

# The NIH Record

## Study Finds Saliva Inhibits HIV Infectivity

By Susan Johnson

Preliminary studies by scientists at the National Institute of Dental Research show that human saliva contains a factor that blocks the AIDS virus from infecting cells. This finding may explain, in part, why the disease is not transmitted orally, the researchers reported in the May issue of the *Journal of the American Dental Association*.

"There is a lot of very convincing, though indirect, evidence that AIDS is not spread by oral fluids," said Dr. Philip Fox, who headed the research team. Nonetheless, many people, including dental professionals, remain anxious about the risk of AIDS being transmitted orally, he said. "The discovery of a protective factor in saliva is reassuring because it provides a biological explanation for why the mouth is not a route for transmission."

Fox and his coworkers collected saliva samples from three healthy men aged 35, 40, and 42 who were not in any risk group for AIDS. They collected whole saliva, which contains secretions from the major and minor salivary glands, and they collected secretions directly

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## 'Sky Horizon' Sculpture Given to NIH

A sculpture created by artist Louise Nevelson will be erected in front of the Clinical Center later this month. An outdoor dedication ceremony has been planned for Thursday, June 9, at 11 a.m. All employees are invited.

"Sky Horizon," a 30-foot high, black Corten steel structure, is the last monumental piece by the Ukrainian born artist, who died recently in New York.

"This sculpture is symbolic of the soaring achievements in health-related research made during the first health century—progress that will extend its reach only through meeting the challenges of the next," declared Dr. James B. Wyngaarden, director, NIH.

Selection of the piece involved an NIH advisory group with the expertise of such art authorities as Richard Andrews, director, Visual Arts Program for the National Endowment for the Arts, who chaired the artist nomination panel; James Demetron, director, Hirshhorn Museum and Sculpture Garden at the Smithsonian Institution; Jane Livingston, curator, Corcoran Gallery of Art; Jacob Kainen, a prominent Washington artist; and

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## National Institute of Dental Research— 40 Years of Progress

By Pat Sheridan

*"The purpose of this Act is to improve the dental health of the people of the United States through the conduct of researches, experiments and studies relating to the cause, diagnosis and treatment of dental diseases and conditions..."*

As he signed this bill into law on June 24, 1948, President Harry Truman launched a research effort that would ultimately revolutionize the oral health field. During the next four decades, the National Institute of Dental Research would spearhead sweeping advances and new technologies that would change both the philosophy and practice of dentistry, and propel the dental sciences into mainstream biomedical research.

### The Early Days

While the NIDR today boasts a permanent staff of almost 400, a broad-based multidisciplinary research program, and a \$126 million budget, the early days of federally-supported dental science began quite humbly with a probe into a turn-of-the-century mystery: a phenomenon called "mottled enamel," linked to fluorine in drinking water.

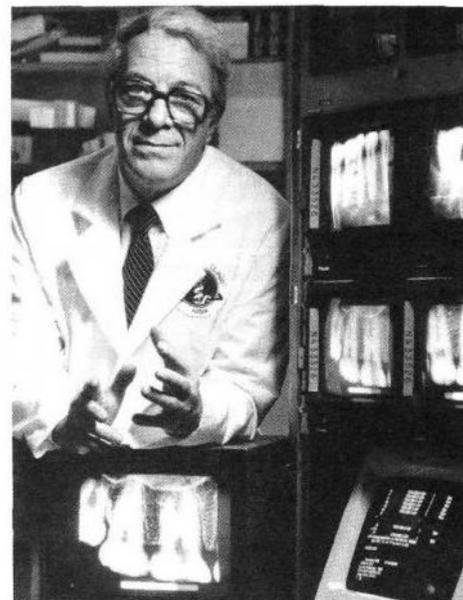
### Mottled Enamel: A Public Health Problem

In 1931, the Public Health Service formed a one-man dental hygiene unit at the newly established National Institute of Health to survey the extent of mottled enamel—later called fluorosis—throughout the country. Dr. H. Trendley Dean, a PHS dentist, was assigned to the unit in the Division of Pathology and Bacteriology as the first dental officer at the NIH. This tiny unit, in time, would provide the scientific foundation upon which the National Institute of Dental Research would later be built.

### The Fluoride-Caries Connection

During the next 10 years, piece after piece of the fluoride puzzle fell neatly into place. Research showed that mottled enamel was a problem of national scope and confirmed its cause. Whereas others had observed that persons with fluorosis seemed to have fewer cavities, Dean provided the first solid evidence correlating the amount of fluoride in the drinking water with the incidence of dental decay. He established that 1 ppm fluoride in drinking water would not cause fluorosis, yet would be sufficient to protect teeth against cavities. These findings set the stage for the world's first controlled community water fluoridation project. In this landmark study begun in 1945, fluoride was added to the almost flu-

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*Dr. Harald Loe is the current director of the NIDR. A periodontist, he has conducted pioneering research on periodontal (gum) disease for more than 30 years. The computers are used to determine bone loss from periodontal disease.*

## Three NIH Scientists Elected to NAS

The National Academy of Sciences recently announced the election of 61 new members and 15 foreign associates in recognition of their distinguished and continuing achievements in original research. Among the new members are three NIH scientists: Dr. Robert C. Gallo, chief, Laboratory of Tumor Cell Biology, NCI; Dr. Robert H. Purcell, medical director, Laboratory of Infectious Diseases, NIAID; and Dr. Robert H. Wurtz, chief, Laboratory of Sensorimotor Research, NEI.

Gallo is widely recognized for his identification of the human virus that causes acquired immune deficiency syndrome (AIDS). He is also acclaimed for his pioneering discovery of the first human retrovirus and its link to a leukemia as well as his discovery of T-cell growth factor, a naturally occurring protein important for the study of T-cell cancers and viruses affecting the immune system.

An international authority on the detection and prevention of viral hepatitis, Purcell has headed NIAID's research program on this disease since 1967. In collaboration with his colleagues, Purcell developed prototype vac-

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## NAS

(Continued from Page 1)

cines for hepatitis B that led to testing, development, and the licensing of a vaccine for prevention of this disease. He headed a team that was the first to visualize the virus that causes hepatitis A, and he and fellow researchers have successfully isolated a strain of the hepatitis A virus that appears to have potential for vaccine development.

Wurtz conducts research on visual motion processing in the cerebral cortex. His research is aimed at understanding better the series of events that lead to the perception of motion as well as the generation of eye movements. Another facet of Wurtz's research explores brain mechanisms for the generation of rapid, or saccadic, eye movements. These research projects contribute significantly to our understanding at a cellular level of the brain organization underlying certain visual functions in man.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. The Academy was established in 1863 by a congressional act of incorporation, signed by Abraham Lincoln, that calls upon the Academy to act as an official advisor to the federal government, upon request, in any matter of science or technology. Election to membership in the Academy is considered one of the highest honors that can be accorded an American scientist or engineer.



Dr. Robert H. Wurtz



Dr. Robert H. Purcell

## Kamen Begins Residence

Dr. Martin Kamen, professor of chemistry (emeritus) at the University of California, San Diego, has begun his scholar-in-residence appointment at Stone House.

Kamen is best known for his discovery with Samuel Ruben of carbon-14, which has become one of the most important tools for studies in biochemistry and molecular biology.

While at NIH, Kamen will be associated with the Laboratory of Biochemistry, NHLBI, and will also work at a number of other research laboratories on campus. During his term as scholar, he will organize a workshop on bacterial cytochromes-c that function as catalysts in biological oxidations and are found in both muscles and bacteria.

In July, Kamen will deliver four lectures on the 19th century German scientist T. W. Engelmann, a founder of the modern science of cell physiology.

Kamen is also an accomplished violist and enjoys playing in chamber music ensembles. □

## Cystic Fibrosis Symposium

The third annual Spring Cystic Fibrosis Symposium will be held on May 23, from 8.30 a.m. to 4 p.m. in the Lipsett Auditorium of the Clinical Center. The meeting is sponsored by the NIDDK-Cystic Fibrosis Foundation Joint Program.

The program will consist of presentations by several speakers on topics that include the genetics, the biochemistry of secretion, and glycoproteins and mucins in cystic fibrosis.

A featured speaker is Dr. Francis Collins from the Howard Hughes Medical Institute, Ann Arbor, Michigan, who will discuss the current status of the search for the CF gene. For further information, call 496-3093 or 496-5948. □



Dr. Robert C. Gallo

## Commissioned Officers' Savings Bonds

The Treasury Department has converted to the new paper Savings Bonds, discontinuing the punch card versions. As a result, all bonds are now processed centrally in Philadelphia, on a bi-weekly schedule. Depending on the matching of the bi-weekly schedule with the monthly payroll cycle of the Commissioned Corps, commissioned officers may receive their bonds as much as two weeks after the payday on which bonds are actually purchased. □

# The NIH Record

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## NHLBI Releases Hypertension Treatment Guidelines

By Blair Gately

The National High Blood Pressure Education Program, coordinated by the National Heart, Lung, and Blood Institute, has released its recommendations for treating high blood pressure, a condition that affects almost 58 million Americans.

The 1988 Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure recommended, among other things, the use of two new classes of drugs as first step agents for treatment of hypertension. It also included a stronger caveat on alcohol consumption, recommending that hypertensives should not take more than 2 ounces of alcohol daily.

