

The NIH Record

U.S. Department
of Health
and
Human Services

September 14
1982
Vol. XXXIV
No. 19

National
Institutes
of
Health

Dr. Stetten Honored By NIGMS Lectureship

To mark its 20th anniversary, the National Institute of General Medical Sciences is inaugurating a recurring lectureship named in honor of Dr. DeWitt Stetten, Jr., former NIGMS Director who is now senior scientific advisor to the Director of NIH.

The first Stetten lecture—A Molecular Analysis of Genes That Determine Developmental Pathways—will be presented by Dr. David S. Hogness, professor of biochemistry at Stanford University. The lecture will take place Wednesday, Oct. 13, at 3:30 p.m., in Masur Auditorium.

Dr. Hogness's current research involves use of recombinant DNA technology to analyze the genes that control development of abdominal segments in the fruitfly.

Dr. Ruth Kirschstein, NIGMS Director, said that through establishment of the new lectureship "the Institute wishes particularly to honor Dr. Stetten for his commitment to basic science and his special encouragement of basic genetic research. It is especially fitting," she added, "that the first Stetten lecturer should be Dr. Hogness, a long-time NIGMS grantee whose work is in the forefront of modern genetics." □



Dr. Stetten

NIH Mourns Death of Dr. Andrew Morrow, Prominent Heart Surgeon and Researcher

By Larry Blaser

Dr. Andrew G. Morrow, Chief of Surgery for the National Heart, Lung, and Blood Institute, died recently at the age of 59. He had been chief of the Surgery Branch since its establishment in 1953.

Dr. Morrow's research interest during the past 20 years has been in the surgical correction of a condition called idiopathic hypertrophic subaortic stenosis (IHSS), also called obstructive subaortic hypertrophy, first described in the 1960's.

At that time cardiologists became aware of a previously unrecognized form of obstruction that interfered with the discharge of blood from the left ventricle. The cause could not be attributed to a malfunction of the aortic valve.

Studies in the cardiac catheterization laboratory showed an abnormal protrusion of the septum of the heart that, under certain conditions, including the stress of exercise, could obstruct the outflow tract leading from the left ventricle through the aortic valve.

The surgical procedure that is now accepted throughout the world as the most effective in correcting this condition is known as the "Morrow operation." It consists



Dr. Andrew G. Morrow

of entering the heart through an opening made in the aorta, preceeding through the aortic valve and excising a block of tissue from the septum to open the outflow tract.

Another of Dr. Morrow's research interests was in the development of artificial heart

(See DR. MORROW, Page 12)

Drs. Beier, Feinsod Leave for Egypt On Arthropod-Borne Diseases Project

Drs. John C. Beier and Fred M. Feinsod recently joined a unique 5-year research project on arthropod-borne diseases involving Egyptian, Israeli, and American scientists.

They were selected by the National Institute of Allergy and Infectious Diseases as the first team of visiting scientists to participate in this cooperative research project at the research and training center on vectors of disease at Ain Shams University in Cairo, Egypt.

The NIAID-U.S. Agency for International Development regional project will focus on malaria, Rift Valley fever, and leishmaniasis, all of major public health importance in the Near East.

Plans for the project have been under way since 1979, culminating last December with the signing of 5-year contracts by NIAID representatives and two of the leading research institutions in Egypt and Israel—

(See EGYPT, Page 4)



Drs. Beier (l) and Feinsod pipette adult anopheline mosquitoes, which transmit malaria, in the insectary of NIAID's Laboratory of Parasitic Diseases.



The National Institute of Child Health and Human Development celebrates its 20th anniversary this month. See page 5.

The NIH Record

Published biweekly at Bethesda, Md., by the Editorial Operations Branch, Division of Public Information, for the information of employees of the National Institutes of Health, Department of Health and Human Services, and circulated by request to writers and to researchers in biomedical and related fields. The content is reprintable without permission. Pictures may be available on request.

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Training Tips

The following courses, sponsored by the Division of Personnel Management, are given in Bldg. 31 unless otherwise indicated.

Communication Skills	Course Starts	Deadline
Freedom of Information Workshop for Contract Staff	10/15 or 10/29	9/27
*Freedom of Information and Privacy Act Workshop for Grants	11/10 or 11/17	10/25
Reading Improvement	10/4	9/15
Office Skills		
Proofreading	10/13	9/29
Effective English	10/18	9/29
Supervisory and Management		
Effective Supervision	10/4	9/13
Planning for Prevention and Results	10/20	10/8

* These courses are offered in Westwood Bldg.

To learn more about these and other courses in office and communication skills, contact the Training Assistance Branch, DPM, 496-2146.

For further information on Supervisory and Management courses, contact the Executive and Management Development Branch, DPM, 496-6371.

DAS Will Hold Workshops

The Supply Operations Branch, DAS, is holding two workshops on Millipore products. The first will be held Sept. 15 from 9 a.m. to 3 p.m. in Bldg. 30, Rm. 117. The second will be held Sept. 21 from 9 a.m. to 3 p.m. in Bldg. 37, 1st floor conference room.

Products from both the Continental Water Systems Corp. and Waters Associates will be displayed. Scientists will be available to discuss technologies and product applications. □

STEP Offers Dynamic 82-83 Sessions

The Staff Training in Extramural Programs (STEP) Committee has prepared a new season of dynamic mini-courses and forums. These training sessions provide career development opportunities for health scientist administrators, grants management specialists, contract specialists and other extramural staff who work with grants and contracts.

The STEP continuing education program was established 10 years ago and has since offered over 70 modules (1-2 day mini-courses) and numerous Forum Series lectures. A committee of 22 regular and 3 ex officio members volunteer their time in planning and executing the training sessions. Continuing education credit may be obtained for attending the sessions.

Dr. William F. Raub, NIH Associate Director for Extramural Research and Training notes in his forward to the 1982-83 STEP brochure, "The modules for 1982-83 are designed to provide a wide range of experiences for improving job skills and broadening intellectual horizons."

1982-83 Modules

The first module, Introduction to the Extramural Programs, will be offered Dec. 2-3. This module has been offered every year and will explain the organization and operation of extramural programs at NIH.

Module 2 on Jan. 10-11, will discuss ethical issues, how they evolve and how the public dealing with them evolves. Perspectives on Bioethical Decision-Making will also aim at increasing awareness of how decisions on ethical issues are made, and how they affect public policy.

Research Project Support: Modify It or Preserve It is the title of the third module. It will examine how to preserve biomedical research in light of today's budget cutbacks. The history, rationale, and future of biomedical research will also be discussed on Feb. 8-9.

Module 4, The Research Microcosm: Pressures and Counterpressures, will be held on Mar. 24-25. This session will look at societal pressures and their effect on research investigators and on the research they choose.

One of the most popular modules, Information Systems for Extramural Staff, will be offered Apr. 5-7. An explanation of NIH information systems and optional "hands-on" sessions will comprise the fifth module.

The sixth module, Dynamic Listening, to be held Apr. 20-21, is totally new. It is designed to help extramural staff in improving the important skill of listening with comprehension in situations such as staff meetings or site visits.

The seventh module on R&D Procurement: Perceptions, Practices, and Pitfalls is also new. It will focus on the contract mecha-

Sing Along With Us

The NIH Singers, under new direction, are planning many events in their upcoming season, in addition to the traditional Christmas and spring concerts. Rehearsals will be held on Monday evenings. There are openings in all voice parts.

Tony DeMarinis, 496-6442, can be contacted for auditions and further information. □

nism, how it operates and how it is best used to achieve extramural missions. It will be offered May 5-6.

The application deadline for modules 1-5 is Oct. 15. Jan. 16 is the deadline for modules 6 and 7. Although extramural staff are given preference, interested NIH employees are welcome to apply as well. Applications may be obtained from BID personnel offices, STEP committee members, or the STEP program office, Bldg. 31, Rm. 1B63; telephone, 496-1493.

STEP Forum Series

The Forum Series, according to Dr. W. Sue Badman, STEP chairman, "allows the STEP program some flexibility to provide information, training, or enrichment in areas where a full module might not be appropriate, or



Dr. W. Sue Badman, NIGMS, STEP committee chairman (l); Arlene M. Bowles, executive secretary, STEP (2nd from l); and Dr. Steven J. Hauseman, NIADDK, STEP forum series director (r), confer with NIH Director Dr. James B. Wynngaarden, who will deliver the first 1982-83 forum lecture Sept. 30.

where 'hot topics' might arise during the year."

