Scientists Develop Pathology Code for Rapid Computer Storage and Retrieval

Dr. Louis B. Thomas (left) and Dr. Arnold W. Pratt examine the first regular edition of the new Systematized Nomenclature of Pathology. The picture was taken in a section of NCI's Laboratory of Physiology.—Photo by Ed Hubbard.

Two years ago it might have taken an NIH scientist as long as six months to search the Clinical Center's Pathological Anatomy Department's autopsy files for pertinent and usable data on any disease. Today a case record library of pathologic diagnoses is stored on magnetic tape and is available for retrieval by the NIH computer in a matter of minutes.

This remarkable progress in pathology data storage and retrieval has far-reaching implications for future scientific inquiry. This progress has been achieved through the combined efforts of Dr. Louis B. Thomas, Head of the Surgical Pathology and Postmortem Service, Pathologic Anatomy Branch, NCI, and Dr. Arnold W. Pratt, Head of the Energy Metabolism Section, Laboratory of Physiology, NCI. Martin Epstein, of the Computation and Data Processing Branch, DRG, provides the computer service for this program.

Named to Committee

Six years ago Dr. Thomas was appointed by the American College of Pathologists to a Committee on Nomenclature and Classification of Disease whose primary aim was to develop a standardized nomenclature to help pathologists organize and better utilize their data through improved communication.

The committee developed a coded nomenclature, and for the past two years, its field trial edition of the new code, called the Systematized Nomenclature of Pathology (SNOP), has been used by several hundred pathologists in the United States and in approximately 35 foreign countries.

The pathology data storage and retrieval program at NIH made use of the field trial edition, prov-

(See PATHOLOGY CODE, Page 5)

DBS Adapts Autoanalyzer to Measure Hemagglutinins in Flu Virus Vaccines

Division of Biologies Standards investigators have successfully adapted the autoanalyzer, an automatic testing technique widely used in blood chemistry, to a system for measuring hemagglutinins in influenza virus vaccines and virus suspensions.

Influenza virus possesses the ability of agglutinating chicken red cells. Measurement of this agglutinin activity makes it possible to estimate the virus content of the influenza vaccine suspensions at any time during the processing of the vaccine.

This titration procedure, known as the CCA (chicken cell agglutination) test, is usually performed manually, employing either a densimeter or colorimeter to measure the agglutinin.

A CCA unit is defined as that concentration of influenza virus hemagglutinin which, under a prescribed set of conditions, causes agglutination of one-half of the red cells in a unit volume of a 0.75 percent red-cell suspension.

Results More Uniform

Use of the automated system, with its continuous-flow technique for separation of agglutinated from nonagglutinated chicken red cells, has been found to produce more uniform and more readily repro-

(See AUTOANALYZER, Page 6)

PHS Co-Sponsors Meeting on Grant, Award Programs

The first of a new series of regional meetings on PHS grant and award programs is scheduled for April 2 and 3 at the David P. Wohl, Jr. Hospital, St. Louis, under the sponsorship of Washington University and the Public Health Service.

This conference will provide an opportunity for biomedical scientists, academic administrators, university business officials, and PHS staff to discuss the interrelationships between research activities and grant and award administration.

Arranged by DRG

The conference was arranged by the Division of Research Grants in response to requests from medical schools, graduate schools and other institutions. It is designed to provide a forum for discussion of scientific program-management as effectively and economically as feasible.

Seven States and 97 institutions have been invited to participate, including current grantees and organizations that have expressed interest in PHS extramural programs.

Participation by PHS staff will

(See GRANT MEETING, Page 1)

Many From NIH

To Attend April FASEB Meeting

One hundred and fifty-eight papers reporting results of biological research by NIH scientists have been submitted for presentation at the 49th Annual Meeting of the Federation of American Societies for Experimental Biology, to be held April 9-14 in Atlantic City, N. J.

Approximately 3,400 papers are expected to be presented at this year's meeting, with authors reporting results of basic research in all areas of the biological sciences that have application in medicine and public health.

17,000 Expected

Two hundred and ninety-eight regular sessions, numerous informal meetings, and 32 symposia have been scheduled during the five days of sessions, with an estimated attendance this year of 17,000. A general session is scheduled for Saturday, April 10, at 8 p.m. in the ballroom of Convention Hall, at which Dr. J. Bronowski, Deputy Director of The Salk Institute for Biological Studies, will discuss "The Philosophy of Biology." He will be introduced by Dr. Philip

(See FASEB MEETING, Page 8)
The NIH Record reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policy of the paper and the Department of Health, Education, and Welfare.