"People with high blood pressure are at increased risk of both stroke and heart attack," Dr. Claude Lenfant, NHLBI director, told reporters at a recent press conference here. "But the news on the stroke front is particularly gratifying. Over the last 16 years the age-adjusted stroke death rate has declined by over 50 percent. This is due in part to the efforts of the many public and private organizations participating in the work of the National High Blood Pressure Education Program."

The JNC IV report reviews, updates and expands the 1984 recommendations for controlling hypertension.

The latest report, which outlines new treatment strategies, translates the results of the latest clinical trials to medical practice; examines factors that influence cost of care; addresses hypertension in special populations; and provides additional guidelines for managing high blood pressure in the presence of other cardiovascular diseases and other coexisting medical conditions.

Like its predecessors, this version of the report is based on the latest scientific research on hypertension management.

Committee chairman Dr. Aram Chobanian, dean of Boston University Medical School, outlined the highlights of the latest JNC report. It advocates a wider variety of drugs to prescribe as initial treatment for high blood pressure; recommends lower initial doses of drugs to minimize side effects; suggests continued use of nondrug treatments whenever possible; broadens the step-care approach to decrease medication after a patient's blood pressure has been brought under control; encourages greater patient involvement; and considers the quality of life in treating patients.

"Four classes of drugs are now recommended as possible options for initial drug treatment," Chobanian said. "In addition to



*Dr. Claude Lenfant (r), director, NHLBI, and Dr. Aram Chobanian of Boston University School of Medicine spoke at a recent press conference to release new guidelines for the treatment of high blood pressure.*

the traditional diuretics and beta blockers, two new classes have been added, the so-called calcium antagonists and angiotensin-converting enzyme inhibitors or ACE inhibitors.

"Clinical studies have shown that they effectively lower blood pressure and, for many patients, they may cause fewer symptomatic and biochemical side effects than diuretics or beta blockers," he added.

Chobanian said patients should initially be treated with nondrug therapies, by reducing their weight if they are overweight, limiting their sodium and alcohol intake, exercising, stopping smoking, and using relaxation techniques. If that fails to lower blood pressure to an acceptable level, one or a combination of the 4 drugs is used.

"The revised treatment recommendations offer more options and more flexibility so that physicians can tailor therapy to individual patients," Chobanian said. "This is another way to encourage patients to stay on their medication."

Dr. Edward Roccella, coordinator of NHLBI's National High Blood Pressure Education Program, told reporters how the program works to educate health professionals, patients, and the public. Its goal is to reduce death and disability related to high blood pressure by stimulating health promotion and disease prevention activities, developing and disseminating educational materials and providing technical support to community health programs.

The JNC IV report has been published in the May issue of *Archives of Internal Medicine* and is intended as a guide for physicians and other health professionals and as a reference for the many community high blood pressure control programs in the United States. □

## Extramural Program Orientation

The Office of Health Scientist Administrator Development Programs will be presenting a two-day orientation session entitled "Fundamentals of NIH Extramural Activities" on July 28-29. It will be held in Bldg. 1, Wilson Hall, starting at 8:30 a.m., with registration at 8 a.m. each day. The course will cover an overview of extramural activities, grants, contracts, cooperative agreements, their review and scientific and fiscal management.

The number of participants will be limited to approximately 50 people. Priority will be given to those who are new to the extramural side of NIH at all grade levels.

Those interested are to submit an HHS-350 form (Training, Nomination and Authorization) through their appropriate BID channels to the HSA Development Programs Office (Bldg. 31, Rm. 1B-62). PHS Commissioned Officers are asked to use this form also. Please be very specific in items 16 and 17. In item 10, please list your complete office address, NOT your home address; item 14 — no cost; item 20 A(8), B(8), C(1), D(NA); item 21 (NA) and item 22 (9998). All other instructions are on the back of the HHS-350. *Send the Vendor's Copy to the HSA Development Programs Office, Bldg. 31, Rm. 1B-62.* To be considered, applications must be received in that office no later than COB June 28. Merely submitting an application to personnel, no matter how early, does not assure its reaching the HSADP Office by the deadline date or at all. It is the applicant's responsibility to see that the HSADP Office receives his or her application by the deadline date. Applications received after the deadline will be returned without further consideration. Each applicant will be informed of the decision concerning his/her application. Those selected will be provided with further details of the course.

Any questions about this course may be directed to A. Robert Polcari or Roberta Light, 496-1736, or Dr. Paul Velletri, 496-7707. □

## Animals In AIDS Research

A briefing for science writers entitled "An Overview of Animal Models in AIDS Research," will be held on Friday, May 20, at 9:30 a.m. in Bldg. 31, Conf. Rm. 8.

The program, jointly sponsored by NIAID, CC, DRR, and the Office of Communications, OD, features discussions by four NIH scientists and will be moderated by Dr. George Galasso, NIH associate director for extramural affairs, and chairman, PHS AIDS animal model committee.

For more information, contact Bob Schreiber, 496-8740 or 496-2535. □

## PHS Honors NIH Employees for Outstanding Achievements

NIH staff members were recognized for their outstanding achievements and contributions at the fourteenth annual Public Health Service Honor Awards Ceremony held May 17 in Masur Auditorium. Dr. Robert E. Windom, assistant secretary for health, assisted by Dr. C. Everett Koop, surgeon general, and Dr. James B. Wyngaarden, director, NIH, presented the awards.

### PHS Superior Service Award

Dr. Jay Arthur Berzofsky  
Acting Chief, Molecular Immunogenetics and Vaccine Research Section, DCBD  
National Cancer Institute

*"For developing methods for predicting molecular structures recognized by T cells and applying those methods to development of vaccines aimed at preventing AIDS and other diseases."*

Dr. Lois K. Cohen  
Assistant Director for International Health and Chief, Office of Planning, Evaluation and Communications

National Institute of Dental Research

*"In recognition of unique leadership and long-standing career commitment to international oral health."*

Dr. Ernst Freese  
Director, Basic Neurosciences Program and Chief, Laboratory of Molecular Biology, DIR  
National Institute of Neurological and Communicative Disorders and Stroke

*"For scientific achievements in the fields of differentiation and teratogenesis, and for leadership in applying scientific knowledge to improve public health."*

Dr. William A. Gahl  
Head, Section on Biochemical Genetics  
National Institute of Child Health and Human Development

*"For the discovery of a new family of inborn errors of metabolism leading to the development of curative therapy for cystinosis, a hitherto fatal genetic disorder of children."*

Dr. Elke Jordan  
Associate Director for Program Activities  
National Institute of General Medical Sciences

*"For sustained exceptional leadership of the NIGMS Office of Program Activities and for instrumental role in critical initiatives shaping the extramural mission of the NIH."*

L. Earl Laurence  
Executive Officer  
National Institute of Diabetes and Digestive and Kidney Diseases

*"For leadership in the establishment of four National Advisory Boards and the formation of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)."*

Dr. Robert A. Weisberg  
Chief, Section on Microbial Genetics  
National Institute of Child Health and Human Development

*"For the discovery of 'site specific' recombination, a mechanism of genetic recombination between phage and bacteria, which has provided an important foundation for modern recombinant DNA biotechnology."*

### PHS Special Recognition Award

Dr. Monique Dubois-Dalcq  
Chief, Section on Neural and Molecular Ultrastructure, DIR  
National Institute of Neurological and Communicative Disorders and Stroke

*"For contributions to our knowledge of how viruses penetrate into the central nervous system, persist there for long times, and cause demyelinating diseases."*

Yvonne H. du Buy  
Budget Officer and Chief, Financial Management Branch, OAM  
National Institute of Allergy and Infectious Diseases

*"For sustained exceptional financial management leadership of the National Institute of Allergy and Infectious Diseases."*

David L. Kenton  
Computer Specialist, Senior Staff Assistant  
National Library of Medicine

*"For continued excellence in improving and promulgating the National Library of Medicine Biomedical Information Retrieval System."*

Dr. Maureen W. Myers  
Chief, Treatment Branch, AIDS Program  
National Institute of Allergy and Infectious Diseases

*"For outstanding leadership and achievement as chief of the Treatment Branch, AIDS Program, and for development of the AIDS extramural clinical trials program."*

Dr. Peter G. Pentchev  
Biochemist, Section on Enzymology and Genetics, DIR  
National Institute of Neurological and Communicative Disorders and Stroke

*"For the discovery of the defect on cholesterol homeostasis in Types C and D Niemann-Pick disease and its application to genetic counseling and therapeutic strategies."*

Dr. Michael D. Walker  
Director, Division of Stroke and Trauma  
National Institute of Neurological and Communicative Disorders and Stroke

*"For outstanding creativity and leadership in clinical research on the treatment and prevention of stroke and traumatic brain and spinal cord injury."*

National Center for Nursing Research Group  
Donald C. Poppke  
Theresa Ringler

*"For exceptional service in designing administrative structures for the National Center for Nursing Research enabling it to become fully operational within months of its establishment."*

Nepal Typhoid Project-NICHHD Vaccine Group  
Civil Service Staff

Dolores A. Bryla  
Benjamin E. Fulton  
Dr. Charles U. Lowe  
Dr. Rachel Schneerson  
Commissioned Corps Officer

Dr. John B. Robbins  
*"For creative science, diplomacy, and administration in successful invention, development, and field trial of NICHHD typhoid vaccine in Nepal."*

