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National
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Creator of Famous 'Live' Lectures for Students Wins Investigators Award

Dr. Richard Eakin, a 20-year grantee of the National Institute of General Medical Sciences, was recently awarded the 1982 Distinguished Investigators Award in Biology by the Electron Microscopy Society of America.

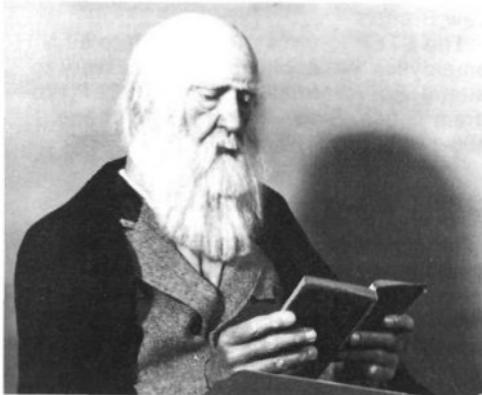
The award was presented to Dr. Eakin, professor emeritus of zoology at the University of California at Berkeley, in recognition of his extensive contributions in research and teaching in electron microscopy over a period of many years.

Dr. Eakin is well known for his contributions both to science and to the teaching of science. In 1969, he surprised and delighted his general biology students with the first of his "guest lectures," now a tradition in his classes.

Charles Darwin, Gregor Mendel, William Harvey, Louis Pasteur and others— impersonated by Dr. Eakin with meticulous attention to period costume, accent, and personality quirks of the historical scientist—"appeared" in his classroom to introduce major biological fields.

Dr. Eakin's "guest lectures" were later published in a book entitled *Great Scientists Speak Again*.

Since 1978, Dr. Eakin has also served as a visiting scientist for the Minority Access to Research Careers program. For MARC, he has taught a semester each at Tougaloo College in Jackson, Miss.; Talladega College in Talladega, Ala.; and Fisk University in Nashville, Tenn.



Dr. Eakin impersonates Charles Darwin as he delivers a lecture on evolution to his zoology class at the University of California, Berkeley. Six motion pictures have been produced based on his "guest lectures."

National Institute on Aging Initiates Its First Clinical Center Research Unit

On Sept. 20, the National Institute on Aging Laboratory of Neurosciences clinical program admitted the first inpatients to a new unit at the Clinical Center. This marks the beginning of an intensive investigation of brain metabolism in relation to normal human aging and dementia, and the first time that the NIA has had a presence in the CC.

At a ceremony honoring the occasion, Dr. Stanley I. Rapoport, LNS chief, noted that the primary focus of research on the unit will be on the dementias and related neuropathologic diseases of the elderly.

Dr. Neal R. Cutler, chief of the newly instituted clinical program, and his staff of research neurologists, psychologists and other health professionals will look closely at Alzheimer's disease, the most common form of senile dementia, and at multi-infarct dementia, which is caused by a series of minor strokes.

These studies of dementia come in the context of a clinical program which has been examining, and which will continue to examine, the normal aging process from biochemical, cardiovascular, and general physiologic perspectives, including careful evaluation of brain function.

New noninvasive procedures have been developed over the last decade to examine regional cerebral glucose utilization in



Drs. Cutler, Jay Shapiro, and Rapoport (l to r) do the official honors at the ceremonial opening of the Clinical Center unit devoted to the study of aging.

humans. As glucose is the key substance involved in brain metabolism, its rate of utilization is a direct measure of brain functional activity in a given region.

With the advent of such new technologies as positron emission tomography (PET), NIA and other scientists are formulating a picture of brain metabolism in aging and dementia.

Certain changes in a person's ability to perceive, think and remember seem normal with age, but occur to a much greater extent when disease interferes. The work of the

(See NIA RESEARCH, Page 9)

Dr. Daniel E. Koshland To Deliver NIH Lecture

Dr. Daniel E. Koshland, Jr., an internationally renowned biochemist and professor of biochemistry at the University of California, Berkeley, will deliver the NIH Lecture, Wednesday, Oct. 27, "Information Processing in a Simple Sensory System: Bacterial Chemotaxis."

Sponsored by the National Institute of Dental Research, the lecture will be held at 8:15 p.m. in Masur Auditorium.

The NIH Lectures were established in 1953 to recognize outstanding scientific accomplishment and to contribute to the vital interchange of scientific information. The lectureship is awarded by the NIH Director on the advice of the scientific



Dr. Koshland

directors.

Dr. Koshland has gained wide recognition for his studies in protein chemistry and the mechanisms of enzyme action, including the regulation of enzymes by such processes as allosteric behavior and conformational changes.

His research to determine how enzymes are regulated has led to studies on the

(See NIH LECTURE, Page 11)

The National Institute of General Medical Sciences celebrates its 20th anniversary this month. See page 5.

The NIH Record

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NIH Record Office
Bldg. 31 Room 2B-03, Phone 496-2125

Editor
Jerry Gordon

Staff Writer
Joyce F. McCarthy

Editorial Assistants
Marilyn Berman
Joseph Charuhas

Staff Correspondents

CC, Barbara Smakula; DCRT, William Hall; DPM, Judy Fouche; DRG, Sue Meadows; DRR, Barbara Menick; DRS, Jim Doherty; FIC, Susan P. Stark; NCI, Patricia A. Newman; NEI, Marsha Corbett; NHLBI, Bill Sanders; NIA, Ann Dieffenbach; NIAID, Jeanne Winnick; NIADDK, Barbara Weldon; NICHD, James Hadley; NIDR, Sally Wilberding; NIEHS, Hugh J. Lee; NIGMS, Wanda Wardell; NIMH, Harry Bell; NINCDS, Diane Striar; NLM, Roger L. Gilkeson.

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 Grants Staff	11/10 or 11/17	10/25
Office Skills		
Travel Orders and Vouchers	11/15	11/1
Letterwriting for Secretaries	11/16	10/26
Supervisory and Management		
Behavioral Strategies for Supervisors and Managers	10/27	10/15

* 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.

Travel Agency Will Open in CC

Ober United Travel Agency will occupy an office in the Clinical Center beginning Nov. 1. They will be making arrangements for patients and employee travel.

It is believed that this procedure, which will be studied for 2 years, will be cost effective since the travel agency will not be paid directly for this service.

Completion of employee travel forms and acquiring the necessary authorizing signatures will be the responsibility of the individual departments. Courses are being offered to employees who have recently taken on these responsibilities, and until Nov. 1, the NIH Travel Office will provide assistance. □

French Research Director General Visits NIH



American and French biomedical research directors, Drs. Wyngaarden (l) and Lazar (second from l), stand together with NIH Deputy Director Dr. Malone and Dr. Pinon, French Embassy science attache (r), at the luncheon in the Stone House given in the visitors' honor. The Institut National de la Sante et de la Recherche Medicale is France's equivalent to the National Institutes of Health.

Dr. Philippe Lazar, Director General of the Institut National de la Sante et de la Recherche Medicale, visited NIH on Sept. 15 and 16. He was accompanied by Dr. Jean-Claude Pinon, science attache of the French Embassy.

Dr. Lazar was in Washington as part of a French delegation, headed by the Minister of State for Research and Industry, to participate in a meeting convened to review

U.S.-France bilateral scientific cooperation. NIH Director Dr. James B. Wyngaarden represented HHS on the U.S. delegation, which was headed by Dr. George Keyworth, the President's science advisor.

At NIH, Dr. Lazar conferred with Dr. Wyngaarden and NIH Deputy Director Dr. Thomas E. Malone, as well as with representatives of FIC, NCI, NHLBI, NIAID, and NLM, about U.S.-France interests. □

Module Deadline Is Oct. 15

The application deadline for the first five modules offered by the Staff Training in Extramural Programs Committee is Oct. 15.

The modules are Introduction to the Extramural Programs (Dec. 2-3); Perspectives on Bioethical Decision-Making (Jan. 10-11); Research Project Support: Modify It or Preserve It? (Feb. 8-9); The Research Microcosm: Pressures and Counterpressures (Mar. 24-25); and Information Systems for Extramural Staff (Apr. 5-7).

