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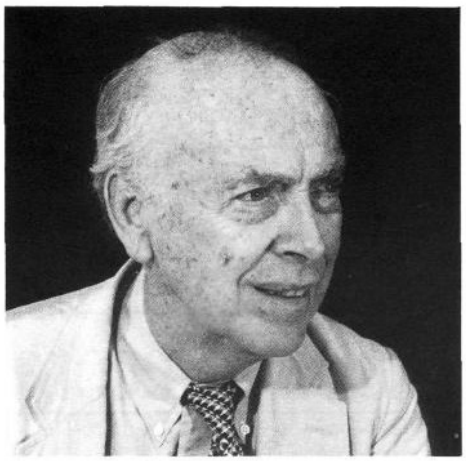
The NIH Record

Watson To Head NIH Human Genome Research

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.

"At last we can find out what DNA is like," he said, expressing satisfaction that he will be a leader of the national effort to learn what messages are concealed in the chemical structure he defined in 1953 with Nobel co-winners Francis Crick and Maurice Wilkins.

Two reasons underlie his excitement, Watson said. "From a practical point of view, we will gain the knowledge we need to conquer baffling diseases. And as a scientist, I am interested in DNA, which is really the message of life. It is what gives all organisms their uniqueness."



Dr. James D. Watson

Watson estimated that it will take 15 years and about $200 million per year to map and sequence the human genome, an effort he said "will be a benefit to the whole world."

The human genome project is a complicated task that involves determining the molecular sequence of 3.5 billion individual coding units that comprise human chromosomes. The effort is expected to have profound impact on the prevention and treatment of more than 3,500 human diseases known to have a genetic origin; it will also help researchers understand such illnesses as depression, hypertension and cancer, all of which have genetic components.

"Today, genetic research is the dominant theme that unites all of the biological sciences," said Dr. James Wyngaarden, NIH director, who announced Watson's appointment on Sept. 26. "There seems to be universal agreement that there is a need for the information that the genome can provide."

Thus far, scientists have "mapped" or pinpointed the specific chromosomal location of the genes associated with such genetic diseases as Duchenne muscular dystrophy, cystic fibrosis and Huntington's disease.

Sequencing the genome will require better technologies than are currently available, Watson said. It refers to identifying, in their correct order, the 3.5 billion subunits of DNA

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Dental Scientists Unlock Secrets of Laminin, A Key Component of Basement Membranes

By Susan Johnson

Dental researchers have determined the complete structure of laminin—the largest protein ever sequenced. Scientists believe the protein's structure holds secrets that could be exploited to repair nerve injuries, prevent cancer metastasis and manufacture artificial blood vessels and glands.

Drs. Makoto Sasaki and Yoshihiko Yamada, working in the NIDR Laboratory of Developmental Biology and Anomalies, determined the order in which 6,555 amino acids are arranged in three chains to form the cross-shaped laminin molecule. The project took 3 years.

"This is a major piece of work," said Dr. George Martin, who heads the NIDR lab. "Using conventional protein chemistry, it would take an entire laboratory about 20 years to work out the structure of a protein this large and complex."

Yamada, chief of the laboratory's molecular biology unit, and Sasaki, a visiting scientist from Japan, did not use conventional protein chemistry to map the amino acid sequence of laminin. Several laboratories, including their own, had tried that approach but it didn't work. Instead the two scientists cloned the genes that encode laminin and, from their sequences, deduced the order of amino acids in the molecule.

Laminin is the subject of intense interest in a number of research laboratories around the world. The protein, which was discovered in

(See LAMININ, Page 4)

'NIH's Finest Hour'

Nirenberg's Triumph Recalled at Museum Exhibit Opening

It is not every day that the subject of an historical exhibit is present for the opening of a show in his honor. But that is precisely what happened Sept. 20 when Dr. Marshall Nirenberg, cowinner of the 1968 Nobel prize in medicine, spoke at a ceremony honoring his scientific achievements.

The occasion was a ribbon-cutting ceremony at a new Nirenberg exhibit in the DeWitt Stetten Jr. Museum of Medical Research, located in the elevator lobby of Bldg. 10.

At present the chief of NHLBI's Laboratory of Biochemical Genetics, Nirenberg was the leader of a team of scientists at NIH that deciphered key elements leading to an understanding of the genetic code 25 years ago in Bldg. 10.

"There were about 20 postdocs in the laboratory working on this problem during a period of about 7 years," recalled Nirenberg, sidestepping the credit. "People from all over

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Playwright Martin Wrestles With AIDS, Strong Women

By Carla Garnett

The latest heroine to fall from his pen is relatively young, a professional at the height of her career, who made her debut at the recent preproduction reading of a new play called *Transgenesis*. Inclined to be strong-willed, determined perhaps to a fault, and feisty, this heroine has a lot in common with some other protagonists authored by the same hand.

The hand holding the pen belongs to daytime NIDDK molecular biologist, nighttime locally acclaimed playwright Dr. Robert G. Martin, whose work has recently won him a nomination for best playwright at the 8th Washington Theatre Festival.

Hailed by its handbills as "a drama of the politics of science," *Transgenesis* is the story of an NIH researcher who, after making the most important advance in the history of AIDS, decides, for moral reasons, to delay sharing her findings with the rest of the scientific community.

"She has a very foul mouth, she's very driv-

(See MARTIN, Page 8)

WATSON

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that make up the human genetic archive.

"We now have a little bit of the message that DNA has to tell us," said Watson, "and it has been extraordinarily informative. Imperfections in genetic instructions will be seen to underlie more and more diseases."

Watson will head a small planning and coordination office at NIH of about five employees and will chiefly be responsible for planning the mapping and sequencing strategy, a collaborative effort that will involve other federal agencies (chiefly the Department of Energy), industry and foreign countries.

"We want to do the job as quickly and efficiently as possible," he said, adding that he has great faith in the NIH tradition of peer-reviewing projects before granting funds.

"I think NIH has shown that it knows how to handle this type of science," he said.

A 12-member advisory committee whose members have not yet been named will help Watson steer the genome effort, which has been funded at $21 million in FY 1988 and $32 million in 1989. An Office of Human Genome Research has also been established at NIH; the staff will be named shortly.

The genome project is "a goal that I simply didn't have in mind back in 1953," Watson related. "It would have seemed like science fiction then to propose such an idea. Francis (Crick) and I used to be called the fathers of DNA research, but I think now we have to be considered the grandfathers. It is unbelievable how fast science has been able to come to grips with problems previously considered unsolvable."

Now age 60, Watson confesses he is more disease-oriented than he was as a younger man. "I'm probably someone who worries too much," he admitted. "We can worry less if we get the message from DNA."

Watson said the genome project "is not an ultimate goal, but a tool" for getting at the basis of cancer, mental illness and other diseases. He stressed that confidential knowledge gleaned from peering into human genes would be kept private, and that no one individual's genes would become fodder for a full-scale genetic investigation.

"I would hate to see the presidential candidates have to put their DNA out for screening," he quipped. "It's important for people to see this project as a benefit to mankind, not as something scary."

Watson said part of his role will be to foster international cooperation in the genome project, with the U.S. contributing an estimated one-third of the cost, and Europe and Asia splitting the other two-thirds.

The American public needs much more education about DNA and its importance, Watson continued. He also lamented the risky nature of making a living by doing science: "There is an inflation in the amount of extraordinary science being done in the U.S. Unfortunately there is no corresponding inflation in science salaries."

Born in Chicago, Watson received a B.S. (1947) from the University of Chicago, and a Ph.D. (1950) from Indiana University, both in zoology. Following fellowships in Copenhagen and Cambridge, England, he spent 2 years at the California Institute of Technology. In 1955 he joined the faculty of Harvard University, becoming a professor in 1961. He resigned from Harvard in 1976 to become full-time director of Cold Spring Harbor Laboratory.

