *New England Journal of Medicine.*

Dr. Philip S. Guzelian led the research team which conducted the clinical trial at the General Clinical Research Center of the Medical College of Virginia.

The Center is one of 83 such units funded by the Division of Research Resources. This miniature research hospital within the larger medical center provides highly specialized patient-centered research facilities to the entire Medical College staff.

The clinical trial involved 22 former workers at a now-closed Hopewell, Va., plant which manufactured Kepone. The workers who absorbed the pesticide developed manifestations of toxicity in several organs, including nervous system disorders, mild liver problems, and decreased sperm production.

In addition to these human manifestations, the pesticide also has produced tumors in rodents.

Under normal conditions, the pesticide is eliminated very slowly from the body, meaning the workers would suffer the effects of Kepone poisoning for an extended period of time and prolong their exposure to the possible carcinogen.

Lowers Cholesterol Level

During the clinical trial, Dr. Guzelian's group treated the workers with the drug cholestyramine, an agent often used to help lower cholesterol levels in the blood. The cholestyramine helped increase the fecal elimination of Kepone from the body sevenfold, meaning that the Kepone stored in body tissue was eliminated much faster than normal.

Dr. Guzelian peers through a maze of tubing, part of a chamber which measured Kepone elimination in animals. The animal experiments preceded human Kepone detoxification studies.

The research team concluded that cholestyramine offers a practical means for Kepone detoxification.

The clinical trial used the double-blind approach. Patients participating in the research were divided into two groups—one that received cholestyramine and another that received a placebo. Neither the researchers nor the patients knew who was actually receiving the drug.

Drug Action Described

"What we found," says Dr. Guzelian, "is that only about 10 percent of the Kepone entering the intestine in the form of bile from the liver is eliminated in the patients' stools. The other 90 percent of the Kepone is reabsorbed in the bloodstream where it once again enters the liver and returns to the intestine.

"We found that cholestyramine stimulated the elimination of Kepone by binding it in the intestine to prevent its reabsorption into the bloodstream.

"Preventing this reabsorption ac-

(See KEPONE STUDY, Page 10)

THIRTY YEARS 1948-1978 National Heart, Lung, and Blood Institute

See NHLBI, pp. 5-8

the NIH Record

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Cosette J. Shull, a chemist in the NIEHS Laboratory of Pharmacology, recently received an award for her special achievements in Equal Employment Opportunity from NIEHS Director Dr. David P. Rall. Over the past 2 years Ms. Shull has served as the Federal Women's Program Coordinator on a collateral duty basis at NIEHS and has demonstrated superior leadership in increasing participation of Institute staff in the Federal Women's Program at all levels of management.

Madrigal Singers To Offer A Varied Musical Program

The NIH Madrigal Singers will present a musical program for Clinical Center patients on Feb. 21 at 7:30 p.m. in the 14th floor auditorium.

The group recreates songs from the 16th, 17th, and 18th centuries as well as modern works.

The program is open to CC patients, their families and guests, and all interested NIH employees.

NIH Women's Golf Ass'n Invites 'All' Interested To Feb. 21 Meeting

All NIH'ers, *both men and women*, interested in playing golf in 1978 are invited to join the NIH R&W Women's Golf Association at the organizational meeting which will be held on Tuesday, Feb. 21, from noon to 1 p.m., in Bldg. 31-A, Conference Room 4.

The Association provides activities for golfers with all degrees of skill, from beginners to scratch handicappers.

Nine-hole matches are scheduled after hours at the Falls Road Golf Course. In addition, the Association sponsors the Betty Sanders Spring Outing, a Spring Golf Weekend, and one or more summer outings.

New members, especially, are urged to attend as are present members who want to participate in the Sanders Outing and the Spring Weekend.

Women may also join the NIH R&W Men's Golf Association. For information, call Ralph Stork, Association president, 496-6893.

Sailing Club Meeting Features Talk by Bay Environmentalist

The February meeting of the NIH Sailing Club will feature William Burgess of the Maryland Water Resources Administration, who will talk on Environmental Protection of the Chesapeake Bay.

The meeting will be held Thursday, Feb. 23, at 8 p.m. in Bldg. 30, Room 117. Everyone is welcome.

Advice is judged by results, not by intentions.—*Cicero*

Five NICHD employees recently received awards for outstanding contributions to NIH and NICHD EEO programs. NIH Merit Award recipients are: John Smart (l) and Jehu Hunter (r). NICHD EEO Award recipients are: Grant Coffman (second from l), Yvonne DuBuy (third from l), and Gordon Guroff (not in photo).

NIH Visiting Scientists Program Participants

1/3—Dr. Amy Davis, Hong Kong, Biometry Branch. Sponsor: Dr. David Hoel, NIEHS, Research Triangle Park, N.C.

1/4—Dr. Masahiko Negishi, Japan, Developmental Pharmacology Branch. Sponsor: Dr. Daniel Nebert, NICHD, Bg. 10, Rm. 13N234.

1/12—Dr. John Radcliffe, United Kingdom, Laboratory of Pathophysiology. Sponsor: Dr. S. D. Morrison, NCI, Bg. 10, Rm. B1B23.

1/13—Dr. Bronislaw Tyran, Laboratory of Immunology. Sponsor: Dr. Myron Waxdal, NIAID, Bg. 10, Rm. 11N260.

1/15—Dr. Carl Bernoulli, Switzerland, Laboratory of Central Nervous System Studies. Sponsor: Dr. Carleton Gajdusek, NINCDS, Bg. 36, Rm. 5B25.

1/15—Dr. Takahiko Iguchi, Japan, Laboratory of Experimental Neurology. Sponsor: Dr. William Caveness, NINCDS, Bg. 36, Rm. 4A27.

1/17—Dr. Harry Langbeheim, Switzerland, Laboratory of Tumor Virus Genetics. Sponsor: Dr. Edward Scolnick, NCI, Bg. 37, Rm. 1B17.

1/23—Dr. Hiroshi Mizusawa, Japan, Chemistry Branch. Sponsor: Dr. T. Kakefuda, NCI, Bg. 37, Rm. 3C12.

1/24—Dr. Marianne Nordqvist, Sweden, Laboratory of Chemistry. Sponsor: Dr. Donald Jerina, NIAMDD, Bg. 4, Rm. 214.

1/24—Dr. Kamaraju Sundar, India, Laboratory of Viral Carcinogenesis. Sponsor: Dr. George Todaro, NCI, Bg. 37, Rm. 1B28.

OMS Offering Employees Colon-Rectum Cancer Test

A simple test to detect colon-rectum cancer is being offered employees by the NIH Occupational Medical Service.

A test kit consists of hemoccult slides—3 sets of cardboard-enclosed, guaiac-impregnated slips of paper on which the employee smears a thin film of stool using a small wooden applicator.

After three separate collections from consecutive bowel movements, the slides are submitted to the OMS for developing.

Employees are notified by mail of the test results.

Positive tests will be repeated after a simple dietary modification to rule out possible food-related effects. If the test again is positive, the employee is referred to his/her physician for further evaluation.

This test is not designed to replace routine medical evaluation and screening, but rather to complement it.

For further information, call OMS, 496-3164.

Dr. Stephen M. Weiss of NHLBI has been elected 1978 program chairman and 1979 chairperson of the Health Research Section, Division of Psychologists in Public Service, American Psychological Association. He will be responsible for the program at the APA's national meeting in Toronto in August.

Chief of Conf. Services Mary C. Meyer Retires

"What will we do without you?" asked NIH Director Dr. Donald S. Fredrickson, echoing the thoughts of thousands who have benefited from the services of Mary C. Meyer, retiring after 34½ years in the PHS.

In 1962 she was named manager of the newly established Conference Services Unit, then in the office of the NIH Deputy Director.

When the C Wing conference rooms in Bldg. 31 opened in 1969, Mrs. Meyer moved her scene of operations there from Stone House.

Mrs. Meyer came to NIH in 1947 as a secretary in the Microbiological Institute, a forerunner of the National Institute of Allergy and Infectious Diseases. In 1948 she became secretary to Dr. H. Trendley Dean, then Director of the National Institute of Dental Research.

Served Three NIH Directors

She served as secretary to NIH Director Dr. Rolla E. Dyer and as administrative assistant to NIH Directors Dr. William H. Sebrell, Jr., and Dr. James A. Shannon.

As chief of the Conference Services Section, now part of the Travel and Administrative Services Branch, DAS, OD, Mrs. Meyer and her assistants keep track of

Mrs. Meyer enjoys the farewell bouquet sent to her in appreciation by the National Cancer Advisory Board.

arrangements for 800 to 1,000 meetings per year: Advisory Councils, Study Sections, Training Committees, and many other conferences and seminars.

51,000 Attend Meetings

It's a big job—last year, for instance, about 51,000 people attended these meetings, including more than 17,700 consultants and more than 27,300 NIH staff personnel.

All those figures add up to a lot of phone calls and frequent last-minute changes when conferences run longer than expected or weather conditions change travel plans.

There are endless details and numerous requirements to consider: the need for simultaneous translation at some conferences, special AV requirements for others, taping and transcription of many meetings.

