

# NIH



# record

DEPARTMENT OF  
HEALTH, EDUCATION, AND WELFARE

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PUBLIC HEALTH SERVICE  
NATIONAL INSTITUTES OF HEALTH

## RESEARCH EQUIPMENT EXHIBIT OPENS MAY 13



Attendance at this year's Annual Research Equipment Exhibit, May 13-16, is expected to exceed last year's total of 5,000 persons. The exhibit is in Bldg. 22 and features a hundred displays of medical research equipment, some of which are shown for the first time. The above scene is from a previous equipment exhibit.

## DR. SMADEL ELECTED TO ACADEMY OF SCIENCES

Dr. Joseph E. Smadel, Associate Director, NIH, was elected to membership in the National Academy of Sciences at its meeting April 22-24.

Dr. Smadel came to NIH in 1955 from the Walter Reed Army Institute of Research, where he was Director of the Division of Communicable Diseases and Chief of the Department of Virus and Rickettsial Diseases. He is one of the Nation's leading authorities on viral and rickettsial diseases.

Election to the National Academy of Sciences is one of the highest honors a scientist can receive. Dr. Smadel is the fifth NIH scientist elected to the Academy. The others are Drs. Charles Armstrong, NIAID, Kenneth S. Cole, NINDB, Lyndon F. Small, NIAMD, and Ralph W. G. Wyckoff, NIAMD.

## BUS SERVICE BEGINS AT NIH

A bus service is now operating for employee use on the NIH grounds. Two station wagons are on a scheduled route beginning at the Stone House and ending at Building T-6. They will make nine regular stops and three "flag" stops at convenient locations throughout the reservation.

The bus service will operate from 9:00 a.m. through 4:00 p.m. Both station wagons will make the 20-minute tour every half hour, one southbound from Building T-6, the other northbound from Stone House.

Schedules listing times of departure and arrival and locations of all stops will be distributed soon. The station wagons will be replaced by two 20-passenger buses sometime in June.

## DR. ROSENTHAL IN PERU FOR BURN STUDY

Dr. Sanford M. Rosenthal, Chief of the Laboratory of Pharmacology and Toxicology, NIAMD, left NIH April 22 for Lima, Peru. There he will set up a program for the clinical use of gamma globulin as a therapeutic agent against *Pseudomonas septicemia* in humans.

Several years ago, Dr. Rosenthal was concerned by the many deaths resulting from traumatic shock, an often fatal condition following serious injuries and severe burns. Searching for a simpler treatment than the standard one provided by the injection of whole blood or plasma, Dr. Rosenthal and his associates found that salt and soda solution given orally would prevent death from shock in laboratory animals.

After experimentation, the treatment was set up for clinical trial. Successful tests were conducted in three hospitals in Lima, Peru.

*(See Rosenthal, Page 4)*

## FOUR NIH EMPLOYEES RECEIVE CASH AWARDS

Four NIH employees received cash awards last month for their suggestions and superior work performance.

A superior performance award was presented to Hanford E. Moxley, Clerk, NHI, by Dr. James Watt, NHI Director, at a luncheon April 24. Mr. Moxley received the award in recognition of his outstanding work with medical exhibits.

Gustave E. Ziesmer, Nurse Supervisor, CC, received an award on April 17 for his design of a holder for bottles used in collecting cerebrospinal fluid. The award was presented by Miss Ruth Johnson, Chief of the Nursing Department.

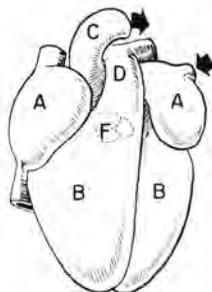
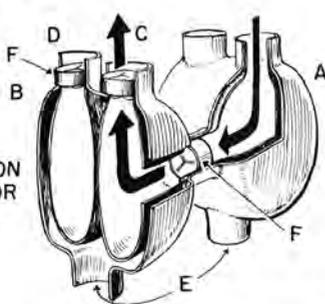
A suggestion award was presented to Jack Jenkins, Medical Biology

*(See Awards, Page 4)*

# The Prospect of an Artificial Heart

No. 185 in a Series

A 'AURICLES'  
B 'VENTRICLES'  
C AORTA  
D PULMONARY  
ARTERY  
E SALINE SOLUTION  
FROM ACTUATOR  
F TRI-CUSPID  
VALVES



Dr. Selwyn McCabe (left) discusses the problems involved in making future blood pumps. Diagram by George P. Marsden of the Medical Arts Section, DRS (right), compares components of the experimental unit with the human heart.