The first lecture in the series will be given by NIH Director Dr. James B. Wynngaarden. "I'm pleased to be the first speaker in the STEP Forum Series. I believe that the continuing educational opportunities provided by the STEP program offerings are vital to the continued growth of NIH's extramural staff," he said.

The presentation, entitled New Directions: A Talk With the Director, will be held on Sept. 30 from 2 to 4 p.m. in Wilson Hall, Bldg. 1. No advance registration is necessary. NIH employees are particularly encouraged to attend.

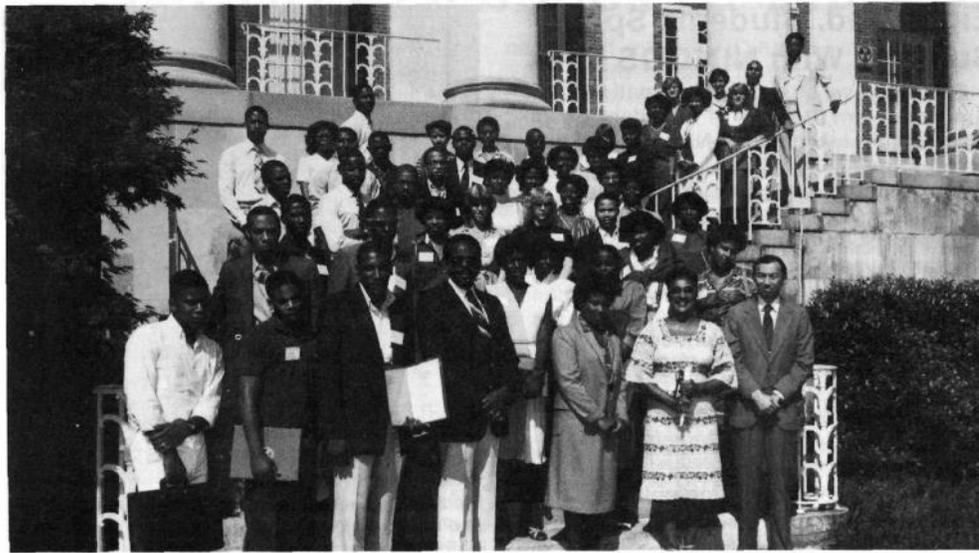
Liability of Civil Servants to Prosecution is the proposed Forum lecture for October. STEP committee members welcome suggestions for future Forum topics. □

NIH Scientists Will Speak At Instrumentation Congress

The Medical and Laboratory Instrumentation Society will hold its annual international congress and exhibition at the Sheraton Washington, Nov. 16-18.

Over one-fourth of the presentations will be given by NIH scientists.

For further information, call John L. Wolf, 946-6464. □



Last month, 49 summer employees in the Office of the Director received merit cash awards in a ceremony in Wilson Hall. NIH Director Dr. James B. Wyngaarden was the keynote speaker and Otis Ducker, director, Division of Administrative Services, acted as master of ceremonies. Student speakers included Cynthia Webb, OPPE; Derek Griffin, DAS; and Sarah East, DCG. The awards were presented by Dr. Philip S. Chen, Jr., Acting Deputy Director for Science, and Helen C. Stafford, assistant director for operations, DPM. The event was coordinated by Juanita Frazier, personnel management specialist, OD.

'Smoke-Free in '83' Policy Launched in CC

The Clinical Center is launching an anti-smoking policy, effective in the ACRF Sept. 20, as part of a campaign called "Smoke-Free in '83." The policy will become official in January 1983 and is designed to limit smoking by CC patients and employees.

Smoking is a contributing factor in hospital fires and has been implicated as a factor in heart ailments and cancer. This initiative emphasizes the CC's commitment to creating a healthful environment for patient care.

The new policy has been agreed upon by the hospital's departments and clinical directors of each institute admitting patients to the CC. In keeping with the spirit of the Surgeon General's report, it reflects the current trend of hospitals and local governments to limit smoking in health care facilities.

Briefly, the policy limits smoking in the CC to specifically marked areas of the cafeteria and staff lounges. Patients would be permitted to smoke in their rooms only if their physician gives permission and if their roommate does not object.

In the ACRF, smoking is prohibited above the first floor. There will be a smoking area in the waiting section of the ACRF. Smoking is permitted in staff lounges if separation in

space or time is made to accommodate nonsmokers.

Employees in private offices may smoke if that office is occupied by one person. But where offices are shared, smoking is not permitted unless all workers are smokers.

Also, ashtrays at the elevators will be removed throughout the ACRF except for the first floor smoking area entrance. The CC concession stand will be requested to eliminate sales of tobacco products. Signs will be made to clearly mark smoking and nonsmoking areas.

For those employees who want to learn how to "kick the habit," the CC is sponsoring a program of talks, films, and quit-smoking classes from September to January.

In September, quit-smoking classes will be offered in Bldg. 10, Rm. B1D25 left, every Tuesday from 12:30 to 1:30 p.m., or from 4:30 to 5:30 p.m. The classes will take place from Sept. 14 to Oct. 19.

It is hoped that NIH employees visiting the CC and ACRF will respect this new policy and refrain from smoking, or smoke only in designated areas. By observing the new policy, a positive effect may influence the health of CC employees, fellow workers, patients, and their families. □

Lloyd Thompson, DES Electrician, Dies From Explosion Injuries

Lloyd H. Thompson, 51, one of the two Division of Engineering Services high-voltage electricians seriously burned in the Bldg. 29 explosion July 27, died of complications from his injuries Aug. 30.

Mr. Thompson and James R. Layman were in the Bldg. 29 transformer room performing routine maintenance, inspection, and reinstallation of a network protector—a switching device that prevents power from flowing on both sides of a transformer—when the explosion occurred.

When the fire occurred, power was taken out of service in six NIH buildings and forced the evacuation of Bldg. 29 employees.

Mr. Thompson was taken to the Washington Hospital Center trauma unit by U.S. Park Police helicopter. At the hospital, it was determined that he had suffered second and third-degree burns to 60 percent of his body. He had undergone several skin graft operations before he died.

He worked for 10 years as a high-voltage electrician in the High Voltage Group, Maintenance Engineering Branch, Office of Research Services, OD. The HVG is responsible for distributing electrical power for the NIH campus and maintaining and servicing that system. The system ranges from high voltage electricity, separate power supplied to all buildings, and separate switchboards for each building.

All electrical systems are checked periodically, whether daily, weekly, monthly or biannually. The HVG is responsible for preventative maintenance of the NIH electrical system. The 119 NIH building network protectors are checked annually.

Prior to the HVG, Mr. Thompson worked in the electric shop section in the shops branch. There he was primarily responsible for the fire alarm system in each NIH building, as well as all the trunk lines running from each building to the NIH Fire Department. He worked in the electric shop for approximately 15 to 16 years, originally joining NIH in 1955.

A native of Bethesda, who used to play as a boy on the NIH reservation and grew up on Rosedale Ave., Mr. Thompson is survived by his mother, a brother and sister, his wife, two daughters and a son, and two grandchildren.

The family requests memorials, in lieu of flowers, be made to the Burn Unit of the Washington Hospital Center, 100 Irving St., N.W., Washington, D.C.

Clinical Center Medicine for Layman Lecture Series Begins Sept. 21

Behavior Patterns and Health is the topic leading off this year's Medicine for the Layman series. On Sept. 21, Dr. J. Michael McGinnis, Deputy Assistant Secretary for Health, PHS, HHS, will explore scientific evidence relating behavior to disease and explain what can be done to lower the risk of heart attack, lung cancer, and stroke by changing lifestyles.

Coronary Heart Disease: Roles of Surgery and Balloon Dilation will be discussed Sept. 28. Dr. Stephen E. Epstein, chief of Cardiology Branch, National Heart, Lung, and

Blood Institute, will talk about coronary artery disease and new approaches to treatment.

He will explain the merits of coronary artery bypass surgery and describe a new procedure, balloon dilation of coronary arteries that can relieve coronary obstruction without surgery.