Beside the Nobel prize, he has won the Presidential Medal of Freedom, 14 honorary doctorate degrees and membership in the Royal Society of London, American Philosophic Society, Danish Academy of Arts and Sciences, the U.S. National Academy of Sciences, and the American Academy of Arts and Sciences. His professional memberships include the American Society of Biological Chemists and the American Association for Cancer Research. □

Normal Volunteers Needed

The Developmental Endocrinology Branch, NICHD, is recruiting healthy women, ages 30 to 50, for research studies. Candidates must have regular menstrual cycles, be free of any serious medical illness and should not have taken birth control pills for the past 3 months. Studies last for one menstrual cycle and require frequent blood drawing, one outpatient endometrial biopsy and one injection of the hormone hCG. Compensation is available. For further information, please call 496-4244. □

NIDR Needs Volunteers

The National Institute of Dental Research seeks volunteers, ages 35–55, to participate in a study to evaluate a new drug for the treatment of periodontal (gum) disease. Volunteers must have moderate to severe loss of tooth supporting bone. Volunteers should not have any uncontrolled chronic diseases such as diabetes and should not currently be wearing any removable dental appliances.

Nonsurgical treatment for periodontal disease will be provided to all participants. For more information, call 496-6626.□

Fredette West has recently joined the NLM staff as budget officer. She began her career at NIH as a chemist and was chosen in 1981 for NIH's management intern program. In this program she had training assignments in contracts, budget, general administration/program analysis and legislation. During the legislation assignment, she served as a fellow to Rep. Joseph Early. Following her internship, she worked for several years as a program analyst with NIAID and later as a budget analyst with NEI. Before coming to NLM, she worked with the House Committee on Appropriations staff of Rep. Louis Stokes. West replaces Mark Rotariu who left the library in April for a position with NCNR.

The NIH Record

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Pickett Retires as DRR Director

Dr. Betty H. Pickett, director of the Division of Research Resources for the past 6 years, retired recently after 31 years of federal service.

Dr. James B. Wyngaarden, NIH director, said at a Stone House breakfast he hosted honoring Pickett that she had been an "outstanding director," offering "distinguished leadership" to the division since 1982.

A native of Rhode Island, Pickett received her academic training at Brown University, earning an A.B. degree magna cum laude in 1945 and a Ph.D. in psychology in 1949. Among her numerous honors are the DHEW Distinguished Service Award in 1975, the Brown University distinguished graduate school award in 1978, the Harold M. Hildreth award from the American Psychological Association for outstanding contributions to psychology in the public service in 1979, and Senior Executive Service Outstanding Performance Awards for 5 of the last 6 years.

After receiving her Ph.D. in 1949, Pickett became assistant professor of psychology at the University of Minnesota, followed by 1 year in the same post at the University of Nebraska, and 1 year as a lecturer in psychology at the University of Connecticut. From 1953 to 1958, she was a professional associate in psychological sciences at the Science Information Exchange of the Smithsonian Institution, Washington, D.C.

Her NIH career began in 1958 as executive secretary of the behavioral sciences study section in the Division of Research Grants. Later, she was appointed chief of the cognition and learning section, Division of Extramural Research Programs, NIMH. From 1968 to 1978, she served as deputy director of that division, receiving the DHEW Superior Service Award for her work.

From 1974 to 1975, she was director of the Division of Special Mental Health Programs for which she received the DHEW Distinguished Service Award for her dedication to "promoting and improving the quality of mental health research programs."

In 1977, she moved to the National Institute on Aging as associate director for the Extramural and Collaborative Research Program. In 1979, Pickett became deputy director of NICHD, and then acting director of that institute from July 1981 to July 1982.

Pickett said: "I remember my NICHD years as offering me a tremendous opportunity to have an impact on the lives of American women and children, touching on such important areas as mental retardation, human learning research and a wide range of problems in maternal and child health."

Dr. Betty Pickett

In October 1982, she was appointed director of DRR—the component of NIH responsible for creating, developing and making available a broad array of centers, resources and institutional support required by the biomedical research activities of the NIH and other research components of the PHS.

"Twenty-six years ago DRR was given eight clinical centers, an animal program, and several embryonic computer resources. Over the years, we have developed this collection of resources into a major program of research facilities and environments," said Pickett. "I am also proud of the division's innovations in developing such significant human vehicles for biomedical research as specialized training for minorities.

"The division's strength has lain in its diversity and its continued ability to provide the types of resources essential to improving human health research," she noted.

"I am proud of my 6 years as DRR director, covering a period in which we consistently provided the NIH extramural community with vitally needed environmental and human resources," Pickett concluded.

The retiring DRR director plans to divide her time between her homes in Washington, D.C., and Surry, Me. □

Paid Volunteers

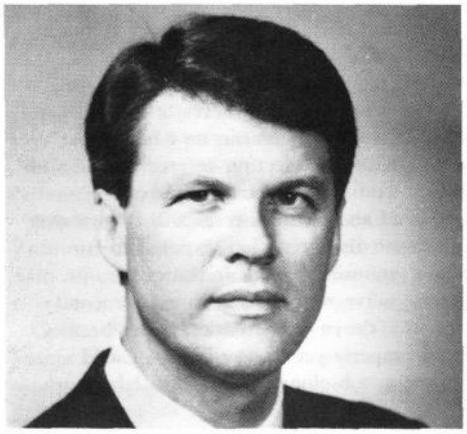
Volunteers ages 18 to 40 are needed to participate in NIAAA research experiments. They must have at least 2 brothers/sisters and both parents also available and willing to volunteer for study.

For further information, call Dr. Mary-Anne Enoch, 496-7513. □

Stetten Lecture To Highlight DNA Cleavage Techniques

Many techniques of molecular biology, including recombinant DNA technology, rely on the ability of enzymes to recognize specific sequences of DNA and cut the double-stranded DNA molecule at those sites. However, the enzymes currently in use recognize relatively small sequences of four to eight base pairs in length. Scientists would like to have molecules that can recognize, bind to, and cut much larger DNA segments—12 to 15 base pairs, for example—so that they can locate specific sequences of genetic material with far greater accuracy than is now possible. The availability of such molecules could have applications in gene mapping, chromosome analysis and gene isolation.

With support from the National Institute of General Medical Sciences, Dr. Peter B. Dervan, Bren professor of chemistry at the California Institute of Technology, has made



Dr. Peter Dervan

significant advances toward this goal. Using the tools of chemistry and molecular biology, he is defining the mechanisms underlying the sequence-specific recognition and cleavage of DNA. Among his achievements is the synthesis of a 15-base-pair DNA molecule that, when linked to iron, cuts DNA at a specific site.

Dervan will discuss his research at the DeWitt Stetten, Jr. Lecture on Wednesday, Oct. 12. The lecture, entitled "Sequence-Specific Recognition of DNA: A Synthetic Approach," will be held in Masur Auditorium, Bldg. 10, at 3:30 p.m.

Sponsored by NIGMS, the lecture honors Dr. DeWitt Stetten, Jr., the third director of the institute, for his strong commitment to basic research and his special encouragement of fundamental studies in genetics and cellular and molecular biology. □

LAMININ

(Continued from Page 1)

Martin's laboratory by Dr. Pamela Robey in 1979, is found throughout the body in structures called basement membranes.

These extracellular membranes surround many body tissues, including blood vessels, epithelial tissues, muscles and peripheral nerves. They give form to the tissues and hold their cells in place.

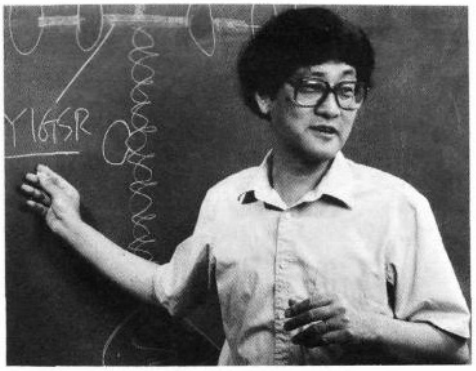
But basement membranes do more than physically contain and separate tissues. They help embryonic cells differentiate into specific tissues and maintain normal cell function and shape throughout life. They have a remarkable ability to stimulate growth and regeneration of peripheral nerves. Basement membranes also play a critical role in cancer metastasis, since tumor cells must breach them in order to spread.