### ASH's Special Citation

Dixie L. Kanagy  
Secretary to the Deputy Director  
National Institute of Neurological and Communicative Disorders and Stroke

*"For invaluable service in support of the activities of the National Institute of Neurological and Communicative Disorders and Stroke."*

Peggy E. Yasem  
Secretary, Office of the Director, DCE  
National Cancer Institute

*"For major contributions, outstanding performance and dedicated support to the Division of Cancer Etiology and to the National Cancer Institute."*

**(Continued on Page 5)**

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## Distinguished Service Medal

Medical Director Gerald D. Aurbach  
Chief, Metabolic Diseases Branch  
National Institute of Diabetes and Digestive  
and Kidney Diseases

*"For outstanding accomplishments in elucidating the mechanism of action of parathyroid hormone, the regulation of its synthesis and release, and applying these findings in clinical medicine."*

## Meritorious Service Medal

Medical Director William A. Blattner  
Head, Viral Epidemiology Section, DCE  
National Cancer Institute

*"For seminal contributions to our knowledge of the relationships between retroviruses and human diseases, including cancer and AIDS, based on a series of outstanding, interdisciplinary epidemiologic investigations."*

Medical Director Floyd J. Brinley  
Director, Convulsive, Developmental, and  
Neuromuscular Disorders Program  
National Institute of Neurological and Com-  
municative Disorders and Stroke

*"In recognition of particularly notable achievements and leadership as the commander of the Bethesda Clearing Staging Unit of the Public Health Service, in its formation, development, and implementation."*

Medical Director Lawrence M. Friedman  
Associate Director for Clinical Applications  
and Prevention Program

National Heart, Lung, and Blood Institute  
*"For significant contributions to cardiovascular research and clinical trials methodology and for selfless and decisive Division leadership during a period of organizational transition."*

Medical Director John I. Gallin  
Director, Intramural Research Program  
National Institute of Allergy and Infectious  
Diseases

*"For outstanding research in the field of phagocyte function and outstanding contributions on the neutrophil and its function in host defense."*

Medical Director John Joseph Mulvihill  
Head, Clinical Genetics Section, DCE  
National Cancer Institute

*"For leadership and outstanding research that has substantially advanced the field of human cancer genetics."*

Medical Director Barbara L. Packard  
Associate Director for Scientific Program  
Operation  
National Heart, Lung, and Blood Institute

*"For exceptional leadership of the Office of Program Planning and Evaluation and for outstanding contributions to the success of the NHLBI events celebrating the NIH Centennial."*

Medical Director Warren Strober  
Head, Mucosal Immunity Section, Laboratory  
of Clinical Investigation  
National Institute of Allergy and Infectious  
Diseases

*"For outstanding contributions to clinical immunology with particular reference to the role of the mucosal immunity system in host defense mechanisms."*

Medical Director Michael A. Zasloff  
Formerly Chief, Human Genetics Branch  
National Institute of Child Health and  
Human Development

*"For the discovery of a new endogenous, vertebrate antimicrobial defense system which holds important therapeutic promise for a broad spectrum of human infections."*

Medical Director Samuel H. Wilson  
Chief, Section on Nucleic Acid Enzymology  
Laboratory of Biochemistry, DCBD  
National Cancer Institute

*"For sustained excellence in research and important contributions to the understanding of the mechanisms of DNA synthesis in mammalian cells."*

## PHS Equal Opportunity Achievement Award

Twenty-one employees of the Food and Drug Administration; Office of the Assistant Secretary for Health; Health Resources and Services Administration; Alcohol, Drug Abuse and Mental Health Administration; and the NIH are being recognized as a group for their work on the PHS Hispanic Adopt-A-School Committee. NIH staff members included in this group honor award are:

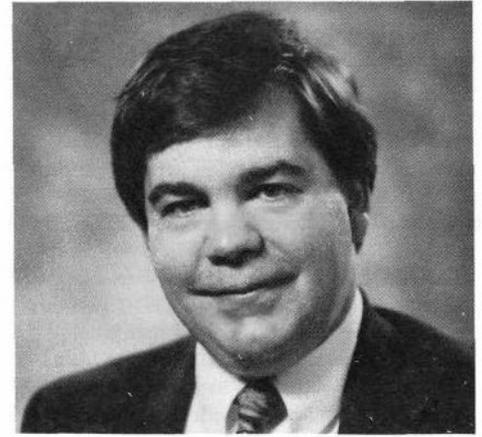
Jaime Arreguin-Avila, OD-OA  
Victor M. Canino, OD-DEO  
Dr. Americo Rivera, NIGMS  
Priscilla V. Rivera, CC

*"For developing innovative programs to introduce minority students to opportunities in public health, in particular, to careers in health, mathematics and computer science." □*

## Hoth Directs AIDS Program

Dr. Daniel F. Hoth was recently named director of the Acquired Immunodeficiency Syndrome Program, NIAID. He had been acting director since October and, during that time, initiated major changes in the institute's clinical trials program for AIDS and helped establish plans for vaccine development.

Hoth brings to the NIAID vast experience and knowledge in drug development and in



Dr. Daniel F. Hoth

clinical research with investigational agents. In addition, his extensive knowledge of the pharmaceutical industry and FDA regulations has been and will continue to be invaluable to the AIDS Program. He has an extensive publication record in the development of antineoplastic drugs.

He earned the M.D. degree from Georgetown University Medical School in 1972, where he also completed his internship and residency in internal medicine, and a fellowship in medical oncology. Hoth joined NIH in 1980 as head of the drug evaluation and reporting section within the Investigational Drug Branch of NCI. He was named chief of that branch in 1981 where he served until he came to NIAID.

While with NCI, Hoth was honored in 1987 with the PHS Special Recognition Award "For establishing a distribution system for azidothymidine (AZT) for patients with AIDS." □

## Atlantic City Trip Planned

Join R&W on Wednesday, June 22 and board the bus to Atlantic City's Showboat Casino for a day of fun. Cost for the trip is \$19 per person, which includes a casino package of \$12 in coin and \$3 in food. The bus will depart from Bldg. 31C at 7:30 a.m. and return at approximately 9:30 p.m. For further information contact the R&W Activities Desk, Bldg. 31, 496-4600. □

**HIV***(Continued from Page 1)*

from the major glands. (There are three major salivary glands: the submandibular, sublingual, and parotid glands.)

The researchers mixed the saliva samples with human immunodeficiency virus-1 (HIV), the virus that causes AIDS. They then added lymphocytes—immune system cells which are major targets for HIV—to the mixture.

They found that the virus was unable to infect the lymphocytes in the presence of whole saliva. Secretions from the submandibular and sublingual glands (collected together because they are hard to separate) also protected against viral infection. Parotid gland secretions in general provided little or no protection against the virus, although samples from one of the three subjects did inhibit HIV infection.

The NIDR study is not the first to suggest a protective role for saliva in AIDS. Two years ago, another researcher reported that whole saliva from a chimpanzee and a human inactivated the AIDS virus. "What's important is that we looked at the individual gland secretions," said Fox. In addition to salivary secretions, whole saliva contains blood components leaked through oral lesions and the gums, as well as bacteria and their products, he explained. "Our experiments showed that the inhibitory activity comes from the salivary glands, not from some other source."

The experiments did not reveal the identity of the protective factor in saliva, or its mode of action. But they did offer some clues. The fact that not all salivary secretions inhibited infection suggests that saliva's anti-HIV activity is due to a macromolecular component rather than to nonspecific factors such as pH or ionic strength, which are similar in all salivary gland secretions.

"Our preliminary work has shown that major salivary glands produce a factor or factors capable of inhibiting HIV infection," said Fox. He and his colleagues are now trying to identify that factor. In addition, they are looking for the protective factor in different groups of people, including children, women, men with AIDS, as well as healthy men. An understanding of salivary anti-HIV activity could conceivably be useful in developing therapies for controlling AIDS, said Fox.

Working with Fox were Drs. Bruce Baum, Andy Wolff, Chih-Ko Yeh, and Jane Atkinson of NIDR's Clinical Investigations and Patient Care Branch. □

**National Center for Nursing Research Names New Staff**

The National Center for Nursing Research has announced several additions to its staff and some staff members have changed positions.

*J. Mark Rotariu*, has been appointed NCNR executive officer; he was formerly the NLM budget officer. He is a graduate of the Key Executive Program at American University, having earned a master's degree in public administration in 1987. He is a recipient of the NIH Merit Award and the NLM Director's Award.

*Dr. Janet Heinrich*, director of the NCNR Division of Extramural Programs, received a baccalaureate degree in nursing from the University of Michigan, a master's in public health degree from Johns Hopkins University, and a doctor of public health degree from Yale University. She came to the NCNR from the American Nurses Association, where she was assistant director for congressional and agency relations in Washington, D.C.

*Charles Zellers*, budget officer, was formerly a budget analyst in NIDDK, a program analyst in the NIH Office of the Director, and an NIH management intern. He has a bachelor of science degree in biology from Bucknell University and has received several special achievement awards and the NIH Merit Award.

*Dr. Doris Bloch*, who earlier served as acting director of the NCNR Division of Extramural Programs, has been appointed, chief of the NCNR Office of Program Planning and Evaluation. She had been associated with the nursing research program in the Division of Nursing, HRSA, since 1972. She holds a baccalaureate degree in zoology from Mt. Holyoke College, a master's of nursing degree

from Yale University, and a doctor of public health degree in maternal and child health from the School of Public Health, University of California, Berkeley.