On Oct. 5, Dr. John L. Doppman, chief of the Clinical Center's Diagnostic Radiology Department, will describe Radiological Imaging Techniques of the 80's. He will discuss new interventional techniques in which the

radiologist uses catheters to perform treatment which was once achieved only by surgery.

He will also explain the capabilities and applications of the newer methods of diagnostic imaging such as computed tomography, nuclear magnetic resonance and ultrasound scanning.

Eight lectures will be given this fall, from Sept. 21 through Nov. 16, and will be held on Tuesday evenings in the CC Masur Auditorium at 8 p.m. For more information, call 496-2563. □

Egypt

(Continued from Page 1)

Ain Shams University and the Hebrew University of Jerusalem.

The NIAID-administered contracts will be funded by the Agency for International Development with first year support estimated at \$1.5 million.

Dr. Beier is enthusiastic about working in the "excellent mosquito-rearing facilities," and will be studying malaria—particularly the dynamics of its transmission. He will work in the University's laboratories and participate in field studies outside Cairo.

"One example of how technology developed in American laboratories can be applied over there," Dr. Beier said, "is the new radioimmunoassay technique for testing mosquitoes."

Developed by NIAID and New York University scientists, this new test uses hybridoma-produced monoclonal antibodies to detect malaria parasites—the sporozoite phase—in infected mosquitoes, and identifies the species of parasite present. Previously, fresh mosquitoes had to be collected and dissected on the spot.

With this new test, dried specimens can be collected and brought back to the laboratory for processing at any time, making this an invaluable tool for epidemiological studies.

Leishmaniasis, a cutaneous and visceral parasitic disease spread by sand flies, will also be studied in an attempt to learn how widespread it is, where it occurs and its mode of transmission.

Dr. Feinsod will be working with University faculty on several epidemiological problems of Rift Valley fever, a febrile viral illness thought to be transmitted by mosquitoes. Because Egypt suffered a serious outbreak of RFV in 1977 to 1978, scientists are particularly anxious to learn the epidemiology of the disease and whether it is still present in Egypt. If so, they hope to develop the means to prevent future outbreaks.

Although the actual research will be conducted in Cairo and Jerusalem, there will be a continuous exchange of information, as well as visits to Egypt and Israel by U.S. scientists.

Dr. Serif El Said will be the principal investigator at Ain Shams and his counterpart in Israel will be Dr. Rachel Galun of the Kuvim Center for the Study of Infectious and Tropical Diseases at the Hebrew University of Jerusalem.

Dr. Karl Western, assistant director for international research, will be the NIAID project officer, and Dr. Robert Gwadz of the NIAID Laboratory of Parasitic Diseases—who was instrumental in developing this project—will be the principal scientific advisor. □

Harvard Medics To Hold Program

The Washington-Baltimore Harvard Medical Bicentennial Day program will be held on Saturday, Nov. 6, at the U.S. Capitol, Washington, D.C.

Registration begins at 11 a.m. in the Rayburn Bldg., Rm. 338-340. Participants in the program include Drs. John Cooper, Joseph Perpich and Philip Leder.

For further information call Dr. Christopher T. Bever, 986-0891. □

Eight Med. Students Spend Summer With NINCDS Labs

Eight medical students participating in the summer extern program of Provident Hospital in Baltimore worked in National Institute of Neurological and Communicative Disorders and Stroke labs this past summer.

Provident Hospital, which serves Baltimore's black community, began the extern program 8 years ago to provide third-year medical students a transition between the preclinical and clinical sciences, and give the students their first patient contact.

Anthony Harrel, Deborah L. DuPrey, Wendell L. Williams, Jr., Wendell S. Bristol, Kathryn D. Dorsey, and Eugene E. Johnson from Meharry College of Medicine in Nashville, Tenn., Harold E. Moore, Jr., and Paul J. Sullivan from Morehouse Medical School in Atlanta, Ga., were this year's students.

Deborah DuPrey worked with Dr. Peter LeWitt in the NINCDS Experimental Therapeutics Branch and the outpatient clinic for Parkinson's disease patients. "I got to see the youngest person known to contract Parkinson's. He was 10 when he was diagnosed as having the disorder, and now he's 22," she said.

Ms. DuPrey also saw patients with dystonia and myasthenia gravis, observed some surgery and saw an electromyogram performed. "I've done some research before, but this was a lot different. The research at NIH is more clinical," she said. A native of New York City, Ms. DuPrey would eventually like to open a private practice there.

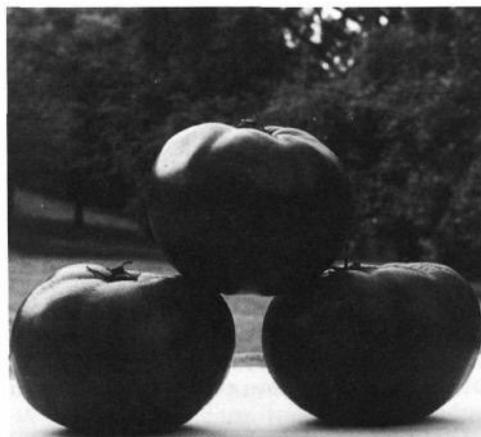
Paul Sullivan, who was assigned to the Experimental Therapeutics Branch under Dr. Norman Foster, assisted in studies involving patients with Parkinson's and Huntington's diseases, Tourette syndrome, and dystonia.

Mr. Sullivan, who will be attending Howard

Run for Your Life

The 7th NIH Health's Angels anniversary run will be held Sunday, Sept. 19, at the Kengar Recreational Center, Beach Dr. and Knowles Ave., Kensington.

There will be a 50-cents entry fee. No preregistration is required. The runs will be children, 10 and under, at 9 a.m.; 2-mile run at 9:15 a.m.; and 10-mile run at 9:45 a.m. All runners are welcome. □



Ed Driscoll, asst. chief of Editorial Operations Branch and part-time horticulturalist, recently harvested these huge "Beefsteak" tomatoes, from his Walkersville, Md. garden.



Medical students (l to r): Mr. J. Sullivan, Ms. DuPrey, Mr. Moore, and Ms. Dorsey, stand in front of the new Ambulatory Care Research Facility. They worked for NINCDS as part of the summer extern program of Provident Hospital in Baltimore.

University Medical School this fall, also observed how the PET scan is used in research. "I didn't realize how complicated NIH research was," he admitted.

Kathryn Dorsey began the summer in the NINCDS Surgical Neurology Branch, where she observed surgical procedures and was exposed to highly technical research.

"Now I know more about the workings of NIH. I had heard of it before, but I really wasn't sure about what went on here," she said.

Harold Moore also worked in the Surgical Neurology Branch, where he observed a surgical procedure in which an arteriovenous malformation was removed from the spinal cord. He is interested in a surgical career. □

Glass Container Explodes; Injures Two Employees

Two Materiel Handling Department employees were injured recently when an empty dextrose saline glass container exploded in a Clinical Center freight elevator on the 7th floor. The container was on a cart in transit to the glasswashing unit.

According to Corwin D. Strong, CC environmental safety officer, and Richard E. Shaff, chemical safety specialist in the Occupational Safety and Health Branch, someone may have placed dry ice in an empty bottle and tightly stoppered it. The bottle then exploded when exposed to extreme cold.

Glass Imbedded in Walls

Glass particles were found imbedded in the adjacent lobby wall surface and in the surface of an adjacent box. The injuries resulted from glass fragments apparently ricocheting off the wall, striking one employee in the face and the other in the chest. Both were transported to Suburban Hospital for medical care.

Serious problems such as burns and asphyxiation may occur from dry ice if not handled correctly. Its use in enclosed spaces is especially hazardous since it could deplete oxygen and result in suffocation of the individual. □

NICHD Celebrates 20 Years of Achievement

Unique Institute Changed NIH History

In 1961, a task force report to President Kennedy charged that research into the physical, intellectual and emotional growth of the child was "severely handicapped" by the absence of a central coordinating point. It called for a new Institute at the National Institutes of Health to launch a "concentrated attack" against disorders of human development.