Through it all, the Conference Section staff remains organized, calm, and hospitable—and the coffee urns and teapots are always hot, the cookie and candy dishes always kept filled, ready for the conference coffee breaks.

Farewell Party Held

A farewell party in Mrs. Meyer's honor was held Jan. 18 at the Navy Officers Club. NIH friends presented her with a painting of the Maryland Capitol dome in Annapolis—she was born in a home nearby.

Her husband, Sidney Meyer, is also retiring from his job as a district sales manager for a company headquartered in North Carolina.

The Meyers will soon depart on a trip to Europe, the gift of her three sons: the Honorable James R. Miller, a Federal judge in Baltimore; Frederick D. Miller, an architect; and Thomas C. Miller, a mortgage and investment broker.

Mrs. Meyer is especially looking forward to one aspect of the trip and her retirement: "Someone else is going to make the afternoon tea and cookies for *me*!"

Volunteer Blood Donors Needed for HLA Testing

The Bureau of Biologics of the Food and Drug Administration has a Histocompatibility (HLA) Testing Laboratory at NIH, Bldg. 29, Room 232.

Healthy volunteers are requested to donate 20 to 50 ml of whole blood for control and research activities of this laboratory. The blood will be used for tissue typing and serum testing.

HLA typing results will be provided to each volunteer on request, free of charge.

Results Are Free

Results of histocompatibility testing are clinically useful if an individual needs a tissue transplant, a white cell transfusion, or is susceptible to developing spondylitic (arthritic) disease.

To participate in either program, call Linda Pelleu or Elmer Martino, 496-4038, or Dr. Kamal K. Mittal, 496-5200, between 2 and 4 p.m.

Special Science Tools Will Be Demonstrated For All at CC Feb. 15

All NIH'ers and their colleagues, as well as visitors from the American Association for the Advancement of Science annual meeting, are invited to attend special demonstrations of recent developments in instrumentation for today's sophisticated biomedical research requirements on Wednesday, Feb. 15, from 1 to 4:30 p.m. in the Clinical Center's 14th Floor Auditorium.

At the invitation of the AAAS, which is meeting in Washington, D.C., Feb. 12-17, NIH is participating in the "celebration" of a Tools for Science program.

Computer Applications Featured

A tour has been arranged for AAAS members on the morning of Feb. 15 starting at the NIH Visitors Center. It will include a visit to the Clinical Center with stops to speak with scientists in the nuclear medicine department and blood banking, viewing a computer-created movie for diagnosis of heart problems, and a visit to the National Library of Medicine.

Selected applications which show the use of computers as a tool of science will be incorporated in the afternoon demonstrations. Also, NIH glassblowers will show the role they play in adapting their art to modern laboratory needs.

Several B/I/D's are demonstrating their newest instruments at the CC, and NIH has an exhibit of its Tools for Science at the Sheraton Park Hotel in Washington, D.C.

National Children's Dental Health Week

Sponsored by the American Dental Association

Sylvia Shaffer Is Named As Scientific and Health Reports Chief, NINCDS

A 1961 graduate of Marquette University, Milwaukee, Wis., Miss Shaffer is currently working on a master's degree in public relations at American University. She is a member of the International Association of Business Communicators.

Sylvia Shaffer has been appointed chief of the Office of Scientific and Health Reports, National Institute of Neurological and Communicative Disorders and Stroke.

In her new position, Miss Shaffer will be the chief advisor for public affairs to NINCDS Director Dr. Donald B. Tower, and will plan and coordinate the Institute's public and scientific information activities.

Miss Shaffer comes to NIH from the Bureau of Medicine and Surgery, Department of the Navy, where since 1975 she has been public information officer, serving both as public affairs counsel to the Navy Surgeon General and as Medical Department liaison with the Office of Chief of Information, Department of the Navy.

Worked With Navy

In that position, Miss Shaffer established a public affairs program for the Navy Medical Department, and coordinated responses on the effect of Navy medical manpower policies which recently received national exposure on the CBS program, *Sixty Minutes*.

From 1973 to 1975, she served as managing editor and then as editor of *U.S. Navy Medicine*, the official publication of the Bureau of Medicine and Surgery. During this same period she initiated a series of radio interviews with Medical Department members on health care topics.

Began With USAF

Miss Shaffer began her career in military medicine reporting with the United States Air Force, Office of the Surgeon General. From 1969 to 1973, she wrote extensively on all aspects of Air Force medicine, and edited the *USAF Medical Service Digest*.

Cornwall, Howard, Mullineaux Retire With 100 Years Combined Gov't Service

Mr. Cornwall

Mr. Howard

Mr. Mullineaux

George W. Cornwall, Clinton G. Howard, and Joseph D. Mullineaux—with a combined some 100 years of Government service, 82 of them at NIH—recently retired from the Planning and Control Section, Plant Engineering Branch, Division of Engineering Services.

Mr. Cornwall started his 35 years of Government service with the U.S. Army in 1942, serving 9 months overseas in France. Later, he worked in a civilian capacity at Fort Devens, Mass., and at the Veterans Administration in D.C.

In 1947, Mr. Cornwall came to work at NIH in Bldg. 1, and remained here until his retirement on Dec. 30, 1977. For the past 14 years he was a purchasing agent in DES.

Mr. Howard's Government service began with the Navy Department in 1940. In 1953 he transferred to NIH's Plant Engineering Branch, DES.

His most recent assignment was as a tool and parts attendant in the Shop Stores Unit of the Planning and Control Section, PEB. His Government service totalled 32 years.

Mr. Mullineaux joined the War Department in 1942. Seven years later he came to work for NIAMD, transferring to PEB in 1953. There he served in various capacities, including as a foreman in the carpenter shop until his retirement on Jan. 6, 1978.

His most recent assignment, since 1969, was as a planner-estimator in the Planning and Control Section.

New Illinois U. Center To Coordinate Clinical Sickle Cell Disease Data

A statistical coordinating center for a nationwide cooperative study of the clinical course—newborns to adults—of sickle cell disease has been funded by NIH at the University of Illinois at the Medical Center, Chicago.

The center, which will be under the direction of the School of Public Health's biometry program, will receive a grant of almost $1 million for the first 5 years of the 8-year study plan.

Determine Factors

The study's objectives are to identify those factors which are determinants of the clinical course of sickle cell disease, including predictors of risk which influence morbidity and mortality and to identify methods of intervention which might positively affect the course of this disease.

The center will coordinate all functions of the study plan, including the activities of 16 participating clinical centers. These centers will be sending the study data they collect for processing and evaluation.

In addition, the statistical coordinating center will train personnel of the clinical centers in the collection of reliable valid data.

The center will also provide opportunities for graduate students in the biometry program to gain experience in a large scale cooperative study.

New Report Describes US-USSR Agreements In Cardiovascular Area

A report on the *US-USSR Exchange in the Cardiovascular Area, 1972-1977*, (DHEW Publication No. NIH 78-1423), was recently issued by the National Heart, Lung, and Blood Institute.

This new publication describes US-USSR health exchange agreements that have, over the last 5 years, created new possibilities for American and Soviet scientists to work together on important health problems, and to jointly develop strategies for current and future research.

Six Areas Already Designated

Researchers from both countries are already working on six cardiovascular problem areas designated in the agreements signed in 1972 and 1974: Pathogenesis of Arteriosclerosis; Management of Ischemic Heart Disease; Myocardial Metabolism; Congenital Heart Disease; Sudden Death; and Blood Transfusion.

The two countries are also collaborating on work in the field of Artificial Heart Research and Development.

This report discusses the exchange program's specific achievements and summarizes progress made during the first 5 years of collaborative studies.

In addition, improvements brought about by the agreements, such as the exchange of scientific information, scientists and delegations, an understanding of the state of the art and available medical resources in both countries and, most importantly, contributions toward better understanding between the peoples of the US and USSR, are also described in detail.

Single copies of the 101-page publication are available from the Public Inquiries and Reports Branch, NHLBI, Bethesda, Md. 20014.

NIH Research Contracts Committee Holds Second Annual Retreat in Jan.

Major new initiatives mandated by HEW Secretary Joseph A. Califano, Jr., to improve contract administration procedures constituted one of the themes at the Second Annual Retreat of the NIH Research Contracts Committee.

Approximately 70 senior contracting officers, specialists, and guests attended the Retreat, held Jan. 9, 10, and 11 at Reston Virginia's Sheraton International Inn and Conference Center.

Lester Fettig, Director of the Office of Federal Procurement Policy in the Office of Management and Budget, noted in his keynote speech the progress made in recent years toward professionalism in the contracting function.

Other speakers and panelists on the first day included General Michael J. Tashjian (USAF, Ret.), Director, Procurement and Contracts Management Directorate, Department of Energy; NIH Associate Director for Administration Leon Schwartz; and NIH Director of Personnel Edward E. Nicholas, Jr.

On the second day, Jerry Vance and Murray Weinstein of HEW described newer policies intended to strengthen contract administration.

Dr. Jacobs Chairs Panel

A panel chaired by Dr. Leon Jacobs, NIH Associate Director for Collaborative Research, outlined steps taken by R&D administrators to improve and speed up the processes of contract project initiation, review, and administration at NIH.