Ohio Wesleyan Chorale To Present Concert This Evening at CC

At 7:30 this evening the Women's Chorale of Ohio Wesleyan University will present a program of sacred and secular music for patients at the Clinical Center, NIH employees, their families and friends.

CSC INSPECTION

The Civil Service Commission Classification inspection has been completed and an informal report has been made to Dr. Shannon, indicating that the results were generally good. A final and formal report will be submitted to NIH at a later date.

The Personnel Management Branch wishes to thank all NIH staff members who were involved in the inspection for their courteous and helpful attitude toward the CSC inspection team. The CSC team noted this cooperation in their report and expressed their appreciation.

SALMON SUCCEEDS ELSBREE

John Elsbree, Personnel Officer for OD-OAM, recently left NIH to become the Chief of Personnel, Office of Education, DHEW. Ralph Salmon, former Special Assistant to the Chief, PMB, has been appointed to succeed Mr. Elsbree.

Grants to Aid Training Of Teachers of Blind

The U.S. Office of Education recently made grants totaling $648,500 to 15 colleges and universities to train teachers of children who are blind or otherwise visually handicapped.

Institutions will use the money during the academic year 1965-66, beginning in September, to provide fellowships and traineeships.
Vaccine Sought Against Respiratory Disease That Afflicts Infants

Surgeon General Luther L. Terry of the Public Health Service recently announced the award of a $214,000 contract to Eli Lilly and Company for the development of a preventive vaccine against respiratory syncytial virus, the single most significant agent responsible for severe, sometimes fatal, respiratory disease in infants.

The contract was awarded by the National Institute of Allergy and Infectious Diseases.

The company will make use of the zonal centrifuge, newly developed by the Oak Ridge National Laboratory in collaboration with NIH and the Atomic Energy Commission.

Machine Is Versatile

This machine is capable of separating and concentrating purified virus particles in volumes heretofore not possible. The different particles can then be studied to determine which portion stimulates resistance to disease in man.

A vaccine incorporating concentrations of only those particles of the virus which contain immunizing antigen would have the desirable properties of safety and increased potency.

Virtually no one is immune to respiratory syncytial virus infection, but infants under six months of age are particularly susceptible. In at least one large study in a pediatric hospital, this virus was causally related to approximately 14 percent of all serious respiratory tract illnesses requiring hospitalization, including bronchiolitis and bronchopneumonia seen over a number of years. Reinfection is common and results in upper respiratory diseases.

10,000 Deaths Yearly

Epidemics occur annually throughout the United States and other parts of the world. An effective vaccine might eliminate many of the 10,000 yearly infant deaths attributed to acute respiratory disease.

The contract with Lilly is part of a collaborative program undertaken by NIAID with a number of industrial and university scientists.

A group of university and government scientists constitute the Vaccine Development Board which advises the Institute on program objectives and the merit of contract proposals.

J. M. Morel, CC Technologist, Develops Tomography Device

By Frank Smith

How often do the doctors say, "We'll have to have more X-rays taken!"

A safer, easier, quicker, less expensive, and sometimes more accurate way of taking many of those "extra" X-ray pictures has recently been invented by Joseph M. Morel, Supervisory Radiographic Research Technologist in the Clinical Center Diagnostic X-ray Department.

When the doctor says "more X-rays," what he often has in mind is not merely more but different kinds of X-ray pictures.

For instance, he may be interested in getting a better look at a brain tumor. And since an ordinary X-ray picture will tend to confuse the tumor with the mass of body structure in front of and behind it, the doctor wants one which blurs out everything except the area in which the tumor is lodged.

He needs a picture that will show just one specific plane or layer of body structures more clearly—what the medical profession calls a tomograph or body-section radiograph.

Ordinary radiographs are obtained by directing radiation from a tube, through the body, and onto a film.

X-Rays Blurred

Due to the spreading direction in which X-rays travel, precise movement of two of the three terminals (tube, body, and film) can hold a central cross-section of the body in constant focus, while causing projections of the front and back portions of the body to be constantly displaced on the film and thereby blurred.