That request ultimately changed NIH history. Solutions to problems of physical and mental development had to be based on a better understanding of *normal* human biology and behavior. At the time, by law, each Institute was designed to wage battles against a specific disease. The Congressional mandate had no provision for an Institute with a major interest in normal human reproductive, growth, and developmental processes.

A new law had to be written. On Oct. 17, 1962, a totally different pattern of research effort was set in motion through President Kennedy's authorization of the National Institute of Child Health and Human Development.

The NICHD's creation symbolized an emerging concept: while we continue to search for solutions to specific disease problems, we must also probe more deeply into all the life processes—behavioral and bio-

performed with NICHD funds—more than 1,300 in 1981 alone. The goals of these studies have been as difficult as they are important:

- Programs have aimed to assure the birth of *healthy babies* through investigations on nutrition, normal and abnormal fetal development, and problems of pregnancy.
- Many projects have sought to assure the birth of *wanted babies* through studies on human fertility and infertility, better methods of family planning, and adolescent childbearing.
- Others have aimed to provide *all children* the opportunity for productive and healthful adulthood through efforts to understand the causes of mental retardation, birth defects, sudden infant death syndrome, and learning disorders, as well as normal development and growth.

High Dividends

The NICHD's unique approach has yielded great returns in the past 2 decades. Working toward the goal of healthy babies, Institute-funded scientists made improvements in the treatment of premature infants that contributed to a 22 percent drop in infant mortality in the U.S. between 1976 and 1980.

treatments for male and female infertility, as well as the development of improved family planning methods. They have also led to much safer use of currently available contraceptives.

Scientists striving toward the goal of assuring a productive adulthood for all children have made great steps in preventing certain types of mental retardation. They have developed screening tests and treatments for some inherited metabolic disorders that cause mental retardation.

In pursuing these aims, the NICHD has served many roles within the biomedical community: initiator, teacher, coordinator, evaluator and catalyst. Some of its impact has been direct, as evidenced by the many valuable research findings made by intramural researchers on the NIH campus and Institute-funded scientists throughout the country.

At other times, the NICHD's influence is less direct: supporting conferences, publishing reports, providing statistical and epidemiological services, and underwriting training programs.

When the Institute was formed, its first order of business was to correct a problem emphasized repeatedly by obstetricians, pediatricians and other specialists at the Congressional hearings in 1961: the serious shortage of research personnel in the field. In the last 2 decades, the NICHD responded to that need by supporting the training of more than 4,000 research scientists in the



medical, normal and abnormal—as a basis for maintaining health as well as for the prevention and conquest of disease.

Lifespan Research

The Institute's search for understanding has followed the continuum of life itself. Studies have explored events before conception, including basic reproductive biology and attitudes toward contraception and parenthood. Research has moved through the transformation of a fertilized egg into an infant; the physical and psychological growth of an infant into a child, adolescent and adult; and the complexities involved in childbearing and childrearing.

Thousands of research studies have been

That decline represents the prevention of some 10,000 infant deaths each year.

The maternal death rate from pregnancy and childbirth has also fallen dramatically—an 80 percent drop between 1962 and 1980—owing in large part to NICHD-supported research advances that allowed women to control their fertility and improved the management of life-threatening conditions in pregnant women.

Efforts toward the goal of assuring the birth of wanted babies have resulted in

areas of pregnancy, child health and human development.

In the last 20 years, our population grew and changed, as did its needs. It grew so fast, in fact, that it became apparent that population research, including studies on family planning methods and attitudes, was vitally important.

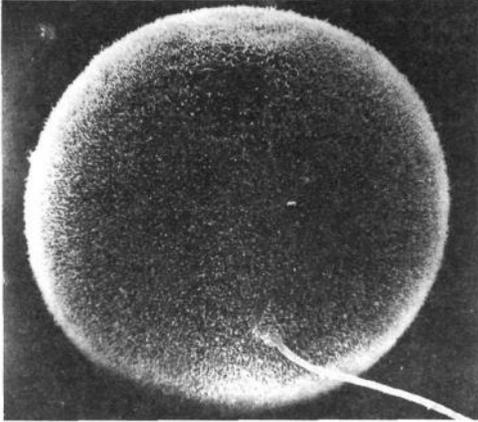
In 1968, the NICHD was designated the major population research component of the

(See HISTORY, Page 8)

A Cross-Section of NICHD Research Highlights

The research of the National Institute of Child Health and Human Development follows the flow of life itself, and is just as diverse. Starting with events before conception and moving through each stage of human development, the NICHD's approach spans the normal and abnormal, the biomedical and behavioral, the basic and clinical. This sampling is a cross section of highlights representing each of these approaches. (Because of its broad mandate, NICHD's programs often intersect those of other Institutes, which share with NICHD the support of some research.)

Understanding the Basics



A better understanding of the two basic components of fertility—egg and sperm—has been achieved through many NICHD-supported projects. Grantees identified two hormones that influence sperm production in men and the monthly release of an egg, or ovulation, in women. Intramural scientists isolated the receptor molecules on the ovaries and testes that allow them to respond to hormonal signals that promote ovulation and sperm production.

A substance that inhibits the maturation of egg cells was discovered by one group of grantees, and another group identified enzymes that facilitate the penetration of a sperm cell into an egg. These and other findings have enhanced our understanding of basic reproductive processes, and form a basis for future medical applications. (Electronmicrograph of mammalian egg and sperm by NICHD grantee Dr. David M. Phillips of the Rockefeller Institute.)

Advances in Obstetrics

Institute-funded researchers have developed technological breakthroughs now widely used in obstetrical practice. Three examples: ultrasensitive pregnancy tests, fetal monitoring, and RhoGam.

The most sensitive pregnancy test in use today was developed by NICHD intramural scientists and grantees in 1977. It can detect very low levels of a hormone produced by the developing placenta—human chorionic gonadotropin—in the mother's blood. The test makes it possible to detect pregnancy as soon as 10 days after conception, before the mother has even missed a period.

An Institute grantee showed that fetal heart rate could be monitored electronically or by ultrasound to evaluate fetal status during labor. Previously, stethoscopes alone had been used, and monitoring and interpreting fetal heartbeats during contractions was difficult.

Now, through the use of electronic fetal monitoring, physicians can "hear" and compare fetal heartbeats as they occur before, during and after contractions. Thus, they can assess the condition of a fetus more precisely and take appropriate steps to ensure its well-being.

Rh-hemolytic disease (Rh incompatibility) used to kill several thousand infants each year. Institute grantees were involved in developments leading to the prevention of this problem.

A team of investigators developed RhoGam, a highly concentrated solution containing immunoglobins with Rh antibodies. Use of this preparation has nearly eliminated Rh incompatibility as a cause of infant morbidity and mortality.

Testing for Lung Maturity

Each year, about 40,000 newborns develop respiratory distress syndrome. These babies cannot breathe on their own because their lungs are immature and lack a substance that prevents the lungs from collapsing. A prenatal test for fetal lung maturity developed with Institute support has become invaluable in managing premature labor and cesarean delivery, two situations where the risk of RDS can be high.

If the test shows the fetal lungs to be immature, it is often possible to prolong pregnancy until the lungs mature, or give the mother hormones to hasten fetal lung development. When RDS occurs despite all efforts, special air pressure treatments to keep the lungs inflated have markedly improved infant survival.

Preventing Prematurity



Research aimed at reducing the number of infants born too early or too small, like this 3½-pound baby girl, has been a priority of the NICHD. In order to prevent premature birth, the mechanisms involved in the initiation of labor must be understood.

Recently, grantees found that the same enzyme released by the amnionic membrane to start labor is also produced by certain bacteria that can infect the female reproductive tract. Investigators are now testing the possibility that the bacterial enzyme may initiate premature labor. If confirmed, this could be a major cause of premature labor, and one that could be readily prevented.

Breast Milk Is Best



NICHD-funded research has virtually confirmed that breast milk is the ideal food for normal, full-term infants, for at least the first 6 months of life. Among the advantages of breast milk are its protein quality, digestibility, low inorganic salt content, and calcium, phosphorus, and vitamin C content.

In addition, breast milk seldom evokes an allergic response, and it conveys immunological benefits. Based on this research, medical groups are encouraging breastfeeding and the percentage of women who breastfeed is increasing. (Photo: Baylor College of Medicine.)

