The Newsletter of the
NIH Alumni Association

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NIHAA Update

Reflections on 50 Years at NIH

An Interview with Margaret Pittman

By Dr. Victoria A. Harden

It was 1936, and President Franklin D. Roosevelt was fighting to bring the country out of the Great Depression with his "New Deal" policies. One of his most important legislative accomplishments was the Social Security Act, which provided a sizable appropriation for public health, including funds to expand medical research at the National Institute of Health, then located at 25th and E Streets, N.W., in Washington, D.C. Among the young investigators hired at NIH with Social Security funds was Margaret Pittman, a talented young woman who spent her entire career in biologics research and who, in 1958, became the first women to be named chief of an NIH laboratory.

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Dr. Margaret Pittman [left] and coworker in a laboratory of the Division of Biologics Control during the 1930's

The Year in Review—NIH in 1988

By Dr. James B. Wyngaarden

"If you know the enemy and know yourself, you need not fear the result of a hundred battles." Man will soon know himself and his enemies—genetic diseases—in ways unimaginable 2,500 years ago when a Chinese philosopher-general gave us this advice or even 35 years ago when Drs. James Watson and Francis Crick determined DNA's structure. We now stand on the threshold of knowing the entire human genome—the location of all the genes and the order of the 3.5 billion base pairs.

It is appropriate that NIH play the lead role in the project to map and sequence the human genome. America's preeminence in molecular genetics is primarily the result of NIH's investment in basic biomedical research over the past several decades.

To oversee the genome project, I have appointed one of the fathers of molecular genetics, Dr. Watson, to be NIH associate director for human genome research. This is a part-time position for him; he continues to direct the Cold Spring Harbor Laboratory on Long Island. He will be guided in setting research goals by the new NIH Program Advisory Committee on the Human Genome. NIH's effort will be coordinated with other agencies, industry, and national and international scientific organizations.

Dr. Watson's first objective is to lay out a sensible plan for the project to be done as quickly and economically as possible. Large-scale sequencing should not move ahead until technology has improved so that the sequencing cost can be reduced; it is estimated that the cost could drop by a factor of 10 from its present price of $1 a base. Important genes certainly will be sequenced as they are found. NIH's FY 1989 budget earmarks about $35 million for the genome project. This figure is expected to increase to about $200 million per year during the anticipated 15 years of the project.

Dr. James B. Wyngaarden, NIH director

The genome project must include both public education and training of young researchers. There are insufficient trained people in the United States to do the rapidly expanding molecular biology at hand. Over the past decade, the number of new Ph.D.'s in the life sciences grew by the lowest amount in 30 years—less than 10 percent—while new master's and bachelor's degrees actually decreased.

As part of NIH's efforts to reverse this trend, we established several new biotechnology research training activities, including a postdoctoral program at NIH and a predoctoral one at universities.

We must also teach the average citizen what DNA is so he or she can appreciate the enormous benefits to be reaped from the genome project. It should have a profound impact on diagnosis and treatment

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Welcome to the NIHAA

With the publication of our first newsletter, we welcome you to the NIH Alumni Association. Our membership in the Washington metropolitan area already totals 400. Many of you attended our first social and educational programs this past spring and fall. We are about to begin a nationwide membership drive with the expectation of establishing local chapters throughout the country and, eventually, overseas (there are already alumni groups in Japan, Taiwan and India). A board of directors has been selected to guide us through the developmental stages of this organization. We believe that the establishment of the NIHAA will greatly enhance the ability of NIH alumni to maintain ties with the NIH, enable the alumni to stay in touch with current scientific events, and facilitate contacts with old friends and colleagues. In addition, we believe that the NIHAA can serve a useful role in bringing talented young scientists to the attention of the NIH intramural program and explaining important scientific issues to the public.

You will learn more about our plans for the Alumni Association in forthcoming issues of the *NIHAA Update*. We welcome your help in planning the future course of the NIHAA.

We are especially grateful to the Foundation for Advanced Education in the Sciences (FAES) and NIH Centennial Committee for their financial assistance and support in establishing the NIHAA.

Abner Notkins
Chairman, NIHAA
Organizing Committee

Leon Jacobs & Cal Baldwin
Co-Chairmen, Local
Organizational Committee

NIHAA Update Editorial Policy

NIHAA Update is not really a new newsletter. Rather it is the successor to an alumni publication whose title was simply "Newsletter." That publication appeared sporadically during the years 1977-1982. Published some 13 times in that period under the auspices of the Foundation for Advanced Education in the Sciences, the old newsletter included several editorial categories that will persist in the new version.

Update's goal is to maintain a link between NIH and its sons and daughters that emphasizes the pride and good feeling that many have shared in careers here. Not quite so informal as a letter from home, *Update* will nonetheless strive to preserve a sense of community between those who remain at NIH and those who have gone elsewhere.

We intend to retain the columns that included NIH staff and alumni appointments and personnel changes, retirements, deaths and awards/honors. As before, we will rely on alumni to notify us of all major career changes, new positions and titles, major publications, awards and honors received and other occurrences of interest to alumni. This material will be arranged according to the decade(s) corresponding to the submitter's tenure at NIH and will be subject to editing.

Each issue will include a major feature story either written expressly for *Update* or chosen from the best of our employee newsletter, The *NIH Record*. We plan to solicit articles on topics of our choosing from among the alumni and senior scientists and administrators on campus who care to write for *Update*.

Also included will be a column on administrative news and policy at NIH, a retrospective look at what was happening here 10, 20, 30 and 40 years ago, a calendar of major

NIHAA Update

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Editor: Harriet R. Greenwald

Editor's Note

The NIHAA Update *welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the* NIHAA Update, *please drop a note to the editor. We reserve the right to edit material.*

NIH events, and a clip-out coupon that will allow alumni to join the NIHAA or send in material for the next *Update*. All bureaus, institutes and divisions at NIH have been invited to contribute to the editorial mix.

We plan one more issue of *Update* in 1989, scheduled to appear in the fall. In 1990 we expect to publish the newsletter quarterly. Queries and news items may be submitted to *Update* editor Harriet Greenwald (who is also executive director of NIHAA), 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

Welcome back to NIH!

Museum of Medical Research Opens

In 1987, as a part of the NIH centennial, Director James B. Wyngaarden established the DeWitt Stetten, Jr. Museum of Medical Research. Its mission is to collect and exhibit significant biomedical research instruments and artifacts relating to NIH history. Several exhibits are currently on display in the lobby of the Clinical Center (Bldg. 10), including one entitled "Breaking the Genetic Code" on the work of NIH's first Nobel laureate, Marshall W. Nirenberg. Alumni who would like additional information or who are interested in volunteer work with the museum should contact Dr. Victoria A. Harden, curator, Building 60, Room 152, National Institutes of Health, Bethesda, MD 20892; (301) 496-6610.

NIH License Plates at R&W

NIH employees as well as alumni are eligible to purchase special Maryland license plates with the initials "NIH" followed by four numbers, at the R&W. Cost is $8 for R&W members.

For more information about obtaining the NIH plate contact the R&W Activities Desk, Bldg. 31, Rm. B1W30, (301) 496-4000.

Dr. Lois Salzman, deputy director of NIDR's intramural research program, and Cal Baldwin, former NIH associate director for administration, welcome guests at a NIHAA social event in Bethesda.

MI Grads Excel

Intern Program Offers Avenue to Top

By Rich McManus

There are at least two ways to be successful in an NIH career, depending on the sphere to which you belong—the scientific or the administrative.

In the first world, success is measured in terms of significant discoveries, excellent publications and important prizes.

In the latter world, more akin to Main Street than MIT, success is measured more subjectively: How much responsibility can you handle? Are you a good manager? Can you get big jobs done?

With astonishing regularity at NIH, the people who have risen to top administrative positions have shared a set of key initials—MI.

Unlike M.D., Ph.D. or M.A., these initials are not academic hieroglyphs heralding scholarly achievement; they stand rather for Management Intern, a year-long program that, since its inception on this campus in 1956, has launched the careers of many an executive officer, budget officer and division chief.

This story is a look at one individual whose life and career were dramatically improved by her passage through the MI year.

Anne Houser has called her MI year of 1977 a "golden year." If that is true, the six years of federal service preceding her acceptance into the program must be described as somewhat leaden.

A native of Bluefield, W.Va., she joined NIH in 1971 as an NHLBI chemist in the Clinical Center. She had majored in chemistry at Salem College in Winston-Salem, N.C.,

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and done a year of research at the University of Virginia before arriving in Bethesda. Like many undergraduate scientists who come to NIH each year, she was bright, talented, enthusiastic and headed just a little north of nowhere in her career.