*Dr. Patricia H. Moritz*, has been named chief, Nursing Systems Branch, DEP. She received baccalaureate and master's degrees from Johns Hopkins University and a doctor of philosophy degree from the University of Maryland in administration with emphasis on organization theory and health and education policy. Moritz came to the NCNR from the advanced nurse education resources branch, Division of Nursing, HRSA.

*Mary Whitehead* was recently appointed NCNR grants management officer. She was formerly a team leader in the grants administration branch, NCI. She received her baccalaureate degree from Agnes Scott College.

*Geraldine Pollen* worked with Dr. Doris Merritt to establish the NCNR at NIH and has recently joined the staff as chief of the office responsible for information and legislation. She came to NCNR from the NINCDS Legislation and Analysis Branch. Before that she was special assistant to the director, NIH Division of Financial Management and a program analyst with the NIH Nutrition Coordinating Committee. She has a baccalaureate degree in political science from Barnard College and a master's degree in curriculum development and teaching from Columbia University. She is the recipient of several special achievement awards including the NIH Merit Award, and is the co-author of a book on teaching nutrition to children.



The National Center for Nursing Research recently appointed the following staff members: (front row, from l): Dr. Patricia Moritz, chief, Nursing Systems Branch; Geraldine Pollen, chief, Office of Information and Legislation; Dr. Doris Bloch, chief, Office of Program Planning and Evaluation. Back row (from l) are Mark J. Rotariu, executive officer; Mary Whitehead, grants management officer; Dr. Janet Heinrich, director, Division of Extramural Programs; and Charles Zellers, budget officer.



The Friends of the Clinical Center has begun a new program on the NIH campus in a joint effort with Change For Good. If you travel abroad or have foreign money—bills and coins—long forgotten perhaps, in a closet, attic, or hidden away in drawers, you can place those foreign monies in one of the new Change For Good globes located on the NIH campus. The globes are located at the R&W stores in Bldg. 38 and Westwood, as well as in the NIH Credit Union in Bldg. 31, and Crestar Bank in the Clinical Center. FOCC, which assists patients and their families with financial help in time of need, will share the income with the Potomac Area Council of the American Youth Hostels, which will use the money to administer camping programs for inner city youths. Pictured (from l) are three FOCC board members: Mary Roberts, public relations chairperson; Dr. Daniel Cowell, president; and Randy Schools, administrator.

## Alumni Association Party

The National Institutes of Health Alumni Association (NIHAA) will hold its first event, a wine and cheese party, on Thursday, June 9, from 6 to 8 p.m. at the Cloister (Bldg. 60).

NIHAA, an organization formed recently as a result of interest expressed by alumni during the Centennial celebration, will enable former staff to maintain contact with NIH and friends and colleagues in the scientific community. The primary goal of the association is to provide professional and social interaction among alumni.

All persons who have worked or studied at NIH are eligible to join NIHAA. Past employees at NIH can become full members and current employees can become associate members; in each case, membership fee is \$25 per year. Attendance at the June 9 party will be restricted to members only, but interested persons may register with NIHAA at the door.

The party will include greetings from Dr. James B. Wyngaarden, NIH director, and an update on AIDS research by Dr. Anthony Fauci, NIAID director and NIH associate director for AIDS research.

For further information about NIHAA or the event on June 9, call 496-7976. □



## TRAINING TIPS

The NIH Training Center of the Division of Personnel Management offers the following:

Courses and Programs	Dates
<i>Management and Supervisory</i> 496-6371	
The Federal Budget Process	6/1
Time Management	6/6
Speed Reading for Professionals	5/25
Improving Managerial Effectiveness	6/7
Practical Management Approaches	6/16
Effective Presentation Skills	7/7
Practical Management Approaches	6/16
Interpersonal Relationships in the Work Environment	7/13
The Management Tactics Clinic	6/9

*Office Skills* 496-6211  
Time and Stress Management for Support Staff 6/13

*Office Automation* 496-6211  
Intro to Lotus 1-2-3 Macros 8/3

*Adult Education* 496-6211

*Training and Development Services* 496-6211

Personal Computer training is available through User Resource Center (URC) self study courses. There is no cost to NIH employees for these hands-on sessions.

The URC hours are:

Monday—Thursday	8:30—9:00 p.m.
Friday	8:30—4:30 p.m.
Saturday	9:00—3:00 p.m.

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## DNADRAW Class Offered

A one-hour talk on DNADRAW, a computer program that draws publication-quality DNA sequences, will be given on May 24, at 1 p.m. in Rm. B51 of Bldg. 12A.

DNADRAW, which runs on the DEC-10 computer, has served many users during the past four years. The formatting part of the program has now been rewritten to run on an IBM-PC (or clone), and the remainder of DNADRAW is in the process of being rewritten. Help will be given to anyone attending the talk who has a sequence to draw.

For more information, call Marvin Shapiro, 496-6037. □

## SCULPTURE

(Continued from Page 1)

Marilyn Farley, coordinator, Art-In-Architecture Program, General Services Administration.

Before her death, Nevelson, who was primarily a wood sculptor, expressed her pleasure at the prospect of her work being installed at NIH. Some of her other major sculptures can be seen at the Museum of Modern Art, the Whitney Museum of American Art, and the Brooklyn Museum. Her 1983 "Sky Landscape," a steel piece similar in structure to the NIH work, stands at Vermont Avenue and L Street, N.W., in downtown Washington.

Purchased privately by Edwin C. Whitehead, founder of the Whitehead Institute of Biomedical Research and chairman, Whitehead Associates, the \$450,000 sculpture has been given to NIH on indefinite loan.

Dr. Armand Hammer, chairman and CEO, Occidental Corporation, has contributed funds to the dedication event.

Whitehead and his wife, Rosalind, who is president of the Lucy Chang Foundation and is also a member of the advisory board of the Fogarty International Center, are among the speakers scheduled for the dedication ceremony.

The program also features remarks by Frank Hodsoll, chairman, National Endowment for the Arts and Daniel J. Terra, ambassador-at-large for cultural affairs at the U.S. State Department. Wyngaarden will give opening and closing remarks. □



Dr. Ronald Elin, chief, Clinical Pathology Department, CC, is greeted by a special guest at a party held in the clinic cafeteria recently during National Medical Laboratory Week. A highlight of the festivities, which included a birthday cake and celebration for Elin, was the surprise arrival of a balloon-bearing gorilla. Workers took time out from a staggering workload that includes some 12,000 tests a day, or 3.3 million a year.

## NIDR (Continued from Page 1)

oxide-free water supply of Grand Rapids, Mich., to determine if the incidence of caries in that population would decline. This program added a new and vital dimension to dentistry—prevention.

### Legislation: The Beginnings

While the fluoride studies of the 1930s and '40s had brought national attention to the seriousness of the caries problem, it was World War II that actually provided the impetus for the establishment of a federal dental research institute. At the time of the Pearl Harbor attack, which brought the United States into the war, a category called "dental defects" led the list of physical reasons for rejection of recruits. Almost nine percent of the military inductees could not meet dental requirements for six opposing teeth in each jaw. The resulting shortage of manpower prompted the military almost to eliminate this requirement and to undertake the greatest dental rehabilitation program among recruits ever faced by the United States.

In 1944, a Senate subcommittee investigated the health problems of servicemen, including dental disease, as part of a future

health planning effort for the nation. Appalled at the impact of dental disease on U.S. conduct of the war and on the American population in general, Senators Claude Pepper of Florida and James Murray of Montana supported the establishment of a separate institute for dental research within the National Institute of Health. On Jan. 20, 1945, the first such bill, "S. 190," was introduced in the Senate with the full backing of the American Dental Association.

During the next three years, a variety of similar legislation would follow in the House and Senate. Finally HR 6726, introduced by Dr. Walter Brehm, a dentist and representative from Ohio, was able to garner the approval of both houses of Congress. On June 24, 1948, President Truman signed the bill into Public Law 755, the National Dental Research Act. The goal of the American Dental Association, which had fought long and hard for this day, at last had been achieved.

### The Fledgling Institute

With the selection of Dr. H. Trendley Dean as its first director, the National Institute of Dental Research opened for business with 25 employees and a budget of approximately \$237,000. Key organizational decisions made by Dean in the first days of the NIDR reflected his belief that solutions to clinical problems could be found through fundamental research. The fledgling institute was organized by basic disciplines for laboratory research and by disease and applied categories

## National Institute of Dental Research 40 Years of I

for clinical investigation. A section for epidemiology and biometry completed the chart.

### NIDR Comes of Age

The 1950s and '60s witnessed the growth of the NIDR, not only in its research base, but also in its physical plant. Staff had expanded, but space had not.

Once more, the American Dental Association, speaking loudly with the national voice of the entire dental community, convinced Congress to allocate funds for a dental research facility at the National Institutes of Health. On August 1, 1958, President Dwight Eisenhower signed the NIDR building appropriation into law. The National Institute of Dental Research Building (Bldg. 30), a seven-level red brick structure designed to house 200 investigators, opened its doors to institute scientists on May 26, 1961 (see sidebar).

