



NLM Publishes Experimental TOX-TIPS, A Monthly Bulletin on Toxicology Tests

Thermostats Set at 65° To Conserve Energy Here

In compliance with President Carter's directive to conserve energy during this time of national crisis, heating thermostats in NIH offices and laboratory areas have been reset to maintain 65°F.

No adjustments will be made to settings in hospital patient rooms, animal rooms, and other special areas.

If an adjustment is permissible in these areas, responsible personnel should advise the Buildings Unit which serves the area.

Reduction of ventilation (outside air supply) in office buildings during night and weekends—where such adjustment can be made—will continue.

All employees are urged to join the effort to conserve energy and to wear warm clothing to combat the inconvenience of lowered thermostats.

Employees Take Note: Parking Fines Higher

Parking fines have recently been raised. A \$15 fine is in effect for unauthorized parking in a space or area reserved for disabled persons, Government officials, carpools, or employees with specific work-related duties.

A \$15 fine may also be charged for parking where prohibited at any time or by an employee in a visitors space.

Fines of \$20 may be imposed for parking on the lawn, in a walkway or pedestrian crossing zone, or for prohibited double parking.

A \$25 fine will be levied for parking in a fire lane or where prohibited during a snow emergency.

A \$10 fine will be incurred for vehicles parked overtime, unauthorized vehicles, or those not parked within marked parking spaces.

Cars parked in an assigned area without displaying a currently valid parking permit may be fined \$5.

Newspaper headlines attest the average citizen's concern with the possible deleterious health effects of the many industrial chemicals, food additives, pesticides, drugs, and other substances to which he is frequently exposed.

To learn more about these effects, Government and industry scientists are engaged in long-term toxicology testing to evaluate the hazard or safety of substances used by man.

With this growing reliance on long-term toxicology research, scientists need to know that testing is going on in other laboratories to avoid needless duplication of testing in other companies, agencies, universities, and even countries.

Begins June 1976

Foreseeing the growing acuteness of this need, the National Library of Medicine began publishing in June 1976, an experimental monthly bulletin, *Toxicology Testing in Progress*.

Sponsored jointly by NLM and the Toxicology Information Subcommittee of the DHEW Committee to Coordinate Toxicology and Related Projects, TOX-TIPS has strong support from industry and

(See TOX-TIPS, Page 6)

Dr. Nathan Shock Named NIH Scientist Emeritus

Dr. Nathan W. Shock has been named the 11th Scientist Emeritus of NIH. The appointment was made upon Dr. Shock's retirement as scientific director of the National Institute on Aging at the end of 1976.

In his new role, Dr. Shock will consult with NIA scientists on aging research matters and will help analyze Baltimore Longitudinal Study data prior to publication.

Continues Editing Duties

He also will continue to compile and edit "Current Publications in Gerontology and Geriatrics," the listing which appears in each issue of the *Journal of Gerontology* covering worldwide literature related to aging.

Dr. Shock has been the catalyst in building the NIA Gerontology Research Center from a small two-man research unit in 1941 to today's modern facility with more than 150 scientists and supportive staff investigating biomedical and psychological factors involved in the aging process.

NIH Director Dr. Donald S. Fredrickson said it best in his congratulatory letter sent to Dr. Shock last fall:

(See DR. SHOCK, Page 8)



Joseph A. Califano, Jr., sworn in as DHEW Secretary on Jan. 26, visited NIH last Thursday morning, Feb. 3. Speaking to NIH employees in the Masur Auditorium, Mr. Califano said that the search for the best person to serve as NIH Director had been completed and that President Carter was announcing the appointment of the best person, Dr. Donald S. Fredrickson, present NIH Director. (Details will appear in the next NIH Record.)

Dr. Rowe Is Honored By Cancer Institute

Dr. Wallace P. Rowe, chief of the Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases, recently received the National Cancer Institute Annual Virus Cancer Program Award for his many valuable contributions to virus cancer research.

The plaque was presented to Dr. Rowe at the Virus Cancer Program 11th Joint Working Conference in Hershey, Pa.

In recent years, Dr. Rowe's research on genetic transmission of the mouse leukemia virus and on virus activation by chemicals has helped demonstrate the presence of a chemical blueprint for the cancer virus in the genes of normal mouse cells.

Other work has focused on hybrid viruses and the defective nature of transforming viruses.

Previous award recipients were: Drs. Werner and Gertrude Henle, 1975; Dr. Charlotte Friend, 1974; Dr. W. Ray Bryan, 1973; Dr. Ludwig Gross, 1972; and Dr. Joseph Beard, 1971.



Dr. and Mrs. Nathan Shock (r) and Dr. Richard C. Greulich, acting NIA scientific director, admire the portrait recently unveiled at the Gerontology Research Center in Baltimore. The painting commemorates Dr. Shock's 35 years (1941-76) as Center director. Alfred C. Laong, DRS Medical Arts and Photography Branch, was the artist.

the NIH Record

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Join NIH Joggers, Enter Cherry Blossom Classic

It's time for joggers to get in shape and register for the Fifth Annual Cherry Blossom Classic—Sunday, April 3—this year offering 2-mile and 10-mile runs beginning from Hains Point, Washington, D.C. Registration for the national competition is free this year.

Teams Forming

In addition to individuals, 5-person teams, including women's groups, may enter. The NIH Health's Angels—an R&W sponsored club, now about 70 members strong—hopes to enter several teams. Contact Allen Lewis, Bldg. 10A, Rm. 1E33, for registration forms and information.

Run Friday at Noon

When the weather allows, Health's Angels members sponsor Friday noon Fun-Runs beginning in front of Bldg. 1. Anyone may participate. Business meetings are held at noon the first Monday each month in the Medical Board Room, Bldg. 10, Rm. 1S213.

Women's Golf Ass'n to Meet March 2 to Plan 1977 Season

The NIH Women's Golf Association will hold an organizational meeting from noon to 1 p.m. on Wednesday, March 2, in Conference Room 5, Bldg. 31, B1 level. All NIH women—especially new members—interested in the 1977 season are invited.