Early Contact Benefits Babies

NICHD-funded studies have examined the influence of parent-child interactions on child development. Findings that normal infants develop better if they receive tactile stimulation have encouraged a trend towards more mother-infant and father-infant contact, especially in the period immediately after birth. Studies also show that early contact with the baby improves the mother's confidence in her ability to care for the child.

Father-Child Interplay Studied

In recent years, interaction between fathers and their children has been studied in many NICHD projects. Investigators have found that toddlers seek out their fathers, are disturbed by separation from them, and at times prefer their fathers to their mothers.

New studies by intramural researchers show that infants as young as 6 months old are more persistent in problem-solving tasks if their fathers play with them. The studies found that even though fathers spend much less time with their infants than mothers do, they have a greater effect on problem-solving behavior.



Progress in SIDS Research

In the U.S., the leading cause of death in children from 1 month to 1 year of age is sudden infant death syndrome. It claims between 6,000 and 7,000 victims each year. Institute-supported research over the past decade has led to significant progress in understanding SIDS. It is now known that SIDS victims are not the normal, healthy babies they were once believed to be.

A major NICHD study suggests that even at birth, there are physical and behavioral differences between groups of babies who later die from SIDS and those who do not. While no single cause for SIDS has been identified, researchers are now working to define a high-risk population that can be targeted for preventive measures.

Understanding Down Syndrome



Retarded children, like these youngsters with Down syndrome, tend to remain isolated from nonretarded children unless adults intervene. NICHD-supported researchers have found that social exchanges between retarded and nonretarded preschoolers can be greatly enhanced by training the children to initiate contact and respond to one another.

This type of research has contributed to improved home care and public education, and a fuller role in community life for persons with Down syndrome. Institute-funded biomedical studies have shown that the father is the source of the genetic defect in about 20 to 30 percent of cases. This finding has led to new approaches in genetic counseling and research design.

In addition, NICHD researchers recently identified in mice a chromosome anomaly that can be used as a model for the Down syndrome genetic defect. The mouse model will allow basic experiments which are essential, yet impossible to perform in humans.

Preventing Mental Retardation

Thousands of cases of mental retardation have been averted through advances made by Institute-supported scientists, who continue to search for other preventive measures.

Research by some of these investigators led to development of a screening test for newborns with thyroid glands that are either absent or not working properly. Without treatment, this condition—called congenital hypothyroidism—leads to mental retardation. The test allows early detection and treatment, greatly improving the prognosis for normal mental and physical development.

Basic Research Brings Nobel Prize, Many Applications

Although an improved understanding of life is a worthy goal in itself, basic research often brings a bonus of practical medical applications. A recent and dramatic example is research on LHRH, a brain hormone whose structure was determined by two NICHD-supported scientists.

Drs. Andrew Schally and Roger Guillemin were awarded a Nobel Prize in 1977 for isolating and determining the chemical composition of luteinizing hormone-releasing hormone. This hormone indirectly regulates the reproductive systems of both men and women.

With the knowledge of its basic structure, Drs. Schally and Guillemin and others produced modified versions of LHRH, called analogs, which are much more potent than the natural hormone. These analogs can either promote or inhibit fertility, depending on the chemical structure and dosage.

Scientists at NICHD and Institute-funded

researchers around the country have put LHRH analogs to work. Intramural researchers recently showed that the analogs may be useful in treating endometriosis, a common cause of infertility in women.

NICHD-supported researchers cured a rare form of male infertility using an LHRH analog, and scientists elsewhere used an analog to achieve pregnancy in several women who had been unable to ovulate. At the other extreme in fertility studies, some LHRH analogs used in NICHD clinical trials show promise as contraceptive drugs for both men and women.

Intramural scientists at the NICHD have had remarkable success in treating precocious puberty with an LHRH analog. Until now, there was no effective treatment for this disorder, which causes children to undergo sexual development and rapid growth years before the normal age of puberty. (See Case Histories).

Advances In Genetics

Recent advances by two NICHD-funded research groups may lead to treatments for some of the 2,000 hereditary disorders now considered incurable. One group successfully transferred a rabbit gene to a mouse, while a second group transferred a gene from a virus to a mouse.

In both instances, the foreign genes worked properly and were transferred to mouse offspring. This work may ultimately lead to the development of new therapy for people with certain disorders caused by absent or malfunctioning genes.

In 1977, NICHD intramural scientists made a discovery that changed the thinking on the organization and function of genes, the basic units of heredity. They found that genes are not arranged in a continuous array of code words, as was originally believed. Instead, segments of genes are separated by intervening sequences of DNA which are not translated into the final product of the gene.

DNA segments can be rearranged to form different genes, thus making it possible for the same piece of DNA to be used in building more than one gene. This finding has helped explain how the body is able to produce almost limitless numbers of antibodies from a limited amount of genetic material. The discovery of intervening sequences also may explain the basis for some inherited anemias and other genetic disorders.

Research on Reading



Reading, far more than speech, places a direct demand on a person's knowledge of

language, Institute-funded studies show. From its beginning, the NICHD has supported research on reading disabilities. This research has led to the development of tests that can be used to diagnose reading problems in children and to prescribe corrective measures.

Birth Control Evaluated



Assessing the safety of birth control methods used by millions of men and women is a major part of NICHD's program in population research. Studies on oral contraceptives have demonstrated the dose-risk relationship, and helped define high-risk populations, such as smokers and women over 35. As a result, pill formulas have improved, prescribing practices have changed, and consumers are able to make more informed decisions.

Institute-funded studies recently confirmed some of the pill's noncontraceptive benefits, such as protection from pelvic inflammatory disease and cancer of the ovary and uterine lining. Other major studies have focused on the side effects of the intrauterine device, and several large projects evaluating the safety of vasectomy are in progress.

The increasing popularity of barrier methods of birth control has prompted Institute-funded development and evaluation of new spermicides, diaphragms and cervical caps, as well as large-scale trials of existing barrier devices.

(Continued on next page)



The rise in women's wages over the past 20 years is a major factor influencing recent fertility trends, according to NICHD-funded research. More women are delaying childbearing and having fewer children—often only one. The rise in one-child families prompted studies that found no adverse effects of being an “only child.” Some Institute-supported research found that “only children” as a group are slightly superior to children with siblings in cognitive abilities and achievement.

HISTORY

(Continued from Page 5)

Federal Government. It has since become the world leader in promoting studies on basic reproductive biology, family planning methods, and the social and behavioral factors related to fertility.

Population shifts prompted other Institute changes. The NICHD originally supported research spanning the entire lifetime. To give a more concentrated focus to the needs of a rapidly enlarging segment of the population, the aged, the NICHD's aging programs were transferred in 1975 to the just-formed National Institute on Aging.

Five directors have guided the NICHD from its infancy to its present early adulthood. In order of service, they are Drs. Robert A. Aldrich, Donald M. Harting, Gerald D. LaVeck, and Norman Kretchmer. The present director, appointed July 1, 1982, is Dr. Mortimer B. Lipsett.

The Institute's first director, Dr. Robert Aldrich, will be a special participant in an event celebrating NICHD's 20th Anniversary. On Sept. 20, as part of the meeting of the National Advisory Child Health and Human Development Council, presentations will be made on accomplishments in the last 2 decades in the fields of child health and human development. The meeting, which is open to all employees and to the public, will be held in Wilson Hall in Bldg. 1, at 8:30 a.m.

—Maureen Gardner

Office of Research Reporting, NICHD

Case Histories

The NICHD has touched the lives of countless people. Here are the stories of three who benefited from the Institute's research.

###

When John G. was born 3 years ago, everything appeared normal. His mother's pregnancy was uncomplicated, he was a full-term baby, and the delivery went smoothly. No particular problems were noted when he was in the newborn nursery. Before he was discharged at 4 days of age, a blood sample was taken and sent to the state laboratory for routine screening.

A week later, John's physician was asked to send another blood sample. The infant's levels of thyroid hormone were abnormally low. The second blood test and a physical exam confirmed the diagnosis: congenital hypothyroidism. In children with this disorder, the thyroid gland is either absent or too small to work adequately. If not treated early, the child's physical and mental development are retarded.