### Caries: An Infectious Disease

Discoveries at this time that dental caries is an infectious, transmissible disease marked a milestone in dental history and ushered the dental sciences into the realm of biomedical research. The early sixties saw the identification of the caries process, which focused on a combination of a cariogenic diet, susceptible

100TH CONGRESS  
2d Session

## H. J. RES. 465

Designating 1988 as "Fortieth Anniversary Year of the National Institute of Dental Research".

### IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 22, 1988

Mr. HOYER (for himself, Mr. DYMALLY, and Mrs. MORELLA) introduced the following joint resolution; which was referred to the Committee on Post Office and Civil Service

## JOINT RESOLUTION

Designating 1988 as "Fortieth Anniversary Year of the National Institute of Dental Research".

Whereas the National Institute of Dental Research was established on June 24, 1948, by the National Dental Research Act;

On Feb. 22, 1988, Rep. Steny Hoyer of Maryland, with Rep. Mervyn M. Dymally of California and Rep. Constance A. Morella of Maryland, introduced H. J. Res. 465 to the 100th Congress of the United States. The Joint Resolution would designate 1988 as the "Fortieth Year of the National Institute of Dental Research" in honor of its past and continuing biomedical research on oral diseases, arthritis, diabetes, herpes, bone and joint disorders, and AIDS, among others. There are currently more than 80 co-sponsors in the House of Representatives.



On June 24, 1948, President Harry S. Truman signed the bill creating the National Institute Of Dental Research. Witnessing the signature are (from l) Dr. C. Willard Camalier, Sr., director, Washington office of the American Dental Association; Rep. Walter E. Brehm (Ohio), author of the bill; Dr. H. B. Washburn, president of the ADA; Dr. Bruce D. Forsyth, chief dental officer, U. S. Public Health Service; Dr. Carl O. Flagstad, chairman, ADA committee on legislation; Dr. Daniel F. Lynch, past-president of the District of Columbia Dental Society, and Dr. H. Trendley Dean, dental director of the National Institutes of Health.

## ... of Dental Research— ... of Progress

tooth surface, and the bacterium *Streptococcus mutans*.

In 1969, the NIDR proposed a targeted research attack on caries with the establishment of a National Caries Program, a concept that was soon adopted as a special health initiative by President Richard Nixon. Two years later, the National Caries Program came into being as an official organizational component of the NIDR.

### Basic Research Expands

Concurrent with the war on caries was an effort to broaden the scope of basic investigation. Institute scientists pioneered research on the structure and properties of collagen and by 1970, NIDR was an acknowledged leader in this field. These studies opened up new avenues of research within the institute including developmental biology, tissue formation and bone metabolism. On another front, NIDR began to make its mark in enzyme research and made early and significant contributions to the identification of enzymatic processes in tissues. Like collagen research, these enzyme studies were of benefit to other areas of science and attracted investigators from a variety of disciplines.

The need to probe the origins of periodontal disease lay behind the institute's expansion into microbiology and immunology. Studies in the 1950s revealed the infectious nature of this group of diseases, but their etiology and mechanisms of progression remained obscure. The sixties produced research that confirmed a bacterial role in periodontal disease and demonstrated that immunological reactions to these bacteria in affected gum tissues played an important part in the disease process. Again, findings by institute investigators had broadened the knowledge base, not only in dental disorders, but also in a wide range of biomedical disciplines. The demands of a growing research effort prompted the institute to offer a variety of intramural and extramural research training opportunities, which successfully expanded the pool of research expertise. Dental sciences had come of age.

### Research Recognized Worldwide

Studies carried out in the 1970s underscored the common denominators among "dental" and "medical" conditions. The institute gained international recognition for its achievements in virology research. NIDR scientists showed that viruses could produce diabetes in experimental animals by destroying



NIDR Staff—April 1, 1953

insulin-producing beta cells, that susceptibility to this endocrine disorder is genetically controlled, and that the disease could be prevented in laboratory mice by a vaccine. In a landmark study, institute investigators isolated, for the first time, a virus from the pancreas of a person with insulin-dependent diabetes mellitus, confirming a long-suspected viral role in the cause of this disease in man. Investigators today are continuing this line of research in an effort to unravel the interplay among viral, environmental and genetic factors—not only in this type of diabetes, but also in a number of other autoimmune diseases such as rheumatoid arthritis and systemic lupus erythematosus.

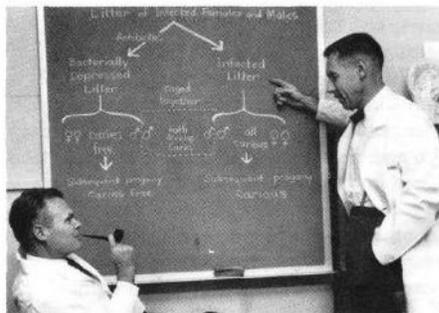
Studies also began in earnest on the herpes simplex virus (HSV) type 1, the organism responsible for cold sores, and HSV type 2, the cause of genital herpes infections. NIDR investigators traced the path of herpesvirus from the point of viral penetration, through its travels up the nerve, to the site of subsequent establishment of latent infection. The heightened understanding of this viral process

laid the groundwork for the development of a herpes vaccine a decade later.

Mineralized tissue research produced major gains during this decade in the understanding of the structure and development of bone and teeth. Advanced laboratory techniques enabled dental scientists to analyze in detail the factors and sequence of events involved in bone formation and resorption, and to isolate and purify substances found in bone matrix. This research has led to the discovery of new proteins and other agents that participate in bone growth, turnover and repair, and has provided clues to what goes awry in the development of bone diseases.

The periodontal diseases, which exhibit many of the features of diabetes and arthritis, began to yield to persistent investigation by intramural and extramural scientists, and three clinical research centers were targeted specifically to this oral health problem. Cellular immunologists brought new perspective to the inflammatory process, data accumulated on the

*(Continued on Page 10)*



Demonstration of the infectious nature of dental caries by NIDR investigators Drs. Robert Fitzgerald (l) and Paul Keyes brought a new dimension to dental research. Circa early 1960's.



Dr. H. Trendley Dean (r) and Dr. Elias Elvove in a laboratory at the NIDR in 1953. In the background is a steam distillation still used for the determination of fluoride content. Elvove was instrumental in discovering the appropriate water-to-fluoride ratio that prevents tooth decay but does not stain the teeth.

Photo is courtesy of the Saturday Evening Post Company.

(Continued from Page 9)

renewed its commitment to the goal of a nation of caries-free children.

#### Technology: Password to the '80s

In 1983, Dr. Harald Loe, known internationally for his contributions to periodontal research, was named the fifth director of the NIDR. Under his leadership, the institute has attained a level of technological sophistication unprecedented in dental history. The NIDR intramural program is recognized today as one of the strongest and most productive research units at the NIH. Dental scientists have been quick to adopt the new techniques of cell and molecular biology, particularly recombinant DNA and monoclonal antibody methodologies. With these new tools, research is rapidly advancing our knowledge of cell function mechanisms common to many tissues and is contributing to our understanding of a broad range of disorders. In the clinical arena, these advances in basic research are translating into new diagnostic techniques, innovative treatment protocols, and realistic opportunities for disease prevention.

As these research interests have expanded, so too has the need for more trained investigators in the dental sciences. In an effort to reverse the decline in the number of clinician-scientists, the NIDR launched, in 1984, a new research career development program—the Dentist Scientist Award.

#### Dental Science: Dental Health

Dental science has matured from a narrow concern with teeth and gums to encompass all the oral tissues, their normal metabolism, function and pathology, as well as the behaviors associated with the cause and prevention of disease and the maintenance of oral health. This expanded domain of research is manifest in current studies of oral viral infections; genetic anomalies; bone and joint diseases; oral cancers; acute and chronic pain conditions; salivary gland dysfunctions, which fostered the establishment of the NIDR Dry Mouth Clinic; and public, provider, socio-environmental and cultural dimensions of oral health and disability.

These investigations have led to some remarkable recent achievements, notably the development of a model *in vitro* system to measure the invasiveness of tumor cells and the development of new antimetastatic drugs; the isolation of protein growth factors for bone; the identification of the precise region of immunoglobulin receptors responsible for hypersensitivity reactions; new experimental vaccines against oral herpesvirus infections, and anti-inflammatory and anti-enzymatic agents to counter the destructive effects of chronic inflammatory reactions.

NIDR has also emerged as a leader in the field of pain research, and in 1983 was

charged with the direction of the new Pain Research Clinic at NIH. Scientists now know that the brain has its own systems capable of blocking pain signals, which we may one day be able to regulate at will. NIDR studies have validated the pain-relieving effects of many pharmacologic agents. New ways to measure pain are standardizing the sensory and behavioral qualities of pain. Current studies are also targeting pain associated with acquired immune deficiency syndrome (AIDS), cancer, and other chronic, debilitating conditions.

In response to the critical need for research in the underlying mechanisms involved in AIDS, dental scientists are identifying early oral changes associated with AIDS, such as hairy leukoplakia and candidiasis, and documenting the history of oral changes that occur as the disease develops. NIDR immunologists have established that protective monocytes are not destroyed by human immunodeficiency



Dr. Harald Loe  
Director 1983-Present

mechanism of bone destruction in periodontal diseases, and inroads were made in the understanding of the roles and interactions of bacteria in the development of oral disease.

During the 1970s, NIDR expanded its role in social and behavioral sciences to explore in depth the relationship between these disciplines and dental health. Program goals were aimed at determining how behavioral, social, cultural and economic factors influence oral health, and at devising strategies to turn American oral health behavior toward prevention.