"The lab was not a growth experience," she recalls. "I couldn't feel in control. I couldn't feel special to the effort. Basically, I was just a good pair of hands."

She remembers walking by the NIH Library on the first floor of the CC and seeing her friends busily checking out science journals; Houser used the library to comb the newspaper want ads.

"A colleague of mine who had left the lab told me about the MI program," she remembers. "I called the training office for the application package. In those days there wasn't much publicity about MI."

About 100 people applied that year but only 10 were selected, 5 from inside NIH, 5 from without. Houser was one of the "ins."

"I was ecstatic when I found out," she says. "I can still remember the day they called. It was about the biggest high I ever had."

Then as now, new interns select, with the help of a mentor, four 3-month rotations to complete; they are also expected to wedge in some relevant classes offered by the Training Center and the Civil Service Commission.

Houser's first rotation was in OMAR—the then newly created Office of Medical Applications of Research.

"We put on the first NIH consensus conference ever," she recalls. "It was on screening for breast cancer. It was a really great experience. I learned good work habits and also how to recognize a good administrator when I saw one."

Anne Houser, graduate of NIH's Management Intern Program, has termed her MI experience "a golden year."

Her second tour was with Philip Amoruso, now NCI's executive officer but then an administrative officer in NCI's Division of Cancer Treatment.

"I learned what AO's do," Houser said, "from FOI (freedom of information) requests, moves of various kinds, FTEs (full-time equivalents—a measure of staffing) and budget issues. I also learned that I didn't want to be an AO."

All of the AOs with whom she worked in that rotation are now executive officers, she points out.

Her third rotation, taken in a program planning office, resembled the second in that it taught her the kind of projects that, for her, are best to avoid.

"I didn't like the long-term planning and reporting aspect," she said. "It's not for me to collect loads of information then huddle up in a room for a few weeks to write a report."

Houser's last rotation, in the Division of Legislative Analysis, found her falling in love.

"It was wonderful," she recalls. "I can still remember the first hearing on Capitol Hill that I attended. It was the Labor and Human Resources Committee with Kennedy as chairman. It was an exciting time. Those people are impressive and powerful. They do things that affect us and we know it."

In DLA, Houser found an office where "everything that is important to NIH is important to this office." There was no question that she would seek her first post-MI job in DLA.

"Unfortunately, there were no slots available when I graduated," she remembers. "Then two people suddenly left and I joined DLA as a program analyst."

That was a decade ago. Today she is chief of DLA's Legislative Liaison and Analysis Branch.

"It is not any less exciting today than it was then," she says. "I've been to hundreds of hearings and the excitement of that has waned a bit. But the issues we face are always new."

Houser manages a staff of three, including former MI Rosalind Gray, her AIDS expert. She has been mentor to some half dozen MIs since 1978 and is "always on the lookout for MI grads."

"You really have to want to be in the MI program," she advises. "You have to prove yourself all over again every three months. People remember reputations many years down the line. You meet a lot of people and find out who does what. They get some sense of your competence and what you can do."

Houser says there was a time during her lab years when "I felt there was nothing beyond the laboratory. I had never even seen a memo before—we were not included in the general bureaucratic maze."

Today she declares that EOs and

AOs "make the world run."

Her advice to new MIs is simple: "Make the year count. Pick really good assignments. Meet as many people as you can. Do a good job at everything and realize that people will excuse you if you make mistakes. It's a year that you can't lose in—a golden year."

Scholars-in-Residence Welcomed

Twenty scientists from 12 foreign countries and the United States came to the NIH campus in 1988 as members of the prestigious Fogarty Scholars-in-Residence program. Under the program, outstanding scientists of any country can be invited to interact with the NIH scientific community and conduct studies in contemporary biomedicine and international health.

Scholars-in-Residence in 1988 were:

Drs. Jorge Allende of Chile, Kare Berg of Norway, Maurizio Brunori and Franco Conti of Italy, Bernard Davis of Massachusetts, Ragnar Ekholm and Sture Forsen of Sweden, Robert Fraser of Australia, David Goldfarb of the Soviet Union, Herbert Gutfreund of Great Britain, Konstantin-Alexander Hossman of West Germany, Elwood Jensen of Switzerland and the U.S., Martin Kamen of California, Joseph Martin of Massachusetts, Itzchak Parnas and Abraham Patchornik of Israel, Tetsou Shiba of Japan, Lars Terenius of Sweden, C.L. Tsou of China, and Robert W. Zwanzig of Maryland.

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of the 4,000 currently known single-gene disorders, as well as polygenic ones such as cancer and heart disease.

In 1988 I established another office at NIH, the Office of Invention Development, to facilitate the transfer of technology from NIH laboratories to the private sector for further development and commercialization. This is in accordance with the 1986 Federal Technology Transfer Act, by which Federal scientists are encouraged to enter into Cooperative Research and Development Agreements (CRADA's) with industry to benefit the public health while protecting each organization's primary goals. A company could obtain an exclusive license to a patented invention developed under a CRADA if that company has contributed substantial resources to the project. Federal scientists can receive up to $100,000 per year as income from such patented, licensed inventions. We have had one forum—and more are planned—at which 250 Federal scientists met with about 250 industry representatives to identify areas of mutual interest that might result in CRADA's.

A new institute, the National Institute on Deafness and Other Communication Disorders, was established by Congress in 1988. Most of NIDCD's FY 1989 funds will come from what is now the National Institute of Neurological Disorders and Stroke, which has heretofore been responsible for hearing and communicative disorder research. NIDCD's purview will include diseases affecting hearing, balance, voice, speech, language, taste, and smell. Until a permanent director is found, I have appointed Dr. Jay Moskowitz as acting director. Meanwhile, he continues his role as NIH associate director for science policy and legislation.

Use of Animals in Research

NIH believes that the use of animals as experimental models is an integral part of biomedical research. We recognize, however, that several segments of our society need a better understanding of the role of animals in research and of NIH's policies requiring their proper care and use. Thus, we held several briefing sessions last year to inform members of Congress and their staffs about our policies and to stress our expanded support of efforts to develop alternatives to animal models and non-invasive techniques. We plan to repeat these sessions periodically.

NIH researchers recognize both the scientific and ethical responsibility for the humane care and use of animals. The intramural program is making considerable progress toward gaining accreditation this year by the American Association for Accreditation of Laboratory Animal Care. As required, we are unifying the animal care and use programs of individual institutes into an NIH-wide program founded upon the principles of the *NIH Guide for the Care and Use of Laboratory Animals* and the PHS animal welfare policy.

AIDS Research

NIH continues to play a leading role in the Federal Government's efforts against AIDS through studies conducted by our intramural scientists, grantees, and contractors. Our AIDS efforts now involve every NIH component; the FY 1989 budget is estimated to be more than $600 million.

To strengthen and coordinate AIDS research and activities at NIH,

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I appointed Dr. Anthony Fauci to be NIH's associate director for AIDS research and director of the NIH office of AIDS research. He continues to be director of NIAID. (In the next issue of *Update*, there will be an article on NIH's outstanding research advances on AIDS.)

Research Highlights

During 1988, research conducted or supported by NIH has led to many important basic and clinical advances, as illustrated by the following highlights.

• Scientists at the NICHD have identified an RNA segment that prevents iron build up in human cells. This is the first example in humans of RNA—rather than DNA—regulating a gene's action. This genetic switch, called iron responsive element (IRE), responds to large amounts of iron in the cell by signalling for the production of the iron-neutralizing protein ferritin. When iron levels decrease, IRE's halt the ferritin-making process. Scientists can attach synthetic IRE's to virtually any gene in a cell culture and then turn the gene on or off by exposing it to different amounts of iron, thus regulating how much of a medically useful protein the gene produces. IRE's appear to be more reliable and easier to control than other genetic on-off switches currently used in biotechnology.

• NINDS grantees used "plating," a surgical procedure to stabilize the spinal canal in a small number of patients with cervical spinal cord injuries. Upon entering the hospital, patients underwent immediate surgery during which a metal plate was screwed into vertebrae over the damaged segment of spinal cord. Most patients could be out of bed within 24 hours after surgery, reducing the risk of pulmonary complications and bedsores. Surgery also eliminated any later need for bone grafts or traction, and shortened the time in intensive care. The investigators are seeking an Investigational Device Exemption from FDA to begin controlled trials.