The modules are designed primarily for personnel in the extramural programs. Applications from other members of the NIH staff will be considered. For additional information, contact Arlene Bowles, 496-1493. □

Philosophy Lecture Offered Oct. 15

My Chances will be the topic of the 9th Annual Edith Weigert Lecture at 8 p.m. Friday, Oct. 15, in the Masur Auditorium.

This free lecture by Professor Jacques Derrida of Ecole Normal Supérieure, Paris, will delve into the topic of chance and necessity in literature and psychoanalysis.

For further information, call Dr. Joseph H. Smith at 530-3361. □

It's Hockey Time Again

The NIH Hockey Club will resume playing ice hockey Oct. 28. The club plays at the Wheaton Ice Rink Thursday evenings from 10:30 p.m. to midnight. Interested players can call Pierre Henkart, 496-1554, for further information. □

Can You Be Sued?

Liability of Civil Servants to Prosecution is the title of the STEP Forum scheduled for Oct. 21 at 2 p.m. in Conf. Rm. 6, Bldg. 31.

Who might sue extramural staff and for what reasons? How likely is it and how serious might it be? What is the obligation of the government to defend the Federal employee?

These and other questions will be addressed.

The discussants will be NIH legal advisor Robert Lanman, and two representatives from the HHS Office of General Counsel: Sarah Hartz, chief, Litigation and Claims Branch; and Timothy White, Administrative Law Branch.

The STEP forum series is open to all NIH employees. No application is necessary to attend. For information, contact STEP Program Office, Bldg. 31, Rm. 1B63; phone, 496-1493. □

Direct Deposit—A Good Deal?

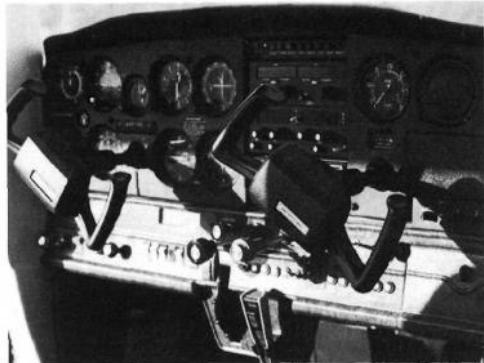
Is direct deposit a smart move? Here are some facts: It is convenient, safe and reliable; it eliminates risk of lost, stolen or forged checks and ensures uninterrupted deposits. It is estimated to save 8½ hours of a person's depositing time annually. It also helps reduce government operational costs.

An SF 1199A form can be obtained from personnel offices for people who wish to join the 40,000 HHS employees using this time-saving system. □

NIH Private Pilots Find Flying Fascinating

By Joyce McCarthy

"What am I doing here?" was the question Anne Proctor asked herself several times in the past year. Last November, she received her "private pilot's license-airplane single-engine land" from the Federal Aviation



Administration after successfully completing and passing her basic flight training and instruction program in a Cessna 152. Here's the story about how one NIH lady took up flying.

Ms. Proctor is the educational services officer, Office of Management Support Services, Clinical Center. She has worked at NIH since 1975. As a PHS commissioned officer, Ms. Proctor served from 1966 to 1970 in Vietnam on loan from PHS to the State Department's U.S. Agency for International Development.

As part of her responsibility there, she made frequent trips to provincial capitals via Air America (mostly small Beechcraft and DC-3 airplanes). When there were no other passengers, she made several of these trips in the co-pilot's (right) seat where she occasionally had the opportunity to practice flying "straight and level," a flying term meaning just that. This sparked her initial interest in learning to fly.

Back in the United States, a Vietnamese friend came for dinner and brought an NIH pilot friend with her. Ms. Proctor's flying interest was further triggered by their conversation and the guest willingly answered her many questions.

While on the way to a nearby shopping mall the next day, she took a turn in her car onto Route 270 that changed her life. Instead of going shopping, she ended up at the Montgomery County Airpark in Gaithersburg, Md.

After asking a few questions of a flight instructor about flying lessons, such as what the age limit is, how much math is involved, and the price, Ms. Proctor climbed into a two-seat Cessna 152 and took an introductory flight with him over Gaithersburg.

That was 1½ years ago, and since then Ms. Proctor has obtained her private pilot's license and is currently continuing her aviation training towards instrument certification (flying "blind," solely by reference to instruments on the panel).

The introductory flight lasted about ½ hour with the instructor flying from the right seat. Both passengers have their own set of controls. After taxiing (going from a parked position to the runway), and later flying "straight and level," Ms. Proctor kept won-

dering if she could ever do this alone.

"It seemed impossible after that introductory flight," she said, "that I would ever be able to fly a plane by myself." Nevertheless, she went ahead and enrolled in the FAA-approved Cessna private pilot training course, which includes ground school, home study, flight training, written quizzes, flight check rides and audiovisual aids.

Her first solo flight came 4 months later. "Certainly one of the most exciting and memorable events of a lifetime," she said. Immediately, her daughter, who was vacationing in Atlantic City, suggested by telephone that Ms. Proctor fly there the very next weekend since now she was able to fly by herself. Ms. Proctor's response was "Thank you, but how would I ever find my way through the sky?"

The next 6 months were spent learning how to fly from point A to point B (navigation); Federal Aviation regulations,



Ms. Proctor readies the plane before taking off from the Montgomery County Airpark in Gaithersburg, Md.

aeronautical charts, radio communications, and basic flying skills. During this time, Ms. Proctor had to make three solo cross-country flights of increasing difficulty and duration.

Her first cross country was to Easton, Md., for which she worked hours the night before to complete a detailed flight plan. Students land at the Easton airport, have their log book signed, take off again and fly back to Gaithersburg.

Ms. Proctor's second trip was from Gaithersburg to Hagerstown, Md., to Lancaster, Pa., and back to Gaithersburg. Her third trip was from Gaithersburg to Salisbury, Md., to Allentown, Pa., and back to Gaithersburg.

Another NIH'er, Dr. Thomas E. Malone, NIH Deputy Director, recently completed his basic flight training program and received his private pilot's license. He also intends to continue his aviation instruction leading to instrument certification. So far, he's logged 80 hours of flying time and is very enthusiastic about being a pilot.

Dr. Malone belongs to the Octopus Flying Club, which uses the Montgomery County Airpark facilities. The club has one plane that is used for training purposes. Dr. Malone's primary instructor for his training was Dr. Itzak Jacoby, technology research and policy analysis officer, NIH Office for Medical Applications of Research, a former Octopus club member.

Thus far, Dr. Malone has flown many

"cross countries" in this area, and made numerous local trips to Ocean City and other nearby locations. He's also flown twice to Lake Ontario, N.Y., a 2½ hour flight one way.

The minimum age requirements are 16 for a student certificate and 17 for a private pilot certificate. There is no maximum age limit, however, as age has little to do with a



Dr. Malone has enjoyed learning to fly so much that he's continuing his training. Photo by Dr. Itzak Jacoby

person's ability to fly well.

FAA requires a routine medical exam, performed by an FAA medical examiner every 2 years to ensure that the pilot has no medical problems which would interfere with the ability to fly safely. Glasses and contact lenses are perfectly acceptable.

An applicant must be able to read, speak and understand the English language. Physical handicaps are not necessarily a restriction to earning a pilot's license. Only the ability to control the airplane matters.

It takes a year or less to complete the basic training. In addition to intensive ground instruction, there are seven blocks of training including instruction with a certified flight instructor, solo flight, cross country and night flight time.

Students can work at their own pace and learn skills of navigation, emergency procedures and all the "rules of the sky."

"Flying has been the most challenging, demanding, and exhilarating experience that I've had in many years," Dr. Malone said.

Ms. Proctor added, "Once you've experienced the thrill of being pilot-in-command, there's nothing else like it!" □

Flying Interest Increases

The NIH Flying Club, started in the last year, meets once a month on Thursdays in the FAES Club House on Old Georgetown Rd., Bethesda.

Dr. Fred Bruner, executive secretary, Scientific Review Branch, NINCDS, is the club organizer. Dr. Bruner has 13 years' flying experience and has both commercial and instrument flight instructor ratings.

The club, which is both social and educational, has about 45 members. Members have heard talks and demonstrations on an instrument simulation system, Civil Air Patrol, and saw a recent slide presentation by Dr. Itzak Jacoby on the Oshkosh, Wis., air show.