In the mid-seventies, the National Caries Program initiated school-based fluoride mouthrinse demonstration projects. Public education efforts on the benefits of fluoride were underway, and basic research on caries continued. Dental sealants, controlled-release devices for administering fluoride, and other preventive measures were developed and tested. In other studies, nutritional scientists explored the cariogenicity of foods and the safety and palatability of artificial sweeteners that were not cariogenic.

In 1979, the NIDR initiated its first nationwide survey of the dental health of school children ages 5 to 17. The survey, a report card for the institute's caries prevention efforts to date, revealed a dramatic drop in tooth decay. One-third of the children were caries free; for the remaining children, the prevalence of tooth decay was only half of what it was a generation ago. Although pleased with the marked improvement in the oral health of these young people, the institute



Dr. David B. Scott  
Director 1976-1981

virus (HIV), but, in fact, may be the vehicle by which the virus is spread throughout the body. Studies of salivary gland secretions, saliva and gingival crevicular fluid of HIV-infected patients also are underway for evidence of subtle pathological changes, as is research on microorganisms associated with opportunistic infections and malignancies in

(Continued on Page 12)

## The Building 30 Story

By Bob Kuska

They were called "the fabulous '50s." The decade of tail fins, hi-fi's, and black-and-white television sets. The decade Uncle Sam wore a coonskin cap, movie audiences wore 3-D glasses, and American children wore whirling \$1.98 Hula-Hoops.

Yet, there was more happening to the American look in the '50s than James Dean movies. It was also an exciting time for American smiles. The fabulous '50s and the fledgling field of dental science dovetailed—thanks in large measure, to studies supported by the newly created National Institute of Dental Research. NIDR intramural studies in water fluoridation, tooth decay, tooth enamel and saliva all greatly enhanced and expanded the realm of dental science. As former NIDR director Dr. Francis A. Arnold said at the time, "Dental research did not begin with this institute but I think it is fair to say that the institute has had a profound effect on its development."

But, NIDR's '50s success story is remarkable for another reason. Like a baseball team without a ballpark, NIDR hit its home runs during the '50s without the benefit of its own laboratory facility.

When Congress passed the National Institute of Dental Research Act in 1948, it authorized \$2 million for the construction of a dental research facility on the NIH campus. However, with Congress in the late-1940s miscalculating some of the institute's immediate research needs and the outbreak of the Korean War shortly thereafter, funding for the facility proved not to be forthcoming. As a result, some NIDR intramural scientists migrated from the NIH campus to outside laboratories, searching for space to undertake their studies. This scattering of manpower resulted in what institute director Dr. H. Trendley Dean called NIDR "research colonies." They were found throughout the Washington, D.C., area, as well as in laboratories in Staten Island and Rochester, N.Y.

But, when the Korean War ended in the mid-1950s, another problem stood in the way of an NIDR building appropriation. In 1949, Congress appropriated \$100,000 for the institute to prepare a blueprint of its proposed research building. But, by 1956, estimated construction costs for this same blueprint had soared from \$2 million to \$5 million. If Congress resisted granting NIDR a \$2 million appropriation, would it now appropriate \$5 million for the building with the nation's economy swirling in an inflationary maelstrom? The rest of the dental community would have to convince Congress that dental science was a burgeoning science, and that



*Attending the 1959 groundbreaking ceremony for the new NIDR research building were (from l) NIDR director Dr. Francis Arnold; Dr. C. Willard Camalier, assistant secretary of the American Dental Association; Dr. John Knutson, chief dental officer of the Public Health Service; and Dr. Seymour Kreshover, NIDR associate director.*

granting NIDR funding for a research facility was vital—if not essential—to further improvement of the nation's dental health.

NIDR's support from the American dental community, at this point, was overwhelming. It patiently and persistently prodded members of Congress to pass the NIDR building appropriation. As one member of Congress told his fellow Congressmen:

"Members of Congress will find that their state, county and district dental societies, as well as the American Dental Association, are wholeheartedly supporting the passage of this bill. In so doing, America's dentists are once again proving that they are indeed members of a great profession, that now as always in the past they regard the interests and well-being of the American people as more important than their own immediate self-interests. This is the distinguishing mark of a true profession. For this the American people are once again indebted to American dentists, and because of this I want to express my thanks to the members of the dental profession and to assure them that I shall do all that lies in my power to see to it that this legislation becomes law and that the National Institute of Dental Research becomes a physical reality."

The dental community's persistence on NIDR's behalf reaped a valuable reward for the institute in 1956. President Eisenhower signed a bill that year, which had been passed by members of Congress, authorizing \$4 million for the NIDR laboratory building. Although NIDR still lacked an appropriation from Congress to build, it appeared that the lobbying effort was gaining steam.

However, just as suddenly as President

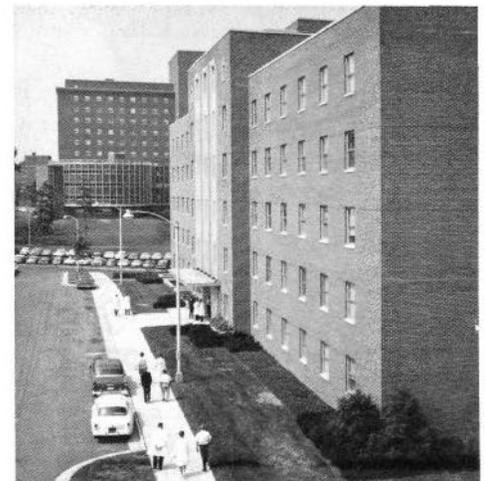
Eisenhower signed the authorization, congressional approval for the NIDR building appropriation was roadblocked. American consumer prices were threatening to skyrocket in 1957. As a result, Congress warned the nation that it would cut government spending substantially in the next fiscal year. This development, in effect, scuttled the dentists' lobbying campaign. For although the dental community had mustered its own congressional cadre of support, it had not yet secured enough votes to assure the appropriation. The institute would have to wait another year for its research facility appropriation.

Then, across the Atlantic Ocean, new trouble surfaced. The Soviet Union launched the space satellite Sputnik into the earth's atmosphere, and with it mankind vicariously entered the Space Age. Washington, not to be outdone by its political rivals in Moscow, would now pour more money into the nation's fledgling space program—perhaps even at the expense of its other social programs. It appeared to many in the dental community that getting an appropriation from Congress would be about as likely as finding life on the rings of Saturn.

Thanks in large measure to the president of the American Dental Association (ADA), Dr. William R. Alstadt, the dental community resolved to continue the fight for a dental research facility. And, as history will show, this time would be the charm.

Alstadt, who worked behind the scenes in the Arkansas Democratic party, soon enlisted the help of Senators John Fogarty (D-R. I.) and Lister Hill (D-Ala.) Both held influential positions in congressional committees overseeing health legislation. Alstadt was told by the congressmen that dentists across the nation

**(Continued on Page 12)**



*Dental Research Building (Bldg. 30) circa early 1960's. The Clinical Center is partially visible in the rear of the picture.*

## BLDG. 30

(Continued from Page 11)

would personally have to continue to urge their representatives in Washington to support the bill. If the lobbying effort waned, they said, so too would congressional interest in the building appropriation. The dental community would once again need to show its solidarity.

ADA members took this suggestion to heart. And soon a lobbying juggernaut was launched from ADA headquarters in Chicago. Dentists from Bangor to Barstow who had heard or read about the campaign through ADA channels inundated their representatives in Congress with requests for support of the legislation.

The effect of this intensive effort was remarkable. Soon new discussions ensued on Capitol Hill about the nation's need for a dental research facility. But this time the talk resulted in both the House and Senate voting to pass the bill.

The dental community's good fortune did not end there. On August 1, 1958, President Eisenhower—following Congress' lead—decided to sign the NIDR building appropriation into law. With this stroke of the pen, it was final—the institute and the entire nation would now have its own dental research workshop.

The National Institute of Dental Research Building, built of red brick and covering more than 92,000-square feet of the NIH campus, opened its doors to institute researchers on May 26, 1961. On this occasion, Abraham Ribicoff, secretary of Health, Education and Welfare, told a gathering of NIH scientists, administrators and guests that the new NIDR research facility "will be a symbol—a living, working symbol—of our (the government's) determination to give a major health problem the kind of national attention it deserves."

His words are still applicable today.

40<sup>th</sup>  
ANNIVERSARY

1948 - 1988

NATIONAL INSTITUTE OF  
DENTAL RESEARCH



DENTAL SCIENCE — DENTAL HEALTH



*Peggy Wirdzek (l) and Dr. Raymond Dionne measure a patient's physiological and psychological responses to an intravenous sedative drug given prior to oral surgery. Researchers at the Pain Research Clinic study the use of various drugs to determine which are the most safe and effective in relieving pain and anxiety.*

(Continued from Page 10)

the oral cavity, and potential measures to control them. Most recently NIDR researchers have shown that human saliva contains a factor that blocks the AIDS virus from infecting cells.

### Oral Health: The State of the Nation

To gauge the oral health and related behaviors of the population, NIDR undertook a nationwide survey in 1985. The National Survey of Oral Health in U.S. Employed Adults and Seniors: 1985-1986, compiled data on 21,000 adults ranging in age from 18 to 103 years—a sample representing 105 million people.