• A major hurdle to the use of gene therapy is getting the transferred gene to be expressed adequately so that sufficient protein is produced to correct the defect involved in the genetic disease. Because inserted DNA often integrates in a random fashion, researchers felt that if the new DNA could be targeted to integrate into the site where it is normally found, it should be expressed better. Two teams of NIGMS grantees have accomplished this in cultured cells, using a method called homologous recombination. The scientists are using the technique to create animal models to study various genetic diseases; ultimately it will be used as an approach to human gene therapy.

• In a mouse model of insulin-dependent diabetes, grantees of NIDDK blocked islet cell destruction by treatment with a monoclonal antibody (MAb) against the antigen on mouse T cells that is the CD4+ counterpart on human T cells. The treatment reversed the advanced phases of islet cell destruction, and the mice remained disease-free without further treatment. The MAb reacted with and killed the T cells believed to play a key role in the autoimmune process that underlies IDDM. These studies provide the basis for a possible treatment that, when combined with genetic screening for high-risk individuals, could one day prevent IDDM.

• NCI scientists have developed a simple urine test that, in a small study, shows promise of detecting bladder cancer at an early, potentially

Construction has already begun on The Children's Inn at NIH, a home away from home for up to 36 families participating in pediatric studies at the Clinical Center. Located on the north side of the campus, the 32,000-square-foot residence should be complete in time for Christmas 1989. Further coverage of this and other construction projects on campus will be included in the next issue of NIHAA Update.

curable stage. The test detects autocrine motility factor, a protein secreted by cancer cells that enables them to migrate from the primary tumor site. AMF levels were highest in urine from patients whose cancers were most invasive. The assay, which should be ready for clinical trials in two years, also was highly accurate in detecting bladder cancer recurrence following treatment.

• Preliminary evidence indicates that some cases of Alzheimer's disease may be due to an infectious agent. Grantees of NIA and NINDS have transmitted a blood-borne virus from humans with AD, or their relatives, to hamsters. The animals developed a fatal brain disorder, with a pathology similar to that of Creutzfeldt-Jakob disease. When a second series of hamsters was inoculated with brain tissue from some of the previously infected animals, all developed a more severe and rapidly progressive form of the disease. Hamsters may be incapable of expressing the long-term neuropathological changes of AD, a uniquely human disorder. If an infectious agent exists, factors in the environment or within the body could trigger the onset of dementing disease.

• Briefly freezing the sclera reduced the risk of severe visual loss by one-half in babies with advanced retinopathy of prematurity (ROP), according to results of a multicenter clinical trial sponsored by NEI. ROP causes visual loss in 2,600 infants in the United States annually. Cryotherapy creates a ring of scar tissue that stops the retinal blood vessels from growing excessively, thus halting the progression of ROP. Retinal scarring may cause some loss of side vision but does not affect the macula. The treatment's long-term effects will continue to be assessed.

• In a study of 200 women, epidemiologists from NIEHS found that 22 percent of pregnancies were lost without being clinically recognized, in what seemed to be an ordinary menstrual period. The unsuspected pregnancies were detected by means of a new assay—developed largely through NICHD support—for the pregnancy hormone human chorionic gonadotropin. This assay, which can detect the hormone in urine about a week after fertilization, is 100 times more sensitive than conventional tests. Importantly, women who lost pregnancies early soon conceived again; most of these pregnancies ended in live births. This method will be used to explore effects of occupational and environmental hazards on human reproduction.

• NIAID researchers have isolated and cloned the gene that encodes an important protein on the surface of the sexual stage of *Plasmodium falciparum*, which causes the most severe form of human malaria. The protein could be used in a vaccine to interfere with the parasite's sexual stage that develops in erythrocytes and is picked up by mosquitoes when they feed on an infected person. The altruistic vaccine would be given to those infected with malaria, thus interrupting the parasite's transmission cycle and preventing its spread to others.

• Estrogen deficiency is a primary factor in postmenopausal osteoporosis, and estrogen therapy effectively prevents the accelerated bone loss. To explain this effect, scientists postulated the existence of estrogen receptors on bone cells but have been unable to detect any. Using new sensitive methods, two independent research teams supported by NIAMS, NIA, NICHD and NCI demonstrated the presence of estrogen receptors on human and animal osteoblast-like cells in culture. The mRNA for the estrogen receptor was also present in the normal human cell lines. Thus, estrogen can act directly on osteoblasts and thereby modulate the extracellular matrix and other proteins involved in maintaining skeletal mineralization and remodeling.

• Scientists at NIDR have synthesized a peptide—YIGSR—that blocks tumor metastasis *in vitro* and in animals. YIGSR, a fragment of a major basement membrane protein called laminin, is believed to compete with laminin for its receptors on tumor cells. The cells' attachment to laminin is the first step in the process of invasion and metastasis. In an assay developed by NIDR researchers, the YIGSR-containing peptide blocked tumor cells from binding to and invading a synthetic basement membrane. When injected along with tumor cells into mice, the peptide dramatically reduced formation of lung tumor metastases. More potent peptides are being developed that could have various uses, including the prevention of tumor cells mechanically liberated during surgery from creating metastases.

• A multicenter, double-blind, randomized trial by NHLBI and DRR found that flecainide and encainide were more effective than moricizine or imipramine in suppressing ventricular arrhythmias in 502 patients enrolled within 60 days of an acute MI. Patients were randomly assigned to one of five combinations of the drugs or a placebo. Imipramine had a high rate of intolerable side effects. Based on these results, NHLBI has initiated a large-scale clinical trial to assess the efficacy of encainide, flecainide and moricizine in reducing sudden cardiac death rate in patients who have had MI's within the previous two years.

This article was prepared with the assistance of Bobbi Bennett, Office of Communications, OD.

Reflections *(continued from p. 1)*

The daughter of a physician in Prairie Grove, Ark., Dr. Pittman was born in 1901. She excelled in mathematics and biology at Hendrix College, a Methodist institution in Conway, Ark. After serving for two years as teacher and principal in the academy of a girls' college, she enrolled in the University of Chicago, where she obtained M.S. (1926) and Ph.D. (1929) degrees in bacteriology.

In 1928 she moved to the Rockefeller Institute for Medical Research in New York City (now Rockefeller University) to work with Dr. Rufus Cole, director of the hospital. There she addressed the question, "Does *Haemophilus influenzae* cause influenza?" Her focus changed, however, when she found two strains of the organism that were encapsulated—a "first" demonstration that earned her international respect before she was 30 years old. Four other capsular types were identified, but it was type "b" that caused highly fatal meningitis in young children. Preparation of the first type specific *H. influenzae* antiserum for therapy led her into lifelong work on the control of biologics, largely bacterial antisera and vaccines. In 1936 she came to NIH and remained on the staff until retirement from the Division of Biologics Standards in 1971. Since that time, she has been a guest worker in the division. For the first issue of *NIHAA Update*, we asked Dr. Pittman to reflect on her more than 50-year association with NIH.

Q: What impressed you most when you first began work at the NIH?
A: I was much impressed by the number of studies that were directly applicable to public health. There was a great deal of collaboration. I worked with Drs. F. J. Daft, H. F. Frazier, and W. H. Sebrell (later a director of NIH). They were interested in nutrition. We treated dogs with severe blacktongue (a disease in dogs equivalent to pellagra in humans) with codehydrogenase, a growth requirement of *H. influenzae*.

Q: Who were some of the other people here at that time?
A: Edward Francis, who worked on tularemia, Rolla Dyer, who also became director of NIH. Trendley Dean was just beginning to work on fluoride prevention of dental caries.

There were three pioneer women microbiologists before I came. Ida Bengtson was the first. She did beautiful work on standardization of gas gangrene antitoxins for the League of Nations. Alice C. Evans was famous for her work on brucellosis. I worked with Sara E. Branham, who had been one of my teachers at the University of Chicago, in the development of a potency assay for antimeningococcus serum.

Q: You arrived shortly before Dr. George W. McCoy retired as NIH director. Could you comment on his work?
A: It impressed me that Dr. McCoy did all inspections of licensed manufacturers of biologics personally. Of course, there were not so many then.

Q: At the end of the 'thirties and during the early 'forties, NIH moved to Bethesda from downtown.
A: Yes. We moved out in the spring of '41, the last ones to come out. In Bethesda, the divisions with larger staffs were located in separate buildings. Since people were separated, there was a decrease in intellectual cross-fertilization.

Q: At about the same time, World War II started. How was your work redirected toward wartime problems?
A: It was directed largely to the safety and purity of plasma and whole blood for the armed services. Plasma, obtained from a large number of units of blood, was filtered and bottled. Occasionally the plasma caused a severe fever reaction in a patient. Pyrogens had been produced by growth of bacteria in the refrigerator before filtration. I worked with Thomas Probey in the development of the rabbit assay for presence of pyrogens. Using a collection of contaminants from plasma and other sources, we found that not more than 5,000 bacteria per milliliter of plasma could be present before filtration.