For more information about the club, contact Dr. Bruner, 496-9223.

Effects of Behavior Patterns on Health Discussed During CC Medicine for Layman

"What you do on a daily basis may hold the prospect of affecting your health more than any other single factor," said Dr. J. Michael McGinnis, Deputy Assistant Secretary for Health, Assistant Surgeon General, and Director of the Office of Disease Prevention and Health Promotion.

Dr. McGinnis was speaking on the topic "Behavior Patterns and Health," at the first lecture of the Clinical Center's Medicine for the Layman series Sept. 21 in the Masur Auditorium.

"Virtually every one of the 10 leading causes of death in this country has behavior as a prominent component," he said. "Many diseases such as heart disease, cancer, stroke, liver disease, diabetes, and intestinal diseases are contributed to by such behaviors as smoking, alcohol use, and diet."

The lecture examines six common lifestyle factors—dietary patterns, exercise, alcohol use, cigarette smoking, stress, and sleep patterns—and their relationship to health or disease.

Dietary Patterns

Dietary patterns have been associated with increased rates of high blood pressure and stroke; cancers of the breast, uterine endometrium, prostate, and gastrointestinal tract; diabetes; gallbladder disease; osteoarthritis; and dental caries, according to Dr. McGinnis.

"On the other hand, a protective effect against some conditions has been suggested for a variety of foods, including those with higher fiber content and fresh fruits and vegetables which are rich in selenium, carotene, and vitamins A and C," he stated.

He emphasized that while the nature of the relationship of many dietary factors to disease remains unclear, epidemiologic studies have suggested the following associations:

(1) Obesity increases risk for such problems as adult onset diabetes; coronary heart disease; gallbladder disease; cancers of the breast and uterine endometrium, and orthopedic disorders;

(2) High blood cholesterol levels increase risk for heart disease;

(3) High salt intake is correlated with higher incidence of high blood pressure;

(4) High sucrose consumption predisposes to dental caries;

(5) Populations whose diets contain higher levels of B carotene and vitamins A and C have been observed to have lower incidence of certain cancers; and

(6) Higher consumption of dietary fiber may protect against certain gastrointestinal problems:

Exercise

"The effects of exercise are not yet fully validated, and may be indirect, but at a minimum may be associated with improved health by reducing the risks of obesity—such as heart disease, high blood pressure, and diabetes—as well as osteoporosis, and depression under certain conditions," said Dr. McGinnis.

Obesity control remains a fundamental



benefit of exercise. As muscles contract, they use ATP, an energy source that is produced by a complex series of reactions from the body's stores of the breakdown products of dietary fats and carbohydrates. The result is use of body fuel, reduction of fat stores, and reduction of weight.

Alcohol Use

The long-term use of alcohol can result in physical dependence, physiologic damage to several organ systems, and specific diseases and syndromes.

"Overall, alcohol is estimated to account for roughly 75,000 deaths annually in the U.S.," stated Dr. McGinnis.

Its effects can be observed in virtually every organ system of the body, with damage most commonly occurring in the liver, the brain, the peripheral nervous system, the gastrointestinal tract, and the developing fetus.

One of the most serious of the liver diseases is cirrhosis, or scarring of the liver tissue, which accounted for 32,000 deaths in 1980, making it the sixth most common cause of death among adults in the U.S.

Alcohol also seems to have a carcinogenic property. Cancer of the liver is found more frequently among those with a history of cirrhosis than among the general population.

In addition, cancers of the tongue, mouth, oropharynx, esophagus, and larynx are all increased in people who drink heavily. And for those who also smoke, the risk, for example, of esophageal cancer exponentially increases.

Smoking

"Cigarette smoking is the single most important preventable cause of illness and premature death in this country," said Dr. McGinnis. "Yet currently, more than 50 million Americans smoke."

It is associated with a wide variety of chronic diseases, including heart disease and lung cancer which are the most prominent disorders. But risk is also increased for a host of lung disorders such as chronic bronchitis and emphysema, other cancers, and fetal growth problems.

How the body responds to stress situa-

tions may also impact on health status. Illness rates are disproportionately high among workers who perceive their jobs to involve heavy workloads, inordinate responsibility, and interpersonal or role conflicts. And susceptibility to infectious diseases has been reported to be increased by stressful situations, according to Dr. McGinnis, who reviewed some of the possible mechanisms for the effect of stress on the immune system.

Sleep is also a health factor. On the average, sleeping substantially less—or even substantially more—than 7 to 8 hours a night seems to be associated with higher risk of death from all causes. Of course, he said, what we don't know is the extent to which those sleep patterns may be the result of preexisting illness—rather than the cause of those illnesses.

"In spite of the substantial uncertainties, it seems clear that there are several actions which each of us can take—decisions we make on a daily basis—that will have a potentially great impact on our health destinies," concluded Dr. McGinnis. "It is important to use that knowledge to our advantage." □

MFL Lectures Continue; Two More in October

The Medicine for the Layman series will continue Oct. 19 with Dr. Jay A. Berzofsky, senior investigator in the National Cancer Institute Metabolism Branch, who will discuss New Tools for Medicine: Cell Factories for Antibodies.

He will describe hybridomas, hybrid cells made by fusing the body's normally short-lived immune cells with specialized tumor cells. The result is a cellular factory for antibodies which can be grown in unlimited quantities.

Male infertility will be discussed Oct. 26 by Dr. Richard J. Sherins, senior investigator in the Developmental Endocrinology Branch, National Institute of Child Health and Human Development. For more information, call the Office of Clinical Reports and Inquiries, 496-2563. □



National Institute of General Medical Sciences

NIGMS, at 20, Takes Pride in Past, Looks Forward to Bright Future

To mark the 20th anniversary of legislation authorizing the National Institute of General Medical Sciences, NIGMS Director Dr. Ruth Kirschstein talked in an interview about what the Institute has accomplished and where it is headed.

Dr. Kirschstein in 1974 became the first woman to head an NIH Institute. Her background includes 17 years of research in experimental pathology in the Division of Biologics Standards, then part of NIH. During that time she helped develop and refine tests of live poliovirus vaccines in monkeys—work that led to selection of the Sabin vaccine for public use.

Dr. Kirschstein has received many awards and citations, including the Presidential Meritorious Executive Award in 1980. In August of this year she was elected to membership in the Institute of Medicine.

Dr. Kirschstein, how do you see NIGMS and its mission?

Our concept is that this is an Institute for the support of basic, fundamental biomedical research, without which many of the advances that will impact on specific diseases cannot take place.

The research areas with which NIGMS is concerned—molecular biology, cell biology, genetics, molecular models in pharmacology, chemical syntheses of drugs, biochemistry, development of instrumentation to advance studies of molecular and cellular biology and genetics—these research areas do not have a categorical focus.

One cannot predict what the impact of such research will be on a particular disease entity or a particular population, but indeed it may have an impact on many of these—one can't tell in advance. And that's

what NIGMS is all about.

Its mission is really to develop basic concepts, which then funnel into the activities of the categorical Institutes and make



Dr. Ruth Kirschstein

possible further research that leads to the prevention, diagnosis, and treatment of specific diseases.

Have there been shifts in research direction since NIGMS's establishment?

Very much so. The first 10 years or so of the Institute's existence saw the expansion of some clinically oriented activities that were related to legislation resulting from the recommendations of the President's Commission on Heart Disease, Cancer, and Stroke.

In the last 8 to 10 years, we've shifted back to

Research, Training Focus on Basic Biomedical Sciences

Twenty years ago this October, Congress authorized a separate Institute at NIH to fund basic, non-disease-targeted biomedical research and research training.

Today, with an FY 1982 budget of approximately \$335 million, the National Institute of General Medical Sciences carries out its research and research training support roles through five programs: Cellular and Molecular Basis of Disease, Genetics, Pharmacological Sciences, Physiology and Biomedical Engineering, and Minority Access to Research Careers.

The first four employ the full range of research and training support mechanisms. The MARC program's awards are for research training only.

• **Cellular and Molecular Basis of Disease.** The human body is made up of some 100 trillion cells, but the malfunction of only a few of them can result in painful disease or early death. For that reason, it is crucial that scientists studying disease understand how cells are organized and how they work. Aided by sophisticated instruments, NIGMS-supported investigators study and carefully document the role of every component and chemical constituent of cells, from their outer membranes to their tiny organelles, each of which has a distinct set of functions often critical to normal, healthy life.