One of the obstacles to the advance of heart surgery has been the lack of a satisfactory blood pump. With present physiological and engineering knowledge, it now seems possible to make an artificial heart that could be used experimentally for reasonably long periods.

To meet this challenge, NHI's Laboratory of Technical Development, headed by Dr. Robert L. Bowman, is engaged in the development of a suitable artificial heart. The project is conducted by Dr. Selwyn McCabe, a heart surgeon and Visiting Scientist from New Zealand.

Other laboratories have devised a variety of pumps and oxygenators, but none is completely satisfactory. They often handle the blood elements roughly, or have been too expensive for experimental work on animals. The latter disadvantage has resulted in the use of makeshift equipment.

Dr. McCabe's development of prosthetic heart valves has led to concentrated efforts to perfect a pump simulating the human heart.

Many materials have been tested for making the artificial valves, such as silastic, a silicone product. The pumping problem has been met by the construction of a pair of pliable

plastic chambers analogous to the ventricles. These chambers are enclosed in an outer chamber of firmer plastic, into which saline or water is repeatedly injected and withdrawn. This provides a pumping force with a rhythm of expansion and contraction closely resembling that of the human heart.

The mechanism, placed at a convenient distance, requires only a single hose for the transfer of force from a suitable mechanical activator.

The artificial heart is slightly smaller than a normal heart. It is designed for placement upon or within the chest, to permit the use of short connecting tubes and thus reduce the amount of blood needed in its operation. Moreover, the foreign surface to be contacted by the blood is minimized and the loss of heat reduced.

Dr. McCabe's model demonstrates the feasibility of constructing anatomically shaped valves and a smooth compact pump to be placed in or near the operative site during open heart surgery. It is conceivable that such a device might be implanted in the body to relieve the heart of stress.

## Publication Preview

The following manuscripts were received by SRB Editorial Section between April 3 and April 12.

Allen, G., et al. The mathematical relations among plural births.

Asatnick, E., et al. The effect of temperature, potassium and sodium on the conductance change accompanying the action potential in the squid giant axon.

Axelrod, J., et al. The inhibitory action of nalorphine on the enzymatic N-demethylation of narcotic drugs.

Bahn, A. K., et al. Outpatient psychiatric clinics in the United States: Characteristics and professional staff 1954-1955.

Bailey, P. The research attack against neurological disorders.

Bavetta, L. A., et al. Protein factors and experimental rat caries.

Blough, D. S. Effect of LSD on the absolute visual threshold of the pigeon.

Bragdon, J. H., et al. Swine and experimental atherosclerosis.

Brennan, J. M. Revival of *Crotiscus Ewing*, 1944, and description of four new species of the genus from Peruvian rodents (Acarina: Trombiculidae).

Burma, D. P., et al. L-ribulokinase and the formation of D-xylulose phosphate in *Lactobacillus pentosus*.

Clausen, J. A. The ecology of mental disorders.

Cole, J. O., et al. Report of the working conference on the status and improvement of clinical drug evaluation reports.

Davidson, J., et al. Studies with the serotonin precursor, 5-hydroxytryptophan in experimental animals and man.

Feder, N., et al. A method for applying different strains to alternate serial sections on a single microscope slide.

Felix, R. H. Creating a community climate conducive to mental health.

Frawley, T. F., et al. A concept of the mechanism of sulfonyleurea-induced hypoglycemia based on studies of glucose and pentose disposition in man.

Fredrickson, D. S. Some biochemical aspects of lipid and lipoprotein metabolism of importance in clinical medicine.

Fry, E. M. Cyclization of an unsaturated benzyl ether to a hydrofuran.

Hayaishi, O., et al. Über den mechanismus der brencatechin-oxydase (pyrocatechase).

Hogben, C. A. M., et al. Absorption of drugs from the stomach. II. The human.