Before NICHD-supported research led to the newborn screening test for congenital hypothyroidism, less than one-third of affected infants were detected in the first 3 months of life. This is the time when treatment is most effective. The others, numbering in the hundreds each year, suffered mental retardation of varying severity.

John was started on replacement thyroid hormone at 4 weeks of age, still showing none of the symptoms of the disorder. He is now 3 years old, and is growing and developing normally.

###

When Sharon L. was 4 years old, her mother noticed something wrong. The child began to grow very fast, her breasts enlarged, and she started menstruating. She became moody and difficult to manage, acting more like a teenager than a young child.

Sharon's pediatrician diagnosed a rare condition called idiopathic precocious puberty. For no apparent reason, children with the disorder start puberty far too early.

The doctor told Sharon's parents her growth could be adversely affected by the condition. She would be tall for her age as a child, because of a growth spurt triggered by sex hormones. But unless her growth rate was slowed, she would stop growing earlier than normal and would never reach her full height potential as an adult.

Sharon was referred to the NICHD's precocious puberty study at the NIH Clinical Center. Doctors there were using a new drug, called a luteinizing hormone-releasing hormone analog, to halt—and even reverse—sexual development in young children.

Within months of starting LHRH analog therapy, Sharon stopped menstruating, her breast development regressed, and she started acting like a child her age again. Her growth slowed to normal, and the drug produced no side effects.

Sharon will take the drug until she reaches the normal age for puberty. Now 7 years old, she is somewhat taller than her peers, but there is no other evidence of her disorder.

###

Jim and Donna B. tried unsuccessfully for 10 years to have a child. Before he was referred to the NICHD Male Infertility Clinic, doctors found that Jim's pituitary gland was not producing enough of the hormones that regulate the production of sperm and the male sex hormone testosterone. They gave him replacement testosterone, but told him there was no therapy available that could enable him to become fertile.

Two years ago, Jim came to the NICHD clinic, where scientists had invested a decade of research into the hormonal requirements of male reproductive function. Over the course of a year, he received carefully regulated doses of the pituitary hormones he lacked. The hormones spurred his reproductive system to produce both testosterone and sperm.

Just over a year ago, Jim and Donna achieved their long-sought pregnancy. Earlier this year, they delivered a normal, healthy baby boy.



The NICHD's staff, which today totals near 600, started out with these 22. Seated: Dr. Eugene Byrd, Dr. Norman F. Gerrie, Dr. Robert Aldrich (Director, 1963-4), Dr. Donald Harting (Director, 1965-6), and Calvin Baldwin. Standing: Gerald Atchison, Wanda Burnett, Alida McBirney, Virginia Hitz, Janet T. Burr, Paul Waugaman, Agnes E. Schroeder, Helen O. Illiff, Florence Mann, Dorothy J. Aiken, Arlene Ludwig, Mary Beilaski, Dorothy Raley, Lillian Freedman, Frances Lee, Enda W. Scruggs, and Dr. Elizabeth Frame.

Clara Cell: One Unfolding Mystery of the Lung

To the layman, the lung appears primarily a mechanical device, a sort of bellows that takes in air, extracts the oxygen, and expels carbon dioxide and other wastes from the blood.

For researchers in the Laboratory of Pharmacology, NIEHS, a more appropriate analogy for the lung would be that of a city, since the lung is made up of at least 40 different cell types—called cell populations—each doing distinctly different jobs.

One type of lung cell that has been extensively studied by NIEHS researchers is the clara cell, which lives interspersed with other types of cells in the lining of the airways of the lungs. Relatively large and heavy, the clara cell is recognizable under the microscope because it lacks the hairlike cilia typical of other lung cells surrounding it.

Scientists do not yet completely understand all the functions of the cell but they do know that it is a site of high metabolic activity. Pharmacologists at NIEHS are especially interested in the high activity of enzymes in the clara cell.

The role of clara cells in the metabolism of foreign compounds became more evident after investigations by Dr. Michael R. Boyd,



Theodora R. Devereux, research biologist in the Laboratory of Pharmacology, works at the microscope and computer terminal as she studies the clara cells of the lung and respiratory tract. The laboratory is interested in the cell's normal function and their vulnerability to toxic environmental agents.

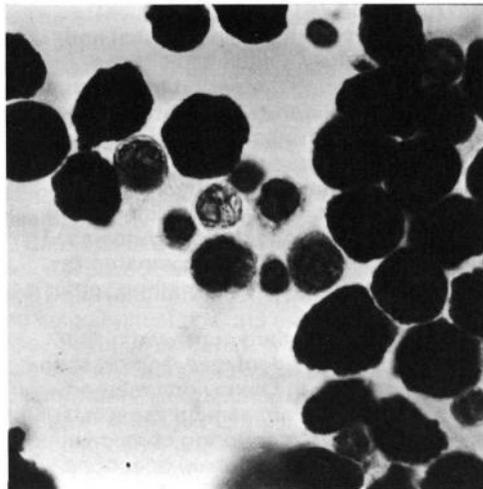
National Cancer Institute, revealed the action of sweet potato mold on the cells in the lung.

Dr. James R. Fouts and Theodora R. Devereux are among several investigators in the Laboratory of Pharmacology who have studied clara cells. Their work began in 1976 to isolate the cells from the lung in order to characterize some of their nonrespiratory functions.

In a closely coordinated effort the cells are isolated into relatively pure populations. The investigators then use the freshly isolated cells immediately for their studies. In only 24

Come Fly With Me!

The NIH Flying Club will hold its next meeting Thursday, Sept. 23, at 5:15 p.m. in the FAES Bldg. on Old Georgetown Rd. Itzhak Jacoby will give a slide presentation about his trip to the "Oshkosh Airfield." For more information call Dr. Fred Bruner, 496-9223. □



The larger, dark bodies in the micrograph are clara cells, one of about 40 different cell populations in the lungs. Although they have been artificially separated from other lung tissue, these clara cells usually live interspersed with other types of cells and are distinguished by their lack of fiberlike cilia. Death of the clara cell population caused by toxic environmental agents results in the death of the entire animal.

hours the activity of cytochrome P-450-dependent monooxygenase enzymes in cell cultures drops to a low level.

"Cells grown in culture can be excellent models for some types of research. However, we are interested in the characteristics and functions of the cell as it exists as close as possible to the *in vivo* state," says Ms. Devereux.

Despite their limited lifespan, isolated cells provide advantages not found in other methods of toxicological research. Ms. Devereux points out that these cell populations can be manipulated and monitored easily in studies of metabolism, whereas many factors often complicate other model systems.

Cells Proved Useful

The isolated cells have proved to be a useful tool for answering many questions in pulmonary toxicology. For example, it was found that two major enzyme forms of the cytochrome P-450 toxication/detoxication system exist in both the isolated clara cells and alveolar type II cells (another important cell type in lung).

However, metabolism of foreign compounds by these enzymes is different between clara cells and other cells of the lung, perhaps because of the different proportions of these enzymes in the different cells.

Individual cell populations are important models in the study of how environmental agents might be activated or deactivated particularly by lung cells.

"Studies of the differences between cell populations in handling various chemicals may help us discover which of the cell types might be susceptible to the toxic effects of certain chemicals and therefore help us to understand why these toxicities occur and then how to prevent them," Ms. Devereux said. □

Five FIC Scholars Return To NIH to Continue Studies

Five Fogarty International Center scholars-in-residence are returning to NIH this month to continue their studies.

Dr. Frank Fenner—a member of the staff at the Curtin School of Medical Research, Australian National University, Canberra—is well-known for his research in virology. His name is particularly associated with the study of myxomatosis in rabbits and with mouse pox. He was among the first to postulate the existence of immune tolerance.

Dr. Susan Lowey, professor of biochemistry at Brandeis University, has devoted her career to the study of muscle contraction. Her early work on myosin structure provided much of the basic information on its subunit composition and its physicochemical properties. Using immunological techniques, she recently demonstrated that a given muscle fiber may contain several different types of myosin.

Dr. Frits Orskov is director of the international escherichia and klebsiella center, State Serum Institute in Copenhagen, Denmark.

He and his wife, Dr. Ida Orskov, have made major contributions to the studies of enterobacteriaceae immunology and to the relation of bacterial antigens to pathogenicity.