• **Genetics.** The Congressional Office of
(Continued on Page 8)

emphasis on the support of basic research. The opportunities in the fields of molecular biology, molecular genetics, and molecular pharmacology are so great, and there is so much really important work that can be done.

Think, for example, of what we have learned, over these years, about membrane receptor functions; the whole story of nucleic acids; the development of recombinant DNA technology; the discovery of transposons (or "jumping genes") and of the fact that DNA is not the stable entity we once thought it was, but is really a dynamic chemical that is constantly changing and responding as cells, organisms, and populations evolve.

This revolution in biomedical sciences will only go on if support is given to it, and we feel that this support is absolutely crucial. Therefore, we made some very specific decisions to emphasize these areas, which we think are much more what this Institute, as the "basic research institute" of NIH, ought to be about.

What about NIGMS's burn and trauma program?

Burn and trauma research is an area that crosses the activities of many of the Institutes, and the second part of NIGMS's legislative mandate, after support of basic research, is support of activities that are important to two or more of the categorical Institutes. So burn and trauma is an area of research that is very much within this Institute's mission.

It's also an extremely important area, since the mortality and morbidity from injury—be it burn injury or any other kind—is still very high. But there have recently been some very significant advances in the burn area, which, like most, came out of basic research.

The successful development of an artificial skin to cover burns—and the newest advance, the seeding of epidermal cells from the burned subject into the artificial skin to permit regrowth of epidermis—these advances really come out of fundamental knowledge about cells: how cells grow; cell membrane interactions; cell-cell touching and interactions. And much of this knowledge comes from the cell biology studies that we support.

What are some of the achievements of the Institute and its grantees that you look back on with particular pride?

I think it would be false pride if we said, "Without NIGMS these grantees would not have done that work," because so many of the achievements that come to mind are at the forefront of the great discoveries in

(Continued on Page 6)

DR. KIRSCHSTEIN

(Continued from Page 5)

genetics and cell biology that the work would have had to be supported somehow.

I'm thinking of such things as elucidation of the fundamentals of nucleic acid structure and function, and of the mechanisms of transmission and expression of genetic information; studies of transposable genetic elements; work on recombinant DNA technology; studies of membrane function and receptors in membranes; elucidation of the fine structure of the cell and the functions of organelles within the cell.

But there's another kind of achievement that I think has also been enormously significant, and that's the Institute's support for research training. When NIGMS was established under the then Director of NIH, Dr. James Shannon, he viewed the role of the Institute as absolutely central in research training.

Now, NIGMS supplies about two-thirds of NIH's support for predoctoral research trainees, and about one-third of NIH support for all trainees. At the predoctoral level, the emphasis is on multidisciplinary training, since it is our conviction and experience that this approach provides the best opportunities to develop new concepts.

Probably one of the most significant accomplishments of the Institute in the training area is its development of a graduate program to train individuals who can truly be called "medical scientists"—men and women who have the medical background, but also have the strict discipline and studies required for a Ph.D. degree in a basic biomedical science. The NIGMS Medical Scientist Training Program leads to a combined, integrated degree: M.D.-Ph.D.

Another very important research training area is our Minority Access to Research Careers Program, which grew out of a recognition that there are only a small number of individuals from minority communities who have had high-quality biomedical research training and are indeed doing biomedical research. The MARC program tries to remedy this.

Would you describe the Institute's instrumentation programs?

For many years, we've had an instrumentation development program through which we support research to develop, for example, new and more powerful microscopes, nuclear magnetic resonance spectrometers, and other instruments.

The cell sorter, for instance, is a piece of instrumentation that was developed by an NIGMS grantee, and it has had great impact on biomedical research.

But we also became aware that at institutions where research is being performed there has been a real problem of obsolescence of equipment.

In addition, we saw that it was becoming increasingly difficult for individual investigators to obtain expensive but necessary instrumentation under the auspices of an individual research grant. We also felt that many times it was entirely possible that several investigators could share equipment.

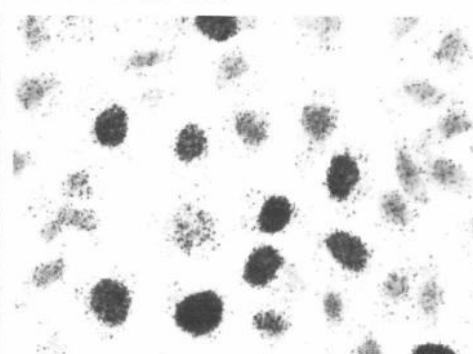
(Continued on Page 7)

NIGMS: Supporting Basic Research...a Key to Clinical Medicine



An artificial skin, developed under grants from NIGMS, offers new hope to victims of severe burns. Dr. I.V. Yannas, of M.I.T., holds a sample of the skin, which he and his coworkers developed in collaboration with researchers at Harvard.

Photo: Calvin Campbell, M.I.T.



Autoradiography shows darkened mouse cell nuclei, verifying successful gene transplants. Such work may eventually lead to gene therapy for human genetic disorders.

Micrograph: Mario Capecchi

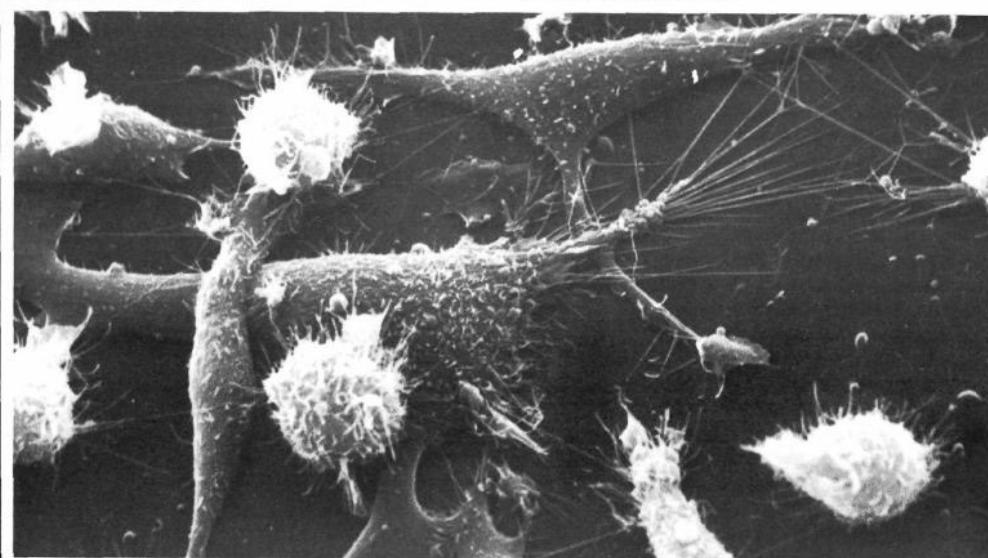
Ten years ago, at NIGMS's 10th anniversary, Dr. Lewis Thomas observed that "the recognition of the connectedness of the fundamental processes in living things is the most startling and exciting aspect of biomedical research today....We are at long last beginning to get clear glimpses of how cells and tissues work, and it is precisely this insight that we need in order to learn how things go wrong."

Since then, NIGMS grantees have made major discoveries about the synthesis and transport of body proteins, the structure and function of cell membranes, drug actions in the body, and the body's



Studies of the genetics of lower forms of life, such as this fruitfly, are teaching NIGMS-supported scientists much about the way genes work in man.

Micrograph: Jean-Paul Revel



The development of ever more powerful microscopes has made possible an avalanche of discoveries about cells, the fundamental units of life.

Micrograph: K.R. Porter and V.G. Fonte

in Progress

responses to trauma and burns.

Especially exciting strides in genetics are now beginning to pay off in our ability to understand the growth and development of cells, tissues, and organs; the regulation of gene activity; the evolution of species; and the bases of certain genetic diseases.

At NIGMS's 10th anniversary celebration, Dr. DeWitt Stetten, Jr., then the Institute's Director, pledged NIGMS's continued commitment to the pursuit of basic biomedical knowledge as a prerequisite for clinical progress. Today, with pride in past accomplishments and faith in the promise of the future, NIGMS renews that pledge.