Other panelists included: Dr. Saul Schepartz, DCT, NCI; Dr. Jerome Green, NHLBI; Dr. John F. Goggins, NIDR; and Dr. Robert J. Byrne, NIAID.

William Mathis, Director of the Division of Contracts Management, Environmental Protection Agency, spoke at dinner the second evening.

Other topics included the administration of contracts involving clinical trials, and recent decisions of the Comptroller General affecting Research and Development contracting methods—the latter discussed by Ron Wartow, Senior Attorney, GAO.

Carl A. Fretts, Director, Division of Contracts and Grants, NIH, who is also chairman of the NIH Research Contracts Committee, summarized the program in closing remarks.

American Indian Students Will Receive Training For Doctorate Studies

The University of Minnesota School of Medicine, Duluth, has been awarded a first-year Federal grant to begin a new program of training for undergraduate American Indian students who wish to prepare for graduate studies leading to the doctorate degree (Ph.D.) and careers in biomedical research and teaching.

The Honors Undergraduate Training Grant was recently initiated by the Minority Access to Research Careers Program of the National Institute of General Medical Sciences to improve opportunities for minority students to achieve careers in the health sciences.

Institutions eligible for the awards are the Nation's 4-year undergraduate colleges and universities in which student enrollments are drawn substantially from ethnic minority groups known to be underrepresented in the health sciences.

These minorities currently include Blacks, Hawaiians, Mexican Americans, and Puerto Ricans, as well as American Indians.

The award to the medical school in Duluth is the first to be devoted primarily to biomedical research training for American Indian students.

The Duluth program will accommodate four students the first year and eight each year thereafter. The initial period of support will continue for 5 years.

3rd GMAC Workshop Held

The NIH Grants Management Advisory Committee held a workshop at Airlie House, Warrenton, Va., on Nov. 30 to Dec. 2, 1977, for its members and key support staff of the organizational components they represent.

Steven C. Bernard, chairman of the GMAC, pointed out that this—the third such workshop for NIH's grants management community—was being held after an 8-year hiatus.

NHLBI Celebrates 30 Years of Research Progress

Institute Reviews Growth in Programs, Improved Disease Prevention, Treatment

Since the National Heart Institute was established in 1948, its congressional appropriations have grown from less than $10 million to more than $400 million a year. Its outlays over this period have totalled more than $3 billion.

This money has supported thousands of research projects, assisted the training of thousands of research workers and clinicians, and funded the establishment and operations of a wide variety of research and clinical facilities.

These investments have vastly increased the store of fundamental and clinical knowledge about the cardiovascular system and its diseases and have stimulated the application of pertinent new findings toward reducing morbidity and mortality from cardiovascular disorders.

New or improved methods of prevention, diagnosis, and treatment that were developed, refined, and/or evaluated with Institute assistance have contributed importantly to the 30 percent decline in mortality rates for cardiovascular diseases that, in most CVD categories, has continued steadily since 1950.

Mortality Rates Decline Since 1950

Mortality rates for hypertension and hypertensive heart disease have fallen by 80 percent since 1950, thanks mainly to the development and application of a variety of effective drugs for blood pressure control.

Improved medical management of hypertension has also been an important factor in declining mortality rates for stroke—down 38 percent since 1950—and for congestive heart failure.

Since 1950, mortality rates for rheumatic fever and rheumatic heart disease have decreased by 66 percent.

The Institute participated in the support of programs demonstrating the effectiveness of prompt detection and treatment of strep infections and of continuous antibiotic protection for the highly susceptible in the prevention of rheumatic fever.

It also supported research that has improved the management of cardiac inflammation resulting from the disease as well as the development of surgical procedures, heart-lung machines and other life-support techniques, and artificial valves that make possible the repair of permanent heart damage inflicted by rheumatic fever.

Similarly, improved diagnostic and surgical procedures, many of them developed with the aid of Institute funds, have made possible the correction or palliation of most types of congenital heart defects. These have been instrumental in bringing about the 34 percent reduction in mortality rates for congenital heart disease since 1950.

From 1950 until 1955, mortality rates for coronary heart disease—the leading killer among the cardiovascular disorders—had continued to increase. But then they levelled off and, since 1968, have declined by about 20 percent. *(Continued on Page 6)*

30th Anniversary Celebration on Feb. 7 and 8 Marks Progress Against Cardiovascular Disease

The National Heart, Lung, and Blood Institute and the American Heart Association will celebrate their anniversary on Feb. 8 and 9 in Washington, D.C.—the first of several events to be held during 1978 marking 30 years of scientific and clinical progress against the cardiovascular diseases.

The highlight of the first day's activities at the Washington Hilton will be a Report to the Nation on Progress Toward Prevention of Cardiovascular Disease featuring presentations on current approaches to prevention and on the stimulation and support of cardiovascular research.

A half-hour film report will describe some major advances in specific CVD areas over the past 30 years.

On the second day, the program in the Masur Auditorium will be directed primarily to physicians and scientists and feature a series of discussions by eminent scientists on the theme, Current Horizons in Atherosclerosis and Hypertension.

These will feature research on causation, mechanisms, instrumentation, medical and surgical techniques, and rehabilitation that have contributed to prevention or more effective clinical management of these diseases.

First home of the new Institute was Bldg. T-6. The site is now occupied by the B and C wings of Bldg. 31 and the 31-D parking area.

The Institute's Directors have been (l to r, top): Dr. Cassius James Van Slyke (1948-52), Dr. James Watt (1952-61), Dr. Ralph E. Knutti (1961-65), Dr. William H. Stewart (1965). L to r, bottom: Dr. Robert P. Grant (1966), Dr. Donald S. Fredrickson (1966-68), Dr. Theodore Cooper (1968-74), and Dr. Robert I. Levy (1975 to the present).

NHLBI, AHA Have Common Goals

In 1948 the National Heart Act created a new Federal agency, the National Heart Institute, to establish, administer, and coordinate federally supported research, training, and control programs in cardiovascular diseases.

That same year, the American Heart Association, formerly a small professional society, was organized as a voluntary health agency that now boasts hundreds of state and local chapters and affiliates throughout the Nation.

It has also served as model and advisor for the establishment of heart associations in a number of foreign countries.

For 30 years the two organizations—one supported by tax dollars, the other by voluntary contributions—have worked closely together toward a common goal: the reduction of illness, disability, and premature death from cardiovascular diseases.

THIRTY YEARS
1948-1978
National Heart, Lung, and Blood Institute

Selected NHLBI R

During the 1960's the Coronary Care Unit has substantially improved survival rates among patients hospitalized with heart attacks through advances in techniques for continuous monitoring, improved resuscitation procedures, and a more aggressive therapeutic approach to the prevention and control of disturbances of heart rhythm (arrhythmias) and other complications developing in the wake of the acute attack. Mapping and quantitating the area of affected heart muscle with multiple electrocardiographic wires (such as on the chest of the patient shown above), and using accurate new enzymatic tests and scanning procedures, teams of scientists are finding that the fate of the stricken muscle segment hangs on a balance of myocardial oxygen supply and demand which can be favorably influenced for hours after the onset of a heart attack.

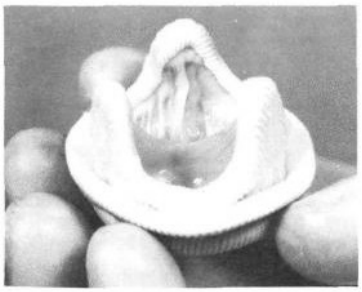
Classic Concepts Challenged

Findings reported in 1957 by NHLBI scientists challenged classic concepts of heart action in health and disease, and provided a valuable index of heart performance.

They found that the tension developed by the fibers of the heart muscle at each beat—not the amount of blood it pumps or the length of the muscle fibers—governs its demands on the coronary blood supply for oxygen.

This finding, and the resulting time/tension index (TTI) of heart performance, were made possible through the group's development of a better way to keep an isolated animal heart alive and performing normally.

In 1960, Dr. Nina Starr Braunwald of the Surgery Branch reported the first clinical success in replacing a patient's diseased mitral valve with an artificial prosthesis that is anatomically similar to a normal mitral valve. Dr. Braunwald was the first woman to be certified by the American Board of Thoracic surgery and was then the only U.S. woman doing open-heart surgery.



Recent studies conducted in the NHLBI's Surgery Branch indicate that heart valves obtained from pigs are often superior to artificial valves for replacing heart valves heavily damaged by rheumatic fever. The pig valves are fixed in gluteraldehyde and mounted on fabric-covered frames prior to clinical use.

First Artificial Heart Valve

The first successful use of an artificial valve in the human circulatory system was reported in 1952 by an NHLBI grantee, Dr. Charles Hufnagel. This original Hufnagel valve, a clear tube of lucite housing a ball of the same hard plastic, was used in the treatment of aortic regurgitation.

It was installed in the descending aorta rather than as a replacement for the diseased aortic valve. While it did not cure the condition, the valve did reduce adverse effects on the heart and circulation and paved the way for the subsequent development of the wide variety of artificial valves in use today for the relief of valvular heart disease.