Laminin is responsible for much of the biological activity of basement membranes, which is why medical researchers are so interested in the molecule. "There are many ways you could use laminin once you overcome the technical difficulties of source, purity and bioavailability," said Martin.

Its role in promoting nerve cell growth, for example, suggests laminin may have great potential for reconnecting severed nerves. Cell culture studies have shown that both peripheral and central nerves will regrow over significant distances when exposed to laminin. While preliminary work indicates laminin may increase nerve regeneration in experimental animals, "the *in vivo* situation hasn't been tested properly yet," according to David Greatorex, a biologist in Martin's laboratory. "These are not easy studies to do and to evaluate," he said.

One obstacle to clinical studies of laminin is obtaining the protein in a usable form. "You can't manufacture a molecule this large in bacteria," said Dr. Hynda Kleinman, chief of the cell biology section in the NIDR laboratory. The only source of laminin in the body is the basement membranes, ultrathin structures that are very hard to extract. In fact, basement membranes were a scarce material in research laboratories until the mid-1970's, when Martin's group discovered a mouse tumor that produces large quantities of the material. "But you can't give mouse laminin to a human because of problems with immunological rejection," Kleinman noted.

To overcome this obstacle, researchers are trying to pinpoint the particular fragments within laminin that control its various biological functions. These smaller parts of the molecule can then be synthesized and studied. Already, Martin and his colleagues have located a site on laminin critical in the process of cancer metastasis.



Dr. Yoshihiko Yamada and his NIDR colleagues found that YIGSR, a peptide within the laminin molecule, plays a critical role in cancer metastasis.

In order to spread beyond the primary tumor site, cancer cells must cross basement membranes. Most tumor cells cannot penetrate this barrier, and do not metastasize. Malignant cells, however, are able to attach to and degrade basement membranes, giving the cancer cells access to the circulation and healthy tissues.

Malignant cells attach to basement membranes by binding to laminin. The NIDR researchers have identified the precise fragment of laminin—a five-amino-acid peptide—to which tumor cells attach. They synthesized the peptide and tested its ability to block tumor metastasis in laboratory mice.

A control group of mice injected with highly malignant melanoma cells developed numerous lung metastases. Mice who received the peptide along with the melanoma cells, however, developed few or no lung metastases. The manufactured peptide acted as a decoy, the researchers concluded, engaging the laminin receptors on the cancer cells, thus blocking the cells' attachment to basement membranes. Instead of metastasizing, the melanoma cells died in the circulation. "A peptide with this kind of activity could be useful for inhibiting metastasis during cancer surgery or during the reinfusion of bone marrow into cancer patients," said Martin.

The NIDR investigators and many other research groups are now looking for other active sites on laminin, including the region that controls nerve regeneration. "This approach of identifying and synthesizing the biologically active regions of macromolecules represents a whole new development in biology," said Martin. □

NHLBI Sponsors Research Day

The National Heart, Lung, and Blood Institute will sponsor a Research Day on Friday, Oct. 21, to honor Dr. Jack Orloff, NHLBI's former scientific director.

The meeting will be held from 8:30 a.m. to 5 p.m. in Masur Auditorium in the Clinical Center. Dr. Claude Lenfant, NHLBI director, will open the day's activities. Dr. Edward Korn, acting scientific director, will be the moderator.

The presenters and their topics will include:

- E. Stadtman, Laboratory of Biochemistry, "Role of Mixed-Function Oxidation Reactions in the Age-Dependent Accumulation of Abnormal Enzymes in Neutrophil Function and in Oxygen Toxicity"
- R. Adelstein, Laboratory of Molecular Cardiology, "Regulation of Contractile Proteins by Phosphorylation"
- R. Crystal, Pulmonary Branch, "Alpha 1-Antitrypsin and Neutrophil Elastate: Genes, Mutations and Human Disease"
- A. Nienhuis, Clinical Hematology Branch, "Transfer and Expression of Genes in Hematopoietic Cells"
- M. Nirenberg, Laboratory of Biochemical Genetics, "Four New Drosophila Homeobox Genes"
- R. Balaban, Laboratory of Cardiac Energetics, "The Control of Mitochondrial Respiration in Vivo"
- M. Burg, Laboratory of Kidney and Electrolyte Metabolism, "Sorbitol, Osmoregulation and the Complications of Diabetes"
- B. Brewer, Molecular Disease Branch, "The Molecular Basis for the Genetic Dyslipoproteinemias"

The scientific symposium will honor Orloff and pay tribute to his record of achievements during a period of continuous service to the institute that began in 1950. When he arrived at NIH he joined the staff of the Kidney and Electrolyte Metabolism Laboratory. He became its chief in 1963, a position he held until 1974 when he was designated director of the Division of Intramural Research.

Orloff's contributions as an investigator in the K and E Laboratory included development of the isolated, perfused tubule for studies of renal physiology, elucidation of the mechanism of urine acidification, and one of the first demonstrations of the second messenger role of cyclic AMP. As NHLBI's scientific director, Orloff had a major impact on the Division of Intramural Research.

Throughout NHLBI Research Day, posters will be on display and their authors will be present between noon and 2 p.m. The scientific sessions are open to the public and no registration is needed. □

Soluble CD4 Linked to Toxin, Potential New AIDS Treatment

By Sandy Hecker

Working together, scientists at NIAID and NCI have produced a recombinant protein called CD4-*Pseudomonas* toxin that attaches to and kills cells actively producing the human immunodeficiency virus (HIV), the cause of AIDS. Previously, in the laboratory, soluble forms of CD4, the receptor by which HIV enters cells, have shown promise for treatment of AIDS by preventing the virus from entering cells. The first clinical trials of CD4 began in August.

In this new development, scientists linked soluble CD4 to a toxin. The researchers are hopeful that CD4-toxin will have a therapeutic effect in AIDS patients by eliminating HIV-infected cells that otherwise would produce more virus as well as potentially harmful viral products. The laboratory findings look promising, but further laboratory and development work remain before studies with patients can begin.

To gain entry into human cells, which the virus must do to replicate or multiply, HIV attaches to CD4, a receptor found on the surface of certain cells including critical immune system cells. The surface, or envelope protein of HIV, called gp120, binds to CD4 on a cell and then the virus enters the cell. Once infected, the cell becomes an HIV factory, manufacturing all of HIV's components including gp120.

As the gp120 collects on the infected cell's surface, new viruses assemble and leave the cell. These new viruses can then spread HIV infection to healthy CD4 containing cells. In addition, the gp120 on the surface of an infected cell can cause the cell to attach to and fuse with uninfected cells that have CD4 receptors, thus providing another route for spread of HIV infection in the body.

Paving the way for the currently reported findings, scientists have genetically engineered soluble CD4 that attaches so tightly to gp120 on the virus or to gp120 on the surface of the infected cell that it prevents gp120 from binding to natural CD4 on healthy cells. Scientists theorize that soluble CD4, by acting as a "decoy," might limit spread of infection in HIV-infected people.

In order to lessen chances that laboratory-made soluble CD4 would interfere with natural CD4 function, scientists wanted to use only the smallest portion of cellular CD4 to which HIV attaches. In June, at the Fourth International Conference on AIDS held in Stockholm, Dr. Edward A. Berger, senior scientist in NIAID's Laboratory of Viral Diseases, reported that he and his colleagues Drs. Tamio Mizukami and Thomas Fuerst had identified the portion of CD4 to which HIV attaches. The researchers accomplished this by analyzing variants of the natural CD4 protein. These variants were produced by genetic engineering techniques using a CD4-producing vaccinia virus system developed under the direction of Dr. Bernard Moss, chief, LVD.

Can cells already infected with HIV be eliminated from the body using soluble CD4 technology? The NIAID scientists considered that by linking soluble CD4 to another protein that is toxic to cells, the CD4 component would target the toxin to seek out and kill HIV-infected cells with gp120 on their surfaces. Healthy uninfected cells with no gp120 would be spared.