At an NIGMS genetics research center, a cell-sorter computer display shows what kinds of cells have been sorted and where they can be recovered. Such sophisticated instrumentation is vital to modern research.

Photo: University of Washington

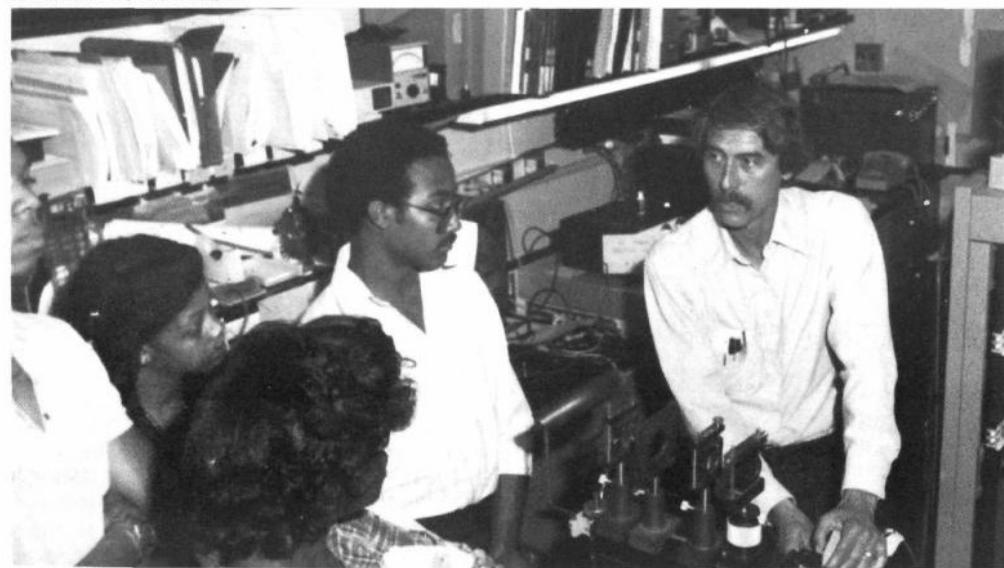


The NIGMS-supported Human Genetic Mutant Cell Repository supplies more than 3,000 cell cultures a year for study by scientists in the U.S. and abroad. Here a technician transfers cultured cells to ampules for storage.



This plasmid contains the segment of *E. coli* DNA where DNA replication begins. Dr. Arthur Kornberg's recent discovery of a test-tube system for initiating DNA replication may ease the way for scientists studying cell growth and cancer.

Micrograph: Stanford University



Honors undergraduates in the NIGMS Minority Access to Research Careers Program get a tour of NIH laboratories. Supporting the training of future biomedical researchers is an important part of NIGMS's mission.

DR. KIRSCHSTEIN

(Continued from Page 6)

For all these reasons, we set up the NIGMS Shared Instrumentation Program to provide small groups of investigators with a particular piece of equipment and to have them share its use.

When we put out our first announcement in 1979, we thought we would make 50 awards, spending about \$5 million. As it turned out, there were so many good applications that we made 79 awards and spent more than \$7 million.

We have subsequently continued the program and are pleased that programs similar to ours are being adopted throughout NIH.

What do you see, just over the horizon, that might be coming out of some of the research areas NIGMS supports?

I think it should be said that although biomedical research has made great strides in such fields as cellular and molecular biology, genetics, and molecular pharmacology, we really have barely scratched the surface, and there's an enormous amount still to learn.

Every new discovery brings a hundred questions that need to be answered, and those questions will continue to come along, over many, many years, as new facts come to light about the cell, the genes, the chromosomes, and the organelles within the cell; about how cells are organized and how they make organ systems during development.

It seems to me that the specific function of NIGMS is to continue to provide the wherewithal for scientists to answer those fundamental questions that every new research achievement inevitably raises.

I think we have to say, however, that discoveries in basic biomedical research very often do not lead to specific payoffs for possibly 10 or more years. In fact, one can probably say that the research NIGMS supports may have more significance—in terms of prevention, diagnosis, and treatment of disease—for our children than for ourselves.

On the other hand, sometimes the payoffs come more rapidly than anyone had dreamed—and the many uses that are now being made of recombinant DNA technology are a perfect example.

At least in the genetics area, I suspect that a great deal of what will be important in the future will have to do with what we are learning now about the dynamic activity of DNA in cells—the ability of little bits of DNA to move from place to place and then become more functional than perhaps they were in their original locations.

Although all sorts of facts are beginning to come to light, I think it's going to take considerably longer to understand exactly what all this means—to view these facts in the context of what they mean for an individual; what they mean for a family, in terms of heredity from parent to child; what they mean in populations; and what they mean in evolutionary terms.

What do you see as some of the problems that may confront NIGMS in the years ahead?

Maybe I should speak first about a problem that's diminishing. One of the

(Continued on Page 8)

Former Directors of NIGMS



Dr. DeWitt Stetten, Jr.
1970-1974



Dr. Frederick L. Stone
1964-1970



Dr. Clinton C. Powell
1962-1964



Dr. G. Halsey Hunt
1958-1962 (DGMS)

RESEARCH TRAINING

(Continued from Page 5)

Technology Assessment has described the field of genetics as "the most rapidly progressing area of human knowledge in the world today." NIGMS-supported scientists seek more detailed understanding of how the genetic information within cells is organized, transmitted, and expressed in health and disease. Lower organisms such as bacteria and fruitflies are often used as model systems by investigators seeking information about basic genetic principles. At the other end of the spectrum, researchers are mapping the location of human genes on chromosomes and studying the basic biochemical defects underlying genetic diseases.

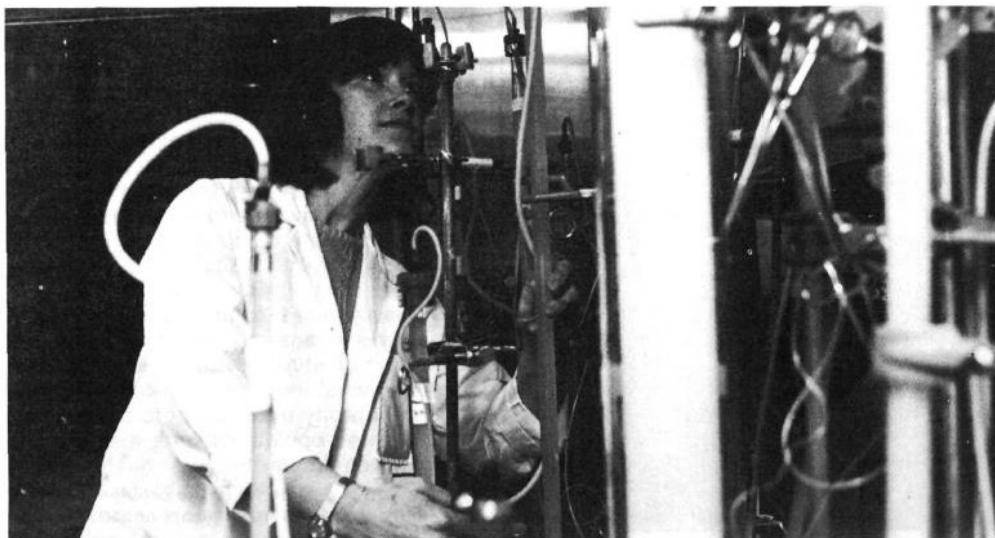
- **Pharmacological Sciences.** Scientists supported by this program seek to better understand the biological phenomena and related molecular processes involved in the actions of therapeutic drugs and their metabolites, as well as to design and synthesize new medicinal agents. Research funded under this program is broadly based and interdisciplinary, and includes studies ranging from molecular to clinical pharmacology.

The Pharmacological Sciences Program supports NIGMS's only intramural research component: 22 postdoctoral fellows (phar-

macological research associates) who perform research in laboratories of other NIH Institutes and of the Alcohol, Drug Abuse, and Mental Health Administration. The goal of this special training program is to develop leaders in pharmacological research for academic, industrial, and government laboratories.