Whole blood reactions likewise were caused by bacteria that grew during refrigerator storage. In other cases, the unit of blood was contaminated with air bacteria by withdrawing a sample for sterility testing. This led to the requirement that a sample of blood in a test tube be attached to the blood container. This sample is used to test for sterility, blood group, hepatitis, and now for AIDS. The blood container is never entered for a sample.

The failure of some contaminants to grow at 37° C. prompted the requirement that the sterility test be incubated at two temperatures. After a study of each ingredient in the sterility test medium, the formula was revised and has remained unchanged in the U.S.A. and internationally.

During these studies there was excellent cooperation with the manufacturers of biologics. As business management changed after the war, however, openness declined.

Q: How did you get into pertussis research?
A: In 1943, Dr. Milton Veldee,

director of the Biologics Control Laboratory, handed me a small piece of paper, handwritten because we had only one secretary: "Develop a standard of potency for pertussis vaccine," it said. Others who had tried to develop a potency assay for pertussis had failed. Dr. Pearl Kendrick and Dr. Grace Eldering in the Michigan Department of Health Laboratories had successfully pioneered the development of a pertussis vaccine that provided significant protection against whooping cough. But even they had failed to develop a potency assay.

About this time, Dr. John Foote Norton, one of my professors at the University of Chicago who was then at Upjohn Company, and Dr. John Dingle were working on a potency assay for typhoid vaccine. They tried intracerebral (IC) challenge of mice. Dr. Norton observed that pertussis vaccinated mice were protected against lethal IC challenge with *Bordetella pertussis*. He reported this observation to Dr. Kendrick and me. At that time the dose of vaccine was expressed in millions of bacteria. We developed an opacity standard; then we exchanged information during the development of an IC challenge potency assay. U.S. Requirements for Pertussis Vaccine were prescribed in 1949. Potency of the bacteria was determined relative to the bacteria in a reference vaccine. In 1953 the U.S. promulgated a standard of 12 units per total immunizing dose. This requirement became the basis of the international potency requirement of the World Health Organization.

Q: Pertussis vaccine, of course, has a greater number of toxic side-effects than some other vaccines. When did you become involved in studying the pertussis toxin?
A: From the beginning, I was concerned about the toxicity of pertussis vaccine. A mouse test was specified in the first Requirements in 1949. Eventually, at least four toxins were described. But it was not until I was a guest scientist at the University of Glasgow in 1976 that it suddenly came to me that pertussis had a true exotoxin, like diphtheria or cholera toxin, that caused the harmful effects and the prolonged immunity of whooping cough. The hypothesis was presented three times at meetings in Scotland, in England, and at NIH but no one paid attention. In 1978, at the Third International Symposium on Pertussis Vaccine, I presented my idea, and Dr. Emil C. Gottschlick said to his companion, "That is it. It is a toxin."

When Dr. J. B. Robbins gave a summary of the symposium, my concept was the first thing that he mentioned. Reprints of the paper then in press went like hotcakes. I don't have a single copy left. You see, the mind has to be prepared to receive a new idea. It is satisfying to have changed the direction of work on pertussis vaccine.

Q: Would you talk a bit about your involvement during the 1960's with the Southeast Asia Treaty Organization (SEATO) cholera project?
A: Yes. Dr. Joseph Smadel, an eminent research scientist, after serving four years as associate director of NIH, elected to come to the Division of Biologics Standards. SEATO had effected an improvement in smallpox vaccine and wanted to do something else beneficial for the health of the people of Southeast Asia. They decided to focus on cholera and selected Dacca as the target city. It was in East Pakistan at that time, which is now Bangladesh. Dr. John C. Feeley and I were brought in to help design the laboratories and equipment in the Cholera Research Laboratory, a Public Health Service building that had already been built in Dacca but not occupied. Another laboratory was established, first in a tent, at Matlab Bazaar, which is accessible only by boat. Dr. Feeley and I developed standards for cholera vaccine.

NIH was in charge of the funds from SEATO and other sources. Dr. Smadel, of course, was the power behind the study, which was designed to cover the field from anthropology to clinical treatment. It was the most extensive study of an infectious disease up to that time. The late Dr. Robert Gordon was one of the first directors.

The high fatality of cholera is due to very rapid loss of fluid. Restoration of fluid is essential. Intravenous (IV) administration of more than 50 bottles of fluid may be required. Most important was the culmination of Dr. Robert A. Phillips's work of many years on IV restorative fluid. And finally, with cooperation of others, was the development of an oral formula for fluid with ingredients that are available in developing countries. It is now used worldwide for all kinds of dysenteries.

The SEATO Cholera Research Laboratory has been succeeded by the International Centre for Diarrheal Disease Research in Bangladesh.

Q: You have been associated with NIH for more than fifty years—
A: Fifty-two years.

Q: How would you compare your career in this government agency with the positions of your contemporaries in academia or industry?
A: I think working at NIH provided a golden opportunity. I was able to obtain the best information in my field, and it was very exciting and

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NIH Notes for 1988

HONORS AND AWARDS

Dr. Adriaan Bax, a visiting scientist in NIDDK's Laboratory of Chemical Physics, was named Maryland's Outstanding Young Scientist for 1987 by the Maryland Academy of Science ... **Dr. Tibor Borsos**, chief of NCI's Laboratory of Immunobiology and research professor of pathology at USUHS, received the Senior U.S. Scientist Award from the Alexander von Humboldt Foundation of the Federal Republic of Germany ... **Dr. Samuel Broder** shared with Drs. Gallo and Montagnier the CIBA-GEIGY Drew Award in Biomedical Research ... **Dr. Willy Burgdorfer**, scientist emeritus in NIAID's Laboratories of Pathobiology at the RML, Hamilton, Mont., was honored at a workshop in Bethesda co-sponsored by NIAMS and NIAID, for his seminal discovery of *Borrelia burgdorferi* as the etiologic agent of Lyme disease. He was also the winner of the Robert Koch Foundation Gold Medal for 1988 ... **Dr. Gerald Chader**, chief of the Laboratory of Vision Research, NEI, received the Jonas S. Friedenwald Award for his outstanding work on vision research from the Association for Research in Vision and Ophthalmology ... **Dr. Lois K. Cohen**, assistant director for international health and chief of planning, evaluation and communications at NIDR, was selected the 1988 Percy T. Phillips Visiting Professor at Columbia University, School of Dental and Oral Surgery ... **Dr. Philip S. Chen, Jr.**, NIH associate director for intramural affairs, was the recipient of the Presidential Meritorious Executive Rank Award ... **Dr. David R. Davies**, chief, section of molecular structure, NIDDK, received a Presidential Distinguished Senior Executive Award ... **Dr. Vincent T. DeVita, Jr.**, former NCI director, received the first Pezcoller Foundation Award, Sept. 10, in Trento, Italy, in recognition of his "innovative work on the curative chemotherapy of lymphoma, as well as the overall stimulus and leadership he has given to the field of oncology" ... **Dr. John W. Diggs**, director of the Extramural Activities Program, NIAID, received the Presidential Meritorious Executive Rank Award ... **Dr. John C. Donovan**, director of NCI's Office of Laboratory Animal Science, was installed as a member of the board of directors of the American College of Laboratory Animal Medicine at its annual meeting in Chicago in July ... **Dr. Anthony S. Fauci**, director of NIAID and NIH associate director of AIDS research, was honored by the Columbus Citizen Foundation of New York. He was also selected the Public Health Leader of the Year by the Commissioned Officers Association of PHS ... **Dr. Gary Felsenfeld**, chief of the section on physical chemistry in NIDDK's Laboratory of Molecular Biology, was chosen for the Presidential Distinguished Executive Rank Award ... **Fogarty International Center's Volunteer Services Program**, was the recipient of a special achievement award from Montgomery County for "unselfish and devoted volunteer efforts" ... **Dr. Thomas Folks**, senior investigator in NIAID's Laboratory of Immunoregulation, was named winner of an award from the Weizmann Scholarship Foundation ... **Dr. Carleton Gajdusek**, NINDS scientist, was honored for his contributions to children's health by being inducted into Ambassador David M. Walters International Pediatrics Hall of Fame at Miami Children's Hospital ... **Dr. John I. Gallin**, director of the intramural program for NIAID, was presented with an honorary doctorate of science degree by his alma mater, Amherst College, at its 1988 commencement ceremonies ... **Dr. Robert C. Gallo**, chief of NCI's Laboratory of Tumor Cell Biology, was the winner of two awards. He shared with Dr. Luc Montagnier of the Institute Pasteur, Paris, the 1988 Japan Prize, one of Japan's most prestigious awards, for research on acquired immune deficiency syndrome. Gallo also shared with Broder and Montagnier the CIBA-GEIGY Drew Award (the second time he was so honored). He was also elected to membership in the National Academy of Sciences ... **Dr. Igal Gery**, chief of the experimental immunology section, NEI, received the International Monokine Workshop Research award, sponsored by the Reticuloendothelial System Society. He was recognized for his 1971 discovery of interleukin 1 ... **Dr. Ada Sue Hinshaw**, director of the National Center for Nursing Research, received several awards: the Elizabeth McWilliams Miller Award for Excellence in Nursing Research by Sigma Theta Tau International and two honorary doctor of science degrees for distinguished contributions to nursing education and research, one from the University of Maryland and the other from the Medical College of Ohio ... **Dr. David G. Hoel**, director, Division of Biometry and Risk Assessment, NIEHS, has been elected to the National Academy of Sciences' Institute of Medicine ... **Karen Howard**, grants technical assistant in the Division of Digestive Diseases and Nutrition, NIDDK, was named 1988 Secretary of the Year by the Bethesda chapter of Professional Secretaries International ... **Dr. Donald M. Jerina**, chief of the section on oxidation mechanisms in NIDDK's Laboratory of Bioorganic Chemistry, was given the 1988 Alumni Achievement Award by Knox College, Galesburg, Ill., in recognition of his outstanding career as a research chemist ... **Dr. David F. Johnson**, an NIDDK research biologist, has been elected to an 8-year term on the Allegheny College board of trustees ... Chaplain **LeRoy Kerney**, chief of the Clinical Center's Department of Spiritual Minstry, was honored by the College of Chaplains with its "Distinguished Service Award" for 33 years of "leadership in pastoral care of institutionalized persons" ... **Dr. Seymour Kety**, senior scientist in NIMH's intramural research program, was named, along with Dr. Louis Sokoloff, the recipient of the first National Academy of Sciences' Award in the neurosciences for their pioneering work and outstanding achievements in neurochemistry and clinical medicine through the development of techniques for measuring brain blood flow and metabolism ... **Dr. Richard Klausner**, NICHD scientist, received the "Outstanding Young Investigator" award from the American Federation of Clinical Research for his research detailing the biological mechanisms that regulate how cells take in and use iron ... **Dr. Edward D. Korn**, chief, Laboratory of Cell Biology, NHLBI, received the Presidential Meritorious Executive Rank Award ... **Dr. Harvey Kupferberg** director of the preclinical pharmacology section in the NINDS epilepsy branch, received the 1988 Epilepsy Research Award for outstanding contributions to the pharmacology of antiepileptic drugs ... **Dr. Harald Loe** , director of NIDR, was the recipient of two awards: the Swedish Dental Society's International Prize and the Surgeon General's Exemplary Service