Sponsored by the Recreation and Welfare Association, the group provides golfing activities for women of all degrees of skill, from beginners to scratch handicappers.

AMWA Chapter Meets Feb. 10; To Hear Eicholtz, See Film

The Mid-Atlantic Chapter of the American Medical Writers' Association is planning a special "double feature" program this Thursday evening, Feb. 10, at Bish Thompson's in Bethesda.

Virginia T. Eicholtz, of the Menninger Foundation and national president of AMWA, will speak, and the award-winning film, "The Human Brain: A Dynamic View of Its Structure and Organization," will be shown.

The film was made in California with NIH funds.

Dinner will be at 7 p.m., and the program starts at 8 p.m. For reservations, please call Mary Matzen, 654-0564 by Feb. 8.

Quartetto Italiano Returning On Feb. 13 For FAES Concert

The Quartetto Italiano is being welcomed back at the next FAES concert to be held on Sunday, Feb. 13, at 4 p.m. in the Clinical Center Masur Auditorium.

This is the fifth concert this season sponsored by the Foundation for Advanced Education in the Sciences.

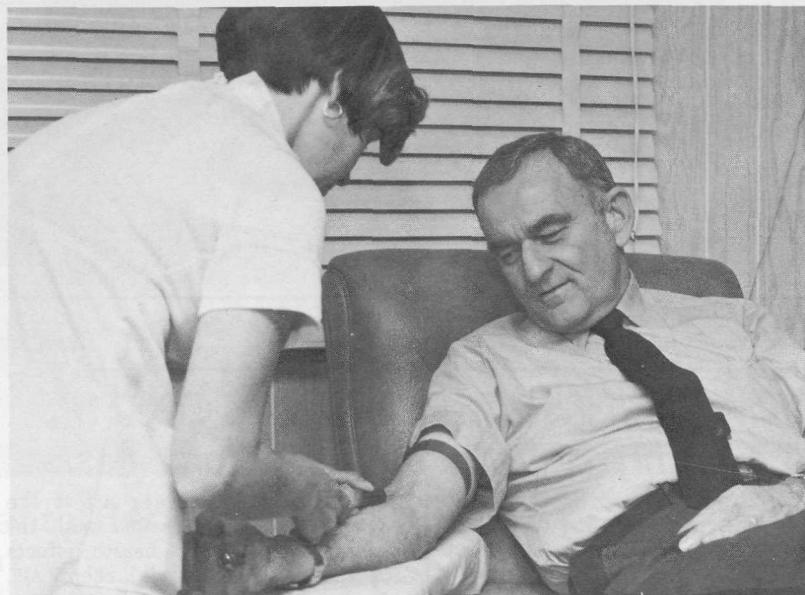
Admission is by ticket only.

'And When You Grow Old' Film to Be Shown on Feb. 23

A 26-minute film, "And When You Grow Old," will be shown Wednesday, Feb. 23, at 11 a.m., in the CC Masur Auditorium.

Developed by the American Occupational Therapy Association, the film presents sketches of five elderly Americans and discusses their concerns and philosophies.

The presentation is open to the public.



NIH PLATELETPHERESIS CENTER nurse Joyce Heller extracts a blood sample from Col. Arthur K. Herold, Commandant of the 2070th U.S. Army Reserve School in Riverdale, Md. Members of the Reserve Unit recently stopped by the Center before attending their weeknight drill. Leukemia patients, mostly children, need blood platelets to prevent fatal hemorrhaging. The chance of matching platelets is approximately 1 in 5,000 so many potential donors need to be tested. To make an appointment, call Ext. 64321.

Spring Computer Classes To Fill Increasing Demand

The DCRT Computer Center Branch Training Unit is scheduling 35 courses and seminars this spring, the 9th consecutive year that the Division of Computer Research and Technology has offered training courses and seminars for employees at NIH.

The demand for computer courses continues to increase—800 persons were enrolled last fall.

Instructors are from both DCRT and the National Institute of Mental Health.

Courses Listed

The regular courses include programming languages, operating and terminal systems, special facilities, and programming aids.

Seminars are being offered in Introduction to Curve Fitting at NIH Laboratory Computers.

Brochures with details about the courses will be distributed through B/I/D personnel offices, or they may be obtained by calling the DCRT Computer Center Technical Information Office, Ext. 65431.

At the back of the brochure, the application procedure is outlined. Applications should be made before Feb. 23, and will be accepted in the order received until classes are filled.

Dr. Mark Haussler Is Honored

Dr. Mark Haussler, an NIAMDD grant-supported investigator at the University of Arizona, Tucson, has been awarded the Andre Lichwitz prize by the National Health and Medical Research Institute in France for his research on calcium and phosphorus metabolism.

Booklet on 'Diverticulosis And Diverticulitis' Now Available From NIAMDD

A new booklet on a common digestive disorder, *Diverticulosis and Diverticulitis*, published by the National Institute of Arthritis, Metabolism, and Digestive Diseases, is now available.

Diverticulosis is a condition of the digestive tract characterized by tiny pouches (diverticula) which protrude through the muscular wall of the large intestine.

If these sacs become infected, the condition is known as diverticulitis.

Complications of this disorder plagued former Presidents Johnson and Truman and ex-Secretary of State John Foster Dulles as well as thousands of other Americans.

More than 20 percent of Americans over 40 years of age and over 60 percent of those over 65 have diverticulosis. Of these, more than 20 percent develop the infected form, diverticulitis.

The condition is found more often in women than in men.

Many doctors believe prevention or management of these disorders is best accomplished through diet.

The diet most often prescribed is high in bulk-producing fiber-containing foods to facilitate the easy passage of feces through the large bowel and to prevent the strong intestinal wall contractions ("straining at stool") which are believed to be responsible for the development of the bowel outpouching over the span of many years.

Copies of the pamphlet are available from the NIAMDD Office of Scientific and Technical Reports, Bldg. 31, Room 9A-04, Bethesda, Md. 20014.