- **Physiology and Biomedical Engineering.** Through this program, NIGMS funds research that applies physiological, biochemical, physical, and engineering sciences to the solution of important biomedical problems. The program also funds the development of new instruments and techniques that facilitate biomedical research. Initiatives range from studies of cells and tissues to clinical investigations in anesthesiology and severe trauma and burn injury.

- **Minority Access to Research Careers (MARC).** This program's goals are to strengthen research training at institutions with significant minority enrollment, to provide support for highly selected undergraduate and predoctoral students planning biomedical research careers, and thus to increase the numbers and capabilities of minority scientists engaged in biomedical research. A number of other NIH Institutes cooperate in the MARC program, which NIGMS administers.



Dr. Anne Hendricks is one of 22 NIGMS pharmacology research associates receiving postdoctoral training in NIH and ADAMHA laboratories.

DR. KIRSCHSTEIN

(Continued from Page 7)

things that has resulted from the biological revolution is that the public at large, and its representatives, have begun to realize in a far clearer manner how important the kind of basic biomedical research NIGMS supports really is to the eventual prevention, diagnosis, and treatment of disease.

This means that the activities of this Institute are now appreciated in a way that was not necessarily true early on.

Now, hardly a day goes by when there isn't some sort of story about new findings resulting from basic studies, and that's a real change.

The future does present a problem, however. We've made enormous advances in basic biomedical research that are beginning to be applied, and there is so much yet to learn. The problem will be to keep the momentum going, and that will fall more and more on the shoulders of NIGMS.

Another problem for those of us who are administrators responsible for Federal dollars is to use our funds as wisely as we can, to advance science as rapidly as possible, within existing constraints.

I think we have to recognize that none of us can be all-wise, and that it really is the scientific community itself which must make the judgments about what should be the thrusts of the future.

And these judgments will come about, first of all, through the creativity and inherent desire of scientists to find something new and important, and then through the peer review system, which is an absolutely critical part of the process.

NIGMS-Supported Nobel Laureates

The Nobel Prize has been awarded to an impressive number of NIH-supported scientists. NIGMS, first as a Division of NIH and then as an Institute, has provided research support for more than half of some 80 Nobel Laureates who have had NIH funding. In the past 20 years these scientists have included:

Dr. Roald Hoffmann (Chemistry, 1981).
Drs. Paul Berg and Walter Gilbert (Chemistry, 1980).

Dr. Herbert Brown (Chemistry, 1979).
Drs. Daniel Nathans and H.O. Smith (Physiology or Medicine, 1978).

Dr. William Lipscomb (Chemistry, 1976).
Drs. George Palade and Christian de Duve (Physiology or Medicine, 1974).

Drs. William H. Stein and Stanford Moore (Chemistry, 1972).

Dr. Earl W. Sutherland (Physiology or Medicine, 1971).

Dr. Luis Leloir (Chemistry, 1970).
Drs. Salvador Luria, Alfred Hershey, and Max Delbrück (Physiology or Medicine, 1969).

Drs. Robert Holley and H. Gobind Khorana (Physiology or Medicine, 1968).

Dr. Lars Onsager (Chemistry, 1968).
Dr. Robert Woodward (Chemistry, 1965).
Dr. Konrad Bloch (Physiology or Medicine, 1964).

Dr. James D. Watson (Physiology or Medicine, 1962).

All of these scientists received support from NIGMS prior to their Nobel awards.

Division of Equal Opportunity Reorganizes

A reorganization of the Division of Equal Opportunity was approved by the NIH Acting Director in March 1982. The reorganization calls for some changes in functions to be performed by the division and establishment of a Complaints Review Branch and an Equal Opportunity Branch.

The Complaints Review Branch is responsible for management of all matters pertaining to the discrimination complaint process—both informal and formal complaints.

The Equal Opportunity Branch is responsible for three areas: affirmative action planning and monitoring performance; developing initiative for special classes (e.g., American Indians, Hispanics, Asians, blacks, women, handicapped persons and older employees); and cooperation with other NIH organizations who have responsibilities for the NIH Civil Rights Program and reviewing and evaluating the program.

New functions are primarily in coordination of overall NIH efforts that concern civil rights, equal employment opportunity and affirmative action, and in evaluation of these efforts.

The DEO reorganization was stimulated by the Aug. 1, 1980, report by the Task Force to Evaluate the DEO (cochaired by Dr. Donald Tower and James Alexander) and the Mar. 6, 1981, report of the NIH EEO Data Systems Committee (chaired by Dr. William Mohler).

Reorganization Forms Branch

The reorganization establishes a branch structure which, when positions are filled, should provide for increased leadership and assistance by DEO to the BID's.

The new organization has been handicapped by personnel freezes as have many other organizations at NIH and in the Federal Government. But it is now beginning to make progress, according to DEO officials.

Theodore W. Blakeney, Acting DEO Director, states: "I am encouraged by several improvements in operations, particularly in complaints management. The backlog of discrimination complaints has shown a steady decline, and the experiment to use outside mediation in resolving complaints gives promise of significant improvements in resolving complaints while they are still in the informal stage." □

Dr. John W. Diggs Appointed NIAID Program Director

Dr. John W. Diggs, has joined the National Institute of Allergy and Infectious Diseases as director of the Institute's Extramural Activities Program effective Oct. 4.

In his new post, Dr. Diggs will develop and recommend alternative approaches to the NIAID Director on the planning, implementation and administration of all Institute activi-

ties, advancing to chief of the Scientific Evaluation Branch of EAP in 1978.

Earlier in his career, Dr. Diggs was a research physiologist with the Walter Reed Army Institute of Research in Washington, D.C. While at the Institute, he developed an experimental model to study drug addiction in the rat, focusing on drug tolerance and opiate receptor sites in the brain.

A graduate of Howard University, where he earned his M.S. degree in 1969 with his Ph.D. degree in 1972, he was honored last year with the first Distinguished Alumni Award presented by the University's Graduate School of Arts and Sciences.

Other honors received by Dr. Diggs include the NINCDS Special Achievement Award in 1979, the Montgomery County Community Service Award in 1980, and the Alpha Phi Alpha Man of the Year Award this year. □

NIA RESEARCH

(Continued from Page 1)

LNS clinical program attempts to link these changes—especially those crossing the threshold from normal to pathological—to changes in regional brain metabolism.

The focus of drug studies will be on how drugs are metabolized in elderly versus young adults, why drugs' effectiveness seem to vary among brain regions, and how medical scientists can reach various brain regions with effective concentrations of drugs.

Drs. Rapoport, Cutler and staff hope to use the results of this work to eventually design pharmacological approaches to treat reversible cognitive defects of aging and dementia and to understand better the neurochemical changes that occur in Alzheimer's disease. □



Dr. Diggs is currently the president of the Montgomery County Chapter of this national black fraternity of professional men which promotes youth education programs and conducts minority business seminars.

ties in the extramural area, advise program staff on scientific management aspects of Institute programs, and act as liaison with other components of the NIH for grants administration and peer review activities.

He comes to NIAID from the National Institute of Neurological and Communicative Disorders and Stroke where, for the past 2 years, he has been deputy director of their Extramural Activities Program. He joined NINCDS in 1974 as a health scientist admin-

Dr. Alexander Named NICHD Deputy Director

Dr. Duane F. Alexander has been appointed deputy director of the National Institute of Child Health and Human Development. He replaces Dr. Betty H. Pickett who is the new Director of the Division of Research Resources.

Dr. Alexander, who assumed his new position Oct. 1, is a specialist in developmental and behavioral pediatrics and a commis-



Dr. Alexander was awarded the PHS Commendation Medal in 1970, and named as one of the "Outstanding Men of America" in 1975.

ioned officer in the U.S. Public Health Service Commissioned Corps.

Since 1978 he has served as special assistant to the NICHD Director. In that capacity, he coordinated consensus conferences on antenatal diagnosis and cesarean childbirth; aided in the administration of grants in the pregnancy and perinatology section; and helped develop and write the Institute's 5-year research plan.

The Baltimore, Md., native first came to NICHD in 1968 as a clinical associate in the Children's Diagnostic and Study Branch. The following year, he was selected to head that branch.

From 1971 to 1974, Dr. Alexander was assistant to the NICHD scientific director. Following that, he was medical officer in the Office of the NIH Director; in the Office of Child Health Affairs, Office of the Assistant Secretary for Health, HHS; and for the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research.