Genius does what it must, and talent does what it can.—*E.R. Bulwer-Lytton*

Extracorporeal Circulation

In 1953 the first successful heart-lung machine maintained heart and pulmonary function during open-heart surgery. This device used by Dr. John Gibbon of Philadelphia oxygenated the blood by filming it over stainless steel screens in an oxygen atmosphere.

The first heart-lung machine to prove consistently satisfactory for open-heart surgery was developed with NHLBI grant aid by Dr. C. Walton Lillehei and associates at the University of Minnesota. This machine incorporated a disposable bubble oxygenator in which the blood was recharged by diffusion from oxygen bubbles rising through it in a plastic chamber.

Many Machines Developed

The success of these pioneering advances stimulated the development of many highly efficient machines employing a variety of new pumping and oxygenating principles.

Machines combining higher flow rates, gentler blood handling characteristics, and heat exchangers for inducing hypothermia when indicated, have steadily increased the time that patients can be safely maintained on heart-lung bypass. As a result, surgeons can undertake the correction of complex or multiple heart defects.

Dr. Christian B. Anfinsen won the 1972 Nobel Prize in Chemistry for ribonuclease studies. At work on ribonuclease in 1958 are (l to r) chemist Juanita P. Cooke, Dr. Anfinsen, and student trainee Judy Wegeman.

Assess Coronary Risk

By identifying factors predisposing to the development of coronary heart disease, the Framingham Heart Disease Epidemiology Study has enabled the construction of a highly useful "coronary profile" which is helping physicians to identify highly susceptible individuals long before the disease produces clinical signs, and to initiate measures calculated to postpone its onset or perhaps prevent it altogether. This coronary profile was compiled over the course of two decades.

30-YEAR HISTORY OF NHLBI

(Continued from Page 5)

One factor in this decline has been the intensive coronary care unit. Now a fixture in most moderate to large sized hospitals, such units have dramatically reduced mortality among hospitalized heart attack patients.

Institute research has also defined various risk factors in the individual or his environment that increase vulnerability to premature coronary heart disease and has improved the diagnosis and treatment of various conditions—notably elevated blood lipids—that, if corrected, may prevent or delay the onset of clinical manifestations of the disease.

Information gained through these studies may also be influencing large numbers of people to modify their habits and modes of life for better cardiovascular health.

Since 1948 the Institute has undergone two name changes and several increases in its authority and responsibilities.

In 1966, it became responsible for surveying the Nation's blood resources and their utilization and for assuring an adequate supply of blood and blood products for present and foreseeable needs through improvements in technology relating to the acquisition, storage, distribution, and use of these products.

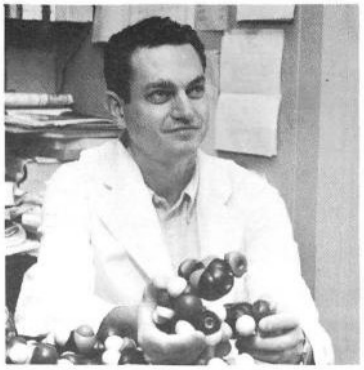
In 1969, the National Heart Institute was rechristened the National Heart and Lung Institute and became primarily responsible for Federal programs directed against lung diseases other than lung cancer and respiratory infections.

In 1972, the Institute was designated the prime mover and coordinator of an expanded and intensified national effort against cardiovascular, lung, and blood diseases to be called the National Heart, Blood Vessel, Lung, and Blood Program.

That same year it became responsible for coordinating a national program of activities to combat sickle cell disease and for administering the newly established National High Blood Pressure Education Program.

In 1976, the Institute's name was changed again, this time to the National Heart, Lung, and Blood Institute, with revised and expanded authority in the areas of blood diseases and resources.

esearch Highlights



Dr. Marshall W. Nirenberg is renowned for his work in cracking the genetic code. Here, about the time of his 1968 Nobel award, Dr. Nirenberg is holding parts of a DNA model. He was the first U.S. Government employed scientist to receive a Nobel prize.

Liver Microsomes Inactivate Drugs

NHLBI studies have shown that tiny structures called microsomes, located in the liver, are a major means by which the body inactivates drugs.

The microsomes contain enzyme systems that can change foreign compounds into forms which the kidney can excrete. Without them, the effects of many drugs might persist too long, with possibly harmful effects.

In fact, the prolonged action and high toxicity of many drugs in very young infants can often be attributed to incompletely developed microsomal enzyme systems during the very early days of life.

It has also been shown that certain drugs can speed up or retard the action of certain of these enzymes, and can thus prolong or shorten the action of subsequent doses of the same drug or other drugs.

Simple Diagnostic Test for Carcinoid Tumor

NHLBI studies of the serotonin metabolism of patients with malignant carcinoid led, in 1955, to the introduction by an NHLBI scientist of a simple urinary test for this tumor.

Malignant carcinoid, a tumor of intestinal serotonin-producing tissues, virtually unknown before 1954, was subsequently found to be relatively common as a result of the ingenious NHLBI diagnostic test.

The enormous oversecretion of serotonin by the tumor leads to increased urinary excretion of the serotonin metabolite, 5-hydroxyindoleacetic acid, which the diagnostic test detects.

First Practical Technique Of Heart Transplantation

The first practical technique of transplanting the heart and the one in widest use today was developed with NHLBI grant aid in 1959 by Drs. Lower, Stofer, and Shumway at Stanford.

This technique leaves in place a portion of the recipient's right and left atria. This greatly simplifies and shortens the transplant operation by eliminating the meticulous task of joining the pulmonary veins and vena cavae entering these chambers.

It also enhances the safety and reliability of heart transplantation by eliminating hazards of blood vessel distortion and clot formation at these venous junctions.

Greatly Reduce Hypertension Mortality

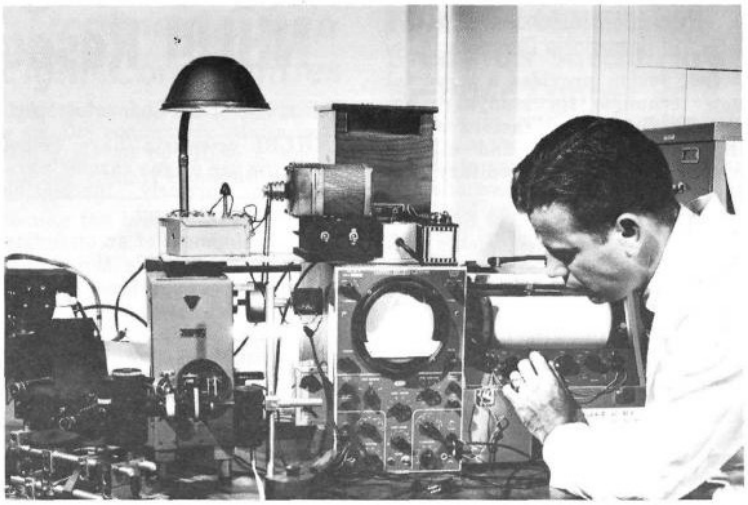
In the past decade there has been a reduction of about 80 percent in mortality from hypertension—a decline which has accelerated since 1971, when the Institute launched its High Blood Pressure Education Program.

The 80 percent decline is doubtless due in large measure to the development of a variety of drugs for controlling hypertension of all degrees of severity.

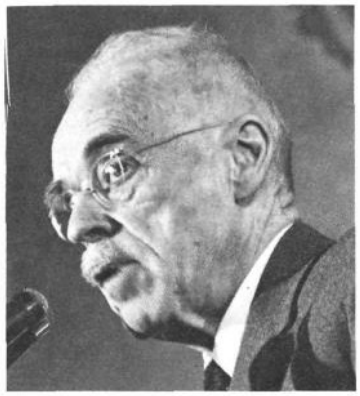
Most of the credit for developing these drugs belongs to the pharmaceutical industry; but NHLBI scientists have often been instrumental in testing and evaluating new agents.

Much pioneering work on enzyme inhibition as an approach to treatment was carried out in NHLBI, and its scientists were also the first to establish the value of alpha-methyl DOPA.

Dr. Frederic C. Bartter, chief of the NHLBI Hypertension-Endocrine Branch and an Institute staff scientist since 1953, is shown in the early 1950's operating an instrument he constructed for measuring the freezing point of liquids to one-thousandth of a degree. The instrument was used in studying the action of the posterior pituitary gland.



The spectrophotofluorometer reveals the presence of "hidden" substances in solutions that fluoresce in the invisible ultraviolet range of the light spectrum. Developed by the (then) NHI's Laboratory of Technical Development in 1955, the device is now in biomedical use worldwide.



The late Dr. Paul Dudley White, noted Boston cardiologist, helped plan and direct Federal programs of research and training in the cardiovascular field from the time that the Institute was first conceived. Dr. White was executive director of the newly formed National Advisory Heart Council and chief medical adviser to NHI from its inception in 1948 through 1955.

Identification of Five Different Hyperlipoproteinemias

NHLBI scientists reported in 1968 that electrophoretic analysis of blood lipoprotein patterns provides a simple low-cost method of detecting and classifying blood lipid disorders that is superior to conventional blood lipid determinations. By this method, they have been able to identify five distinct hyperlipoproteinemias often previously lumped together.