Hollcroft, J., et al. Combined lipopolysaccharide and radiation treatment in tumor-bearing mice.

Irreverre, F., et al. The occurrence of  $\gamma$ -guanidinobutyric acid.

Jakoby, R. K., et al. Lactic dehydrogenase of cerebrospinal fluid in the differential diagnosis of cerebrovascular disease and brain tumor.

## NIH Spotlight



Nellie V. Brake

A secretary's job often includes many interesting and challenging duties outside the realm of secretarial work, and no one can attest to this better than Nellie Brake.

Nellie demonstrates many of the qualities a good secretary must possess. Pretty, neat, and capable, she is responsible for a variety of assignments and manages to do them all well.

For the past two years Nellie has been the competent secretary of George P. Morse, Chief of the Plant Safety Branch, DBO. Her job, she asserts, includes "everything from soup to nuts." Nellie personally knows almost all of the 86 guards and 12 firemen in the branch and often advises them on their job problems. She also does all the secretarial work required by the Fire Department.

In addition to regular secretarial duties, Nellie answers frequent inquiries about parking and other activities supervised by PSB. She is widely known for her effective assistance in the control of classified documents, and is responsible

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## Temporary Traffic Rules Now In Effect

In view of the extensive construction work being done on Wisconsin Avenue, the Plant Safety Branch has modified certain traffic rules to provide for additional parking facilities and the better flow of traffic.

Stone House Road will be open 24 hours a day.

The eastern portion of South Drive will be closed to all traffic until further notice, and may be used as a temporary parking area with all cars facing west.

### NOTICE

The NIH Board of U. S. Civil Service Examiners is now located on the first floor of Wilson House. The telephone extension remains the same.

for time and leave cards. Nellie remembers with pride the part she played in "Operation Alert" in 1956, and enjoys working in PSB because it is such an integral and interesting part of NIH.

Nellie started her secretarial career when she took a commercial course at Richard Montgomery High School, Rockville. She worked at the Rockville Court House for two years after graduation and in several NIH Institutes before coming to PSB.

Active even after working hours, Nellie and her husband are enthusiastic bowlers and have quite a collection of trophies to prove it. They also enjoy fishing and go to Florida every year to fish and relax. At home, Nellie loves to entertain friends and likes to cook--"but nothing too fancy," she emphasizes.

Nellie was born in Germantown, Maryland, but has spent most of her life in Rockville. She met her husband, Sidney, now an engineer in the Plant Engineering Branch, in high school. Nellie especially likes to remember the time she spent visiting California's Imperial Valley with her sister and brother-in-law, where she swam in the Pacific Ocean, met movie stars, and just loved everything about California.

Sometime in the future, Nellie hopes to become a housewife and settle down to raising children, but for now she is happy with the important and active part she plays in helping to keep things running smoothly in the Plant Safety Branch.

Kornetsky, C., et al. A comparison of the effects of chlorpromazine and secobarbital on perception and motor behavior in man.

Likins, R. C., et al. Distribution and excretion of hexafluorophosphate.

Marshall, R., et al. Preparation and properties of the isomeric forms of cystine and S-benzylpenicillamine.

Maxwell, E. S., et al. A specific enzymatic assay for the diagnosis of congenital galactosemia. II. The combined test with 4-epimerase.

Maxwell, E. S. The enzymatic interconversion of uridine diphosphogalactose and uridine diphosphoglucose.

Mitoma, C., et al. The effect of ortho- and meta-tyramines on the central nervous system and its implications in phenylketonuria.

Morrow, A. G., et al. Left heart catheterization by the transbronchial route: Technique and applications in physiologic and diagnostic investigations.

Mulay, A. S., et al. Transplantable sarcomas induced in rats by para-dimethylaminobenzene-1-azo-1-naphthalene.

Prehn, R. T., et al. Immunity to methyl-ocholanthrene induced sarcomas.

Rabinowitz, J. C., et al. An enzymatic method for the determination of formic acid.

Rheingold, H. L., et al. The conditioning of vocalizations in infants using an adult's social response as reinforcer.

Rosenthal, D. The fate of psychiatric clinic outpatients assigned to psychotherapy.

Schatten, W. E., et al. Effect of altered endocrine balance on heterotransplantation of sarcoma 37 in rats.