Award ... **Dr. Claude Lenfant**, director of NHLBI, was awarded an honorary doctor of science degree from the State University of New York at Buffalo. Lenfant also received the Presidential Meritorious Executive Award ... **Dr. Charles R. MacKay**, director of the Division of Program Development and Evaluation of the NIH Office for Protection from Research Risks, was selected as the regents' lecturer at the University of California, Berkeley, during 1988-90 academic year ... **Dr. George R. Martin**, chief, Laboratory of Developmental Biology and Anomalies, NIDR, received the Presidential Meritorious Executive Rank Award. He was also selected to deliver the 1988 G. Burroughs Mider Lecture on "Basement Membranes: Key Determinants of Differentiation and Their Role in Cancer Metastasis" ... **Dr. Bernard Moss**, chief, Laboratory of Viral Diseases, NIAID, was named winner of the 1988 Dickson *Prize* from the University of Pittsburgh in "recognition of his distinguished scientific accomplishments to the fields of virology and molecular biology" ... **Dr. Abner L. Notkins**, director of NIDR's intramural research program and chief of the Laboratory of Oral Medicine was recognized in November 1988 at the 13th International Diabetes Federation Congress in Sydney, Australia. He was given the first Rolf Luft Award Medal for "pioneering contributions to diabetes research." ... **Joseph D. Naughton**, chief of the Computer Center Branch, DCRT, was inducted into the Government Computer News Hall of Fame ... **Dr. Robert Nussenblatt**, clinical director of the NEI, received an honorary Ph.D. from Bar-Ilan University in Ramat-Gan, Israel, for his work in the immunology of eye diseases ... **Dr. Joram Piatigorsky**, chief, Laboratory of Molecular and Developmental Biology, NEI, delivered the first Hans Bloemendal Lecture at the University of Nijmegen in The Netherlands ... **Dr. William E. Paul**, chief of NIAID's Laboratory of Immunology, was selected as the winner of the 3M Life Sciences Award, which honors outstanding contributions to the field of modern immunology ... **Dr. Robert H. Purcell**, medical director, Laboratory of Infectious Diseases, NIAID, was elected to membership in the National Academy of Sciences ... **Dr. David P. Rall**, director of NIEHS, received the WHO "Health for All 2000" Medal ... **Dr. William F. Raub**, NIH deputy director, was recipient of the Presidential Distinguished Executive Rank Award ... **Dr. Matilda White Riley**, the associate director for behavioral and social research at NIA, received the 1988 Distinguished Scholar Award from the American Sociological Association's section on aging. She was also named one of America's 100 Most Important Women by the *Ladies Home Journal* ... **Dr. Steven A. Rosenberg**, chief of NCI's Surgery Branch, was awarded both the Griffuel Prize and a special Hammer Cancer Prize for Adoptive Immunotherapy ... **Dr. Jesse Roth**, director of NIDDK's Division of Intramural Research, won two awards for his contributions to diabetes research. He was named winner of the first annual Medical Research Award of the National Health Council and also received the fifth annual Steven C. Beering Award for Advancement in Medical Science from the University of Indiana ... **Randy Schools**, general manager of R&W at NIH, was named a "Washingtonian of the Year" in the January 1989 issue of *Washingtonian magazine* for his humanitarian efforts ... **Dr. Michael D. Shelby**, a geneticist with NIEHS, received the Alexander Hollaender Award for his work in the field of environmental mutagenesis ... **Dr. Maxine F. Singer**, chief of the Laboratory of Biochemistry, DCBD, was the recipient of the Presidential Distinguished Executive Award for her work on DNA ... **Dr. Theressa C. Stadtman**, chief of the section on intermediary metabolism and bioenergetics of the Laboratory of Biochemistry, NHLBI, was awarded the Klaus Schwartz Commemorative Medal for 1988 in recognition of her pioneering work on selenium ... **Dr. Louis Sokoloff**, chief of the Laboratory of Cerebral Metabolism, NIMH, won with Dr. Seymour Kety, the first National Academy of Sciences' Award in the Neurosciences ... **Dr. Boris Tabakoff**, director, Division of Intramural Clinical and Biological Research, NIAAA, received the 1988 Jellinek Memorial Award. He was also winner of the 1988 Research Society on Alcoholism's Distinguished Research Award at RSA's annual meeting held in Charleston, S.C. ... **Dr. John D. Termine**, chief of the Bone Research Branch, NIDR, was winner of the 1988 Basic Research in Biological Mineralization Award of the International Association for Dental Research (IADR). It is one of nine distinguished scientist awards conferred annually by the IADR ... **Dr. Robert H. Wurtz**, chief of the Laboratory of Sensorimotor Research, NEI, was elected to membership in the National Academy of Sciences ... **Dr. J. Samuel Zigler, Jr.**, head of the cataract section in the Laboratory of Mechanism of Ocular Diseases, NEI, received an award from the Alcon Research Institute for his research on changes in the structure of lens crystallins that occur during aging and cataract formation ...