To properly move the objects involved has, until now, required a great complex of equipment, much of it not as accurate as desired, the search therefore for very large and heavy—and quite expensive, and all of it causing considerable X-ray exposure to the patient. One of the best conventional systems for tomography involves a massive arrangement of machinery whereby the patient lies on a table and the X-ray tube and film pivot above and below him.

Aided by DRS

With the important skilled assistance of George W. Blakeslee and several others in the Instrument Engineering and Development Branch, Division of Research Services, Mr. Morel has developed a device that is a vast improvement and refinement of previous equipment. It provides the necessary precise movement with an unprecedented combination of accuracy, versatility, low cost, portability, and less equipment and exposure.

The device makes it possible to center a cross-section of the patient's body over an axis of rotation, and then rotate the patient during X-ray exposure.

The X-ray tube and the film remain stationary, resulting in a tomograph somewhat the shape of a double concave lens in which the examined area is broadened at its extremities.

Moving the film simultaneously and parallel with the patient's body results in a straight plane, as in a conventional tomograph. The width of the cross-section pictured varies directly with the amount of turning done by the body.

The base of the device consists of a portable platform much like (See TOMOGRAPHY, Page 1)
R&W Hamsters Set Sail for Rehearsals Of Seagoing Musical, 'Anything Goes'

Imagine a luxury liner crossing the Atlantic carrying this weird assortment of characters—Public Enemy No. 13 complete with sawed-off shotgun in a violin case; a rich, handsome, gibl playboy; a beautiful blonde engaged to a stuffed shirt; and a female revivialist turned up nightclub star—and you have the setting for "Anything Goes," the spring production of the R&W Hamsters. The lights go on April 28 and continue through May 2.

The curious passengers on the ship make for an interesting and exciting time, and that's not all, there are such great Cole Porter tunes as "Blow, Gabriel Blow, ""I Get a Kick Out of You," "You're the Top," and the title song "Anything Goes," to keep things pop-ping.

ALOC Players Starred

Now in rehearsal, the cast of "Anything Goes" will star Suzanne Meintzer Brock as the blonde dreamgirl "Hope Harcourt" and Ashton Morriza (Treasury) as the rich playboy "Billy Crocker." Both have played leading roles in American Light Opera Company productions.

Veree Silverman (BSS) will play the role of the swinging evangelist nightclub star, "Reno Sweep-
ye."

Playing the part of "Moon Mar-
tin," Public Enemy No. 13, is Murray Gould, whose wife Sally is an NIMH secretary.

Another Hamster favorite in the show is Dottie Mathis who plays "Hope’s" mother, "Mrs. Harcourt."

Other prominent cast members are Roger Paul Myers (ALOC) as "Hope’s" fiancé "Sir Evelyn," Lin-


The four "Angels" from "Reno’s" nightclub act are played by Lyi-
nette Watley (DRG), Dawn Ann Smith (Parkland Jr. H. S.), Pat Craig (W. J. H. S.), and Shirley Farnham (W. J. H. S.).

Chorus members singing and ac-
ing in the show are Kenneth Braun (CC), Joyce Richards (BSS), Da-
vid Cooperman (Northwood H. S.), Al Cohen (ALOC) as "Alice," Cheryl Anne Laugherly (NCl), Lillian Imber (NINDB), Wendy Ratner (CC), Elwyn Reeves (NCl), and Patricia Ann Roezy (CC).

Singers, Dancers Needed

Director Pierre LaMarre would like to see more people turn out for both male and female singing and dancing parts for this production. Anyone interested should see Director LaMarre, or Choreogra-
pher Luis Garcia at rehearsals in the CC auditorium on Mondays and Thursdays at 7:30 p.m. and Saturdays and Sundays at 1 p.m.

System’s Potential Cited

"This radiographic system has greatly enhanced our ability to sup-
port patient care and clinical re-
search," says Dr. Betty Hathaway, Chief of the Diagnostic X-ray De-
partment. "And we believe that it holds great promise for the extent and quality of X-ray technological services everywhere."

The National Institutes of Health is protecting the Govern-
ment’s rights to utilize the new equipment, but mass re-
production of the device will be left to private industry.
President Congratulates John W. Finn and Five Other HEW Employees

John W. Finn, Assistant Chief of the Financial Management Branch, OAM-OD, was one of six Department of Health, Education, and Welfare employees recently honored for developing programs resulting in economy in government operations.

The six honored by the Department were congratulated by President Johnson on March 3 in Secretary Anthony J. Celebrezze's office following ceremonies at which the President unveiled a portrait of Senator Abraham A. Ribicoff, former DHEW Secretary.