With their CD4 data in hand, the LVD scientists turned to their colleagues at NCI. Drs. Ira Pastan and David FitzGerald of NCI's Laboratory of Molecular Biology have been developing modified toxin conjugates as therapeutic agents for cancer. Using a variety of techniques including genetic engineering, the NCI scientists have linked all or portions of a bacterial toxin called *Pseudomonas* exotoxin A to a variety of targeting proteins including monoclonal antibodies that are tailored to deliver the toxin to and kill specific cancer cells. These "targeted toxins" are currently in clinical trials at NIH with ovarian cancer patients.

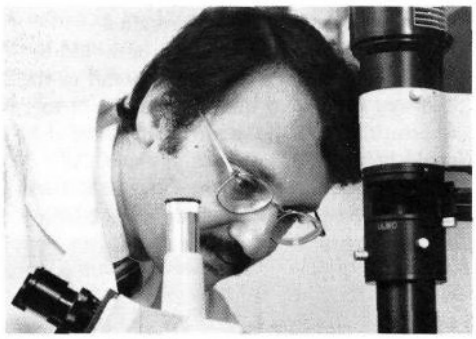
In the newly reported CD4-toxin research, NCI's Dr. Vijay Chaudhary, a senior scientist in Pastan's laboratory, genetically engineered the bacterium *E. coli* to produce a hybrid protein called CD4(178)-PE40 (CD4-*Pseudomonas* toxin). This protein contains the portion of CD4 that attaches to HIV gp120 linked to the portion of the toxin that kills cells. Because it binds to gp120 on the surface of infected cells, CD4-toxin acts like a self-guided missile that searches out and destroys only cells that are infected with HIV and actively producing gp120. The scientists have demonstrated highly selective killing of HIV-infected cells in culture, suggesting that this novel derivative of soluble CD4 may prove to be a potent weapon for treatment of AIDS.

Future work will include continued testing of the effect of the soluble CD4-toxin recombinant protein on different types of normal and HIV-infected cells in cell culture. One question is whether all HIV-infected cells have gp120 on their surfaces and will be targeted. The researchers are currently working to obtain larger quantities of the recombinant CD4-toxin protein that will be necessary for testing in animals and humans. □

CIBA-GEIGY/Drew Award To HIV Researchers

NCI Drs. Samuel Broder and Robert C. Gallo, along with Dr. Luc Montagnier of the Institut Pasteur in Paris, are recipients of this year's CIBA-GEIGY Drew Award in Biomedical Research.

The scientists, chosen for their research on human immunodeficiency virus, will lecture at the Frontiers in Biomedical Research symposium cosponsored by CIBA-GEIGY and Drew University in Madison, N.J., on Oct.

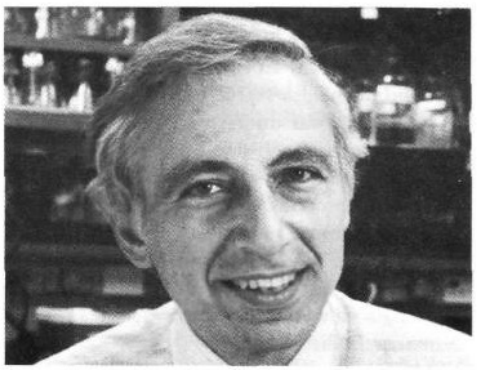


Dr. Samuel Broder

19. They will each receive a cash stipend of $2,000 and a commemorative plaque. The topic of the 12th annual symposium is "Human Immunodeficiency Virus: Biology, Pathogenesis and Treatment."

Broder will present his research on long-term antiretroviral therapy in patients with HIV infections. He is currently the associate director of NCI's Clinical Oncology Program.

Gallo, chief of the NCI Laboratory of Tumor Cell Biology, will lecture on the role



Dr. Robert Gallo

of human retroviruses in malignancies, in the central nervous system and in AIDS. In 1977, Gallo was honored as the first recipient of the CIBA-GEIGY Drew Award and is the only person who has been twice honored.

Montagnier's research presentation will be on the viral pathogenesis of AIDS. He heads the viral oncology unit at the Institut Pasteur. □

NIRENBERG

(Continued from Page 1)

NIH helped in every way. That's very, very obvious I think."

Among those who pitched in were Drs. Maxine Singer and Leon Heppel, whom Nirenberg labeled "true experts in nucleic acid enzymology," and Dr. Robert Martin of NIDDK.

Also essential to Nirenberg's discovery was a guest worker from Israel whose laboratory was located a floor below Nirenberg's.

"I used to go down to Leon Heppel's laboratory if I had a question," recalled Nirenberg. "Most of the time he would be busy working and I would just stand in the doorway and watch him. I didn't want to interrupt. One day I went down to see if he could help me, but he wasn't there. A postdoc, Michael Sela, was in the lab. I was trying to find out what made phenylalanine soluble."

It turned out that Sela was probably the only person in the world who knew what solution was necessary; he had created the reagent once by mistake.

Dr. DeWitt Stetten Jr., now NIH deputy director for science emeritus and the man who hired Nirenberg at NIH some 31 years ago, recalled the first time the two met.

"I met Marshall at a meeting in Chicago," he said. "It was a rainy day and we had gone for a walk. We ducked into a crummy coffee house and there he unloaded on me his dream of the future of biology."

Stetten was sufficiently impressed to invite Nirenberg to join him in the National Institute of Arthritis and Metabolic Diseases.

"He selected his own problems rather than those I set before him," Stetten remembers. "I thought that was an example of his good taste and judgment."

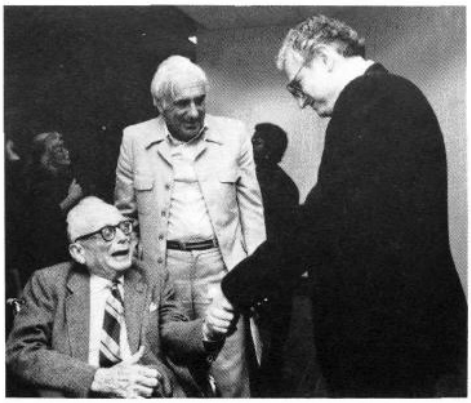
Nirenberg was interested in measuring protein synthesis in cell-free preparations and in identifying the codons that directed the manufacture of proteins. It was not very long before he became successful.

"Once the way was shown, the wolves came out of their cages and the battle was on," said Stetten, reviewing early scientific reaction to Nirenberg's discoveries.

"All at once the scientists from all of the institutes rose to the challenge," said Stetten. "This one they (competitors in other labs) weren't going to take away from us."

Stetten said the campus was galvanized in its effort to help Nirenberg.

"This scientist had an enzyme, this one had a peptide, this one had a trinucleotide, this one had an idea. Everyone pitched in. The only phrase adequate to describe what happened is one given by that great maker of adequate phrases, Winston Churchill—'This was our finest hour.'"



Dr. DeWitt Stetten Jr. (1) greets Dr. Marshall Nirenberg at the opening of an exhibit marking the 25th anniversary of Nirenberg's Nobel prize-winning research uncovering the genetic code. Stetten was Nirenberg's first mentor at NIH, bringing him here in 1957 to what was then NIAMD.

Nirenberg cuts the ribbon opening an exhibit in the DeWitt Stetten Jr. Museum of Medical Research devoted to his groundbreaking research on the genetic code. The exhibit is located in the north corner of the main elevator lobby in Bldg. 10.

Stetten also recalled a day when Nirenberg's father, visiting Marshall from his home in Florida, dropped by NIH to see how his son was doing.

"His father's final question before leaving my office was, 'Can he make a living doing this (research)?' I told him he wouldn't make much of a living, but that he would make a living."

Also joining in the ceremony honoring Nirenberg were Dr. James Wyngaarden, NIH director, and Dr. Joseph E. Rall, NIH deputy director for intramural research, who said the exhibit "honors what is probably the greatest achievement in NIH history."

Following the opening of the exhibit, which was organized by museum curator Dr. Victoria A. Harden, a Science Writers Seminar on "Molecular Genetics and Medicine 25 Years After Breaking the Genetic Code" was held in Lipsett Auditorium featuring Nirenberg and three other investigators. □

Patent Policy Briefing

The NIH patent policy board training subcommittee has scheduled a briefing for scientists and administrators on current patent policy information. The session is scheduled for Wednesday, Oct. 12, at 1:30 p.m. in Lipsett Auditorium, Bldg. 10.