Symptoms Differ

The five disorders differ in the symptoms they produce, in the coronary heart disease risk they carry for the patient, and in their responsiveness to dietary and drug therapy. Effective treatment reduces elevated blood lipid levels and often brings about dramatic relief of symptoms.

First Artificial Cardiac Pacemaker

In 1952 repetitive electrical stimuli were first applied successfully in man to maintain rather than merely initiate, an effective, regular heart rhythm for prolonged periods of time.

An external pacemaker developed by Dr. Paul Zoll, an NHLBI grantee at Harvard Medical School, delivered pulses of electricity to the heart through the intact chest wall at a rate of 40 to 90 times per minute. Development has progressed through portable battery-powered pacemakers to completely implantable versions, and to nuclear-powered pacers.

Repetitive electrical stimulation of the heart with battery-powered, transistorized pacemakers has benefitted thousands of victims of complete heart block. The device shown, developed in 1957 at the University of Minnesota with the aid of Institute research grant funds, was the first truly portable pacemaker. It is strapped to the chest and connected to the heart by thin wire electrodes. This and other kinds of external pacemakers are still used for short-term or interim pacing of the heart, but have been superseded for long-term use by a variety of pacemakers, some nuclear-powered, that are completely implantable.

NHLBI Research Highlights

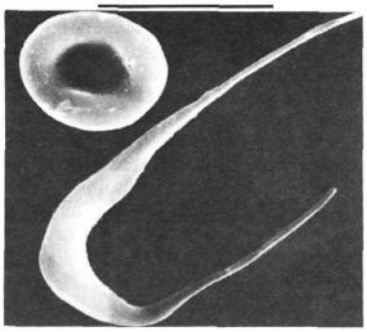
Hybrid Cells Advance Studies Of Hemoglobin Disorders

Cell fusion provides a powerful new technique for studying genetically determined factors affecting the occurrence and clinical course of various hereditary diseases.

NHLBI scientists have been employing it to study hemoglobin synthesis in Cooley's anemia, sickle cell disease, and other genetic diseases affecting the red blood cell.

By fusing hemoglobin-producing cells from different species (mouse x human, hamster x human, etc.) they produced cell hybrids containing various mixes of chromosomes and their associated DNA that were originally present in the parent cells.

From such experiments, the scientists have established that genes involved in the synthesis of the two protein chains of hemoglobin are located on different chromosomes; and that regulators from other chromosomes must be present if hemoglobin synthesis is to occur at all or if it is to proceed at normal rates.



Unusual photo of a sickled and a normal red blood cell was taken under the auspices of the Comprehensive Sickle Cell Center, University of Miami—a component of the National Sickle Cell Disease Program, coordinated by NHLBI.—Photo by Dr. Bruce R. Cameron.

Radionuclide Cineangiography

An effective and safe technique to identify coronary artery disease and its physiological effects on heart function has been developed by NHLBI scientists in collaboration with the Division of Computer Research and Technology and the Nuclear Medicine Department of the Clinical Center.

The technique employs a scintillation camera placed over the patient's chest to detect minute amounts of injected radioisotope within the heart.

This data is recorded as a series of pictures, and, when amplified and synchronized with data from the patient's electrocardiogram, is computer-processed for video display as a real-time motion picture of the beating heart at rest and during exercise.

Extend Use of Gas Chromatography

NHLBI scientists have helped extend the use of gas chromatography into formerly inaccessible areas of lipid research.

The development of an analytical column made possible the use of gas chromatography for the analysis of steroids, a family of compounds that includes cholesterol, many important hormones, and their metabolites.

The same column has also been applied successfully in the analysis of many alkaloids, an enormous group of plant substances that includes many important drugs.

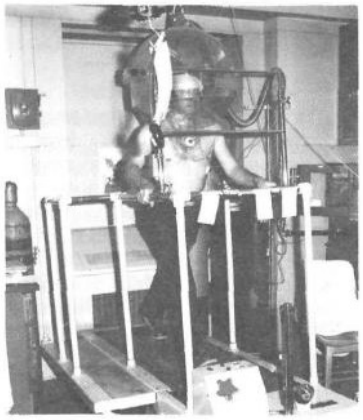
Chlorothiazide for Hypertension

The anti-hypertensive effectiveness of chlorothiazide was discovered by two independent teams of grantees in 1957. Chlorothiazide, then known as a new diuretic, was found by both teams to be selective for hypertension (not hypotensive in normal persons), effective orally, and free of severe side effects.

And both teams found that chlorothiazide not only lowers blood pressure by a direct effect when used alone, but also greatly enhances the effectiveness of other anti-hypertensive agents when used in combination with them.

Has Unique, Multiple Effects

Thus, the ability of chlorothiazide to potentiate the action of other hypotensive measures, and its apparent dual mode of action as a diuretic and direct hypotensive made it a uniquely useful and entirely new kind of drug for the treatment of hypertension.



Simultaneous electrophysiologic and metabolic studies are conducted in the exercise laboratory of NHLBI's Cardiology Branch. Here, a patient's response to graded exercise on the treadmill is monitored via chest ECG electrodes and a specially designed hood for the collection of respired gases.

First Successful Human Kidney Transplant

The first case in which the life of a human was saved by transplanting a kidney from another human was reported in 1956 by an NHLBI grant-supported team at Peter Bent Brigham Hospital and Harvard Medical School. They transplanted a healthy kidney from one identical twin into his brother with end-stage kidney disease.

With the accumulation of scientific knowledge concerning the immunological mechanisms of the body, the development of drugs and other techniques for suppressing these mechanisms, and more reliable tests of tissue compatibility, it has subsequently become possible to transplant kidneys from donors to genetically unrelated recipients with good prospects of long-term function of the transplant and long-term survival of the recipient.

Antihemophilic Globulin Concentrate Precipitated From Frozen Plasma

Early methods of treating the hemorrhagic episodes of hemophilia or preparing hemophilia patients for surgery had relied heavily on transfusions of normal whole blood or plasma to supply the missing antihemophilic factor.

The development, in the late 1950's of plasma concentrates rich in antihemophilic globulin (AHG) was an important advance, but the methods of preparing such a concentrate remained elaborate and time-consuming and the product quite expensive.

In 1965, NHLBI grantees at Stanford showed that, using a standard double plastic bag set, any hospital or blood bank can easily make concentrates of AHG averaging 30 times the potency of frozen plasma, and in such a way that the units of whole blood from which the concentrate was made can be "reconstituted" and banked for other uses.

The final product is a relatively inexpensive and potent concentrate of the antihemophilic factor.

Echocardiography

Two-dimensional echocardiography, as developed by scientists in NHLBI's Cardiology Branch and DRS's Biomedical Engineering and Instrumentation Branch, is a painless, non-invasive technique for visualizing the heart and great vessels by means of reflected ultrasound waves.

It has proven highly effective in diagnosing a variety of congenital and acquired circulatory defects, often providing information that is not obtainable by conventional X-ray visualization.

Scientist works in oxygen-free atmosphere of anaerobic laboratory at NHLBI.

Identification of Hepatitis Carriers

Immunologic research supported by NHLBI has led to the detection and characterization of two antigens associated with serum hepatitis.

This research has encouraged the application of serologic methods to detect the antigens and thereby identify persons who may pass on the disease (including prospective blood donors).

The studies also open the way for the development of a vaccine against hepatitis.

Enzyme Tests for Heart Muscle Damage

In 1955, an improved test for serum glutamic oxaloacetic transaminase (SGOT), enabled a more accurate determination than previously of the amount of heart muscle damage in patients with acute myocardial infarction.

Detect Transaminase

At that time, Dr. Daniel Steinberg of NHLBI and Dr. Bernard Ostrow of the George Washington University modified an earlier laboratory method for the detection of transaminase, which was developed at the Sloan-Kettering Institute in New York, and carried out a critical evaluation of it as a clinical test for heart damage.

Cardiopulmonary Resuscitation

Cardiopulmonary resuscitation (CPR) combines mouth-to-mouth breathing with closed-chest cardiac compression.

This life-saving emergency procedure was first employed at Johns Hopkins in 1959 by NHLBI grantees Drs. Jude, Kouwenhoven, and Knickerbocker, following their development of closed-chest cardiac massage.

Today, largely as a result of promotion and training programs of the American Heart Association, hundreds of thousands of Americans are skilled in its use.

Richard Wagner Is Chief, NICHD Contracts Section

Mr. Wagner received his B.S. degree in business administration from Pennsylvania State University. Recently, he was designated a Certified Professional Contracts Manager by the National Contract Management Association.

Richard A. Wagner has been appointed chief, Contracts Management Section, Office of Grants and Contracts, National Institute of Child Health and Human Development.

Mr. Wagner joined NICHD as unit head of the OGC (then the Grants and Contracts Management Section). Prior to that he was a contract negotiator with the Office of Administrative Services, NIH.

He trained extensively in procurement and contract management in the Department of the Army, where he began his Government career in 1962.

LAETRILE RECORDS

(Continued from Page 1)

cancer activity as new testing systems have become available. To date, no animal studies have demonstrated reproducible anticancer activity of Laetrile.