MEDLEARN Helps Computer Students Gain Skills by Using MEDLINE Program

Since 1971, when the National Library of Medicine inaugurated MEDLINE, the tremendous growth in the use of the Library's on-line retrieval services has been paralleled by increased training provided by NLM to network users.

Although MEDLINE use requires no special background in computers, data base searchers do need to be acquainted with NLM indexing procedures, the vocabulary used for retrieving references, the techniques for accessing the system, combining search systems, and so forth.

Teaching for Several Years

For several years, NLM has been teaching MEDLINE users through training courses, workshops, and demonstrations.

A new approach, *MEDLEARN*, uses a computer to teach students how to search NLM's on-line data bases. An example of CAI (computer-assisted instruction), *MEDLEARN* eliminates the geographic restrictions of training classes by providing access to the same instructional program from remote locations by means of computer terminals.

Although somewhat expensive to create, CAI courses may be given at modest costs and are easy to update or modify.

Also, a CAI program allows the student to experience a genuine interaction with the computer, enabling the transition from instruction to on-line searching to be much easier and smoother.

MEDLEARN—a modularized instructional program—is written

in chapters, each dealing with a specific aspect of searching MEDLINE.

Students who have had little or no experience with on-line searching are guided through a logical sequence of topics, while more experienced students may choose their own path through the material.

A complex and sophisticated computer program enables each *MEDLEARN* user to bypass or to review instructional sequences at his own discretion.

Thus, each student may determine the length of time to be devoted to an instructional session, and simply resume at some future time at precisely that point in the program at which the previous session terminated.

Highly Interactive Program

MEDLEARN is a highly interactive instructional program: student and "teacher" are constantly sending messages to each other. The student's level of comprehension is assessed through frequent questions and quizzes.

The computer responds to each of the student's answers, with clarification and reinforcement for a correct response, or a restatement of the lesson and further queries for an incorrect response.

The average total time of instruction is 4 hours. At the current lowest rate of \$8 an hour for time connected to the NLM computer, (See *MEDLEARN*, Page 7)

Research in Dacca Proves Malnutrition Increases Severity of Diarrhea in Cholera

Scientists partly supported by the National Institute of Allergy and Infectious Diseases have verified and expanded earlier reports that nutritional status can affect the severity of diarrhea in cholera patients.

A study of hospitalized patients in Dacca, Bangladesh, found that a 30 to 70 percent increase in diarrhea duration in the more severely malnourished was not related to antibiotic therapy, intestinal parasites, or the diet given as the patient recovered.

The investigators suggest that poor nutrition retards replacement of normally short-lived intestinal mucosal cells, allowing irreversibly bound cholera toxin to continue to exert an effect.

Malnutrition has long been thought to affect adversely the course of cholera, but no adequate documentation existed. A connection between malnutrition and prolonged diarrhea was noted in tetracycline-treated cholera patients in 1967 and corroborated in 1970.

The present study by Drs. D. L. Palmer, F. T. Koster, A. K. M. J. Alam, and M. R. Islam of the de-

Black History Observance Programs Begin Feb. 14; Details to Be Announced

Programs for this year's Black History Observance will be held at noon each day from Monday, Feb. 14, through Friday, Feb. 18, in the CC Masur Auditorium.

The theme is "Beyond Civil Rights: A New Day of Equality."

Participants in the Observance will include: Carl Rowan, TV commentator and newspaper columnist; Delores Tucker, Secretary of State for the Commonwealth of Pennsylvania; Prof. Thomas Flagg, concert pianist and acting dean of the School of Fine Arts, Howard University.

Other Participants Noted

Also, the St. John's Baptist Choir of the Interfaith Center, Columbia, Md.; James Farmer, former president of CORE; the Cardoza High School Band; and the Ellington High School Band.

According to O. H. Laster, program chairman, there will be desk-to-desk memos as well as posters and notices on bulletin boards announcing the exact days on which the participants are scheduled to appear.

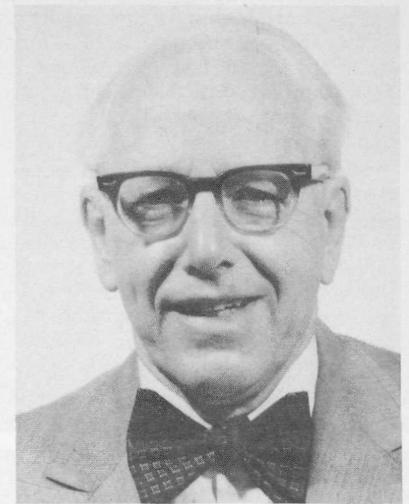
Plan for Evening Employees

Dr. James C. Moore, general chairman of the program, said that this will be the first time displays and presentations are being planned for evening employees.

Carl Funn, Black History exhibitor, will show a film and give a lecture.

The following week, as part of the Observance, Julian Bond, member of the Georgia State legislature, will speak here.

Wm. Haenszel Retires; Conducted Own Research And Encouraged Others



Mr. Haenszel has moved to Chicago, where he accepted positions as senior epidemiologist, Illinois Cancer Council, and professor of epidemiology, University of Illinois School of Public Health.

William M. Haenszel recently retired from the National Cancer Institute after nearly 24 years of research on the origins of cancer.

For the past 15 years, Mr. Haenszel was chief of the Biometry Branch, whose programs have encouraged the establishment of cancer registries throughout the United States.

Developed Epidemiology Studies

He was instrumental in developing international studies on the epidemiology of cancer, which encouraged collaboration among scientists of many countries.

Mr. Haenszel developed the studies of migrant populations that convinced many scientists that cancer is largely a disease of the environment and, hence, possibly preventable.

In recent years, through his own research, Mr. Haenszel has suggested that dietary factors contribute to cancers of the stomach and large intestine. He was among the early research workers who showed the relationship of smoking to cancer, particularly among women.

Mr. Haenszel also contributed to the development of biostatistical techniques for analyzing data.