APPOINTMENTS AND PERSONNEL CHANGES

Dr. Samuel Broder, 17-year NIH cancer scientist and pioneer in AIDS research, was named by the White House in mid-December to be the 10th director of NCI. He replaced **Dr. Vincent T. DeVita, Jr.**, who resigned effective Sept. 1. In the interim **Dr. Alan S. Rabson**, the director of the Division of Cancer Biology and Diagnosis, was appointed acting director ... **Dr. Gene D. Cohen**, a leader in geriatric mental health research, was named deputy director of NIA ... **Dr. Kenneth A. Collins** was named chief of the International Services and Communications Branch, FIC ... **Dr. Sheldon G. Cohen** has moved from his job as the director of the Immunology, Allergic and Immunologic Diseases Program, NIAID, to be scientific advisor in the Office of the Director, IRP, NIAID, and also Scholar-in-Residence at NLM ... **Dr. Gregory A. Curt**, deputy director of NCI's Division of Cancer Treatment, was named in July director of medical education and chief of clinical pharmacology, Department of Medicine, at Roger Williams General Hospital in Providence, RI ... **Dr. Anthony Demsey** was appointed associate director for referral and review in DRG. He had been deputy director of the Division of Extramural Activities and Chief of Review Branch, NIDDK ... **Dr. Vincent T. DeVita, Jr.**, 9th director of NCI, resigned Sept. 1 to become physician-in-chief of Memorial Hospital at Memorial Sloan-Kettering Cancer Center in Manhattan in February 1989. He had been director since 1980 and at NCI, except for a 2-year stay at Yale, since 1963 ... **Dr. Lawrence R. Deyton** was named head of the newly created community clinical research section in NIAID's extramural AIDS pro-

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gram. He will also serve as NIAID assistant director for community research ... **Dr. Philip R. Dodge**, an internationally known neuroscientist at the Washington University School of Medicine in St. Louis, Mo., has been appointed special assistant to the NICHD director to focus on mental retardation research ... **Yvonne H. du Buy** has been named executive officer at NIDR. She served as budget officer at NIAID prior to her appointment ... **Dr. William Duncan** has been named chief of NIAID's Genetics and Transplantation Biology Branch of the Immunology, Allergy & Transplantation Program. He joined the branch as program officer in 1987. He replaces **Dr. Jane Schultz**, who will become director of research administration for the health sciences, University of Pittsburgh ... **Dr. Anthony S. Fauci**, director of NIAID, has also been named associate director of NIH for AIDS research ... **Dr. John R. Ferguson**, a neurologist with more than 22 years of experience in private practice, research and teaching, has been appointed director of the Office of Medical Applications. He will also head the Consensus Development Program and supervise other activities including coordination of Medicare coverage issues and the NIH Patent Program ... **Dr. Peter J. Fischinger** has been chosen vice president for research at the Medical University of South Carolina. Most recently, he has been director of the national AIDS program, after serving as deputy director of NCI. He had been at NCI since 1963 ... **Dr. Vay Liang W. (William) Go**, director of the Division of Digestive Diseases and Nutrition, NIDDK, since 1985, was named executive chairman and professor in the department of medicine at the University of California, Los Angeles in April... **Dr. Richard A. Griesemer** has been appointed director of the Division of Toxicology Research and Testing at NIEHS, Research Triangle Park, N.C. ... **F. Grey Handley** was named chief of the Coordination and Liaison Branch, FIC ... **Dr. James C. Hill** has been named deputy director of NIAID. He had served as acting deputy director and also served as assistant to the director since 1984 ... **Dr. Jay Hoofnagle**, an expert on hepatitis, has been appointed director of the Division of Digestive Diseases and Nutrition at NIDDK. A federal scientist for the past 16 years, he has been a senior investigator in NIDDK's liver diseases section since 1976 and that institute's acting clinical director since 1986 ... **Dr. Daniel F. Hoth** was named director of the AIDS Program, NIAID. He joined NIH in 1980 as head of the drug evaluation and reporting section within the Investigational Drug Branch, NCI ... **Dr. Daniel C. Ihde** was selected as editor-in-chief of NCI's biweekly *Journal of the National Cancer Institute* ...

Dr. Elke Jordan, NIGMS associate director for program activities since 1982, has been named director of the newly created Office of Human Genome Research ... **Dr. Werner H. Kirsten** has been chosen the new associate director of the NCI-Frederick Cancer Research Facility (FCRF). He comes to NCI-FCRF from the University of Chicago's department of pathology, where he had been chairman since 1972 ... **Dr. Wayne C. Koff** was named chief of the Vaccine Research and Development Branch in the AIDS Program, NIAID ... **Dr. Richard M. Krause**, former director of NIAID, has rejoined NIH as senior scientific advisor to the FIC ... **Dr. Robert Lazzarini**, chief of the Laboratory of Molecular Genetics, NINDS, has been appointed director of the Brookdale Center for Molecular Biology of the Mount Sinai School of Medicine in New York ... **Dr. Marc E. Lippman**, former head of the medical breast cancer section, Medicine Branch, DCT at NCI was chosen to direct the Vincent T. Lombardi Cancer Research Center, Georgetown University ... **Norman D. Mansfield** was named NIH's new associate director for research services, a post that was formerly filled by **Dr. Edwin Becker.** Prior to this appointment Mansfield was the director, Division of Financial Management ... **Libby McKnight** has joined the staff of the Division of Equal Opportunity as a full-time sign language interpreter ... **Dr. Jay Moskowitz**, NIH associate director for science policy and legislation, has been appointed to head a new institute, the National Institute on Deafness and Other Communication Disorders (NIDCD). He will continue in his present position and will serve until a permanent director is chosen ... **Dr. Charles E. Myers** was named to head the Medicine Branch in the Clinical Oncology Program of NCI's Division of Cancer Treatment ... **Dr. Mary Janet Newburg** has been appointed director of the Institutional Liaison Office in the Office of Extramural Research ... **Dr. Steven M. Paul**, chief, NIMH Clinical Neuroscience Branch, has been appointed acting director, IRP, NIMH. He succeeds **Dr. Frederick K. Goodwin**, who was named administrator of the Alcohol, Drug Abuse and Mental Health Administration ... **Dr. Roger J. Porter**, chief of the Medical Neurology Branch in the NINDS Division of Intramural Research has been named deputy director of NINDS ... **Dr. Gerassimos G. Roussos** has been appointed chief of NIDR's Caries and Restorative Materials Research Branch. He had been director of the Pancreas and Gastrointestinal Digestion and Immunology Programs of the division of Digestive Diseases and Nutrition at NIDDK prior to accepting his new position ... **Dr. William A. Sadler**, chief of the Reproductive Sciences Branch, NICHD since 1979, has been named dean of the Graduate School of Arts and Sciences at Howard University ... **Dr. Philip E. Schambra** has been appointed director of the Fogarty International Center for Advanced Study in the Health Sciences effective Aug. 2 ... **Dr. Jack R. Schmidt** has been appointed chief of the Fogarty Scholars-in-Residence Branch, FIC ... **Dr. John Sever**, chief of the intramural research program's Infectious Disease Branch, NINDS, has left to become professor and chairman of the department of pediatrics at the George Washington University School of Medicine and senior vice president for medical and academic affairs of the Children's Hospital National Medical Center. He will also hold a guest-worker appointment with NINDS ... **Dr. Maxine F. Singer**, chief of the Laboratory of Biochemistry, DCBD, was named to head the Carnegie Institution of Washington. She still leads a research group at NCI ... **Dr. Edward Tabor** was named associate director, Biological Carcinogenesis Program in NCI's Division of Cancer Etiology ... **Dr. Craig Wallace**, who held the dual role of director of FIC and NIH associate director for international research, has joined the Office of NIH Director in the latter position as the two jobs are divided and **Dr. Carl Kupfer**, director of NEI, was named acting director of FIC ...

Dr. Henry Wagner has resigned as chief of the section on neuronal interactions of the Laboratory of Neuropathology and Neuroanatomical Sciences, NINDS, to become scientist emeritus at NINDS ... **Dr. James D. Watson**, winner of the 1962 Nobel prize in medicine for his part

in discovering the structure of DNA, joined NIH on Oct. 1 as NIH associate director for human genome research. He will work at NIH part-time and continue to direct Cold Spring Harbor Laboratory on Long Island, a post he has held since 1968 ... **Dr. Frederico Welsch** has been named associate director for international affairs at NCI. He was executive officer to the Committee on Research at Harvard-Massachusetts Institute of Technology Division of Health Sciences and Technology ... **Dr. Luther S. Williams**, a molecular biologist and expert in biotechnology has been appointed deputy director of NIGMS. Prior to this appointment, he served for more than a year as special assistant for biotechnology to the NIGMS director ... **Dr. Robert Wittes**, director of NCI's Cancer Therapy Evaluation Program and editor-in-chief of the *Journal of the National Cancer Institute*, left to join Bristol-Myers, Wallingford, Ct., as senior vice-president for cancer research ... **Dr. Robert A. Whitney, Jr.**, currently director of DRS will become acting director of DRR (result of the merger of the two divisions, DRS and DRR) ... **Dr. G. Wayne Wray** has been appointed deputy director of NIDR's extramural program. He was a health scientist administrator in the NHLBI Review Branch prior to accepting his new position ... **Dr. Robert Young**, associate director of NCI's Centers and Community Oncology Program and former chief of NCI's Medicine Branch left NCI to become president of the Fox Chase Cancer Center in Philadelphia.