The 2-hour briefing, which is tailored specifically for the NIH scientific community, will focus on the Federal Technology Transfer Act of 1986. This law is designed to encourage government scientists to establish cooperative research and development agreements with industry and to share in any royalties that may result. Key topics addressed in the informative briefings include: invention reports; domestic and foreign patents; licenses; cooperative research and development agreements; material transfer agreements; and royalties.

Participants will receive a briefing notebook containing NIH patent policy, relevant forms and other information describing the patent process. For further information, contact Doris Dorin, 496-6211. □

Coma Video To Be Reshown at NIH

In response to requests, NINCDS will represent *Surviving Coma: The Journey Back*, a poignant video about young adults' experiences during and following coma. The hour-long program will be shown at noon according to the following schedule:

Wednesday, Oct. 12
Bldg. 1, Rm. 114
Bldg. 31, 8th Fl. Conf. Rm.
Federal Bldg., Rm. B1–19

Friday, Oct. 14
Bldg. 36, Conf. Rm. 1B–13

Thursday, Oct. 20
Bldg. 10, Lipsett Auditorium

This video was produced by the Sunny von Bulow Coma and Head Trauma Research Foundation in New York and has been shown on public television. □

Symposium on Disaster Readiness

A symposium titled "Disaster Preparedness: A Military Imperative," will be held Oct. 22–23 in Masur Auditorium, Clinical Center. Sponsored by the U.S. Army Reserves, it is the sixth annual symposium for health professionals. For more information or to register, contact Mary Roberts, 593-9595. □

Hoofnagle To Head NIDDK Digestive Disease Division

Dr. Jay H. Hoofnagle, a world-renowned expert in hepatitis, has been appointed director of the Division of Digestive Diseases and Nutrition (DDN).

A federal scientist for the past 16 years, Hoofnagle has been a senior investigator in NIDDK's liver diseases section since 1976 and that institute's acting clinical director since 1986.

"Dr. Hoofnagle brings a rare combination of qualities to this position," says Dr. Phillip Gorden, director, NIDDK. "He's a scientist of exceptional understanding, vision, creativity and productivity. He is a highly effective and respected administrator. He is also an excellent physician and an inspiring teacher whose counsel and advice are genuinely valued by his patients, colleagues and others who know him."

As DDN director, Hoofnagle will coordinate NIDDK's programs of research grants, research training and career development and contract-supported research in the fields of digestive diseases and nutrition. The division leads nationwide research programs in diseases of the liver, biliary tract, pancreas and other gastrointestinal disorders, including problems of neuroendocrinology, motility, immunology, digestion, nutrient metabolism, obesity, eating disorders and energy regulation.

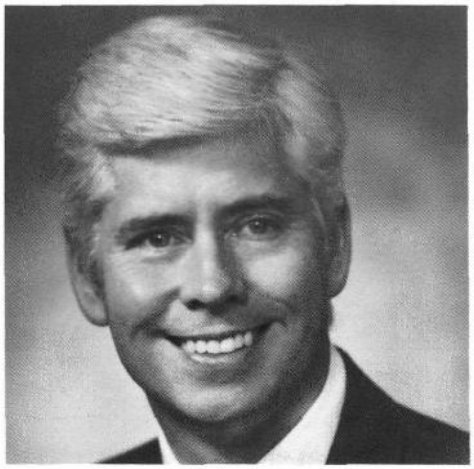
Hoofnagle replaces Dr. Vay Liang W. Go, who recently joined the University of California, Los Angeles School of Medicine as executive chairman and professor of the department of medicine.

After receiving his M.D. degree from Yale Medical School, Hoofnagle completed an internship and residency in internal medicine at the University of Virginia Hospital. He began his federal career as a staff associate in the hepatitis branch of the Food and Drug Administration, where he became acting director in 1974.

He resumed clinical training as assistant chief resident in medicine at the Veterans Administration Hospital in Washington, D.C. in 1975, where he subsequently trained for 2 additional years in gastroenterology and hepatology.

During his training at the VA Hospital, Hoofnagle collaborated in pioneering research into the nature of acute hepatitis and helped evaluate new laboratory tests then being developed for the disease. He developed a test for hepatitis B, which depended on establishing the presence of the antibody to hepatitis B core antigen.

He continued this work when he came to NIDDK's liver diseases section, where his investigations focused primarily on chronic



Dr. Jay Hoofnagle

hepatitis B, chronic non-A, non-B hepatitis, autoimmune chronic active hepatitis and primary biliary cirrhosis. At NIH, he successfully characterized the natural history and epidemiology of chronic hepatitis B and of chronic non-A, non-B hepatitis and developed approaches to treating those diseases.

Hoofnagle's recent research has largely focused on therapeutic trials and laboratory studies of the pathogenesis of liver diseases. In 1986, he and his colleagues in the liver diseases section reported evidence of the efficacy of long-term interferon therapy in controlling chronic non-A, non-B hepatitis in certain patients. On the basis of these findings, multicenter, controlled trials of alpha-interferon in patients with chronic hepatitis B and non-A, non-B hepatitis are being conducted.

Hoofnagle has broad clinical and research experience in liver, gastrointestinal and nutritional disorders. He has authored and coauthored more than 155 articles and book chapters on hepatitis, primary biliary cirrhosis and other topics. He is associate editor of the journal *Hepatology,* and councillor of the American Association for the Study of Liver Disease. He is board certified in gastroenterology and is a member of the American Gastroenterological Association and of the American Society for Clinical Investigation.
—Jim Fordham □

Meeting Calendar Available

The 1988–1989 Calendar of Biomedical Meetings, which includes meetings sponsored by NIH as well as those of major medical societies and biomedical research associations, is available from the Division of Public Information, OD. To obtain a copy, call Bea D'Aguanno, 496-1766. □

Pineau Appointed Sign Language Interpreter

Antoinette (Toni) Pineau is the most recent addition to the Division of Equal Opportunity, OD. A certified sign language interpreter, she will interpret for deaf and hard-of-hearing staff, visitors and patients of NIH. She will also teach basic signing courses through the NIH Training Center for all interested personnel. In addition, she will act as a resource person regarding services for the deaf community.

A native of Bethesda, Pineau became interested in sign language at an early age after observing deaf people signing in the metro area. She later studied sign language at Gallaudet University, but her real education began when she entered the interpreter training program at Gallaudet and lived off campus with a deaf housemate. Pineau graduated from

Toni Pineau

Gallaudet in 1985 and went to work as a staff interpreter with Deafpride, Inc., a nonprofit, community-based organization that advocates for the rights of deaf people and their families.

Pineau is also a theater enthusiast and spent 4 years in Paris studying mime. While there she also took basic courses in French sign language and became involved in the deaf community.

After 3 years with Deafpride, Pineau is pleased to join the staff of the Division of Equal Opportunity. She may be contacted through the Equal Opportunity Branch, Handicap Program, Bldg. 31, Rm. 2B40, 496-9755 (TTY), or 496-6301 (voice). □

Carpoolers Sought

The NIH Parking Office is seeking employees who commute from the Springfield, Annandale and Burke, Va., areas and are interested in carpooling to the NIH main campus. Employees are requested to contact Larry Holman, NIH Parking Office, Bldg. 31, Rm. B3B04, 496-6851. □

MARTIN

(Continued from Page 1)

ing, very unforgiving," says Martin of his main character. "And I'm very fond of her."

The playwright also seems fond of creating characters he describes as "strong women" and featuring them in moral and emotional dilemmas. Three of Martin's last four plays have portrayed such women.

"I like to pit good against good," he says. "Situations where neither intention is inherently evil are more interesting than good versus bad."

Martin's first play, *Experiments*, a comedy about a young female doctor who challenges her personal and professional ethics by announcing premature research results, debuted a success in March 1987.

Rudolfo, written completely in Shakespearean-style blank verse, describes the exploits of a 14th century Venetian woman who, disguised as a man, fosters the secret attempts of Venice's elected duke to overthrow the country's republic and establish himself as sovereign prince. The play is based in part on real, historic events.