Mr. Finn was selected for this honor because of his role in developing and implementing the new grant payment process.

Comments Quoted

Comments prepared by DHEW officials stated: "Although the development and implementation of a grant payment system based on overall cash needs of the grantee rather than individual approved grant awards is the work of many dedicated people within the Department, the leadership and effectiveness of Mr. Finn has been outstanding.

"The system resulted in $99 million being held in the Treasury at the end of Fiscal Year 1964 that would have otherwise been disbursed to grantees. The average daily balance of deferred payments between November 1963 and July 1964 was $48 million.

"The savings in interest costs over the 7-month period is estimated at $800,000. This was the result of a limited pilot project.

"The system is now being extended under Mr. Finn's supervision to DHEW grants to colleges, universities and non-profit organizations. Eventual total savings will significantly exceed savings so far realized."

Juvenile Court Cases in '63 Set All-Time High

An all-time high of 601,000 juvenile delinquency cases were handled by the juvenile courts of the United States in 1963, according to a report recently released by the Children's Bureau of the Welfare Administration, DHEW.

The report points out that delinquency cases increased 8 percent over 1962, while the entire child population—aged 10 through 17—increased only 4 percent.

In addition, about 366,000 traffic cases were disposed of by juvenile courts in the country in 1963. The increase in traffic cases (17 percent) was more than twice that of the increase in delinquency cases (excluding traffic).

With the advent of good weather, work on the Center Drive widening and grading project progresses rapidly. This photo, taken March 15, shows base material being spread on the new lane of Center Drive. Paving operations are now underway. This portion of the 2-phase project is expected to be completed by mid-April. Work on the second phase, relocation of South Drive to intersect Rockville Pike north of the present intersection, will be started shortly.—Photo by Ed Hubbard.

PATHOLOGY CODE

(Continued from Page 1)

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Reverend Robey Named CC Training Chaplain

The Rev. Robert B. Robey was recently appointed Training Chaplain at the Clinical Center, in which capacity he will not only serve as Protestant Chaplain but will also help develop educational programs to benefit hospital staff, community, other clergy and students of theology.

In announcing Chaplain Robey's appointment, Rev. LeRoy G. Kerney, Senior Chaplain at the CC, pointed to these factors which "afford a special learning opportunity in attending the spiritual needs of patients at the Clinical Center."

The longer-than-usual hospital stay required of research patients.

The Center's extraordinary resources in the medical and biological sciences but the social and behavioral sciences as well.

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Within this framework pathologists' observations may be coded. Each term in each of the sections has been given a 4-digit code number; synonyms were given the same number. In addition, terms in the topographical section were assigned both 2-digit and 4-digit code numbers, thus making it possible to use the code for either a simple manual index or with the latest electronic data processing equipment.

NIH Program Developed

When the first trial edition of SNOP became available, Dr. Pratt and Dr. Thomas developed a pathology data retrieval program for NIH.

The first step was the coding of nearly 200,000 diagnostic statements in the autopsy, surgical pathology, and cytology reports prepared in the Department between 1953 and 1962.

Next Dr. Pratt developed computer programs which used both the numerical code and its English language equivalents, enabling the NIH computer to search the tapes for any combination of diagnoses. A completed search produces for the investigator a detailed listing of each patient record with the diagnosis in which he is interested. The lists include the patient's age, hospital unit number, Institute, sex, and race, in addition to all pathologic diagnoses.

The research workers at NIH immediately appreciated the nature of the new retrieval system for pathology data, and recognized its ability to unlock a storehouse of medical data heretofore largely untapped.

Doctors Use File

In the first few months of routine operation more than 70 physicians have made use of the file, asking for complete case records on non-bacterial endocardiosis; hemorrhage in patients with acute leukemia; all other congenital defects associated with the Tetralogy of Fallot; all congenital defects associated with leukemia; all women who died with choriovitrectoma who had had hysterectomies; all bile stasis in patients with leukemia or lymphoma; thrombosis of dural sinuses; all cytology examinations of pleural, pericardial or peritoneal fluids; cytomegalic inclusion disease; cystic fibrosis; uleers of the small bowel; and all myelo-proiferative disorders, to name only a few.

Both Dr. Pratt and Dr. Thomas are enthusiastic about the widening horizons of investigation opened up by SNOP and the associated automatic data processing capability.