A paper coauthored with Nathan Mantel in the April 1959 *Journal of the National Cancer Institute* is considered a classic reference for biological research workers, epidemiologists, and other scientists.

All patients above the median age of 8 were considered adults. Because reported ages were unreliable, weight-for-age measurements were used to determine nutritional status, comparison data having

(See CHOLERA, Page 7)



Walter Hershey, NCI property management specialist, recently stopped in Plains, Ga., on his way back from a Florida vacation, and met "Miss Lillian," President Carter's mother. Mr. Hershey and his family also met then President-elect Carter at the Plains Baptist Church and invited him to visit NIH. Mr. Carter's response, according to Mr. Hershey, was, "I just might do that."

NIAID Scientists Use Interferon Inducer To Treat Chronic Hepatitis B in Chimps

Scientists at the National Institute of Allergy and Infectious Diseases and their colleagues have reported temporarily successful use of a chemical in treating chimpanzees with chronic hepatitis B virus infection.

The chemical used—PICLC—induces interferon, an antiviral substance produced by the body. Interferon can also be produced in the laboratory from human white blood cells, but it is difficult to obtain and is very expensive.

Scientists have sought an effective and relatively inexpensive inducer to increase production of endogenous interferon to fight viral infections. PICLC (polyriboinosinic-polyribocytidylic acid-poly-L-lysine carboxymethyl cellulose)—one of the most promising inducers at the present time—is only mod-

erately toxic and is not readily broken down by the body.

As reported in the Oct. 9 issue of *Lancet*, Dr. Robert H. Purcell and his associates used PICLC, a stabilized derivative of an earlier inducer, poly I:poly C, in a study with four chimpanzees.

PICLC significantly reduced the number of Dane particle markers in the blood that indicated hepatitis B infection. Dane particles are thought to represent the complete hepatitis B virus.

The scientists' success in treating the chimpanzees was only temporary in that cessation of therapy resulted in markers of infection returning to pretreatment levels. Dr. Purcell and his co-workers believe, however, that their failure to cure the animals may have been due to their inability to maintain constant serum levels of interferon in the experimental animals.

Parallels Other Studies

The results closely parallel findings recently reported by NIH grantees and by European scientists who administered exogenous interferon to chronically infected humans. The studies have not yet determined whether suppression of Dane particle production also limits the infectivity of the hepatitis carrier.

Virus Doesn't Stimulate

The studies further indicated that the hepatitis B virus itself is a relatively poor stimulator of interferon production, perhaps accounting for the chronicity of the disease. However, even small amounts of interferon suppress virus synthesis.

Thus, PICLC (or exogenous interferon) may be useful in treating chronic hepatitis B virus infections in humans. It has been estimated that at any one time between 150 and 200 million of the Committee on Aging. He has also

the Arkansas State Interagency served as Vice President of the Arkansas Gerontological Society.

In addition to the three new appointments, Bernard Nash, a consultant to the American Association of Retired Persons/National Retired Teachers Association, has replaced Dr. Carl Eisdorfer as an ex officio member of the Advisory Council representing the Federal Council on Aging.

Mr. Nash was formerly deputy commissioner to the U.S. Administration on Aging, as well as serving as executive director of the AARP/NRTA.

NIH Visiting Scientists Program Participants

1/1—Dr. Ada Hsiao-Chia Kung, Taiwan, Environmental Biology Branch. Sponsor: Dr. Marshall Anderson, NIEHS, Research Triangle Park, N.C.

1/3—Dr. Julian Edwin Arundell Leakey, United Kingdom, Pharmacology Branch. Sponsor: Dr. John R. Fouts, NIEHS, Research Triangle Park, N.C.

1/6—Dr. Teodozjy Kolasa, Poland, Section on Molecular Structure. Sponsor: Dr. Erhard Gross, NICHD, Auburn Bg., Rm. 7.

1/10—Dr. Sunil K. Chaudhary, India, Environmental Biology and Chemistry Branch. Sponsor: Dr. Phillip W. Albro, NIEHS, Research Triangle Park, N.C.

1/10—Dr. Yoshifumi Nakanishi, Japan, Cellular Aging Program. Sponsor: Dr. Edward Schneider, NIA, Gerontology Research Center, Baltimore, Md.

1/11—Dr. Yoshimi Ota, Japan, Laboratory of Molecular Genetics. Sponsor: Dr. Michael Cashel, NICHD, Bg. 6, Rm. 335.

1/17—Dr. Alexandria Dimitriu, Rumania, Clinical Physiology Section. Sponsor: Dr. Anthony S. Fauci, NIAID, Bg. 10, Rm. 11B09.

1/17—Dr. Yvonne Joy Rosenberg, Australia, Laboratory of Microbial Immunity. Sponsor: Dr. John F. Finerty, NIAID, Bg. 5, Rm. 206.

1/18—Dr. Giorgio Belvedere, Italy, Carcinogenesis Chemistry Branch. Sponsor: Dr. Harry Gelboin, NCI, Bg. 37, Rm. 3E24.

1/21—Dr. Alok Bhattacharya, India, Laboratory of Pathology and Physiology. Sponsor: Dr. Barbara Vonderhaar, NCI, Bg. 10, Rm. 9B06.

1/24—Dr. Albrecht Hans Bruckner, East Germany, Laboratory of Molecular Biology. Sponsor: Dr. Ernst Freese, NINCDS, Bg. 36, Rm. 3D02.

1/24—Dr. Georgine P. Faulkner, United Kingdom, Laboratory of Molecular Biology. Sponsor: Dr. R. A. Lazzarini, NINCDS, Bg. 36, Rm. 3B04.

world's population are infected with hepatitis B virus. Most of these are chronically infected, and thus are potential carriers of disease, posing a major threat to world health.

This study was reported by Drs. Robert H. Purcell, NIAID, John L. Gerin, Molecular Anatomy Program, Oak Ridge National Laboratory, William T. London, National Institute of Neurological and Communicative Disorders and Stroke, JoAnn Wagner, NIAID, Vincent J. McAuliffe, NIAID, Hans Popper, Mt. Sinai School of Medicine, New York, Amos E. Palmer, NINCDS, Eduard Lvovsky, NIAID, Paul M. Kaplan, Molecular Anatomy Program, Doris C. Wong, NIAID, and Hilton B. Levy, NIAID.