At closer glance, the similarities between Martin's 14th century Venice and America today add depth and humor to the work.

"She has a very foul mouth, she's very driving . . . and I'm very fond of her."
—Dr. Robert Martin

The difficulties of language almost overwhelmed the intent, however.

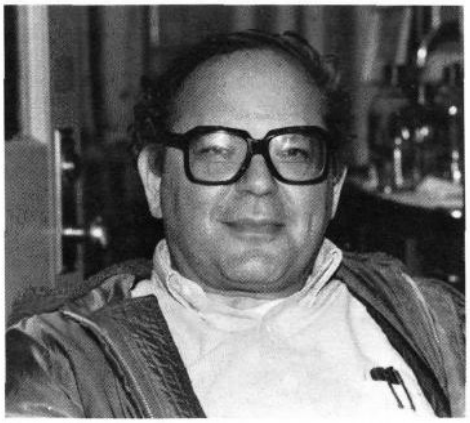
"*Rudolfo* was a challenge," says Martin. "First I wanted to see if I could do it. Obviously, it was virtually impossible for me to write in 14th century local Venetian dialect. I had a big problem: What convention could I use to make their language work for this play?"

The solution was to use current, contemporary slang and translate it into the rhythm of blank verse.

"It was very complicated," he admits. "The writing went so slowly."

During the writing of *Rudolfo*, Martin managed a two-week break to write the first draft of *Transgenesis*.

"I don't know where the inspiration came from," he says, laughing. "I can only give you a total disclaimer—the characters bear no relationship to anyone, living or dead."



Dr. Robert Martin

The playwright denies using real people for his characters. "A lot of people read or see my plays and say 'Hey, I know exactly who that is.' What they are really seeing is a personality type rather than any individual."

Unlike many other playwrights, Martin involves himself in the production of the plays as well as the creation.

"In the last production, I helped build the sets and ran the sound cues," Martin says. "I was in on almost every aspect of the production, except performance. That is not the usual procedure. Most playwrights write, and nothing else."

Already two of Martin's plays have reached production in the Washington theater community. Beside his premier effort, *Experiments*, his entry in the D.C. Theatre Festival, *Fenix Quartet*, recently played to sold-out audiences.

In *Quartet*, a group of string musicians loses one of its foursome and engages a young, recent graduate of Juilliard as a replacement, forcing the players to reevaluate their commitment to their art.

Again featuring a female as its protagonist, *Quartet* was recently nominated for best play by the D.C. Theatre Festival. A six-week revival of the play, jointly produced by two Washington area theaters, Source and Sanctuary, begins on Oct. 13.

Although *Transgenesis* is just starting the quixotic journey that every work must travel to get to production, Martin sees the initial reading as a crucial and helpful step in the right direction. Ultimately, he hopes this play will collect acclaims, but the road of the theater has its ups and downs.

"After a reading, the play gets thrown out to the audience which then critiques it," he explains. "Nothing is sacred. Often a person in the seats will pick up on something that the author missed—an awkward line or gesture. If I agree with the change, then it's rewritten into the story. The whole process is give and take." □

NIEHS Unfolds Arsenic Carcinogenicity Mystery

By Thomas Hawkins

Arsenic has been identified as a human carcinogen, but scientists have long been puzzled by its failure to cause cancer in laboratory animals. Now a study by scientists at NIEHS suggests the mechanism of arsenic carcinogenicity may be to induce the amplification of oncogenes (genes that trigger cancer under special circumstances). This oncogene amplification often occurs late in the development of cancer that occurs in multiple stages—initiation, promotion and progression. Arsenic may act in sequence, after initiator and promoter carcinogens, to serve as what the researchers call a "tumor progressor."

The study, conducted in NIEHS' Laboratory of Molecular Carcinogenesis, was published July 1 in *Science*.

The authors point out that human exposure to inorganic arsenic compounds in drugs, drinking water and occupational settings is associated with increased risk of skin, lung, and possibly liver cancer, yet little evidence exists for the carcinogenicity of arsenic in animals.

In the study, researchers found that two arsenic salts, sodium arsenite and sodium arsenate, are potent enhancers of dihydrofolate reductase (DHFR) gene amplification in cells in culture. Treatment of cells with the arsenic salts induced dose-dependent increases in the number of cell colonies showing gene amplification. The authors point out that a similar type of gene amplification is present in many human tumors.

The findings in this study are important both in defining the difference between carcinogenic activity in humans and rodent laboratory animals and in suggesting productive directions in the study of the mechanisms by which cancer occurs in both animals and humans.

The authors conclude, "since oncogene amplification has been shown in some tumors to correlate with the degree of progression of the cancers, the demonstration that arsenic induces gene amplification in cells in culture and acts in a late stage in human carcinogenesis supports the hypothesis that this human carcinogen acts in the progression phase." The authors emphasize the need for new *in vivo* and *in vitro* assays to detect chemical carcinogens that act in the late stages of carcinogenesis, but are not tumor promoters or are weak tumor promoters.

Authors of the study are Dr. Te-Chang Lee, Dr. Noriho Tanaka, Patricia W. Lamb, Tona M. Gilmer, and Dr. J. Carl Barrett. □

Personal Computing Branch Established at DCRT

Personal computing has become a major force at NIH in everything from administration to scientific research. To meet the burgeoning needs of the NIH community, DCRT has announced the establishment of the Personal Computing Branch (PCB).

"We are well past the stage when PC's emerged as tools instead of toys," said David C. Songco, chief of the new branch. "They are proliferating at a rate of 1,000 a year across NIH as they continually take on more tasks due to increased capabilities. This branch has been created to better serve NIH's growing needs."

PCB's function was previously served by the Personal Workstation Office (PWO), established in 1984 as part of the Office of the Director, DCRT, as a support structure for scientists and administrators. As PWO, the group has performed various functions, including training, consulting, product evaluation and publishing that will continue on an expanded basis.

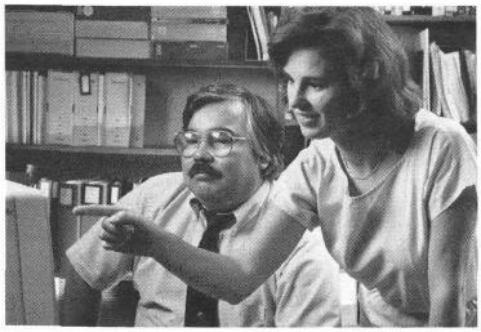
PWO set up and coordinates a training program in collaboration with the NIH Training Center that now trains about 2,400 people a year. This highly successful program will be expanded this fall to include Apple Macintoshes and local area networks (LANs).

PWO also established a consultation service, which via the PWO Helpline (496-2282) handles about 700 consults a month, ranging from requests for publications to advice on appropriate computer configurations. What began as a service for a few hundred IBM PC users has grown to serve more than 5,000 users of PC's, clones, Macs and networks.

In addition, the group publishes *PWO Newsbrief* (now known as *PCBriefs*), a 5,500 circulation newsletter that provides technical information to campus PC users, including reviews of new hardware and software and tips to facilitate computer use. It also publishes the *Product Information Guide*, offering purchasing information on personal computers, PC software and related equipment.

The PWO's lead user program, under which each BID nominates persons to receive hands-on PC training from DCRT staffers, has been crucial to the organization's success. Lead users serve as the PWO's first line of support in their organizations, answering questions and training their own staff members. The program, which has grown from 30 to 250 lead users across campus, will be expanded by the PCB to include support for locally managed networks.

PCB will also continue to support software such as DOware, a set of easy-to-use commands that have made networking (the ability of PC's to communicate with one another)



DCRT Personal Computing Branch chief David Songco consults with computer assistant Cathy Greenville.

popular at NIH.

"Networks are becoming increasingly popular as more people understand computers and learn to use them as tools," said Songco.

As PCB, the new branch will continue to expand current programs as well as meet new challenges.

"The PWO was established as a response to a specific need. The reorganization will make us stronger and more viable. We are now positioned to offer guidance and support for a wide range of personal computing projects as they develop," said Songco.