In time they expect the computer to be programmed to code pathology diagnoses automatically and add to and extend the SNOP vocabulary.

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Resident Patients in Mental Hospitals Decline; Alcoholic Admissions Increase

Total Below 500,000
First Time in 15 Years

The number of patients resident on any one day in State and county mental hospitals decreased in 1964 for the ninth straight year, dropping to below 500,000 for the first time in 15 years, according to the Public Health Service.

However, there were more than 300,000 admissions to these hospitals in 1964—the largest number in history.

The decrease in resident patients, in the face of rising admissions, results from much shorter hospital stays, according to a report prepared by the Office of Biometry, National Institute of Mental Health.

Live Releases Double

Net live releases from the hospitals have more than doubled in less than 10 years, up from 126,498 in 1955 to 271,506 in 1964, the report shows. There were 45,186 deaths in the hospitals in 1964.

The 1964 total of 490,754 resident patients in the Nation's 298 State and county mental hospitals represents a 10.9 percent decrease since 1956, the first year in which the total number of resident patients declined. Between 1963 and 1964 the drop was 2.8 percent, compared to the previous year's decline of 2.1 percent.

Total admissions to the hospitals rose from 178,005 in 1955 to 302,946 in 1964. According to the report this 70 percent increase over a 9-year period has resulted in a 1954 rate of 160 admissions per 100,000 civilian population, compared with 110 in 1955. Of the 1964 admissions, 138,112 represented patients with no prior psychiatric inpatient experience.

Personnel Ratio Increases

There are now 199,600 full-time personnel caring for the mentally ill in State and county mental hospitals. The ratio of personnel to patients steadily increased in 1964. In 1954 the ratio was 1.8; in 1959, 2.0; in 1964 reached the level of one full-time employee for every 2.5 resident patients.

Maintenance expenditures for the care of these patients increased to a total of $1.1 billion in 1964, or an average of $5.62 daily for each resident patient, more than double the $3.06 spent in 1955.

The report—"Provisional Patient Movement and Administrative Data, State and County Mental Hospitals, United States, 1964"—is available from the Public Infor- mation Section, National Institute of Mental Health, Bethesda, Md. 20014.

One in 7 New Patients Admitted Is Alcoholic

Alcoholics, particularly those with the most severe forms of the disease, are increasing among State and county hospital admissions, according to Dr. Stanley F. Yolles, Director of the National Institute of Mental Health.

A study by the Institute's Office of Biometry reveals that one in seven newly admitted patients is an alcoholic, an 18 percent rise in 10 years. In nine states, disorders associated with alcoholism lead all other diagnoses in mental hospital admissions.

Recent figures analyzed by Ben Z. Locke, NIMH statistician, show a startling rise in the number of alcoholics diagnosed with "chronic brain syndrome associated with alcoholism," the most severe and hopeless of the three classifications of the disease.

Brain Damage Permanent

Patients in this group suffer permanent destruction of the tissues of the brain. The damage probably results from metabolic or nutritional defects caused by prolonged use of alcohol.

These alcoholics undergo severe personality changes, delirium, confusion, amnesia, confabulation, talkativeness about things that never happened, inflammation of the nerves, and pain in the arms and legs. The brain damage may be diagnosed by the electroencephalogram.

More than half the alcoholics now in State mental hospitals suffer from this irreversible form of alcoholism—a 50 percent increase in the group in the past 10 years. This rise occurred during a period when the number of patients in mental hospitals has dropped.

Patients in public mental hospitals in 1962 totaled 531,981 in contrast to approximately 490,000 today. Resident patient rates for these hospitals have dropped from 438 per 100,000 population in 1952 to about 359 per 100,000 now.

Growth Rates Compared

In contrast to the "chronic brain syndrome" patients, the other two classifications of alcoholics, "acute brain syndrome associated with alcoholism," and "sociopathic personality disturbance, alcoholism addiction," have grown at a much slower rate.

An analysis of one characteristic State—Ohio—furnishes this profile of the typical alcoholic admitted to a mental hospital: The odds are seven to one that he will be a male, probably separated or divorced, with little or no elementary education. He is most likely to be admitted for the first time in his forties.

The person least likely to become an alcoholic patient, according to these statistics, is the married female with some college education, either under 35 or over 54 years of age. Figures from other States show that the Ohio profile accurately represents the national picture.