In addition, human case material which has been presented was not sufficiently documented to allow an assessment of Laetrile's effectiveness in the treatment of human cancer.

Two recent events suggest that there now may exist enough patient cases which could provide adequate documentation to assess Laetrile's possible value. Fourteen states have voted to legalize Laetrile.

Rights Differ by State

In most of these states, physicians can administer the substance to patients without threat of discipline from state licensor boards. A ruling by Federal District Court Judge Luther Bohanon in Oklahoma gives individual patients the right to import Laetrile for their own use.

In an attempt to document the many anecdotal claims concerning Laetrile, the NCI is requesting physicians to submit names of consenting patients who may have shown a beneficial response to the drug. Articles describing the evaluation have appeared in January issues of both *JAMA* and *The New England Journal of Medicine.*

Contact Physicians

This initial solicitation attempt will be followed in late February by a direct mailing to approximately 400,000 U.S. physicians and health professionals.

Patients who are referred or who write to the NCI upon their own initiative will be sent a questionnaire on their treatment and a release of medical records form.

Dr. Neil M. Ellison, a 3rd year NCI clinical associate, will collect the patient records and determine whether the cases fit the established criteria for evaluation.

These criteria include biopsy-proven cancer with objective evidence of anticancer response as documented by scans, X-rays, physical exams, or other means, during a period when the patient was treated only with Laetrile (with or without other metabolic therapy).

Following collection of the data, each evaluable case will be summarized, coded, and presented to an expert medical panel consisting of non-NCI oncologists. The requirements for establishing a response to Laetrile treatment will be precisely those necessary to establish efficacy of any NCI-tested anticancer drug in the earliest stages of clinical testing.

6 Month Evaluation Required

The evaluation will require at least 6 months. The results will be presented to the NCI Decision Network Committee, a panel of pharmacologists, toxicologists, biochemists, pharmacists, and clinical oncologists, who will decide whether further trials of Laetrile are warranted.

North Central Cancer Treatment Group Now Links Clinics in Eight Communities

A new clinical research group has been formed to extend promising new cancer therapies to patients in the smaller community clinics in the North Central U.S., an area not presently served by either a comprehensive cancer center or a nationally-funded clinical cooperative group.

The North Central Cancer Treatment Group links eight participating community clinics stretching across the northern Great Plains from Duluth, Minn., to Billings, Mont. It creates a means for the exchange of important medical information between community physicians and the clinicians of the National Cancer Program.

In 1971, the National Cancer Act was passed by Congress to ensure that advances in cancer treatment would reach local communities, where 80 percent of cancer patients are treated.

The establishment of 19 comprehensive cancer centers was an initial step in that direction. The North Central Cancer Treatment Group will augment the centers' program.

Mayo Center Coordinates

The Group will specialize in medical treatment of cancer (anticancer drugs, immunotherapy, and hormone therapy) at times combined with surgery and radiation therapy. These studies will be coordinated by the Mayo Comprehensive Cancer Center, Rochester, Minn., and the Eastern Cooperative Oncology Group.

In addition to acquiring information on the latest treatment methods, North Central Group physicians will be invited to attend scientific meetings of the coordinating groups.

The physicians will work independently to design new research treatments for the most common forms of cancer, such as those affecting the breast, lung, and large intestine.

In addition, they will participate in ongoing studies of the Eastern Cooperative Oncology Group for less common forms of cancer. These studies often will involve investigational new drugs developed by the National Cancer Institute.

The Group will report scientific findings on the effects of these drugs back to NCI. Eventually, such findings may be used to help other community physicians treat their patients more effectively.

Two NCI Divisions Support

Funding for the new treatment group is shared by two divisions of NCI—the Division of Cancer Research Resources and Centers and the Division of Cancer Control and Rehabilitation.

Participating institutions and the principal investigators are:

Minnesota:
- Duluth Clinic, Duluth; Dr. James Krook
- St. Cloud Internists, Ltd., St. Cloud; Dr. Harry Windschitl

Montana:
- Billings Clinic, Billings; Dr. Warren Bowman, Jr.

Nebraska:
- Internal Medicine Specialties, Lincoln; Drs. Joseph Stitcher and David Dyke

North Dakota:
- Fargo Clinic, Fargo; Dr. Lloyd Everson
- Grand Forks Clinic, Grand Forks; Dr. John Laurie
- Quain and Ramstad Clinic, Bismarck; Dr. Del Pfeifle

South Dakota:
- Central Plains Clinic, Sioux Falls; Dr. Loren Tschetter

FDA and NCI Plan Study on Saccharin's Bladder Cancer Role

Plans to conduct a nationwide study on the possible role of saccharin in causing bladder cancer in humans was recently announced by the Food and Drug Administration and the National Cancer Institute.

The study, to begin in March, will cost $1.375 million and require about 18 months to complete.

It will be conducted in five states —New Jersey, Connecticut, Iowa, New Mexico, and Utah—and four metropolitan areas—Detroit, San Francisco-Oakland, New Orleans, and Atlanta.

All but New Jersey are part of the nationwide Surveillance, Epidemiology, and End Results (SEER) network of population-based cancer registries established by NCI to monitor patterns of cancer occurrence, treatment, and survival in the United States.

The New Jersey study will be coordinated by the State Health Department of New Jersey.

The study will include about 3,000 people with bladder cancers diagnosed during 1978 and 6,000 randomly chosen healthy individuals living in the same areas. All 9,000 people will be interviewed.

NCI will analyze the data and compare the saccharin consumption patterns of the cancer patients with those of the healthy individuals to determine whether there may be an association between the sweetener and bladder cancer.

Most Patients Are Male

Of the 3,000 bladder cancer patients, an estimated three-fifths will be 65 or older and three-fourths will be male, according to past bladder cancer statistics developed by the SEER network. Patients younger than 21 or older than 85 will not be eligible.

The study also will develop information on other factors that may play a role in bladder cancer including cyclamate (another artificial sweetener, banned by FDA in 1970), drinking water, cigarette smoking, and occupational exposures.

The FDA-NCI study is one of several that will be conducted on saccharin during the coming months.

FDA is also negotiating with the National Academy of Sciences for a number of studies specifically required by legislation to assess the health benefits and risks of the artificial sweetener.

The NCI-FDA study is not specifically required by law. It stems from a recommendation by a special task force of FDA and NCI scientists, which recently urged that a large, population-based study be conducted to determine whether the proven association between saccharin and bladder cancer in animals also applies to humans.

Instrument Devised To Measure Relative Migration Distances of Protein Zones

A semi-automatic device which measures the migration distances of stained protein bands in polyacrylamide gel electrophoresis (PAGE) has been devised by Burt Chidakel, Biomedical Engineering and Instrumentation Branch, Division of Research Services.

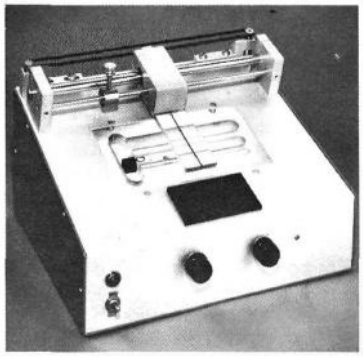
The device functions as an electronic ruler and can measure distances up to 6 inches with a tolerance of ± 1 percent.

The instrument was developed for Dr. Andreas Chrambach of the Endocrinology and Reproduction Research Branch, National Institute of Child Health and Human Development.

The process (PAGE) is extensively used in medicine and biology for the separation and physical characterization of proteins or other charged species.

The relative band position at any protein concentration within the column is characteristic of the particular protein.

Previous techniques required a relatively laborious procedure involving two photographs of the unstained and stained gel, and manual measurement of length by caliper and ruler.



This semi-automatic instrument devised by Mr. Chidakel functions as an electronic ruler and reduces time of previous measurement procedures by two-thirds.

Mr. Chidakel's device eliminates use of mechanical measuring devices and reduces procedure time by two-thirds.

Principal advantages over manual methods are: speed, ease of operation, reduction of fatigue-induced measurement error, improved detection of minor bands, and adaptability to automated data storage and processing.

After electrophoresis the tube containing the polyacrylamide gel is placed on the device. Calibration is carried out by setting the instrument for 0.000 and 1.000 at the origin and front (or end) of the gel.

A digital readout is obtained by sliding the position arm to set points on the band. After removal of the gel from the tube and fixation and staining of the protein zones, the gel is stored in a test tube.

The tube is placed into the appropriate groove of the device, and zone distances relative to gel length are measured as described above.

Characteristic protein mobilities are calculated from values measured on unstained and stained gels.

Mr. Chidakel was assisted in the design and fabrication of this instrument by Thomas Tedder of the Systems Maintenance Section in BEIB, DRS.

KEPONE STUDY

(Continued from Page 1)

celerated the depletion of Kepone from tissue stores in the body and provided a means of detoxification for Kepone poisoning.

"It also is important to note that cholestyramine can possibly have the same effect of detoxifying the body of other environmental toxins."

Following the clinical trial, a decrease in the severity of symptoms of Kepone poisoning was observed.

At the time of diagnosis, 11 of the 22 patients were unable to work because of tremor or other neurological disorders. Only three remained severely impaired and unable to work following the trial.