Jane Pauley and TODAY Cameras Visit CC; Tapes Also Show NIH at Work



Scores of people were involved, and sections of the program were TV-taped ahead of time on Tuesday, Jan. 18, but Friday morning, Jan. 21, it all seemed effortless as NBC's TODAY show went out over the air—live from NIH.

Millions of Americans just getting up heard Jane Pauley interview NIH Director Dr. Donald S. Fredrickson about current research at NIH.

Technicians Arrive Early

Actually, technicians had begun arriving at the Clinical Center at 4 a.m. to install on the eighth floor a microwave antenna which transmitted the program to towers at WRC-TV. Thick cables ran from the portable antenna to the cameras on the first floor.

Arrangements were made far ahead for the on-location TV interview and for TV-taping research and clinical care projects.

Several days earlier, a mobile TV-camera was used to tape portions of the program that could not be televised live, including the laminar air-flow patient facilities, not shown in the photos on the opposite page.

Photos by Jerry Hecht

(L to r, top to bottom): (1) Ms. Pauley discusses program arrangements with Dr. Fredrickson (1) and Ed Gough (r), producer of the TODAY show. (2) Ms. Pauley asks Dr. Fredrickson about the application of computers to research and medicine. (3) An open heart surgery team, headed by Dr. Charles McIntosh of NHLBI, was taped during an operation by (4) an NBC camera crew, in the observation dome above the operating room. The portable TV cameras also visited laboratories. (5) Dr. Frederick Appelbaum of NCI explains the leukopheresis process being performed. (6) A normal volunteer for metabolic research explains her carefully regulated diet, prepared in the CC's Nutrition Department (7) by Dorothy Bingham (c) and Mary Little. (8) Ms. Pauley discusses with Michael Green (c) of the CC Nuclear Medicine Department and Dr. Jeffrey Borer, NHLBI, how radionuclides, combined with controlled exercise on a machine and cineangiography, can improve diagnosis of heart problems.

3 New Members Attend Nat'l Advisory Council On Aging's 7th Meeting

Three new members were ushered in at the National Advisory Council on Aging's seventh meeting on Jan. 31: Martin Janis, Jr., Isadore Rossman, and Arthur Bouton.

As executive director of the Ohio Commission on Aging, Mr. Janis has been active in providing housing and services for Ohio's aged. The Commission was created while Mr. Janis served as director of the Ohio Department of Mental Hygiene and Corrections.

He was recognized in 1975 by the Senate Special Committee on Aging for his development of two Golden Age Villages.

These model facilities for low-income aged are unique in that they provide personal care services, such as meals, health clinics, and barber and beauty shops.

Another program created by Mr. Janis is the "Golden Buckeye Card," which makes commercial discounts available to Ohio's aged.

Authors Text

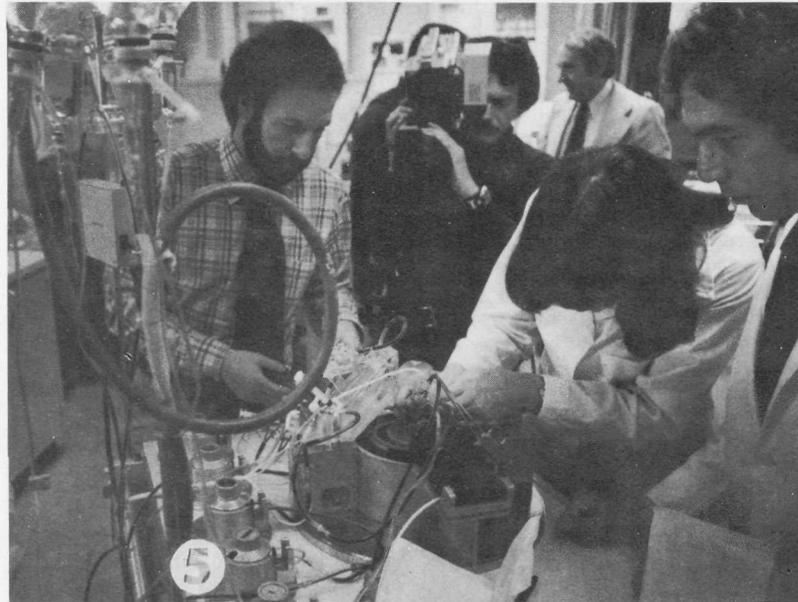
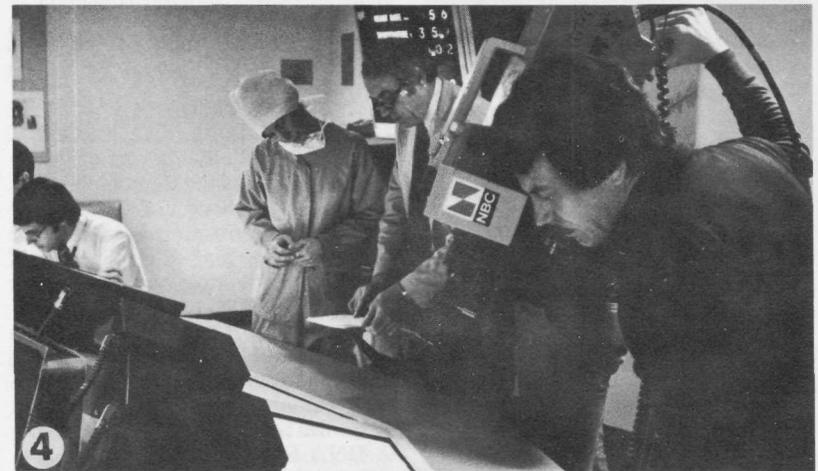
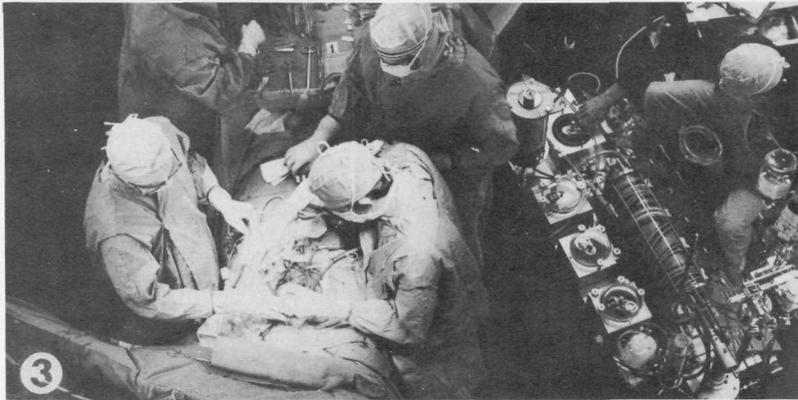
Dr. Rossman, a pioneer in the field of home care for the aged, is also the author of *Clinical Geriatrics*.