Shock, N. W. Trends in Gerontology, Chapters VII and VIII, revised.

Skolaut, M. W., et al. A pharmacy-operated sterile supply service.

Smith, W. W., et al. Hematopoietic recovery induced by bacterial lipopolysaccharide in irradiated animals.

Tanaka, C. A study on the relationship between adenovirus and epidemic keratoconjunctivitis.

Tasaki, I. Properties of the myelin sheath of the vertebrate nerve fiber.

Tomkins, G. M., et al. Inhibition of adrenal 11- $\beta$  hydroxylation by ions.

Tschudy, D. P., et al. The effect of 3-amino-1, 2, 4-triazole on  $\delta$ -amino-levulinic acid dehydrase activity.

Udenfriend, S., et al. Assay of serotonin and related metabolites, enzymes, and drugs.

Wagner, E. M., et al. Effect of insulin on growth in force-fed hypophysectomized rats.

Yarrow, M. R. On social and cultural aspects of child development research.

Yarrow, M. R. Some next steps in research.

Zississ, E., et al. The structure of tri-O-methyleneolemitol.

## AWARDS BOARD CITES FOUR EMPLOYEES



These employees received awards last month under the NIH Incentive Awards Program. They are (left to right) Hanford E. Moxley, NHI, Raymond P. Kelly, NHI, Gustave E. Ziesmer, CC, and Jack Jenkins, NIAMD.

### AWARDS Contd.

Technician, Section of Biochemistry, NIAMD, for an inventor that he designed for use in sheep cell agglutination tests. Dr. Koloman Laki made the presentation on April 29.

Raymond P. Kelly, NHI Laboratory Mechanic, was presented with his award by Dr. Luther L. Terry on April 23. The award was for developing equipment to agitate specimens at controlled temperatures.

### ROSENTHAL Contd.

Although clinicians were able to bring many patients through the shock crisis, Dr. Kehl Markley, the Institute physician in charge of the clinical team, noted that many of the burn victims died later of a mysterious infection.

From blood cultures, he identified the presence of a common and ordinarily harmless organism known as *Pseudomonas aeruginosa*. Dr. Markley then referred the problem to Dr. Rosenthal and his associates.

They first tried to infect normal laboratory animals with the organism, but were unsuccessful. Later it was found that mice suffering from burns could be infected with *Pseudomonas*. After some research, they discovered that the most effective agent for prevention of this infection was human gamma globulin.

Dr. Nicholas Kefalides of the University of Illinois, who was recently commissioned in PHS, will be in charge of the projected study.

### Material Needed For "Life At NIH"

Plans for the Hamster's seventh annual production of "Life at NIH" are now in progress. Songs, skits, dialogues, and sketches are needed to complete the script. Those interested in contributing please contact Leon Tractman, ext. 2888, or William Hollister, code 692, ext. 31.

## PVT. EGGLESTON IS GUARD OF THE MONTH

The March Guard of the Month, Pvt. Louis M. Eggleston, was selected for this honor because of his initiative and ability to carry out assignments efficiently. He also was commended for his neatness, good attendance, and winning personality when meeting the public.

Pvt. Eggleston has been with the Guard Section since May 1955. He is a native of Newburgh, N.Y., and served in the Pacific with the U.S. Army for three years during World War II.

## BERTHA HAMILTON, CC, DIES IN ACCIDENT

Bertha M. Hamilton, kitchen helper in the CC Nutrition Department, was fatally injured April 20 in an automobile accident. Mrs. Hamilton had been employed at NIH since February 1955, and was a conscientious and well-liked employee.

A native of Williamsburg, Virginia, she came to Washington in 1940. Mrs. Hamilton is survived by a sister, Mrs. Ruth Williams, of Williamsburg, and three brothers, Leroy and Robert Williams, of Williamsburg, and John Johnson, of Chicago, Illinois.

## PHS ORIENTATION CLASS TOURS NIH



Forty new PHS employees toured the Clinical Center and NIH grounds April 24 as part of their orientation course. They also heard a lecture by Dr. Murray Brown on the history and programs of NIH. This is the first time an NIH tour has been included in the PHS Orientation Program.