The most dramatic finding from the adult survey was the almost complete absence of toothlessness before age 40. Furthermore, only four percent of working adults aged 65 and below were missing all their teeth—and half the adult population below 65 had lost, at most, one single tooth. These are tangible measures of the progress of dental research and its impact on dental practice during the last four decades, the lifetime of the NIDR.

Today's older generation, however, includes individuals who grew up before World War II and did not benefit from programs of prevention. The NIDR has already taken steps to address oral health problems among the growing number of older people—a need that demands new knowledge of the normal aging

of the oral tissues—not just of the teeth and gums, but also of the tissue complex used in speaking, chewing, and swallowing, and of the senses of taste, smell, touch, temperature and pain. This research also must explore what happens to the oral tissues in relation to changes in immunity, in endocrine gland function, and in other body systems, and how oral health affects, and is affected by, systemic disease common in old age.

In 1986-87, NIDR conducted a follow-up survey of children's oral health to assess further the effectiveness of community and school-based caries prevention efforts. This survey of 40,000 children, representative of all school children ages 5-17, brought the good news that the decline in the caries rate is continuing in the U.S. Combining this study with the adult survey, the institute is now able to report on the oral health of approximately 150 million Americans.

### A Look to the Future

In the course of four decades, research has made enormous strides in our understanding of oral diseases, as well as in methods to prevent them. As dentists strengthen their partnership with other biomedical and behavioral specialists, these physicians of the mouth will be able to maintain the health of the teeth and associated tissues throughout a lifetime.

## Upcoming Events Celebrate NIDR's Fortieth Anniversary

- During the week of May 23, an exhibit on America's contribution to dental research will open at the National Library of Medicine. The display will commemorate the NIDR's 40th anniversary as well as trace the progress in the fight against various oral diseases.
- On Tuesday, May 24, Dr. Jens Pindborg will speak on "Dentistry in the Arts" from 2 to 4:30 p.m. in Bldg. 1, Wilson Hall. Pindborg, professor of oral pathology, Royal Dental College, Copenhagen, is a visiting scientist with the NIDR.
- During the morning of Wednesday, May 25, the NIDR will dedicate its newly renovated conference room in Bldg. 30 as the "H. Trendley Dean Conference Room." Dean was the first director of the institute.
- Also on May 25, a symposium, "Dental Science-Dental Health: The Status of American Oral Health," will be held in the Palladian Room of the Omni Shoreham Hotel in Washington from 2 to 5:30 p.m. This symposium will cover the preliminary results of the 1987 NIDR survey on the dental health of schoolchildren, an update on findings from the adult survey and projected plans for a national oral health promotion campaign.
- During the evening of May 25, the American and International Association for Dental Research will sponsor a cocktail reception and dinner in honor of NIDR's 40th anniversary. The dinner will be held in the Omni Shoreham's Diplomat Room. Members of Congress from the various health committees, representatives of the dental community and industry, and NIDR staff have all been invited to attend.
- On June 24, the NIDR will hold an employee picnic on the grounds of the Bethesda Naval Hospital. June 24, 1988, is 40 years, to the day, from when President Harry Truman signed the dental research act establishing the NIDR.
- Dr. George R. Martin, chief of the Laboratory of Developmental Biology and Anomalies has been selected to give the G. Burroughs Mider lecture this year. Martin will speak on "Basement Membranes: Key Determinants of Differentiation and Their Role in Cancer Metastasis." The event, part of the NIH Lecture Series, will be held on Wednesday, June 22, at 3 p.m. in the Clinical Center's Masur Auditorium
- On September 26, Dr. Ronald Gibbons, associate director of the Forsyth Dental Center in Boston, will give the sixth annual Seymour J. Kreshover Lecture. The title of the lecture

(See **EVENTS**, Page 14)



*Dr. Seymour J. Kreshover*  
Director 1966-1975



*Dr. Francis A. Arnold, Jr.*  
Director 1953-1966

## NIDR Dedicates Conference Room to Trendley Dean

On Wednesday, May 25, the NIDR will dedicate its newly renovated conference room in Bldg. 30, the major dental laboratory facility on the NIH campus. The room will be named the "H. Trendley Dean Conference Room" and will commemorate the memory of the first NIDR director (1948-1953), called the "father of fluoridation." Dean was instrumental in establishing water fluoridation as a safe and effective means to prevent tooth decay.

Among those participating in the event, to be held during the National Advisory Dental Research Council meeting, are Mrs. H. Trendley Dean and her daughter Ruth, Drs. David Scott and Seymour Kreshover, both former directors of the institute, Dr. Robert W. Elliott, Jr., president of the American College of Dentists, and Dr. Gordon H. Rovelstad, executive director of the ACD. The college donated the plaque, an aluminum bas relief of Dr. Dean's likeness, which will be mounted permanently at the conference room entrance.



*Dr. H. Trendley Dean*  
Director 1948-1953

## EVENTS

(Continued from Page 13)

is "Bacterial Adhesion to Oral Tissues: A Model for Infectious Diseases." The lecture will be held in the Clinical Center's Lipsett Auditorium at 3:30 p.m. and a reception will follow.

- On October 8-11, the joint meeting of the American Dental Association (ADA) and the Federation Dentaire Internationale 76th Annual World Dental Congress will be held in Washington, D.C. As part of its 40th anniversary celebration, the NIDR has scheduled several events:

A lecture on dentistry in stamps will be given by Dr. Alan Drinnan of the State University of New York at Buffalo in the NIH's Visitor Information Center and a companion exhibit will be displayed in the Clinical Center from mid-September to mid-October.

A postal cancellation booth will be set up at the ADA registration area and a special pictorial cancellation will be issued commemorating NIDR's 40th anniversary.

A symposium entitled, "Dental Science—Dental Health: 40 Years of Progress" will be held on Oct. 9. Later that evening, the ADA will sponsor a special reception in the Smithsonian Institution's Museum of American History. A special exhibit on dental research, developed for the event, will be officially opened.



*NIDR today: Dr. Abner Louis Notkins (r) scientific director, Intramural Research Program, and chief, Laboratory of Oral Medicine and Dr. Javariyah Srinivasappa, a visiting associate, examine insulin data from diabetic animals.*



*At four o'clock on Jan. 25, 1945, the city of Grand Rapids became the first city in the world to add fluoride to its community water supply.*

## **NIDR Recognizes Grand Rapids for Pioneering Water Fluoridation Study That Changed History**

As part of NIDR's fortieth anniversary celebration, officials of the institute convened in Grand Rapids, Mich. on Thursday, April 21, to recognize the city for its pioneering role in the prevention of tooth decay.

Grand Rapids was the site of a landmark water fluoridation project initiated in 1945 that was coordinated by the NIDR. The 15-year project cut in half the rate of tooth decay among Grand Rapids schoolchildren and firmly established water fluoridation as a safe, effective, and economical public health measure for preventing tooth decay. Today, more than 250 million people in 31 countries in the world receive the benefits of water fluoridation.

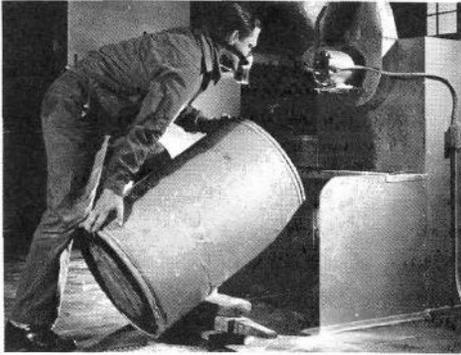
The Grand Rapids water fluoridation project was a joint effort by the NIDR, the city of Grand Rapids, the Michigan Department of Public Health, the University of Michigan, and the U.S. Public Health Service. The project grew out of several decades of dental research and began Jan. 25, 1945, when Grand Rapids became the first city to fluoridate its drinking water deliberately.

The program reviewed the history and

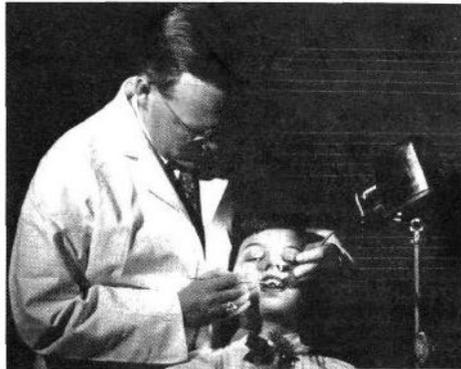
major developments of the project and the dramatic influence that the study had on worldwide oral health. During the program, Dr. James B. Wyngaarden, director of the NIH and a Grand Rapids native, and Dr. Harald Løe, director of the NIDR, presented Grand Rapids' Mayor Gerald Helmholtz with a special tribute recognizing the city for its dedicated participation with the Public Health Service in conducting the project.

Others who participated in the "Thank You Grand Rapids" ceremony were: Dr. David B. Scott, dental examiner in Grand Rapids for the 15-year study and former NIDR director; Dr. Daniel Whiteside, chief dental officer, U.S. Public Health Service; Dr. Willard B. VerMuelen, Grand Rapids dentist and former president of the West Michigan Dental Society; and Dr. Herschel S. Horowitz, renowned fluoride researcher and public health dentist. A special video message from Dr. C. Everett Koop, surgeon general of the U.S. Public Health Service, and a historical film documenting the early years of the Grand Rapids project, were shown.