He has served on the Moreland Commission, which investigated nursing homes in New York State to provide information and make recommendations on a variety of issues related to long-term care.

Mr. Bouton is currently chairman of the Board of Directors of the 9-million member American Association of Retired Persons, the Nation's largest organization serving the interests of older persons.

Prior to his retirement, he had been in the banking business for 25 years. Mr. Bouton is a member of the Retired Senior Volunteer Program, the Arkansas Governor's Advisory Committee on Aging, and

NBC's TODAY Show Features Clinical Center on January 21; Gives Live and Taped TV Coverage



Studies on Chromatin, Protein Synthesis Discussed at Science Writers Seminar



Dr. Korn (second from l) introduced the speakers at the recent Science Writers Seminar, held Jan. 25 at NIH. L to r: Dr. Nienhuis of NHLBI; Dr. Felsenfeld, NIAMDD; and Dr. Leder, NICHD.

Chromatin and Protein Synthesis were the general topic of the most recent Science Writers Seminar, sponsored by the Intramural Scientists of NIH and by the Division of Public Information.

Dr. Edward D. Korn, chief of the Laboratory of Cell Biology, National Heart, Lung, and Blood Institute, introduced the speakers and topics:

Dr. Gary Felsenfeld, acting chief of the Laboratory of Molecular Biology, National Institute of Arthritis, Metabolism, and Digestive Diseases, discussed Organization of DNA in Higher Organisms and Its Relationship to Biological

Activity.

The Genes for Hemoglobin: A Model for the Study of Gene Regulation was the topic of Dr. Arthur W. Nienhuis, chief of the Section of Clinical Hematology, Molecular Hematology Branch, NHLBI.

Dr. Philip Leder, chief of the Laboratory of Molecular Genetics, National Institute of Child Health and Human Development, spoke on Organization of Antibody Genes: A DNA Cloning Approach.

In addition to information personnel from various B/I/D's, science writers from several newspapers and magazines attended.

The next seminar, on Immunology Research, is scheduled for April 19 from 2 to 4:30 p.m. Call Jane Collins, Ext. 69151, or Angela Martin, Ext. 62535, for further information.

TOX-TIPS

(Continued from Page 1)

trade associations which have voluntarily submitted reports of ongoing research projects.

By the end of 1976, TOX-TIPS had made public the information on nearly 100 current or planned toxicology testing projects involving more than 100 substances.

Project announcements carry information on chemical structure, how the substance is administered, dosage, species and strain of test animals, duration of the test, control arrangements, and the like.

Each issue of TOX-TIPS includes a cumulative index by compound, investigator, and supporting and performing organization.

In fact, TOX-TIPS may be the only published notice for many toxicology projects. For various reasons—such as absence of any observable effect—results may never be published.

Knowledge that such a project was undertaken, however, could be critical to another toxicologist interested in the same or a structurally similar substance.

NLM plans to issue several more experimental issues before converting the publication to a subscription item available from the National Technical Information Service.

For sample issues or further information, write to Dr. Melvin Josephs, Chief, Technical Files Implementation Branch, Specialized Information Services, NLM.

Study Finds Hypnosis Is More Effective Than Acupuncture in Dental Pain Relief

Western theories of the mechanism of pain control by acupuncture can be classified as primarily psychological or neurological. Acupuncture has been likened psychologically either to hypnosis or the placebo effect attributable to a patient's confidence in a procedure.

Acupuncture has also been compared to electrical stimulation of specific regions of the brain which, when activated, block pain messages from reaching consciousness, and to the pain-relieving effects of narcotics which also seem to activate these same pain-inhibiting regions of the brain.

Fits Morphine Pattern

Recent research indicates that acupuncture may fit the pattern of pain control by morphine, because the pain-relieving effects of acupuncture can be reversed by naloxone, a drug that specifically counteracts the effects of narcotic drugs such as morphine and fentanyl.

Thus, there appear to be specific regions of the brain with a normal function of inhibiting pain. These regions may be activated by morphine, electrical stimulation, or acupuncture.

Dr. Donald D. Price of the National Institute of Dental Research and Dr. David J. Mayer of the Medical College of Virginia determined the point of pain recognition in groups of volunteers by increasing the stimulation of incisor teeth with an electric vitality tester.

A higher pain threshold means that a stronger stimulus is required to evoke pain, and therefore scientists infer that pain relief or a decrease in pain sensibility has occurred.

A group of 35 volunteers received manual acupuncture during a 30-minute period. The needles were inserted in the web between the

thumb and the forefinger at the HO KU point which controls tooth pain.

Because manipulation of the needle is distracting and sometimes painful, it was done for the first 2 minutes of each 5-minute interval between measurements of tooth pain, but not during the tooth test.

Individual reactions varied, but the average threshold of pain increased 27 percent, and indicated a small but statistically significant amount of pain reduction.

Group Hypnotized

Another group of 14 subjects was hypnotized and given the suggestion that they would not feel pain. The tooth test showed an average 85 percent increase in pain threshold for these individuals.