PC's had early success in administrative applications with spreadsheet, database and word processing programs. Future directions for the PCB include interconnecting workstations and better meeting the needs of scientists, according to Songco, who stresses that the newer computer designs are better suited to scientific applications.

"We are seeing radical changes as computers continue to become more powerful, smaller and cheaper," he continued.

"This is a very exciting time to be in computing. PC's and Macs will soon be joined by advanced laboratory workstations, desktop supercomputers, and comprehensive networks for exchanging information.

"With the addition of the PCB, DCRT is prepared to meet the challenge of effective computing at NIH," Songco concluded. □

Dental Research Exhibit

A special exhibit devoted to American dental research opens at the Smithsonian Institution's National Museum of American History on Oct. 10.

The exhibit, "Dental Science for Dental Health," is a joint effort of the museum's medical sciences division and NIDR. It will be on display until Oct. 16 in conjunction with the World Dental Congress in Washington, D.C. □

Rall Receives WHO Medal

Dr. David P. Rall, director of the National Institute of Environmental Health Sciences, recently received the World Health Organization's "Health for All 2000" medal presented by Dr. J. P. Jardel, assistant director-general, WHO.

"Since the formation of the World Health Organization 40 years ago, the ultimate aim has remained—health for all—both the absence of disease, as well as a state of complete physical, mental and social well-being," said Jardel. "Environmental health has always been, and remains an extremely important program for WHO as it strives toward this goal."

Dr. George Becking, team leader of WHO's International Programme on Chemical

Dr. David Rall (l), director of NIEHS, accepts the "Health for All 2000" medal from Dr. J.P. Jardel, assistant director-general of WHO.

Safety (IPCS) interregional research unit, stationed in Research Triangle Park, added that, "Dr. Rall's long-standing commitment to the development of national and international environmental health programs in which scientific information is used to improve the health of all peoples has assisted WHO greatly as we move toward the ultimate goal of 'Health for All.'"

The award ceremony and a reception given by WHO in Rall's honor completed a symposium on NIEHS research highlights. The symposium was presented as part of a week-long meeting of the IPCS at the NIEHS facility.

Rall joined NIEHS as director in 1971, coming from the National Cancer Institute. Dr. James B. Wyngaarden, NIH director, attended the symposium and award presentation.

In addition to his position as director of NIEHS, Rall serves as the founding director of the National Toxicology Program, which coordinates toxicological research within agencies of the Department of Health and Human Services. □

Burnight, NCI Official, Dies

Dr. Robert G. Burnight, 69, a former health scientist administrator at NCI and retired sociology professor died Aug. 1 at the Clinical Center.

Burnight joined NCI's Division of Cancer Prevention and Control in 1979 and was executive secretary of the community-based cancer control program review committee until 1981. He then served as executive secretary of the board of scientific counselors for DCPC. Before retiring in 1984 due to illness, Burnight developed the Cancer Control Science Associates Program, a training program for scientists entering the field of cancer prevention and control.

"This program is one of the most important and far reaching activities of this NCI division," says Dr. Peter Greenwald, director, DCPC. "Bob has left a legacy as a pioneer in the emerging field of cancer control science. He was greatly respected for his extraordinary skills and talents, his persistence, and his good humor."

Born in Lancaster, Pa., Burnight graduated from Franklin and Marshall College in 1940. During World War II, he served with the U.S. Army in Europe.

From 1949 to 1971, Burnight taught sociology at the University of Connecticut, Brown University and the University of Pennsylvania where he received his doctorate in 1952.

He was a member of NIGMS's advisory committee on epidemiology and biometry from 1962 to 1967 and NIH's developmental behavioral sciences study section from 1968 to 1970.

Surviving are his wife, Catherine Glazier Burnight of Silver Spring, Md., and two sisters, Gladys Brackbill and Helen Borthwick, both of Lancaster, Pa. A memorial service was held at the Cedar Lane Unitarian Church.

Al-Anon Groups Meet Weekly

The Al-Anon Family Groups are a fellowship of relatives and friends of alcoholics who share their experience, strength and hope in order to solve their common problems. There are no dues for membership.

The Al-Anon/Adult Children of Alcoholics meeting is held every Thursday from noon to 1 p.m. in Conf. Rm. 4, Bldg. 31A. The regular Al-Anon group meets every Tuesday, 11:30 a.m. to 12:30 p.m. in Bldg. 31B, Rm. B2B57.

Check the NIH Calendar of Events or call the counseling office, 496-3164, for any room changes. □

Dr. Ruth Kirschstein, director of NIGMS, recently presented NIH Merit Awards to three NIGMS employees: Loretta Jordan, data management specialist (l), Marie Taboada, mail file clerk (second from l) and Robert Willcoxon, management analyst.

Jenkins Retires from NIAID

Joyce Jenkins, administrative officer in NIAID's extramural program, retired Aug. 1 after 35 years of federal service.

She joined NIAID's intramural program in 1961 as secretary to then clinical director, Dr. Vernon Knight. She became an administrative assistant in the institute's intramural program in 1968 and was named an administrative officer with the extramural program in 1978.

Joyce Jenkins

Her government career began as a medical secretary with the National Institute of Neurological Diseases and Blindness—now NINCDS.

Coworker Mike Crumly said that he and his colleagues would especially miss her "incredible wealth of knowledge, her sense of humor, and her special way of doing things."

For the time being, Jenkins says she will "relax and enjoy," but future plans call for travel and additional music study on the organ. □

Six New Fellows Join NCI

Six new fellows have been selected by the Cancer Prevention Fellowship Program for 2-year assignments within NCI's Division of Cancer Prevention and Control. They begin their appointments by attending a 4-month academic course and then working under assigned preceptors.

Dr. Retford O. Berko obtained his Ph.D. in biochemistry and nutrition, and comes from the Louisiana Board of Regents, Baton Rouge, La. He will work with Dr. Ritva Butrum in the Diet and Cancer Branch.

Dr. Lester S. Gorelic obtained his Ph.D. in chemistry and comes from the Southwest Foundation for Biomedical Research, San Antonio, Tex. He will work with Dr. Douglas Weed in the Biometry Branch.

Dr. Ashima K. Kant obtained her Ph.D. in nutrition and comes from the Division of Geriatrics, Johns Hopkins University, Francis Scott Key Medical Center, Baltimore, Md. She will be matched with a preceptor within the first few months of her assignment.

Dr. Forrest Pommerenke comes from a general practice at the DeSoto Medical Center, DeSoto, Kan. He will work with Dr. Charles Smart in the Early Detection Branch.

Dr. Sudhir Srivastava has a Ph.D. in biochemistry and a M.S. in computer sciences and comes from NHLBI. He will work with Dr. Thomas Marcinak in the Surveillance and Operations Research Branch.

Dr. Jacqueline Whitted obtained her Ph.D. in sociology and comes from Howard University Cancer Center, Washington, D.C. She will be matched later with a preceptor.

The Cancer Prevention Fellows represent an important source of future leadership in cancer prevention and control. □

Weekend Cruise Oct. 29-30

Venture out for a taste of fun and sun at sea. Pools, saunas, deck sports, live music, a casino, dancing, movies, disco and superb food are all part of this package. The cruise departs from New York Saturday at 2:45 p.m., and returns to port Sunday morning.

Price based on 4 people sharing 1 cabin starts at $90 per person inside cabin; $100 per person outside cabin.

Price based on 2 people sharing 1 cabin starts at $109 per person inside cabin; $129 per person outside cabin.

Port tax is an additional $12 per person.

Make your reservation at the R&W Activities Desk, Bldg. 31, Rm. B1W30, 496-4600. □

TRAINING TIPS

The NIH Training Center of the Division of Personnel Management offers the following:

Courses and Programs	*Dates*
Management and Supervisory 496-6371	
Voice for Success for Professional Credibility	10/21
Managing Behavior in the Work Environment	10/26
Basic Conversational Sign Language	10/04
Interacting With Difficult Employees	11/09
Practical Management Approaches	11/21
Effective Presentation Skills	11/28
Coaching: The Performance Extra	11/03
Coping With a Dynamic Environment	11/07
Office Operations Training 496-6211	
Proofreading & Editing	10/17

Adult Education 496-6211

Training and Development Services 496-6211
Personal Computer training is available through User Resource Center (URC) self study courses. There is no cost to NIH employees for these hands-on sessions. The URC hours are:

Monday–Thursday	8:30 a.m.—9:00 p.m.
Friday	8:30 a.m.—4:30 p.m.
Saturday	9:00 a.m.—3:00 p.m.