AUTOANALYZER

(Continued from Page 1)

duplicate results than the standard CCA test methods.

The speed with which the results can be obtained is increased many fold, permitting the performance of many tests and opportunities for multiple replication.

The basic components of the autoanalyzer include a sampling device to introduce reagents into the continuous-flow system; proportioning pumps to equalize the flow of the reagents through a closed system of plastic tubing; and glass coils submerged in water in a constant temperature incubator in which the reagents are mixed.

Other Components Listed

Other components include a settling coil in which the agglutinated red cells are separated from non-agglutinated red cells; a colorimeter to measure the hemoglobin content of lysed cells remaining in the system after removal of agglutinated red cells; and a recorder to trace the colorimeter values.

Except for introducing reagents into the system, the entire measuring operation is carried out under automated conditions, including the recording of a permanent record of the test results.

Adaptation of the automated system to the measurement of influenza virus hemagglutination was carried out by Dr. J. A. Morris, J. C. Jenkins, and R. L. Horswood, all of DBS.

Dr. Morris described the work at a recent conference on Automation in Industrial Pharmaceutical Process and Quality Control, sponsored by the New York Academy of Sciences.

Dr. Warren Discusses Handicapped Programs

Dr. Stafford Warren, the President's advisor on mental retardation, was scheduled to discuss "State and National Action Programs for the Handicapped" at the Fifth Annual Mental Health-Retardation Awards Day luncheon at Sacramento, Calif., on March 18.

Governor Edmund G. Brown was to deliver the principal address at the banquet that evening, at which awards were presented to Californians who have contributed significantly to mental health.

Dr. Frei's leadership of groups conducting collaborative studies is regarded by the National Cancer Institute as an important factor in their success.

A native of St. Louis, Mo., Dr. Frei studied at St. Louis University and Colgate University before entering Yale University School of Medicine where he received an M.D. in 1948. He spent his internship and residencies in medicine at the St. Louis University Hospital, joining the staff of the NCI in 1954.
Prior to the beginning of another in the series of training courses in supply procedures, recently attended by 80 employees from all NIH Institutes and Divisions, Howard E. Kettl, NIH Assistant Executive Officer (left) and James B. Devis, Chief of the Supply Management Branch, discuss final details.—Photo by Ralph Fernandez.

**GRANT MEETING**

*(Continued from Page 1)*

include a description of the newer programs in child health, community health, environmental health, mental retardation, and library services, as well as discussions of recent modifications in grants policies and procedures, such as the adoption of the accounting principles specified in the recently revised Bureau of the Budget Circular A-21 and the new PHS policy statements on research grants and training grants.

Participation by staff of the grantee institutions will include discussion of the activities in their particular institutions and the impact of the PHS programs on their staffs, resources, and institutional responsibilities.

**NIH Officials Attend**

Among the NIH staff who will attend are Dr. John F. Sherman, NIH Associate Director for Extramural Programs; Joseph S. Murtaugh, Chief of the Office of Program Planning; Dr. Frederick L. Stone, Director, National Institute of General Medical Sciences; Dr. J. Franklin Teager, Associate Director, National Heart Institute; and Dr. Eugene A. Confrey, Chief, Division of Research Grants.

Dr. Gilbert R. Barnhart will represent Community Health and Dr. William M. Upholt will describe Environmental Health programs.

The agenda for the 2-day meeting includes discussion of the concept of a grant, application review, support mechanisms, research facility construction, recent legislative developments, financial management activities, and research training programs.

Particular interest in the conference stems from the scope of the subject matter and the diversity of participants.

The hope was expressed that as a result of the interchange between government and non-government individuals, scientists and administrators, bench scientists and teachers, there will be mutual understanding of the problems and responsibilities involved in providing and administering Federal support.

During the afternoon of Saturday, April 3, several members of the PHS will be available for individual consultation. PHS publications will be available at an exhibit staffed by scientist-administrators during the course of the meeting.

**Outside Dial Tone Changes To Low Hum Next Sunday**

The Communication Section of the Office Services Branch, OD, reports that beginning next Sunday, March 28, a low hum dial tone will be heard at NIH when dialing “9” for an outside telephone line.

Instead of the familiar dial tone now heard when dialing “9” to make a local Metropolitan Area call, a tone pitched in a lower frequency will be heard. This new tone will not be as loud as at present and will be more of a monotone hum.