During the period of increased pain thresholds, half of the hypnosis group and half of the 20 acupuncture responders were given an injection of naloxone while the remainder of each group received a saline injection. These solutions were given on a double blind basis, neither patient nor doctor knowing what was given at the time.

Thresholds Elevated

Those subjects in the acupuncture group who received saline had the same elevations of pain thresholds as before.

In contrast, when naloxone was given to the other acupuncture subjects, their pain thresholds returned to pre-acupuncture levels. When applied to the hypnosis group, naloxone did not reverse the elevated pain thresholds of any hypnotized subject.

This research shows that at least part of the pain control of acupuncture is attributable to an effect on neural pathways that are also activated by narcotics such as morphine because one chemical antagonist, naloxone, inhibits both.

May Release Enkephalin

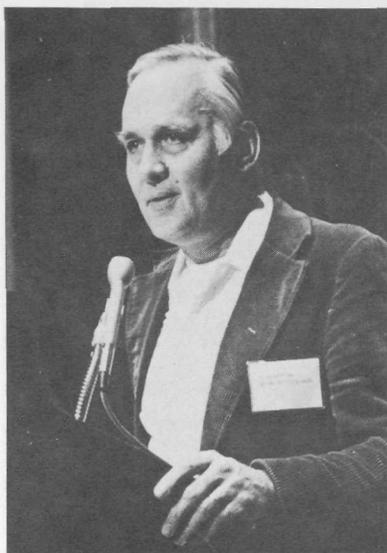
Acupuncture may release the newly discovered "enkephalin" a pain-killing, morphine-like substance produced by the brain itself.

These findings also convinced the investigators that hypnosis has a different mechanism than acupuncture, and is a more powerful and predictable method of pain relief.

Drs. David J. Mayer, Joseph Barber, and Amir Rafii, of the Medical College of Virginia, Richmond, and Dr. Donald D. Price, NIDR, report their findings in the *Proceedings of the International Association for the Study of Pain*, 1976.



Dr. Felsenfeld discussed the strong evidence from many scientists around the world that chromatin has the structure of "beads on a string." Chromatin is a combination of DNA and associated proteins, chiefly histones. The beads—clusters of eight histone molecules—with a short length of DNA wrapped around the outside connected by short lengths of DNA relatively free of protein, enable the long DNA molecule to fold into a compact form suitable for packaging in the nucleus.—Electron micrograph courtesy of A. L. Olins and D. E. Olins, Oak Ridge National Laboratory, 1974.



Dr. Rowe accepts the NCI award for his contributions to virus cancer research. (See story on page 1.)

CHOLERA

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been obtained from 8,666 normal Bengali children of known age.

The nutritional status of all patients was poor by international standards, though half the children ranged above and half below the Bengali norm. Seventy-eight percent of the children were suffering from first-degree and 17 percent from second-degree malnutrition, which affected 69 and 26 percent of the adults respectively.

Affects Duration

Depending on its severity, malnutrition was found to be associated with a 30 to 70 percent increase in duration of diarrhea in all age groups. The effect on volume of stool loss was less pronounced than on duration. Both duration and volume were significantly decreased with tetracycline therapy.

The investigators examined various factors other than malnutrition as causes for the prolonged diarrhea, but found no support for any of these.

Toxin Persists

Intestinal mucosal cells, which usually have very brief lives, are known to be replaced slowly in diseases of severe malnutrition. The effect of cholera toxin is believed to persist for the life-span of the mucosal cell to which it binds, and this slowed replacement rate could prolong the toxin's effect.

The protracted course of cholera in the malnourished is of great significance, since it increases the demand on the hospital for fluids, medical supplies, and nursing care, and adds to the cycle of malnutrition-leading-to-diarrhea-leading-to-malnutrition so prevalent in underdeveloped countries, say the investigators, who published a report of the study in the July 1976 issue of the *Journal of Infectious Diseases*.

NICHD Scientists Explore Muscle-Nerve Synapse Formation in Tumor Cell Clones

Anyone who has looked into the electronic circuitry of a computer, in all its numbing complexity, has some appreciation of the problems scientists face in attempting to understand the delicate molecular, biochemical, and electrical changes that occur during transmission of a neural impulse to a muscle cell.

The manner in which nerve cells form functional connections—synapses—from one to another, and by means of these connections assemble into complex, specifically organized circuits, is a central problem for neurobiology. Understanding this process is essential for progress in analysis of normal and pathologic development of the brain.

Complexity Poses Problems

The complexity and heterogeneity of the intact central nervous system pose enormous problems for studies of the molecular and cellular basis of synapse formation.

Cloned lines (derived from a single cell) of neuronal tumor cells overcome some of these problems and have been widely used in neurobiologic studies.

During the past year, Dr. Phillip Nelson and Clifford Christian, neurobiologists in the National Institute of Child Health and Human Development, in collaboration with Dr. Marshall Nirenberg of the National Heart, Lung and Blood Institute have demonstrated that cloned neuroblastoma hybrid cells are capable of forming synapses with normal muscle cells.

Hybridization and cloning techniques allow the experimenter to generate a large number of cell lines, each homogeneous, but each line carrying in its genetic machinery a different combination of characteristics.

Comparison of cells which form synapses and cells with various synapse deficiencies in the genetic program permits delineation of the steps in synapse formation.

Neuronal tumor cells are also extremely sensitive to a variety of neurotransmitters—chemical substances, produced by the neuron, that flow across a synapse and change the membrane potential of the adjoining cell, allowing transmission of the message.

The sensitivity of these neuronal cells allows studies of such cell properties as synthesis, storage and release mechanisms for neurotransmitters, and membrane receptors.

The investigators found that early stages of synapse formation are not characterized by an extremely high degree of specificity. Normal, mature neuronal networks, are however, organized with precision.

Modulate Selectivity

It appears that patterns of electrical and neurochemical activation imposed upon the developing network somehow selectively modulate synaptic connections so that highly precise functional networks result.