RETIREMENTS

Dr. Anton Allen retired from his position as chief of the comparative pathology section, Veterinary Resources Branch, DRS, after 32 years of service in that section, including 26 years as chief. He has joined Microbiological Associates, Bethesda, while continuing his research on diseases of laboratory animals as a part-time guest worker in VRB ... **Dr. Fred H. Bergmann**, director of the NIGMS Genetics Program since its inception, retired after almost 27 years of NIH service, 22 of which were spent with NIGMS ... **Dr. Kenneth S. Brown** retired Nov. 1. He served as a medical director in the PHS and as principal investigator in the connective tissues section, Laboratory of Developmental Biology and Anomalies, NIDR. He was with the institute for 27 years ... **Dr. Peter Condliffe** retired on Aug. 3 as the chief of the Scholars-in-Residence Program of the Fogarty International Center, after a 37-year career with the federal government ... **Louis E. Cozart**, foreman of the NIEHS warehouse, retired after 38 years of federal service ... **Vivian F. Dickson** has retired after 29 years at NIH, the last 20 of which she spent with NIGMS ... **Dr. Robert Edelman**, deputy director of NIAID's Microbiology and Infectious Diseases Program since 1984, and medical director in the PHS Commissioned Corps, retired from federal service. He has joined the University of Maryland School of Medicine at Baltimore as professor of medicine and associate director for clinical research at the Center for Vaccine Development ... **Dr. Mischa E. Friedman** retired from federal service after almost two decades with DRR. He was associate director for referral and review and chief of the Referral and Review Branch ... **Dr. John R. Gill, Jr.**, a senior investigator with the NHLBI's Hypertension-Endrocrine Branch since 1960, retired after 31 years of federal service ... **James Walling Harrison (a.k.a. Dink)**, a clerk-typist in the disbursing section of the Division of Financial Management, retired after almost 18 years of federal service ... **Dr. Richard C. Greulich**, scientific director for two institutes during his 22 years at NIH, retired from NIA. He had served as the institute's scientific director since 1977 and previous to that was scientific director (1966-74) of NIDR ... **James G. Hawkes**, director of the Division of Space Management, retired after a 38-year federal career that spanned many changes in the physical makeup of NIH ... **Joyce Jenkins**, administrative officer in NIAID's extramural program, retired Aug. 1 after 35 years of federal service ... **Dr. William S. Jordan, Jr.** retired in Oct. 1987, as director of the Microbiology and Infectious Diseases Program, NIAID ... **Marie Munsterteiger**, secretary to the chief, Bone Research Branch, NIDR, retired Mar. 1 after 30 years of government service, more than 20 of which were spent with NIDR ... **Dr. John E. Nutter**, medical microbiologist and health science administrator with NIAID for 15 years retired in January. He plans to continue his association with biomedical research activities and has joined Program Resources, Inc., operations and technical support contract at the Frederick Cancer Research Facility, in a managerial position ... **John P. Patterson**, executive officer at NIDR, retired after 35 years of government service, 31 of those years with NIH ... **Dr. Betty H. Pickett**, director of the Division of Research Resources for the past 6 years, retired after 31 years of federal service ... **Gilbert D. Press**, budget officer for NIDR, retired after more than 30 years of government service ... **George F. Russell, Jr.**, director of the Division of Management Policy, retired Jan. 29 after 25 years at NIH and 37 years of federal service ... **Ed Singleterry**, long-time chief of the photography unit, Medical Arts and Photography Branch, DRS, retired after 34 years of work at NIH ... **Mary Virts** retired after 37 years working at various posts, always in Bldg. 1 ... **Lillian Wathen** retired at the end of August after 27 years at NCI as a secretary in the Dermatology Branch of the Division of Cancer Biology and Diagnosis ... **Dr. William T. Watson**, chief of the small animal section, Veterinary Resources Branch, DRS, has retired from the PHS Commissioned Corps after 12 years of service at NIH and 11 years of service in the U.S. Army Veterinary Corps. He has accepted the position of director of laboratory animal resources at Massachusetts General Hospital, Boston, with an academic appointment at Tufts University Medical College ... **Dr. Richard I. Webber**, chief, Diagnostic Systems Branch, NIDR, retired Dec. 1. His career in the PHS Commissioned Corps spanned more than 25 years. He will join the University of Alabama at Birmingham as chairman, department of diagnostic sciences in the School of Dentistry ... **Henry Whitehead**, an audiovisual technician with the Division of Technical Service, retired after 34 years of work at NIH.

DEATHS

Dr. Frederick S. Brackett, a renowned biophysicist, died Jan 28 of a heart attack. He was recognized for his work in the field of spectroscopy. His involvement with NIH began in 1936 and even after he retired in 1961, he continued to serve as a consultant to NIAMDD ... **Jo Braz**, 66, former chief of the Allergy and Infectious Diseases Nursing Service, died Oct. 29 in an automobile accident. Braz, who retired in 1982, had been with the Allergy and Infectious Diseases Nursing Services since 1955 ... **Dr. Robert G. Burnight**, 69, a former health scientist administrator at

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NCI and retired sociology professor died Aug. 1 at the Clinical Center ... **William F. Coleman**, chief, fire and emergency response section, Emergency Management Branch, Division of Safety, died Dec. 13, 1987. He began his career in the Fire Department of NIH in 1956 and was responsible for many improvements in emergency services to the NIH community ... **Dr. Robert L. Dixon**, who worked at NIEHS from 1972 to 1984, died Aug. 28 in Albany, N.Y., after a short illness. He began his federal career in 1969 when he joined NCI. At the time of his death, he was vice-president of drug safety at Sterling-Winthrop Research Institute in Rensselaer, N.Y. ... **Dr. Thaddeus J. Domanski**, 76, former chief of the Chemical and Physical Carcinogenesis Branch in the Division of Cancer Cause and Prevention, NCI, died of cancer Jan. 22 at Bethesda Naval Hospital. He had served 23 years in the military before joining NCI in 1966 ... **Sylvia Zilber Edelstein**, 50, data processing section chief in the NINCDS Biometry and Field Studies Branch, died after a lengthy illness. She had been with NIH since 1963 ... **Dr. Frederick P. Ferguson**, 72, former program coordinator of the biophysics and Physiological Sciences Program, NIGMS, died of a heart attack while travelling in Oregon. He had retired in late 1987 ... **John E. Fletcher**, 73, former vice-president for public affairs of Merck & Co., Inc., and a past director of public information at NIH from 1949 until 1960, died Feb. 13 in Philadelphia of cancer ... **Dr. Henry Nobuyoski Fukui**, 64, director of the cataract program in the extramural and collaborative programs at NEI, died suddenly Mar. 6 ... **Dr. Abraham Goldin**, 76, a scientist emeritus with NCI and one of the pioneers in the use and design of cancer chemotherapy died of cancer on Aug. 5. He spent 40 years with NCI ... **Dr. Hyman Goldstein**, 79, a former chief of the biometrics branch of NINDB, died of a stroke Jan. 6, 1989, at Shady Grove Adventist Hospital ... **Jean Gilbert**, secretary to the NIH deputy director, died on Aug. 18. She had worked at NIH in Bldg. 1 for more than 19 years ... **Dr. Max Halperin**, 70, formerly of NHLBI, died of cancer Feb. 1. He was assistant chief and branch chief of NHLBI's Biometric Branch from 1966 to 1977. At the time of his death he was research professor of statistics at George Washington University and director of its biostatistics center ... **Dr. John I. Hercules**, 63, a scientific project officer in the Sickle Cell Disease Branch of the Division of Blood Diseases and Resources, NHLBI, died of chronic hepatitis, Mar. 28 at the Clinical Center ... **Hope E. Hopps**, 62, a retired scientist and administrator at the Center for Drugs and Biologics, FDA, died of cancer Nov. 7 at George Washington University Hospital ... **Chaplain LeRoy G. Kerney**, 66, chief of the Clinical Center's Department of Spiritual Ministry, and chief of chaplains at NIH since 1963, died of a heart ailment on Jan. 13, 1989 ... **Dr. Takeo Kakunaga**, 51, a pioneer in studies on the genesis of human cancer, died of cancer on Sept. 21 in Osaka, Japan. From 1973 to 1984 he worked at NCI where he was chief of the cell genetics section, Laboratory of Molecular Carcinogenesis. He returned to Japan in 1984 ... **Dr. Marian Wood Kies**, 73, former chief of the section on myelin chemistry, Laboratory of Metabolism, NIMH, died Dec. 18 ... **Dr. Choh Hao Li**, professor and director, Laboratory of Molecular Endocrinology, University of California at San Francisco, died on Nov. 28, 1987. He had been selected as a Fogarty-Scholar-in-Residence and would have begun in May 1988 ... **Mike Levy**, 39, a health physicist with the Radiation Safety Branch, Division of Safety, since 1980 died as a result of a brain aneurysm on Jan. 9, 1989 ... **Alma Martinson**, longtime secretary to the chief of the Laboratory of Molecular Biology, NIDDK, died on Aug. 3 in New Port Richey, Fla. She had worked at NIH for 13 years prior to her retirement in 1982 ... **Rita Minker**, one of the original staff members of DCRT, died on Oct. 11. Illness had forced her to retire in April 1988, exactly 24 years after she joined NIH ... **Dr. Jack Orloff**, director of the Division of Intramural Research at NHLBI died of cancer on Dec. 6. He had been at NIH for 38 years. In October 1988 a scientific symposium was held at the institute to honor his accomplishments ... **Dr. Bertram Sacktor**, 66, chief of the Laboratory of Biological Chemistry at NIA's Gerontology Research Center in Baltimore for the past 20 years, died of an apparent heart attack July 8 in North Solomon, Me. ... **Dr. Norman E. Sharpless**, 72, a research chemist in the Laboratory of Chemical Physics, NIDDK, died of cancer Jan. 29, 1989. He had been at NIH for 51 years beginning in 1936 when he joined NIH's industrial hygiene division. He retired in 1988 ... **Dr. Michael B. Shimkin**, 76, formerly with NCI, died of a stroke, Jan. 16, 1989, at the Medical Center of California at San Diego. In a career that spanned five decades, Shimkin wrote more than 300 articles and books and was director of field studies for NCI ... **Mary Jane Talley** died June 4, after a year-long illness. She had worked as biologist at NCI for 35 years. For the last 6 years, she worked in the Laboratory of Mathematical Biology, NCI ... **Kirk Weaver**, a management analyst for NIDR, died of cancer on Feb. 4, one day after completing 30 years of federal service at NIH ... **Mary Lois White**, a dedicated member of the NIH community for 28 years, died last summer. At the time of her death she was working at the NIH Print Shop.