After completion of the trial, all patients were given cholestyramine, and 6 months later none was judged to have more than "mild" neurologic signs.

"Our study establishes that cholestyramine is a practical treatment for patients exposed to large quantities of Kepone," Dr. Guzelian explains. "It does not resolve the question of cholestyramine treatment in asymptomatic patients with low levels of Kepone in the body.

". . . The magnitude of the hazard to humans of environmental contact with Kepone has not been established. Therefore, the indications for therapy remain speculative and warrant further investigation."

Assistance on Income Tax, Forms Available in Bg. 31

Income tax forms, tax information, and limited assistance in computing 1977 returns are now available for NIH employees in Bldg. 31, Room 4B-09.

Tax assistance (walk-in service) will be provided from 10 a.m. to 2 p.m.

Tax assistance by appointment only will be available from 8:30 to 10 a.m. and from 2 to 5 p.m. Appointments may be made by calling 496-9034.

NIAID Researchers Report on Ir Genes, Role of Macrophage in T Cell Responses

National Institute of Allergy and Infectious Diseases scientists have demonstrated that the Ir genes—which appear to control the ability of animals to mount an immune response to a specific antigen—operate, at least in part, at the level of the macrophage.

The present study suggests that this cell plays a fundamental role in selecting the appropriate portion of a complex antigen (with more than one determinant) to be recognized by immune T cells—thymus-derived lymphocytes.

The intricate role of the macrophage in regulating immune responses is being increasingly delineated. The ability of these cells—which reside chiefly in the spleen and lymph nodes—to ingest and destroy invading organisms has long been recognized.

However, within the last 5 years, the participation of the macrophage in T cell immune responses has been uncovered.

In particular, NIAID scientists have demonstrated that recognition of a soluble antigen by the T cell requires initial uptake of that antigen by the macrophage which then "presents" it to the T cell.

The proliferation—division and rapid multiplication—of T cells in response to antigen has been shown to be under Ir gene control.

To determine whether the Ir genes are exerting their influence at the level of the macrophage—specifically in its presentation of antigen to the T cell—the researchers studied the T cell response of guinea pigs to insulin—a naturally occurring but complex antigen.

They used two strains of guinea pigs which had earlier been shown to recognize different antigenic determinants on pork insulin. Strain 13 guinea pigs recognized this hormone through a determinant on its B chain, while strain 2 guinea pigs recognized a different determinant on the hormone's A chain.

Hybrid guinea pigs—produced by mating strain 2 with strain 13—are capable of recognizing either determinant.

Dr. Alan Rosenthal, Dr. Marcello Barcinski, and J. Thomas Blake of NIAID's Laboratory of Clinical Investigation measured the proliferative response of T cells taken from these hybrid animals after immunization with pork insulin.

They found that macrophages from either parental strain could "present" the antigen to the hybrid.

However, if these animals were immunized with the isolated B chain of pork insulin, only strain 13 macrophages could "present" the whole insulin molecule to these T cells. Presentation of whole insulin by strain 2 macrophages did not produce a proliferative response in these T cells.

The investigators feel these results indicate that, in hybrid guinea pigs immunized to insulin, two distinct clones (genetically identical families of cells) are generated.

One clone recognizes the determinant in the A chain when it is presented by strain 2 specific cell structures in the macrophage while the other recognizes the B chain determinant presented by the strain 13 counterpart.

Evidence in support of this theory was obtained by using a technique which specifically blocks proliferation of T cells.

The researchers were able to eliminate the hybrid's T cell response to antigen associated with macrophages from strain 2 without eliminating their responsiveness to the same antigen presented by strain 13 macrophages.

In another experiment, the converse was true when they eliminated T response to antigen presented by strain 13 macrophages.

Thus, the scientists believe that a selected chemical sequence or structure within the antigen may be seen by the T cell receptor. Generation or display of such antigenic determinants would thus be a function of the Ir genes operating at the level of the antigen-presenting cell, the macrophage.

Further studies are in progress to determine the general mechanisms by which macrophages could carry out this function.

This study was reported in the May 12, 1977 issue of *Nature*.

Cancer Clearinghouse Offers New Service

Four annotated bibliographies on selected cancer topics are available to health educators through the NCI Cancer Information Clearinghouse: on oral cancer, ostomates, nutrition for cancer patients, and educational materials in Spanish.

The bibliographies list educational materials available for programs with the public, cancer patients, or health professionals.

Each bibliography includes booklets, pamphlets, films, and other types of publications and audiovisuals.

The Cancer Information Clearinghouse does not distribute educational materials. It directs users to organizations that supply the materials.

The bibliographies are a new service of the Clearinghouse, initiated in 1976 by the NCI Office of Cancer Communications.

Bibliographies may be obtained free of charge from the Cancer Information Clearinghouse, Office of Cancer Communications, National Cancer Institute, 7910 Woodmont Avenue, Suite 1320, Bethesda, Md. 20014.

1977 'Cumulated Index Medicus,' To Be Shipped By GPO in April 1978

Advance orders for the 1977 *Cumulated Index Medicus*, Vol. 18 —which is to be shipped about April 1978—may be sent to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

When ordering, please include G.P.O. Stock No. 017-052-00184-1.

The 14 books, sold in sets only at $202 per set ($50.50 additional for foreign mailing), were prepared by the National Library of Medicine.

Cumulated Index Medicus is an annual compilation of citations to journal articles and chapters in selected monographs from the world's biomedical literature indexed in the monthly *Index Medicus*.

The citations within *CIM* are arranged by author and subject and also include a Bibliography of Medical Reviews, Medical Subject Headings, and List of Journals Indexed.

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Ms. Krey

Dr. Davidian

Anne K. Krey, formerly with the Walter Reed Army Institute of Research, and Dr. Nancy McConnell Davidian, a research associate with the University of North Carolina, have joined the NIH Grants Associate Program for a year of training in health science administration.

Ms. Krey received her B.S. degree in physics from the University of Marburg, West Germany, in 1960 and continued graduate work at the Universities of Marburg, Hamburg, and West Berlin, earning an M.S. equivalent degree in physics in 1963.

That year she immigrated to the U.S. She was a research assistant at the University of Illinois, where she received her M.S. degree in biophysics in 1965.

Later she did graduate work and served as a teaching assistant in the department of chemistry at the University of Maryland.

In 1967 Ms. Krey joined the Walter Reed Army Institute of Research as a research biophysicist in the Department of Molecular Biology, later transferring to the Department of Microwave Research.

The author of more than 35 publications, Ms. Krey received a Department of the Army Certificate of Appreciation in 1976.

Dr. Davidian attended Wellesley College and transferred to Cornell University, where she received the B.A. degree in chemistry in 1962. In 1969, she received her Ph.D. in chemistry from the University of North Carolina, Chapel Hill, where she held both NIH Predoctoral and Postdoctoral Fellowships.

She then held positions with the University of North Carolina's department of biochemistry and Center for Research in Pharmacology and Toxicology.

Since June 1977 she has held an appointment with the Laboratory of Environmental Toxicology, National Institute of Environmental Health Sciences, under the Intergovernmental Personnel Act of 1970.

London Group Finds T Cells Can't Tell Difference Between Influenza A Viruses

T lymphocytes—immune defense cells important in viral infections—appear unable to discriminate between different influenza A viruses. According to scientists partially supported by the National Institute of Allergy and Infectious Diseases, this finding may have important implications for immunization and for understanding influenzal disease.

Cell-mediated immunity—carried out largely by T and B lymphocytes —is thought to play a major role in the body's defenses against viral infections.

One type of cellular response occurs when T lymphocytes—in the presence of viral antigens—act directly as cytotoxic cells capable of destroying virus-infected cells.

This response depends on the ability of the T cells to recognize specific foreign antigens. The molecular nature of this recognition—and thus the specificity of the response—is one of the important unsolved problems in immunology today.

The researchers chose to investigate the specificity of the T cell response to influenza viruses because they contain two well-known surface antigens—neuraminadase and hemagglutinin. In addition, these antigens can be easily isolated and are expressed on the surface of virus-infected cells.

Cytotoxic cells are normally produced in the spleen during a viral infection. In the laboratory, the researchers induced lymphocyte production by injecting several different strains of mice with an influenza A virus (A/Jap/Bel). Spleen cells were then extracted and cultured for cytotoxic cells.

To test the virus-specificity of these laboratory-produced lymphocytes, the scientists exposed the lymphocytes to target cells infected with the A/Jap/Bel virus and to similar cells that were uninfected.

As expected, the viral-induced lymphocytes were virus-specific, destroying only those cells infected with the virus. On further analysis, these killer cells were found to be thymus-derived or T cells.

Since the two major types of influenza virus—A and B—contain different strains—with slightly different antigenic make-ups—a study of the extent of T cell specificity for these viruses and their strains was the next logical step in this investigation.

However, as the researchers state in their report, virus-specificity is not the only requirement for a T cell response to influenza viruses.

The T cells and the target cells must also be histocompatible, that is, possess similar surface antigens known to be responsible in graft rejection.

To do this study, histocompatible target cells were infected either with one of three different strains of the A virus or with one strain of the B virus (B/Hong Kong).