The cloned lines of nerve cells have proved to be a most effective model system for investigation of synapse development and modulation.



Synapse formation between nerve and muscle cell in tissue culture is not characterized by a high degree of specificity.

Dr. Nelson's group continue their studies, employing a combined genetic, molecular biologic, and neurophysiologic approach to expand understanding of the molecular basis for the functional properties of nerve cells that establish those specific neuronal circuits which, in turn, are responsible for brain function.

MEDLEARN

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the cost for each student is about \$32.

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To be astonished at anything is the first movement of the mind towards discovery.—Louis Pasteur.



Dr. Joel B. Baseman (c), from the University of North Carolina, chaired a recent Workshop in the Biology of *Treponema pallidum*, the organism that causes syphilis. The Workshop was sponsored by the National Institute of Allergy and Infectious Diseases. Dr. Thomas J. Fitzgerald (l), University of Minnesota, and Dr. King K. Holmes, University of Washington, were two of the almost 50 scientists who met to discuss the feasibility of a syphilis vaccine and the progress being made in cultivating *T. pallidum*. Although a great deal has been learned about the metabolism and structure of the organism, most of the scientists felt that more work is needed before a vaccine can be contemplated. They recommended continuing work on in vitro cultivation and on the antigenic components of the organism.

PHS Employees Commemorate Martin Luther King Day



Seated at the podium and listening to the Blair Concert Ensemble and the PHS Choir (l to r) are: Raymond Jackson, EEO Director; Sherry Salway, Indian Health Service, HSA; Storm Whaley, NIH Associate Director for Communications, who welcomed the participants on behalf of the NIH Director Dr. Donald S. Fredrickson; Dr. Dickson; Congressman Dellums; Robert H. Smith, OASH, general chairperson; and Harriette Hunter, Affirmative Action Officer, FDA, and chairperson, program committee.

Exhibit of Modern Art Opens Feb. 13; Benefits Child Care Scholarships

An exhibit of the work of two modern artists—recent paintings by Rose Abrahamson and sculpture by Ella Tulin—is being presented from Feb. 14 until March 5 at the FAES Building by the Parents of Preschoolers, Inc.

Proceeds from sales and donations at the exhibit will benefit the Child Care Scholarship Fund.

An opening reception for the exhibition will be held on Sunday, Feb. 13, from 3 to 8 p.m., in the FAES Building on the corner of Old Georgetown Road and Cedar Lane, with no admission charge.

Beginning Feb. 14, exhibit hours will be 10 a.m. to 4 p.m. weekdays, and noon to 5 p.m. weekends.

Because the exhibit is trying to raise funds for the Child Care Fund, the artists are reducing prices for their works. Also, any contributions are tax deductible.

Dr. Plough to Speak Feb. 23 At NCI 4th Wednesday Forum

Programs of the Division of Cancer Biology and Diagnosis will be discussed by Dr. Irvin Plough, associate director of that Division, at the National Cancer Institute's Fourth Wednesday Forum on Feb. 23 at noon in Wilson Hall. The meeting is open to all NIH staff.

Dr. Plough will also discuss the relation of work here at NIH to contract-supported research and describe how such work is selected and monitored.

DR. SHOCK

(Continued from Page 1)

"... In your 35 years of leadership in gerontology at the National Institutes of Health you have exerted a powerful influence and strengthened the commitment of the scientific community to the importance of studies on aging.

Dedication Cited

"The programs you have championed and nurtured have become the scientific core of the new National Institute on Aging. Few of us have expectations of a larger or more tangible monument to a lifetime of dedication."

Dr. Shock is a national and international leader in the field of aging.

A charter member of the Gerontological Society, he served as its secretary for 7 years, as well as president; assistant editor or editor of the *Journal of Gerontology* for nearly 19 years; and as Publications Committee chairman for 5 years.

In 1965 he won the Society's first annual award for meritorious contributions to aging research, the coveted Robert W. Kleemeier Award.

Fosters Interest in Aging

As a member of numerous national and state organizations, including the American Heart Association, American Geriatrics Society, American Physiological Society, and American Psychological Association, Dr. Shock has been instrumental in fostering interest in aging studies among non-gerontologists.

Photos by Tom Joy
And Carl Guenveur



Dr. Dickson receives from Mr. Smith the pledge signed by 600 employees.

Rep. Ronald V. Dellums of California, chairman of the House District of Columbia Subcommittee, was the principal speaker on Jan. 14 at ceremonies at NIH commemorating the birth of the Rev. Dr. Martin Luther King.

Ceremonies were concurrently held earlier in the day for PHS employees at the Parklawn Bldg. in Rockville and also at NIH.

Congressman Dellums called for demonstrable personal involvement in the King ideals.

"Wherever we see... injustice and misery, then we must challenge it," he said, "whether we challenge it on the floor of Congress, or whether we challenge it at NIH..."

Employees Sign Pledge

More than 600 PHS employees signed a pledge that was presented to HEW Acting Assistant Secretary for Health Dr. James F. Dickson, III, during the ceremonies.

The pledge offers the employees' "individual efforts, not only as employees in governmental positions, but as individuals with an involvement in humanhood, to work for the betterment of the human condition, especially for those persons who have been neglected in past generations or who have been unable to share in the economic benefits that the Nation has successfully afforded to the majority of its citizens."

The document also requested that HEW officials "note formally to the Administration which is about to assume power our desire to see the Nation marshal all the resources it can reasonably afford to see that these (King's) ideals are achieved."

He is an active champion of the International Association of Gerontology, dating back to its birth in the early fifties. He presided over



Congressman Dellums characterized the King dream as that of a society in which a person has the right not only "to survive... but to flourish in pride and dignity and respect."



Velma M. Strode, Director, EEO, Department of Labor, delivered the featured address in morning ceremonies here at NIH.



Mrs. Hunter served as mistress of ceremonies both at Parklawn in the morning and at NIH in the afternoon of Jan. 14.

the 8th International Congress of Gerontology held in Washington, D.C. in 1959, and was IAG president from 1969 to 1972.