Special Events in 1988

The year 1988 at NIH included several special events. Three institutes celebrated their anniversaries—NICHD's the 25th and NIAID and NIDR both commemorated their 40th.

A new institute was announced—the National Institute on Deafness and Other Communication Disorders (NIDCD).

The ACRF Ampitheater in the Clinical Center was named in honor of Dr. Mortimer B. Lipsett. He died in 1985 having devoted 25 years to NIH as a biomedical investigator, physician and administrator. He served as director in three of NIH's components; the CC, NICHD and NIADDK.

In May the newly renovated conference room in NIDR's Bldg. 30 was dedicated to the memory of Dr. H. Trendley Dean, first director of NIDR, and a pioneer in establishing water fluoridation as a safe and effective means to prevent tooth decay.

In a ceremony that officially closed NIH's centennial observation, NIH director Dr. James B. Wyngaarden dedicated artist Louise Nevelson's last major outdoor sculpture—Sky Horizon—in front of the Clinical Center. On permanent loan to NIH, the artwork was purchased by Edwin C. Whitehead in commemoration of the NIH centennial.

Reflections *(continued from p. 9)*

challenging to see improvement in a biologics product, even though some people considered sterility testing mundane. But all these links make the whole.

Q: How have people at NIH changed over the years?
A: My impression is that there is now a greater interest in self-promotion than in public health. This may be due to pressure to publish or perish. I am also concerned about the number of authors on papers today. A dozen or more people may have their names on one paper, but it is not possible for all of them to be directly involved in the work. We used to be so small that each person was directly responsible for the research project.

Q: Could you comment on NIH's contribution to the United States, to the world?
A: NIH has been and still is a leader in medical research throughout the world. There are many examples I could cite, but smallpox eradication may be the best. Smallpox vaccine was in use long before the Biologics Control Act in 1902. The Hygienic Laboratory (forerunner of the NIH) was delegated the responsibility to carry out that Act. The first year, 1903, eight manufacturers were licensed to produce smallpox vaccine. The research at NIH has also contributed to the development of protective vaccines against other infectious diseases, such as poliomyelitis, measles, rubella, mumps, rickettsial infections, pertussis, meningococcus and *H. influenzae* meningitis. The field is now open for new types of vaccines with the rapid developments in molecular studies. Each pinnacle reached broadens our horizons.

Retrospectives from the *NIH Record*

Spring 1949

First Woman to Get M.D. from Georgetown

First woman graduate of Georgetown University's Medical School, Dr. Sarah E. Stewart, former NIH bacteriologist, will soon intern at the U.S. Marine Hospital on Staten Island.

With the benefit of a clinical background, Dr. Stewart hopes to resume her research work some day.

Spring 1959

Dr. Witkop Awarded Prize in Chemistry

Dr. Bernhard Witkop, Chief of the Laboratory of Chemistry, NIAMD, has been named winner of the 1958 Hillebrand Prize by the Washington Section of the American Chemical Society.

Spring 1969

Dr. Roth Wins Award from Maryland Academy of Science

The discovery that plasma insulin in man is composed of "big" and "little" insulin helped win for Dr. Jesse Roth, head of the section on Diabetes and Intermediary Metabolism, NIAMD, the Maryland Academy of Sciences' 1968 "Distinguished Young Scientist" award.

Spring 1979

NIH Authors, Papers Acclaimed Most Cited in Magazine Article

A recent article in the publication *Current Contents* on the most cited authors and most cited scientific papers shows that 45 of the 300 most cited authors were NIH intramural scientists.

CALENDAR

April

A "Symposium on the Molecular Basis of Disease" will be held on Thursday, April 27, in honor of Dr. DeWitt Stetten, Jr., NIH deputy director for science emeritus.

The symposium will be held in Masur Auditorium at the NIH Clinical Center from 8:15 to 11:45 a.m., sponsored by the Office of the Director, the Foundation for Advanced Education in the Sciences and the NIH Alumni Association.

Cochairmen will be NIH director Dr. James B. Wyngaarden, who will give the introduction, and Dr. J. Edward Seegmiller of the University of California, San Diego, who will give concluding remarks.

At 8:30, a lecture on "Molecular Approaches to Lysosomal Storage Disease: The GM2 Gangliosidoses" will feature Drs. Elizabeth F. Neufeld, Rachel Myerowitz and Richard Proia of the University of California, Los Angeles, and NIH.

Dr. Theodore Friedmann of UCSD will discuss "Approaches to Genetic Therapy of Metabolic and Neoplastic Diseases," at 9:10, followed by a coffee break at 9:50.

The symposium resumes at 10:10 with "Fibrinolysis, Proteolysis and Metastasis: The Cellular and Molecular Biology of Plasminogen Activation" by Dr. Thomas Gelehrter of the University of Michigan. He is followed at 10:50 by Harvard's Dr. Philip Leder speaking on "Development, Differentiation and the Cancer Problem."

For more information on the lecture, call the alumni office (301) 530-0567.

March—May

The DeWitt Stetten, Jr. Museum of Medical Research, in cooperation with the NIH Clinical Center Art Galleries, will mount an exhibit, "Design of Life," in the Mortimer B. Lipsett Auditorium Lobby, NIH Clinical Center, March 1 through May 30, 1989. Featuring the molecular art of scientific illustrator Irving Geis, the exhibit will include different media that have been used to represent protein structure, including molecular models and computer graphics. For further information, contact the museum's curator, Dr. Victoria A. Harden, (301) 496-6610.

For information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.

If You Are Not Yet A Member Of The NIHAA **[Clip and mail]**

TO:
Foundation for Advanced Education in the Sciences
NIHAA
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National Institutes of Health
Bethesda, Maryland 20892

or to NIHAA Office
9101 Old Georgetown Rd.
Bethesda, MD 20814

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[Years]

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Full Name: _____

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Place of Employment: _____

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City, State, and Zip Code: _____ **Telephone:** _____

Memberships
Please indicate membership desired:

Type	Annual Dues
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NIH Alumni are people who have worked or studied at NIH. Present NIH staff are invited to join as associate members.

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