He received his medical degree in 1966 from the Johns Hopkins University School of Medicine. In recognition of his meritorious research on the neuropsychological aspects of genetic diseases, he was selected as the school's Henry Strong Denison Scholar in 1965-66.

Dr. Alexander completed his internship in 1967 and residency in 1968 at the Johns Hopkins Hospital department of pediatrics. In 1970 and 1971 he served as a fellow in pediatrics (developmental disabilities) at the John F. Kennedy Institute for Habilitation of the Mentally and Physically Handicapped Child at Johns Hopkins.

He received his B.S. degree in premedical studies with honors from Pennsylvania State University in 1962. □

Five-Day Stop-Smoking Program To Be Telecast By Baltimore TV Station

If you've tried everything you can think of to quit and you still find that you can't walk past a cigarette machine without buying a pack...

Don't lose hope. Help is on the way.

Beginning Oct. 18, WBAL-TV (Channel 11), Baltimore, will begin a stop-smoking program as a part of the 5:30-6:30 p.m. news segment.

The concepts presented in the program were developed by the National Heart, Lung, and Blood Institute, Office of Prevention, Education, and Control, and were tested initially in Minnesota. The Baltimore station is presenting the program in cooperation with the American Lung Association of Maryland.

Called "Quit Smoking This Week with Chris Gaul," the program consists of five segments that will provide a step-by-step method to help you stop smoking.

Moral support and empathetic suffering will be provided by newscaster Christopher Gaul and WBAL news director John Petrovich, who are going to follow the steps in the program and give up the smoking habit during the 5 days the program is being aired. □

Mildred E. Waters Retires From Clinical Center

After 19 years as an NIH employee, Mildred E. Waters, an administrative clerk in the CC's Nutrition Department, has retired. According to deputy chief Alberta C. Bourn, her immediate supervisor, Mrs. Waters will be greatly missed. "She has been a very personable and conscientious employee."

Mrs. Waters' first position at NIH was as supervisor in the CC cafeteria, then under the supervision of the Nutrition Department. In 1975, she was assigned to the department's office of the chief. Since that time she has been responsible for the time and leave records of all employees in the department. □

Judo Techniques Performed During Club Demonstration

NIH Judo Club members recently demonstrated various techniques to an attentive audience in the Clinical Center's Masur Auditorium. Examples shown were five types of judo throws, three areas of mat techniques, reactions to both, and Junokata and Kimenokata, forms designed to use an attacker's strength to defeat him.

The NIH Judo Club is holding a series of fall beginner's classes, which began Sept. 21, each Tuesday from 6 to 7:30 p.m., in the old gymnasium of the Stone Ridge School.

NIH Deputy Director Dr. Thomas E. Malone, a second-degree black belt, is chief Kodakan judo instructor or sensei. Diane Moore, also a second-degree black belt, serves as coinstructor. For more information call Susan Allyn, 496-7195. □

Blood Rheumatoid Factor Found Elevated in Elderly

Immunological cells taken from the elderly produce more of the autoantibody known as rheumatoid factor. Scientists from the University of New Mexico School of Medicine in Albuquerque, in research supported by the National Institute on Aging and the Division of Research Resources, found significantly higher levels of rheumatoid factor in blood samples taken from 31 healthy donors over the age of 70 than in samples from 27 young donors.

Lymphocytes from the elderly donors also produced more rheumatoid factor in culture. During experiments designed to find out which lymphocytes were involved, the investigators discovered abnormalities in both T and B lymphocytes. Drs. Martin A. Rodriguez, Jan L. Ceuppens, and James S. Goodwin published their rheumatoid factor study in the June 1982 issue of *The Journal of Immunology*.

A big problem in old age is that the immune system often manufactures larger-than-normal amounts of autoantibodies, substances that attack the body's own cells rather than foreign invaders. Many scientists believe that autoantibodies are responsible for certain age-related diseases.

Rheumatoid factor is one of the autoantibodies frequently found in blood sera of healthy old people, and the New Mexico team has been trying to define the immunological defect responsible for the increased production of these cells.

The scientists tested blood samples and

lymphocytes from 27 healthy young people, aged 21 to 35, and 31 men and women over 70. The elderly donors were part of a long-term study of health of old people. All were in excellent health.

Lymphocytes from each donor were incubated with pokeweed mitogen, a substance that stimulates cellular activity. Stimulated immune cells from old donors, the investigators found, produced significantly more rheumatoid factor than young lymphocytes. The increased autoantibody production by old lymphocytes paralleled the higher levels of rheumatoid factor found in blood samples from old donors. In further tests, the investigators separated T from B lymphocytes and assessed the effect of each on autoantibody production.

The tests revealed that old T cells provide more "help" than young cells to produce antibodies by B lymphocytes from either young or old individuals. Old B lymphocytes, however, proved to be less capable than young B cells of producing rheumatoid factor, given the same degree of stimulation. The scientists think the primary defect in the aging immune system may lie in the declining function of B cells. The T cells become more active as they try to compensate for the loss of B lymphocytes function.

The New Mexico investigators commented that their results support the suggestion of other investigators that a basic functional B cell defect during aging may be responsible for the secondary T cell dysfunction. □

'Outside Work' Committee Appointed To Review Policies

NIH Director Dr. James B. Wyngaarden has appointed a Committee on Outside Work chaired by Dr. Philip S. Chen, Jr., Acting NIH Deputy Director for Science, to review existing NIH policies on outside work and to submit a report with possible recommendations by the end of 1982.

Issues that have been identified as being of particular concern are (1) "Consulting" by NIH professional staff for industry; (2) Outside work by high level NIH officials, such as Institute Directors; (3) Outside work by extramural program administrators; and (4) Clinical practice policies.

An ancillary issue the committee will be considering is "official-duty" relationships of NIH professional staff with industry.

Anyone wishing to comment on these, or other possible issues, is invited to forward their comments to Dr. Chen, Bldg. 1, Rm. 103, by Oct. 30 for review by the committee. □

How Do You Choose a Psychotherapist?

The Employee Assistance Program of the Occupational Medical Service, Division of Safety, will present, How to Choose a Psychotherapist, on Monday, Nov. 1, from noon to 1 p.m. in Bldg. 31, Rm. B3C02C.

Dr. Angela Hill, staff psychiatrist, and Morris Schapiro, mental health counselor, will lead the discussion.

For further information, call 496-3164. □

Telephone Employee Messages Available

Code-A-Phone messages for the balance of October are Oct. 11-15, Your Leave Benefits; Oct. 18-22, Annual Leave: Use It or Lose It; and Oct. 25-29, Court leave.

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



Bill Arnwine, chief, Travel and Administrative Services Branch, DAS, was recently appointed commander of the 7th Psychological Operations Battalion, U.S. Army Reserve. Lt. Colonel Arnwine's headquarters for this 450-man reserve unit is located in Prince George's County, Md. The battalion has a strategic psychological operations mission in support of U.S. military European forces.

NIH LECTURE

(Continued from Page 1)

regulation of biological systems in response to chemical signals.

In this regard, Dr. Koshland has made landmark discoveries about the processing of information in single cells. This work is a direct consequence of his findings on conformational alterations in enzyme proteins since external chemical signals that impinge upon a cell are known to act on a specific binding site, a receptor on the cell surface.

The combination of a stimulus with a receptor is thought to cause a conformational change in the receptor which leads to amplification of the signal, finally producing a given type of cellular behavior.

Using bacterial chemotaxis, a simple behavioral system, as a model for other biological systems, he has demonstrated how bacteria both sense and adapt to external stimuli.

Adaptation is a device of the sensory system which enables the cell to become unresponsive to a steady background stimulus level. This allows the cell to detect and respond to a subsequently presented stimulus. These functions are part of an integrated response designed to obtain maximal responsiveness to changes in environmental conditions.

By obtaining mutations which block the cell's ability to sense and adapt, Dr. Koshland has been able to specify the reactions involved in the mechanisms by which the cell accomplishes this behavior, and has developed a picture in biochemical terms of how bacteria process information received from the outside.

Dr. Koshland joined the faculty of the University of California, Berkeley, in 1965 and is a professor of biochemistry in the department of biochemistry. He previously served as chairman of the department. From 1951 to 1965, he worked at the Brookhaven National Laboratory, and also held a joint appointment at Rockefeller University.