Professor of cell biology at the University of Colorado, Dr. Keith Porter is one of the founders of modern cell biology. He founded the *Journal of Cell Biology*, and organized both the U.S. Society for Cell Biology and its international counterpart.

In addition to revitalizing cytology and crystallizing the multifocal discipline of cell biology, Dr. Porter has played a major role in the development of electron microscopy. He will be associated with NCI while he is here.

Dr. Lars Svennerholm, professor of neurochemistry, faculty of medicine, University of Goteborg, Sweden, is an acknowledged expert on glycolipid biochemistry and particularly the biochemistry of gangliosides.

Dr. Svennerholm will be associated with NINCDS during his stay. He has also provided fresh insight concerning possible treatment of stomach cancer through use of monoclonal antibodies directed against tumor-specific gangliosides.

The five Fogarty scholars have offices in Stone House and can be reached at 496-1213. □

Phone Training Messages Available

The Code-A-Phone messages for the balance of September are Sept. 13-17, NIH Training Policy; Sept. 20-24, Sources of Training; and Sept. 27-Oct. 1, Requesting Training.

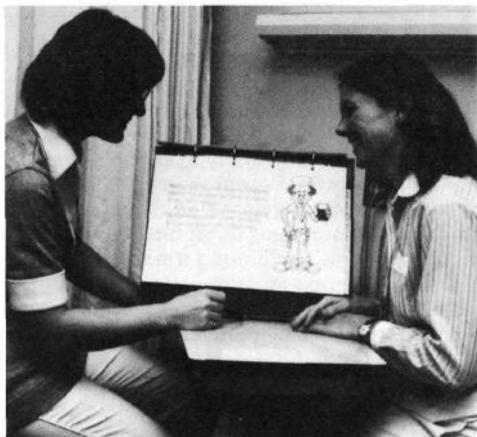
Dial 496-4608 for the 3-minute messages. □

Housing Listings Available

The Recruitment and Employee Benefits Branch makes available a computerized housing listing in Bldg. 31, Rm. B3C03.

The listing contains information on rental housing, apartment sharing, and rooms for rent. For further information, call 496-4973. □

Patient Self Management Improves Disease Outcome



Patients with chronic diseases, such as hypertension, diabetes, arthritis, lung and heart disease, consistently function better when they have a role in the management of the disease, according to a recent literature analysis by the NIADDK-supported Diabetes Research and Training Center at the University of Indiana.

The study found that a patient education program, conceived and designed to help patients cope through self management, is more likely to improve the course of chronic disease than a standard presentation of medical facts and treatment rules that all chronic disease patients should know.

Change Environment

Behaviorally oriented programs, which emphasize changing the environment in which patients care for themselves, were consistently more successful at improving the clinical course of chronic disease.

These findings were published in the *Journal of Chronic Disease*, Vol. 35, 1982, by Dr. Steven A. Mazzuca, assistant professor, Indiana University School of Medicine. Dr.

Mazzuca reviewed articles on patient education from various educational and scientific journals. Of the 320 articles reviewed, covering the period from January 1970 through March 1981, 30 articles were useful in the analysis.

The analysis was presented in two parts. The first part summarized the extent to which all patient education affects compliance, progress, and disease outcome. The second part of the analysis compared the effectiveness of a teaching method versus a behavioral method.

The teaching method consisted of lectures, pamphlets, videotapes, and prescription labels, while the behavioral method emphasized self-management aspects, such as social support, monitoring of medication by a third party, and followup telephone calls to patients.

Had 64 Percent Success

In one study, knowledge alone had a 64 percent success rate in affecting compliance, progress, and disease outcome, while a method using behavioral strategies (reward or approval), received an 85 percent rating. The best average (88 percent) was achieved by combining educational and behavioral strategies.

Dr. Mazzuca said that doctors and allied health professionals have witnessed an enormous change in the nature of illness in the United States over the past 50 years. Infectious diseases have declined, while chronic illnesses such as hypertension, diabetes, and arthritis have increased. Since the center currently follows the clinical course of about 500 patients with diabetes mellitus, the findings from this most recent study are being used in the development of effective patient education.

—Barbara Weldon □

Dr. Margaret H. Edwards Research Educator, Retires

Dr. Margaret Hay Edwards, cited this year by the American Association of Cancer Institutes for her outstanding work in promoting clinical education in the United States, has retired from the National Cancer Institute.

In a unanimous resolution of gratitude, the AACI recognized "her distinguished service as evidenced by her unrelenting and consistent efforts to improve the quality and scope, through education, of all aspects of cancer research, especially clinical research and care."

Dr. Edwards came to the National Cancer Institute in 1964 as executive secretary of the National Advisory Cancer Council's Subcommittee on Diagnosis and Treatment.

She had spent the previous 2 years in Washington in the Public Health Service as a section chief in the Diabetes and Arthritis Program, Division of Chronic Diseases, Bureau of State Services.

From 1965 to 1982, Dr. Edwards directed NCI's clinical cancer training and education activities, until 1973 in the Division of Extramural Activities, and thereafter in the Cancer Program, first as chief of the Education and Training Branch, and then as chief of the Clinical Manpower Branch.

Last February she became executive secretary of the clinical cancer education committee of the Division of Extramural Activities.



Now residing in Seattle, Wash., Dr. Edwards will cochair a panel on cancer education during the International Cancer Congress this month.

A recipient of the NIH Director's Award in 1976, Dr. Edwards was made an honorary member of the American Association of Dental Schools in 1980. On her retirement from NCI she received a certificate "in special recognition of her outstanding contributions to programs of NCI from 1964 to 1982."

Dr. Edwards received her M.D. degree from Temple University School of Medicine in Philadelphia and a M.P.H. degree from the Harvard School of Public Health. She practiced internal medicine from 1952 to 1958 in Trenton, N.J., and was assistant director of oncology and director of the Tumor Clinic at the Woman's Clinic at the Woman's Medical College in Philadelphia.

From 1956 to 1962, she held various positions with the New Jersey State Department of Health. □



Dr. Elizabeth A. O'Hern, program administrator, Physiology and Biomedical Engineering Program, NIGMS, was recently given the meritorious service award of Sigma Delta Epsilon, Graduate Women in Science, Inc. As the highest award of the organization, it is only given on special occasions. Dr. O'Hern has been a member for 20 years, serving on their national council as secretary, network coordinator, and president of the Omicron chapter.



Dr. George V. Hillyer, director of the DRR-funded Minority Biomedical Research Support Program at the University of Puerto Rico, Rio Piedras, has been presented with the 1982 Henry Baldwin Ward Medal by the American Society of Parasitologists at its annual meeting in Toronto. The Ward medal is the highest research award which the society bestows on its members.

Dr. Berman, Mathematical Biology Chief, Dies

Dr. Mones Berman, chief of the Laboratory of Mathematical Biology at the National Cancer Institute, died Aug. 12 of cancer. He was 61.

Dr. Berman joined NIH in 1958 after working for a number of years at the Sloan Kettering Institute for Cancer Research in New York City. During his career at NIH, Dr. Berman pursued his interest in mathematical biology, a field which applies the rigor of mathematical analysis to data derived from biological experiments.



Dr. Berman

His success in this field led to his appointment in 1972, as head of NCI's newly formed Laboratory of Theoretical Biology (later renamed the Laboratory of Mathematical Biology).

Dr. Berman's work has influenced biological sciences including endocrinology, immunology, and cell biology. He was best known for his pioneering work in computer "modeling" of biological systems. Modeling is a method for mathematically describing biological systems.

As an aid to researchers interested in using this modeling method, Dr. Berman and his colleagues designed a computer program package called SAAM (Simulation, Analysis, And Modeling).

Scientists world-wide now use the program to model basic biological processes such as the action of insulin, the production of proteins, and the metabolism and action of anti-tumor drugs in the body.

His contributions to the field of mathematical modeling were recognized in 1974, when he received the HEW Superior Service Honor Award. Earlier this year, Dr. Berman was awarded the HHS Senior Scientific Service Award.

Born in Lithuania, Dr. Berman moved to New York City in 1938. He graduated with a B.E.E. from Cooper Union School of Engineering and received his doctorate in physics from the Polytechnic Institute of Brooklyn.