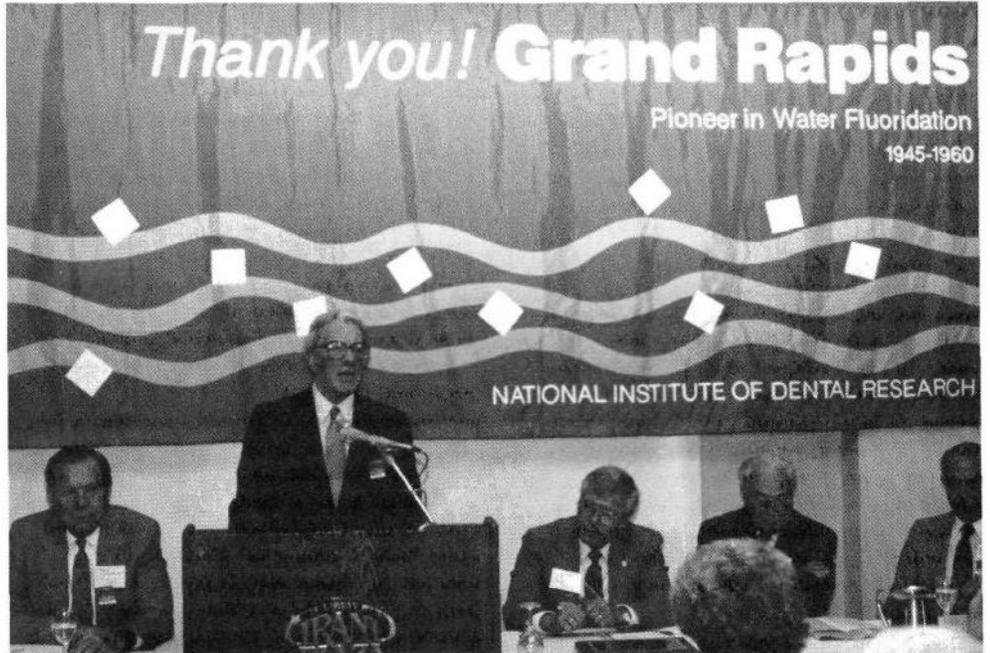
*Dentistry today: Dr. Michael Roberts, chief of the Patient Care Branch at NIDR applies sealants to a child's teeth. The teeth are sealed with a plastic film or resin to protect them from bacterial products produced when sugary foods are eaten.*



*Adding fluoride to the water in Grand Rapids, Mich.—1945. Worker wears a mask to prevent inhalation of dust.*



*Dr. David B. Scott examines the teeth of a Grand Rapids schoolgirl. Scott was the only examiner to participate in all 15 years of the Grand Rapids study. He later became the director of NIDR.*



*NIDR director Dr. Harald Loe addresses the audience at the "Thank You Grand Rapids" ceremony held in Grand Rapids on Apr. 21. To his right is Dr. James B. Wyngaarden, director, NIH and Grand Rapids native. To his left are Gerald R. Helmboldt, mayor of Grand Rapids.; Dr. Willard B. VerMuelen, Grand Rapids dentist and former president of the West Michigan Dental Society; and Dr. Herschel S. Horowitz, renowned fluoride researcher and public health dentist.*



*NIDR Staff Today*

## Chiles Speaks at NIH Biotech Meeting

By Anne Oplinger

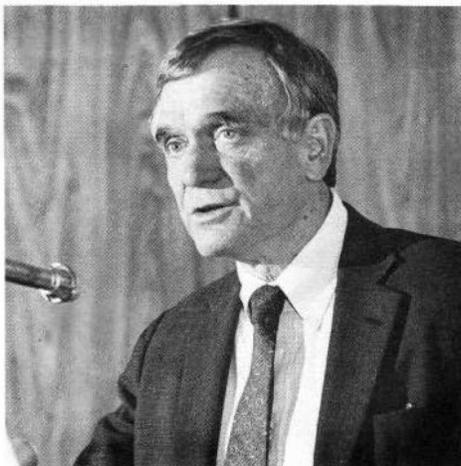
Florida senator Lawton Chiles spoke recently at an NIGMS-sponsored meeting on the future of biotechnology in the United States. The senator expressed concern that the U.S. leads the way in basic research, "only to see foreign competitors develop products and dominate world markets." According to Chiles, the United States must make a "declaration of strategic interest" in biotechnology if we are to take advantage of burgeoning opportunities and maintain our preeminence in this field.

Meeting participants, who represented state, federal, university, and industrial organizations concerned with biotechnology in all of its manifestations, discussed ways to meet these goals.

The participants said that a true revolution has occurred in biology in the last 25 years, and that its achievements have been enormous. Much has been learned about, for example, the structure and nature of DNA—the hereditary material found in all living things. Scientists today routinely manipulate DNA in ways that would have seemed impossible only a generation ago.

Our growing understanding of fundamental life processes, gained through basic scientific research, has created numerous opportunities for the application of this knowledge to medicine, agriculture, and industry. For example, DNA-based tests are now available that detect such genetic disorders as Duchenne muscular dystrophy, Huntington's disease, and sickle cell disease. Genetic engineering in microorganisms has produced such potentially valuable products as bacteria with an increased ability to fix nitrogen and thus improve the fertility of soil, bacteria that can degrade toxic chemicals, and bacteria that can be used to control insect damage to plant roots. The physician's armamentarium has also been increased, thanks to such biotech products as tissue plasminogen activator to treat heart attacks, interferons for leukemia treatment, and human insulin and growth hormone.

While acknowledging these achievements, the meeting's participants pointed out deficiencies in the pathway from discovery to product. They noted that past research efforts have focused on the initial step of making a new "biotech" product—often, the identification and cloning of a potentially useful gene. What must be emphasized now, they said, are the subsequent steps needed to turn a gene's product (a protein) into a marketable substance. These steps include finding ways to make large, pure amounts of the protein for which the gene codes. There was a consensus that more research in such areas as fermenta-



Sen. Lawton Chiles

tion technology, robotics, biocomputation, and automated DNA and protein analyzers is necessary to continue the momentum in biotechnology.

Continued momentum also requires adequately trained personnel. The experts at the meeting warned that the U.S. will lose its edge in the world biotech market if it does not rectify the severe personnel shortages in such fields as biochemical engineering, structural biology, immunogenetics and chemistry. They recommended that a biotechnology research training program be established to overcome these shortages. This training would be interdisciplinary and would include hands-on laboratory courses in techniques crucial to biotechnology. The participants said that trainees should also have the opportunity to learn about industrial aspects of biotechnology through internships at firms that develop biotech products. □

## Klinman Honored by WAS

Dr. Dennis Klinman recently received the Biological Sciences Award given by the Washington Academy of Sciences in recognition of his achievements in "studies on the genesis of systemic autoimmune diseases." The award was presented at the 1988 Annual Awards for Scientific Achievement ceremony held at American University.

Klinman's work on systemic autoimmune diseases, performed while he was a senior staff fellow in the Arthritis Branch, NIAMS, focused on polyclonal B cell activation in systemic lupus erythematosus. He is currently a medical staff fellow with the Infectious Diseases Branch, NINCDS. □

## Firefighter Injured in CC Blaze

A fire May 11 at the Clinical Center, caused by an electrical short-circuit in an exhibit, has left a county firefighter injured and \$35,000 in damage to the hospital's Visitor Information Center.

The fire, reported by an employee, occurred at about 6 a.m. and was contained by 6:25 a.m. In the attempt to put out the blaze, the Dental Clinic and other areas nearby were flooded with water 2-3 inches deep. Although the actual site of the blaze posed no danger to patients, the amount and intensity of smoke necessitated the removal of residents of the 3B North nursing unit.

The injured fireman, one of the first to arrive, was apparently blinded by smoke and fell from the balcony of the 2nd floor cafeteria onto a mezzanine one floor below. He was sent to Suburban Hospital for treatment of back injuries.

According to Dr. John Decker, CC director, everyone and everything, including the Clinical Center sprinkler system, responded exactly as the situation demanded.

By 8:55 a.m., with the fire put out and most of the damage limited to smoke and water, cleaning up was a priority.

During the cleanup, Susan Lee White, an editorial assistant with the Tumor Immunology and Biology Branch, NCI, was rescued from getting wet by an electrician as she attempted to get to her 8th floor office.

"A very chivalrous electrician pushed me onto a metal stretcher and pushed it through the water so I didn't get wet," she said. "I even managed to get to work only 10 minutes late."—Carla Garnett □

## Discussion of Drug Dangers

The third and final lecture in the STEP series, "Science for All" will address a timely and important issue—"Biological Effects of Drug Use." Drug use and its serious biological effects are apparent in daily headlines and this lecture and subsequent question and answer period will provide an opportunity to learn some of the facts of the problem.

Dr. David Friedman, deputy director of the Division of Preclinical Research, National Institute on Drug Abuse, will conduct the presentation. He has also maintained an active research program with the Laboratory of Neuropsychology, National Institute of Mental Health for 8 years, conducting research on the neurobasis of sensory perception, learning and memory.

All members of the NIH community are encouraged to attend this event on Friday, June 3, in Masur Auditorium, Bldg. 10 from 1 to 3 p.m. No preregistration required. For additional information, call the STEP program office, 496-1493. □