The recipient of many honors, Dr. Koshland was presented the Edgar Fahs Smith Award and the Pauling Award of the American Chemical Society in 1979, and in 1977 he received the T. Duckett Jones Award from the Helen Hay Whitney Foundation.

He has been elected to the National Academy of Sciences, and is currently chairman of the editorial board of the *Proceedings of the National Academy of Sciences*.

Dr. Koshland is also a member of the American Academy of Arts and Sciences, an honorary foreign member of the Royal Swedish Academy of Sciences and the Japanese Biochemical Society, and a former president of the American Society of Biological Chemists. In 1971 he was selected as a Guggenheim fellow, and in 1972 he was a visiting fellow of All Souls College at Oxford University.

Born in New York City, Dr. Koshland earned his B.S. at the University of California, Berkeley, in 1941 and his Ph.D. at the University of Chicago in 1949. He was a Harvard University postdoctoral fellow from 1949 to 1951. □

White Blood Cell Donors Needed for CC Patients

The Clinical Center Blood Bank is asking anyone with O-positive or O-negative blood to volunteer to donate white blood cells for two young CC patients. Both youngsters, one 14 years old and another 14 months, are receiving daily transfusions of white cells.

Donation of white cells requires the donor to relax on a reclining chair for 2½ to 3 hours. During that time, a machine separates white cells from the whole blood being drawn from one arm of the donor.

The blood is simultaneously returned minus the white cells to the donor using his or her other arm. A donor's body will replace the removed white cells in a couple of hours.

One of the youngsters for whom the white cells are needed has aplastic anemia, a condition characterized by an inability of the bone marrow to make blood cells. Patients with aplastic anemia are extremely vulnerable to infections.

The 14-month-old patient is in remission following treatment of leukemia. If all goes well in the course of their current treatment, the prognosis for both these young people is hopeful.

NIH policy provides, at the discretion of the employee's supervisor, any employee donating blood with 4 hours administrative leave immediately following the donation.

Anyone interested in offering a life-preserving gift, or in asking questions about white cell donation, can call 496-4506. □

FIC Fellow Comes From Spain

Dr. Montserrat Puente-Cueva, a research assistant at the Hospital Clinico San Carlos, Madrid, Spain, began a Fogarty International research fellowship on Sept. 10.

She will be under the preceptorship of Dr. Kevin Catt in the NICHD Laboratory of Endocrinology and Reproduction. Her research project is PRL and LH Receptors in the Control of Testicular Function (RG). □



The Rev. Dr. John C. Fletcher, Clinical Center, assistant for bioethics, gave the opening prayer for a session of the House of Representatives on Thursday, Sept. 23. Dr. Fletcher, an Episcopal minister, was the invited guest of the House's resident chaplain, Dr. James D. Ford.

Mary Ann Shimko Exits Laughing

The Audiovisual Branch, Office of Communications, OD, has lost its "8 a.m. handle on the morning." They will miss the ever-present smile and laugh, and the person in the office who knew what everyone was doing at any given time.

Mary Ann Shimko is retiring after 13 years at NIH, 8 of them as branch secretary.

A native of Winber, Pa., Ms. Shimko came to NIH when the coal company she had been working for 19 years went out of business. "The job was really suited better for a man," she said. "However, most of the men had gone off to war in 1942 when I started there."

Her stories of her earlier years described to some of her fellow workers, who lived in



In her performance as AV branch secretary, Ms. Shimko was responsive and natural in dealing with public and broadcast news people who called for information. With equal ease, she worked against deadlines in typing radio and TV scripts and also in transcribing interviews.

metropolitan areas, what it was like to grow up in a small town existing around a single industry.

For instance, she said she knew she had better shop at the store belonging to the coal company rather than elsewhere. She vividly described this unspoken arrangement in eight words, "I sold my soul to the company store!"

Jobs were scarce in Winber when the coal company failed, so Ms. Shimko made her way to Washington, D.C., and ultimately joined NIH. She gained a familiarity with the special needs and work of the AV branch during her years there which made her an extremely valuable employee.

She will be moving to Sarasota, Fla., where she will share a house with her two sisters and a favored dog, Chipper. □

Help Wanted

There are several NIH personnel officers who are looking for job applicants who possess the following requisites:

Must have the strength of an eagle; the grace of a swan; the gentleness of a dove; the friendliness of a sparrow; the evening overtime working hours of an owl; and can survive on the food of a canary. □

Dr. Atkinson Retires; Gets Helwig-Jennings Award

Dr. Joseph W. Atkinson, Division of Research Grants, retired Sept. 30, after 32 years of Federal service.

Dr. Atkinson was recently honored with the Helwig-Jennings Award from the American College of Veterinary Preventive Medicine for "significant contributions to the totality of veterinary preventive medicine."

The Helwig-Jennings Award, established in 1980, is the highest honor one can receive in the field.



Dr. Atkinson (r) accepts the third annual Helwig-Jennings award made by ACVPM for his accomplishments in veterinary preventive medicine. Presenting the award is Dr. Edward Menning, chairman of the awards committee.

Dr. Atkinson came to NIH in 1960 and served as assistant chief, Laboratory Aids Branch, before taking his current position as executive secretary in 1961 for what is now the Surgery and Bioengineering Study Section of DRG.

Prior to coming to NIH he served as a commissioned officer in the U.S. Public Health Service's Milk and Food Program (1953-1959).

During that time he had a major role in developing and revising the model ordinances of the poultry, milk, and restaurant codes. He was also employed by the U.S. Department of Agriculture from 1950 to 1952.

In addition to his most recent award, Dr. Atkinson has received a PHS Commendation Medal, and a letter and certificate of commendation from the chief, Bureau of State Services. He also was recipient of the NIH Superior Performance Award in 1972.

Dr. Atkinson has also been involved in many associations. He is currently a fellow of the American Public Health Association. He has held offices in the Conference of Public Health Veterinarians, and the American Veterinary Medical Association.

A native of Missouri, he received his doctor of veterinary medicine degree from Kansas State University in 1950. □

Volunteers Invited for R&W Council

The R&W invites volunteers to represent their respective BID's on the executive council. As representatives, they will become the voice of all members in the organization. Employees wishing to become council members should contact their executive officer. □

Consensus on Biomaterials Will Be Held November 1-3

An NIH Consensus Development Conference on Clinical Applications of Biomaterials will be held Nov. 1 through Nov. 3 in Masur Auditorium.

The Biomedical Engineering and Instrumentation Branch, Division of Research Services, is organizing and sponsoring the meeting, with the NIH Office for Medical Applications of Research providing assistance in the planning and conduct of the program.

Biomaterials—whether they be ceramics, polymers, metals, textiles, tissues, or other substances—are the basic constituents of thousands of medical devices that come in contact with living tissues.

During the past several decades, substances of varied properties have been applied in almost every area of the body to replace tissues and repair lost functions. Despite these accomplishments, particularly demanding applications still require improvements.

This consensus development conference will assess the relevance of tests for performance, ways in which biomaterials are introduced into clinical care, and adequacy of currently used biomaterials to fulfill the needs of clinicians.

The conference will bring together biomedical investigators and physicians as well as individuals from industry, government, and consumer and public interest groups in an open meeting that will evaluate the safety and efficacy of this broad technology.

After 2 days of presentations by experts and discussion by the audience, a consensus panel of members from the health professions and other organizations with an interest in biomaterials will consider the scientific evidence offered and issue a draft statement responding to the following questions:

- How safe and effective are biomaterials currently in clinical use?
- What results of ongoing research in materials science would potentially be applicable to clinical care?
- How well can the biological performance of materials be predicted in the human body: host response, biomaterial response?
- Are the ways for introducing biomaterials into medical use responsive to current clinical needs?
- What elements in the process are amenable to improvements?
- What are the areas of greatest clinical need for new biomaterials?

On the last day of the meeting, panel chairman Dr. Pierre M. Galletti, professor of medical science and vice president of the division of biology and medicine at Brown University, will read the preliminary consensus statement before the conference audience and invite comments and questions.

The 2½-day conference is open to the public. There is no registration charge. For further information, contact John Boretos, 496-5771. □

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