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FY 89 Training Center courses

Access Wylbur and enter SHARE TRAINING.
First time users only, enter:
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Career Day 1988

Career Day 1988—"Setting Your Career in Gear" will be held on Thursday, Oct. 13, from 11 a.m. to 2 p.m. in the Visitor Information Center and the Mortimer B. Lipsett Auditorium, Bldg. 10. Sponsored by the NIH Federal Women's Program in the Division of Equal Opportunity, this program is attended by hundreds of NIH employees each year who seek information on a variety of career development issues.

Representatives from local universities and colleges will be available to provide information on academic courses and programs. Members of professional organizations will also be represented. NIH training and personnel specialists will be present to provide information on career development and training opportunities at NIH. In addition, NIH employees serving as role models will be available to answer questions about their occupational series.

Sign language interpretation will be available. To request other accommodations for disabling conditions, or to obtain additional information about Career Day, please call 496-2112. □

Dr. Robert Dixon, Formerly of NIEHS, Dies in New York

Dr. Robert L. Dixon, colleague, mentor and friend to many at NIEHS, who served with the institute from 1972 until 1984, died Aug. 28 in Albany, N.Y., after a short illness. At the time of his death, he was vice-president of drug safety at Sterling-Winthrop Research Institute in Rensselaer, N.Y.

He began his federal career in 1969 when he joined NCI as chief of the Laboratory of Toxicology, Experimental Therapeutics and Chemotherapy. In 1972 he joined NIEHS as chief of the Laboratory of Environmental Toxicology, which later became the Laboratory of Reproductive and Developmental Toxicology.

From 1977 to 1978 Dixon served as senior policy analyst in the executive office of the president, and in 1979–1980 was NIEHS assistant to the director for international programs. He served as director, Office of Health Research, at the Environmental Protection Agency in Washington, D.C., from 1984 to 1985.

He published more than 60 scientific papers and served as president of the Society of Toxicology from 1982 to 1983. He received the SOT Achievement Award in 1972, and the NIH Director's Award in 1977.

Services were held Aug. 31 at St. Paul's Lutheran Church, Albany, N.Y., and burial was in Sacramento, Calif. A memorial service was held at Our Savior Lutheran Church, Oct. 2 in Raleigh, N.C.

Dr. Robert Dixon

Dixon is survived by his wife Marilyn, of 501 Covington Place, Slingerlands, N.Y. 12159; two daughters, Wendy Robertson of Cary, N.C., and Diane Dixon, of Raleigh, N.C.; and a son, David Dixon, of Durham, N.C. The family requests that remembrances be sent to: Fund for 2121 (Building Fund), in care of Albany Medical Center Hospital, New Scotland Avenue, Albany, NY 12208.

Schools Have USDA Funds for Free and Reduced-Price Meals

The NIH Preschool Developmental Program offers free and reduced-price meals for children under the sponsorship of the Child Care Food Program of the U.S. Department of Agriculture; so does the Nettie Ottenberg Memorial Child Care Center.

The same meals are available to all enrolled children at no separate charge regardless of race, color, sex, age, handicap or national origin and there is no discrimination in admission policy, meal service, or the use of facilities.

Any complaints of discrimination should be submitted in writing within 180 days of the incident to the Secretary of Agriculture, Washington, D.C. 20250.

Eligibility for free and reduced-price meals is based on the following income scales effective from July 1, 1988 to June 30, 1989.

Family Size	Eligibility Scale For Free Meals	Eligibility Scale For Reduced Price Meals
1	$0–$ 7,501	$ 7,502–$10,675
2	$0–$10,049	$10,050–$14,301
3	$0–$12,597	$12,598–$17,927
4	$0–$15,145	$15,146–$21,553
5	$0–$17,693	$17,694–$25,179
6	$0–$20,241	$20,242–$28,805
7	$0–$22,789	$22,790–$32,431
8	$0–$25,337	$25,338–$36,057
Each additional family member add	+ $2,548	+ $3,626

The NIH Preschool Developmental Program is located in Bldg. 35, Rm. 1B05. For more information, call Pat Gokey or Vanessa Fuss, 496-5144. To reach the Ottenberg Center, 5650 Oakmont Ave., Bethesda, call Anne Schmitz, 530-5550. □

Advice Not Binding

Panel Okays Use of Human Fetal Tissue in Research

A surprising unanimity emerged when, after 3 days of public testimony, a panel of 21 experts convened at NIH to consider the acceptability of doing research using tissues from intentionally aborted fetuses.

Despite impassioned testimony on both sides of the issue—much of it touching on the morality of abortion—the panel voted 19-0 with 2 abstentions that it is morally relevant and acceptable to allow federal funds to be used to support research involving transplant of fetal remains.

A formal recommendation to this effect will be made to the NIH director when his advisory committee meets in early December.

The panel, chaired by retired federal judge Arlin Adams of Philadelphia, was assembled at the request of DHHS Assistant Secretary for Health Robert Windom, who issued an order suspending new research on fetal tissue recovered from elective abortions last spring.

Composed of authorities in medicine, law, ethics and religion, the panel was to resolve the ethical problems surrounding this issue; its advice is not binding on NIH.

Following the vote, Adams said he was impressed with the intellectual honesty of those who gave testimony and the brilliance of arguments on both sides of the issue.

The absence of dissent was unexpected considering the range of views presented and their often personal and emotional nature. One speaker, Dr. Hans Sollinger, a pathologist from the University of Wisconsin who argued in favor of using fetal tissue to combat disease, showed slides of a brother who died of complications related to diabetes to end his presentation. Another speaker pleaded with the panel to consider the plight of her diabetic son in making its decision.

Arguing against use of tissue from elective abortions was Dr. William Colliton of Bethesda, representing Right to Life of Maryland Inc.

"This proposition further devalues our preborn brothers and sisters and lends an aura of respectability to the elective killing of these patients who today have no protection under the law," he said, adding that such experimentation "takes no consideration of the principles of informed consent ... and furthers the recent trend in medical ethics to abandon the principle that regards human life as sacred and inviolable, and in its stead assumes a posture of deifying medical technology."

Straddling the fence was an embryologist who apologized that his remarks would likely "offend everyone in the audience." Acknowledging that his own research would be much furthered by use of fetal tissues from induced abortion, he nevertheless feared for the moral consequences of creating a utility for such material.

Perhaps the biggest beneficiary of the panel's deliberation was human reason itself; at no time did anyone come to blows and everyone had the chance to speak their piece.

The advisory panel will meet again Oct. 20–21 to consider questions posed by the assistant secretary for health that were not answered in its first meeting. The meeting will be open to the press and public. □

Volunteers Needed

The National Institute of Dental Research is looking for individuals who have cold sores or fever blisters for research studies. For more information call 496-0309. □

Dr. Katherine L. Bick (r), NIH deputy director for extramural research, spoke recently at the first 1988 NIH civil rights grants training session sponsored by the Division of Contracts and Grants and the contract compliance coordinators' committee. Maureen B.E. Miles (l), NIH contracts and grants compliance officer, moderated the session.

As a gesture of gratitude to NIH, the Schwantes family of South Milwaukee, Wis., visited NIH director Dr. James Wyngaarden recently. Daughter Brianne (front row, fifth from l), 8, has been treated at NIH for osteogenesis imperfecta, a bone disease, since she was 5 months old. She was the first patient here to begin a protocol that emphasized increased activity for children with brittle bones, not less. Researchers have shown that OI patients improve more the less they are coddled and passive. The family wore "Thanks NIH" t-shirts for their visit with Wyngaarden and during a press conference on OI at the National Press Club. Attending the conference were two NIH investigators who have helped Brianne, Drs. Joan Marini of NICHD and Lynn Gerber, chief, Department of Rehabilitation Medicine, CC.

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