The change is necessary because the telephone company is gradually modifying telephone central offices throughout the area with new electronic equipment. The NIH "inside," or reservation, dial tone will remain the same.

**NIH Co-Sponsors Series Of Medical Seminars**

The National Heart Institute co-sponsored again this year a series of medical seminars for Montgomery County high school students. The seminars are designed to stimulate a greater interest in medicine and the biological sciences as a career. About 250 students attended each of the five sessions.

Other sponsors of the seminars, held at the National Naval Medical Center and at NIH, are the Montgomery County Tuberculosis and Heart Association, the Montgomery County Board of Education, the Montgomery County Health Department, and NNMC.

At the final session, competitive examinations were given to select 12 students to be awarded summer study opportunities at NIH and NNMC. The winners of these Research Fellowships will be announced soon.

Dr. John Ross Jr. of the Institute's Cardiology Branch is a member of the Student Research Fellowship Committee. NIH staff members who spoke at the seminars included Dr. Ross, Dr. Edward Sonnenblick, and Dr. Charles Chilton of the Cardiology Branch, and Dr. Daniel Steinberg of the Laboratory of Metabolism.

**DRS Training Course in Research Animal Care To Be Given in April**

"Caring for Research Animals," a training course given by the Division of Research Services, will be held for the second time beginning early in April.

Presented jointly by DRS's Environmental Services Branch and Laboratory Aids Branch, the course is for animal caretakers and related workers. It provides basic training in good environmental control practices and proper animal management.

The training course consists of eight weekly sessions of one hour each, dealing with such subjects as importance of good animal care to research, basic characteristics and diseases of some common laboratory animals, waste disposal procedures, housekeeping, and proper sanitation methods.

For more information about the course and starting dates, contact Institute or Division personnel offices.

**21 Receive Certificates**

Certificates of attendance were recently presented to the 21 participants in the first course, completed last January. Those attending the course were: Michael Hooten, Rudyard Wallace, and John Grantham, DRS; Donald Eckon, Roosevelt Ingram, and Archibald Jackson, NCI.

Also Lee Jacobs and Calvin S. Hawkins, NINDS; James Ingram, James Mabry, and General Mosley, NIDR; Glenn Hodges, James Wellner, Leslie Harne, and Richard Cloman, NIAID; James Hodges, Leon Dorsey, and Charles Ambush, NIMH; and Fred Brooks, Leroy Murray, and Les Pearson, NIH.

**Success of Hemodialysis Changes Role of Nurse**

Success of hemodialysis in treating renal failure is changing the emphasis of nursing care from comfort measures for terminal patients to active, scientific research participation, according to a former nurse specialist in the general clinical research center in the University of Washington Hospital, Seattle. The center is supported by the Division of Research Facilities and Resources.

The decreasing mortality rate for acute renal failure, which was 26 percent in 1963 compared with 60 percent for the period from 1954 to 1959, has shifted the emphasis to knowledgeable care as a result of research team studying patients treated by the artificial kidney.

**Nurse Monitors Machine**

The nurse must be prepared to monitor the operation of the hemodialyzer and to give comprehensive care to patients whose life depends upon the use of this machine.

A discussion of the principles of hemodialysis, the dialysis procedure, and technical nursing observations for which the nurse is responsible are discussed in an article in the February issue of the American Journal of Nursing.

The author, Carol W. Trusk, noted that "the success of nursing in caring for patients undergoing hemodialysis has opened up an exciting new field for nurses and has given them an opportunity to participate actively in a complex and technical area of medicine where the survival of patients often is directly related to the quality of the nursing care.

In addition, DRFR support for the center, the research project on hemodialysis is supported by the National Institute of Arthritis and Metabolic Diseases.

**9 NIH Employees Reach Two-Gallon Donor Mark**

The Blood Bank reports that nine NIH employees have given as much as two gallons of blood to date. They are Robert D. Murrill, Scientist Administrator, Health Research Facilities Branch, DRFR; Donald Goldthorpe, Information Officer, NIGMS; Dr. Karl Frank, Associate Director for Intramural Research, NINDS; Donald B. Finan, Chief, Operations Branch, NIH; Ervin J. Liljegren, Administrative Officer for Intramural Research, NIAMD; Paul N. Carter, Associate Director for Intramural Research, NIMH; Ervin J. Liljegren, Administrative Officer for Intramural Research, NIAMD; Paul N. Carter, Nursing Assistant, CC; Robert D. Andrews, Supervisor, Fixed Industrial Equipment Operator, DRS; George W. Blakeslee, Head, Bldg. 10 Unit, Instrument Engineering and Development Branch, DRFR; and W. David, Laboratory Technician, Laboratory of Physiology, NCI.