The three A viruses share internal antigens with the A/Jap/Bel virus, but differ among themselves in one or both of the surface antigens. Type B viruses have different internal and surface antigens from the A virus.

The researchers found that T cells generated in mice from an A/Jap/Bel infection killed all other A virus-infected cells as efficiently as they killed cells infected with A/Jap/Bel. However, T cells produced from cells infected with an A-virus and T cells from a B-virus infection killed only B virus-infected cells.

Based on these results, the investigators concluded that although cytotoxic T cells are specific for influenza virus-infected cells with which they are histocompatible, they are unable to recognize different influenza A viruses.

In contrast, antibodies produced by immune B lymphocytes can readily distinguish between these viruses, probably by recognizing the difference in their surface antigens. The researchers suggest conducting additional studies to explain the difference in T and B cell recognition.

The ability of T cells to react in the laboratory to various influenza A viruses raises interesting questions about the role of cell-mediated immunity in influenza.

Does this phenomenon also occur during natural infection? If so, how does one explain the fact that widespread exposure to one influenza A virus does not seem to protect against another strain.

Perhaps, as some investigators believe, the T cell response may be both protective and harmful, contributing to symptoms and the disease process as well as to recovery.

The report of this research by Drs. H. J. Zweerink, S. A. Courtneidge, J. J. Skehel, M. J. Crumpton, and Brigitte A. Askonas from the National Institute for Medical Research, Mill Hill, London, appeared in the May 26, 1977 issue of *Nature*.

John B. Debnam Retires; NIH Deputy Fire Chief Was Here for 23 Years

Mr. Debnam says that in retirement he will continue to be concerned with fire-related activities.

John B. Debnam, deputy fire chief, retired on Jan. 31 after 23 years of service with NIH. Mr. Debnam joined the NIH Fire Department in 1955 not long after the unit was established.

A lifetime charter member of the Chillum-Adelphi Volunteer Fire Department, he has served that organization over the years as an officer in many capacities.

Mr. Debnam is a graduate of numerous fire training courses of the Maryland Fire and Rescue Institute (formerly Fire Service Extension Department), University of Maryland. He is a field instructor for the Institute and has assisted many volunteer and paid firemen through successful completion of basic and advanced firemanship.

For many years, Mr. Debnam was known around NIH as "the Fire Inspector," and he instructed many of the NIH personnel in fire safety. He says that many may remember him for "perseverance and insistence on correction of fire hazards."

Mr. Debnam remembers a number of serious fires at NIH which could have been larger, but because of the quick response of the Fire Department were kept to a minimum.

He served in the Army infantry in World War II in combat in France and Germany. He also saw service in Europe during the early days of the Korean emergency.

Dr. Keith R. Porter, director of the DRR-supported laboratory for high voltage microscopy at the University of Colorado, receives the National Medal of Science from President Jimmy Carter for his efforts in the field of electron microscopy. Dr. Porter was one of 15 scientists honored for "outstanding achievements in the sciences and engineering." Among other accomplishments, he developed a technique for reconstruction of cellular structure from successive tissue sections.

Black History Programs Feature Roots Theme

Roots: Achievement and Projections is the theme of the 7th annual Black History Observance from Feb. 13 through Feb. 17.

Daily programs at noon except for a special evening program on Feb. 14—all in the Masur Auditorium—will emphasize the current state of Black America: Progress and Retrogress, with speeches, panel discussions, and entertainment.

The Observance starts on Monday, Feb. 13, with Dr. Maynard Jackson, Mayor of Atlanta, the keynote speaker.

On Tuesday, Feb. 14, at 7:30 p.m., a special program for evening employees will feature a panel discussion on The Black Athlete.

Martin Wyatt, sports announcer on NBC's channel 4, will serve as panel moderator. The panel will include Elston Howard, first base coach for the New York Yankees, and Leo Miles, athletic coach at Howard University.

The Reverend Ralph Abernathy, former SCLC president, and others will speak on Wednesday, Feb. 15.

On Thursday, Feb. 16, David Schoumacher, anchorman on ABC's channel 7, will be moderator of a panel discussion on The Bakke Case: An Assault on Affirmative Action.

Panelists will include: Dr. Kenneth Tollett, Director, Institute for the Study of Educational Policy, Howard University; Professor Hubert Reid, Howard University Law School; Myer Eisenberg, attorney; and Dr. Charles Bookert, National Medical Association.

The Observance will conclude on Friday, Feb. 17, with the appearance of Janelle Commissiong, Miss Universe for 1977, and a troupe of entertainers.

The programs are designed as "training activities, but more important will enhance the cultural and historic awareness of Black Americans," according to Black History Observance cochairpersons O. H. Laster and Otis Watts.

Internat'l Workshop Will Consider Ecology Of Influenza Viruses

Research scientists from 12 countries—including virologists from Hungary, Russia, Czechoslovakia, and the Peoples Republic of China—will be attending an International Workshop on the Ecology of Influenza Viruses on Feb. 13-14 in Conference Room 6, Bldg. 31.

The workshop was planned under the leadership of Dr. Robert G. Webster, Director of the WHO Collaborating Center on the Ecology of Animal Influenza Viruses, Division of Virology, St. Jude Children's Research Hospital.

Sponsors are the World Health Organization; St. Jude Children's Research Hospital; Center for Disease Control; National Institute of Allergy and Infectious Diseases; Bureau of Biologics, FDA; the U.S. Department of Agriculture; and the Fogarty International Center.

Investigators currently working on influenza viruses in man, birds, and animals will discuss recent developments in antigenic and molecular biological methods for the analysis of influenza viruses, and review the world-wide situation regarding recent and potential epidemic human strains.

Interested scientists are welcome. For information call 496-2516.

Dr. Upton's Perspectives After His First 6 Months Topic of Feb. 15 Forum

Dr. Arthur C. Upton, appointed Director of the National Cancer Institute on July 29, 1977, will discuss his Perspectives After the First 6 Months at the next meeting of the NCI Wednesday Forum.

All NCI employees are invited to attend the meeting, which will be held on Feb. 15, the *third* Wednesday of the month, at noon in Wilson Hall, Bldg. 1.

Since his appointment, Dr. Upton has extensively reviewed NCI activities to familiarize himself with Institute structure and programs.

He will report on the perspectives gained through this review, discuss the rationale for changes that have been made, and outline plans for future directions of the Institute.

After his presentation, Dr. Upton will entertain questions from the staff.

President's 1979 Budget for NIH

Summary of Appropriation

(Amounts in thousands)

The NIH budget request for fiscal year 1979 was submitted to Congress on Jan. 23. The budget contains a request for $2,884.7 million, an increase of $42.2 million over the 1978 operating level of $2,842.5 million.

Funds are included for the final phase of construction of the Ambulatory Care Research Facility at the Clinical Center. Every Institute receives at least some increase in the 1979 budget, with the largest increase, $32.6 million, requested for the National Institute of Child Health and Human Development.

The amount for NICHD is intended to support research on HEW Secretary Joseph A. Califano, Jr.'s major new initiative areas in Adolescent Health and Pregnancy Prevention, and in the prevention of smoking.

The increase will fund expansion of programs in contraceptive development and fetal health, specifically addressing the behavioral dynamics of adolescent contraception, and the development of safe, acceptable, and effective methods of fertility regulation.

Research on the relationship of smoking and health is being carried on in several Institutes, particularly the National Cancer Institute, National Heart, Lung, and Blood Institute, and National Institute of Environmental Health Sciences.

In addition, in 1979 NICHD will be examining the impact of smoking on fetal development, and developmental factors in childhood that can influence later behavior related to smoking.

The following table summarizes the 1979 budget request by appropriation, with the comparable figures for 1977 and 1978:

	1977	*1978**	*1979*
NCI	$ 814,245	$ 872,270	$ 878,802
NHLBI	396,385	447,926	454,336
NIDR	55,482	61,718	62,039
NIAMDD	219,394	260,246	267,246
NINCDS	155,318	178,414	180,932
NIAID	140,826	162,326	166,802
NIGMS	204,866	230,707	234,412
NICHD	145,409	166,380	198,931
NEI	63,938	85,392	86,428
NIEHS	51,022	64,200	69,247
NIA	29,949	37,286	37,910
DRR	137,451	145,054	149,049
FIC	7,969	8,465	8,489
NLM	35,127	37,533	39,774
Buildings and Facilities	67,400	65,650	30,950
OD	16,906	18,894	19,373
Central services	—	—	—
TOTAL NIH	$2,541,687	$2,842,461	$2,884,720

* Includes proposed supplemental for pay costs ($19,706).

On Jan. 23 NIH Director Dr. Fredrickson met with WECOPS executive secretary Donna Huber (l) and with employee representatives of the various B/I/D's with offices in the Westwood Bldg. NIGMS Director Dr. Ruth Kirschstein and NIGMS executive officer William Fitzsimmons (rear) were among those present. Dr. Fredrickson named NIH Deputy Director Dr. Thomas E. Malone (r) as his representative to deal with all problems at Westwood. The group is also awaiting HEW's reply to a memo from NIH Associate Director for Administration Leon Schwartz concerning building conditions and the imposition of parking fees at Westwood.

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