He was a member of several professional and extracurricular organizations, and helped organize the Medical Internal Radiation Dose Committee of the Society of Nuclear Medicine, serving as a member from 1965 to 1976.

He was on the editorial boards of several professional journals including the *American Journal of Physiology* and the *Journal of Lipid Research*.

Dr. Berman taught at the NIH Foundation for Advanced Education in the Sciences. Several prominent biophysicists received their training in his laboratory.

Dr. Berman's family is establishing a scholarship fund for students interested in the field of computers and mathematical modeling.

Computers in Medical Care Meeting To Be Held In D.C.

The Sixth Annual Symposium on Computer Applications in Medical Care, to be held Oct. 30 to Nov. 2 at the Sheraton Washington Hotel, will examine the ways in which computers are penetrating many areas of medicine and biomedical research.

Over 2,000 practitioners, researchers, administrators, computer scientists and health scientists are expected to attend.

Sessions in which NIH scientists and grantees will participate will consider ambulatory and hospital information systems, including nursing applications, the development and use of clinical research data bases, and the use of computers as clinical decision aids.

Laboratory and radiologic systems, information systems in mental health, legal issues and computers, and medical education will also be addressed.

NIH staff qualify for reduced registration fees as members of a sponsoring organization. Additional reductions in registration fees are available up to Oct. 22.

The keynote speaker on Sunday, Oct. 31, will be Dr. A.M. Cormack of Tufts University, winner of the Nobel Prize in Physiology or Medicine for his work on the CAT scanner.

Special tutorials (additional fees) are available on Saturday, Oct. 30, with the primary sessions occurring on Sunday through Tuesday.

The symposium is organized by SCAMC, Inc., a group of experts dedicated to disseminating information on new uses of computers in medicine. The symposium is sponsored by 80 universities, professional groups, government agencies and research and health care organizations.

Further information may be obtained from the conference coordinators at the George Washington University office of continuing medical education, Dr. Thomas Pieumme, 676-4285. □



Art directors and designers from the Medical Arts and Photography Branch, DRS, sit in front of their posters and publications which won six awards of merit and one silver medal at the 33rd annual show of the Art Directors Club of Metropolitan Washington. (L to r): Lee Nance, Linda Brown (silver medal winner for "Sleep" poster), Ron Winterrowd, holding the silver medal in the shape of a light bulb, Al Laoang, and Sara Danis.

NIH Scientists To Speak At Toxicology Conference

The National Association of Life Sciences Industries, Inc., is sponsoring a conference on Toxicology Laboratory Design and Management for the 80's and Beyond at the Hyatt Regency Hotel, Crystal City, Va., on Sept. 26-29.

Among the NIH speakers are Drs. Albert New, NCI; Robert L. Dixon, NIEHS; and E. Emmett Barkley, Division of Safety.

For further information, call Harold C. Brown at 466-4464. □

Silence never makes any blunders.—H. W. Shaw □



The National Institute of General Medical Sciences recently held its annual awards ceremony to honor four employees. They are pictured with Dr. Ruth L. Kirschstein, Institute Director (c), who presented the honors. The NIH Award of Merit was given to (l to r): Martha Pine, deputy executive officer; a cash award to Ellen Chuang, summer employee; the NIH Award of Merit to Carolyn Mohan, secretary, genetics program; and a cash award to Martin Allen, summer employee.

Dr. Morrow: Skilled Surgeon and Fisherman

(Continued from Page 1)

valves and the perfecting of the surgical technique to implant them in place of diseased valves.

In 1960, he performed the first mitral valve implant, using an artificial valve that he had developed. A significant part of the credit for the success of the implant was given to Joan Fuller, Dr. Morrow's secretary of many years, who assisted the valve research program by sewing the fabric covering onto the frame.

The first valve implanted, he said, may well have been one that she sewed. Through the years, several other valves were developed within the Cardiac Surgery Branch that were widely used by the medical profession for valve replacement.

Dr. Morrow also worked extensively in the field of pediatric cardiac surgery, pioneering procedures for the correction of congenital valvular aortic stenosis, discrete subaortic stenosis and the incomplete form of persistent A-V canal with cleft mitral valve. It was his work with children for which the Greek Government conferred on him the Golden Cross of the Order of the Phoenix.

A clinical associateship in cardiac surgery in his branch has always been a favored position for young doctors, and about 150 of them have gone through the rigorous program directed by Dr. Morrow. About 20 years ago the group formed the Andrew G. Morrow Society, open to surgeons who have trained under him.

The society meets every year at the annual meeting of the American College of Surgeons. The group of associates who completed training in 1974 presented Dr. Morrow with a pinball machine, one of his favored methods of relaxation at the completion of his day. The machine found a home in his office and was used to "assess hand-eye motor coordination among young surgeons."

Was Avid Bass Fisherman

Outside the operating room, he dedicated a considerable portion of his free time to the calculated pursuit of *Micropterus salmoides*, the large-mouth black bass. He had remarked on numerous occasions that heart surgery was his hobby, but that fishin' was his vocation.

His dedication to that sport is attested by his involvement in all aspects of it. He was a founding member of the Bass Anglers Sportsmens Society (BASS) and a past president of the Montgomery County chapter.

He was a member of the Florida and Georgia Bass Associations and the International Game Fish Association, and was the founder of the Piscatorial, Chirurgical, and Imbibatorial Society of Currituck County, N.C. The door to his office was festooned with decals and stickers extolling the virtues of fishing and his prowess at it.

A native of Indianapolis, Dr. Morrow received his premedical training at Wabash College in Crawfordsville, Ind. and earned his M.D. at Johns Hopkins University in 1946.

Early Surgery at Hopkins

He completed his internship and residency in surgery at Johns Hopkins and became the senior registrar in thoracic surgery at the General Infirmary, Leeds, England. In 1953, he was appointed chief of the clinic of surgery for what was then the National Heart Institute.

Dr. Morrow was a member of a number of professional societies and was past president of the Society for Vascular Surgery and the International Cardiovascular Society. He served on the board of governors of the American College of Surgeons and on the executive committee of the American Heart Association.

He was the recipient of the Arthur S. Flemming Award, the Alexander Vishnevsky Award from the Vishnevsky Institute, U.S.S.R., and the PHS Meritorious Service Award.

Dr. Claude Lenfant, NHLBI Director, said of Dr. Morrow, "He was one of the true pioneers in the progress of cardiovascular surgery during the past 30 years. His contributions have long been recognized as outstanding by his peers and have benefitted countless numbers of Americans."

Dr. Morrow is survived by his wife, Phyllis, and their son and two daughters, in addition to two grandchildren, a sister and two brothers. □

FIC To Hold Conference on Substances in Neurons

An international conference on the Coexistence of Neuroactive Substances in Neurons will be held Sept. 28 and 29 under the auspices of the Fogarty International Center in the conference room of Stone House, Bldg. 16.

Investigators during the past 5 or 6 years have disclosed that many nerve cells contain multiple neuroactive substances and release more than a single transmitter in response to stimulation. These results tend to invalidate the widely held unitary principle that each nerve cell releases only a single, unique neurotransmitter at all its terminals.

The conference will review the latest findings concerning the coexistence of multiple transmitters and will explore the significance of these new observations for the understanding of the nervous system.

The conference was organized by Drs. S.L. Palay, Fogarty scholar-in-residence, and V. Chan-Palay, associate professor of neurobiology, at Harvard Medical School. It is scheduled to begin at 8:30 a.m. on Tuesday, Sept. 28.

As space is limited, preregistration is required. Contact Nancy E. Shapiro, conference coordinator, FIC, 496-2517. □

Be Trim n' Terrific

Trim 'n Terrific aerobic dance-exercise classes are being held on Mondays and Wednesdays, starting Sept. 13, from noon to 12:45, and 3:45 p.m. to 4:30 p.m. in the 14th fl. auditorium, Clinical Center. Cost per session is \$2 on a "drop in" basis. □

* U.S. GOVERNMENT PRINTING OFFICE: 1982-341-134/1

DEPARTMENT OF
HEALTH & HUMAN SERVICES
Public Health Service
National Institutes of Health
Bldg. 31 Room 2B-03
Bethesda, Maryland 20205

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