Warren Powell, Chief of the Sanitation and Training Unit, Environmental Services Branch, DRS (left), points out important features of a well-managed animal room to Calvin S. Hawkins, NINDS (center), and Charles Ambush, NIMH, who participated in the last "Caring for Research Animals" training course.—Photo by Sam Silverman.

During February, the Clinical Center Blood Bank reports, 141 units of blood were received from NIH donors. Within the same period, 1,751 units were used by Clinical Center patients.
Cancer Institute Clinical Associates Win 3 Awards

Dr. John P. Minton (left) and Dr. Reuben F. Gittes, clinical associates of the Surgery Branch, NCI, are recent award recipients.—Photo by Jerry Hecht.

Three research papers reporting work done here at the National Cancer Institute by four clinical associates of the Institute's Surgery Branch have won awards for their authors.

Two of the winners, Dr. John P. Minton and Dr. Reuben F. Gittes, are currently associated with the Surgery Branch. Dr. Minton is in his third year here.

The other two winners, Dr. R. S. Riggins and Dr. Y. H. Pilch, share an award, completed their clinical associate training in July 1964 and returned to their respective residency programs.

Residends in Surgery

Dr. Riggins is a resident in orthopedic surgery at Campbell Clinic, Memphis, Tenn., and Dr. Pilch a resident in general surgery at the Albert Einstein College of Medicine in New York City.

Dr. Minton will receive a certificate and $250 as winner of the James Ewing Society's Resident Award for 1965 at the society's annual scientific meeting in Houston, Tex., on April 6.

The title of his paper is "A Correlation of the Laser Wavelength Absorption Capabilities of Experimental and Human Tumors and Its Relationship to the Quatitation of Human Tumor Destruction by Pulsed Laser Radiation."

Dr. Minton received a B.S. degree from Ohio State University in 1956 and an M.D. from the same university in 1960. After completing his internship and surgery residency at Ohio State, he joined the Surgery Branch of NCI in 1962.

Dr. Gittes will receive first prize of $250 from the American Urological Association at the association's annual convention in New Orleans, La., on May 10.

The title of his paper is "Experimental Model for Hyperparathyroidism: Effect of Excessive Numbers of Transplanted Isologous Parathyroid Glands."

Two other recent award winners are Dr. Yosef Pilch (left) and Dr. Richard Riggins, photographed during their recent service as clinical associates with the NCI Surgery Branch.

Dr. Riggins received an A.B. from Duke University and an M.D. from the university's School of Medicine in 1960 and completed internship and a residency in surgery at Duke University Hospital before coming to the Institute in 1962. Dr. Riggins is the winner also of an $1,000 Kappa Delta Award, presented to them at the 32nd Annual Meeting of the American Academy of Orthopaedic Surgeons in New York City.

Their prize-winning paper, presented at that meeting January 13, was among 40 papers reviewed by the awards committee. The title is "Basic Studies on the Antigenicity of Fibrosarcoma."

Dr. Riggins received an A.B. from Duke University and an M.D. from the university's School of Medicine in 1960 and completed internship and a residency in surgery at Duke University Hospital before coming to the Institute in 1962. Dr. Riggins is the winner also of an annual award from the American Academy of Dental Medicine.

Dr. Pilch was graduated magna cum laude from Harvard Medical College in 1956. He received an M.D., also magna cum laude, from Harvard Medical School in 1960 and is a member of Phi Beta Kappa and Alpha Omega Alpha.

Joins NCI in '63

After completing internship and residencies in surgery and urology at Massachusetts General Hospital in Boston, he joined the NCI Surgery Branch in 1963.

Drs. Riggins and Pilch share the $1,000 Kappa Delta Award, presented to them at the 32nd Annual Meeting of the American Academy of Orthopaedic Surgeons in New York City.

The purpose of these lectures is to stimulate thinking and generate new ideas in connection with the many components that make up the total design of such facilities. Although these presentations are primarily for engineers, others who are interested are invited to attend.

The Division of Research Services, which is sponsoring the lecture series, is responsible for the coordination of the planning and construction of new NIH facilities and for the development of improved facilities and equipment.