

# The NIH Record

## *Treatment Before Birth*

### Fetal Therapy: A Promising New Field Is Born

By Anne Blank

From gene and drug therapies to *in utero* surgery, the relatively new field of fetal therapy is rapidly expanding to cover many aspects of therapeutic intervention. Advances in diagnostic medical technology such as genetic screening, sensitive methods of embryo and fetal biopsy, and fetal visualization techniques now make it possible to diagnose certain disorders before birth. At the same time, new treatment methods such as gene and drug therapies, and highly precise surgical techniques can be used on a fetus to treat specific disorders *in utero*, before the disorder can produce irreversible damage or death.

At a recent international conference held at NIH and cosponsored by NICHD and the Institut Electricite Sante, Paris, researchers and clinicians from the United States and abroad convened to discuss the current status of fetal diagnosis and therapy, and to identify gaps in research, as well as future directions.

To determine whether a fetus is a candidate for therapy, doctors now use various methods designed to diagnose different disorders in the embryo such as muscular dystrophy, hemo-

philia, Fragile X syndrome, cystic fibrosis, sickle cell anemia, and Tay Sachs and Gaucher's diseases. These methods include sampling techniques such as amniocentesis, chorionic villus sampling, preimplantation analysis (used in conjunction with *in vitro* fertilization), preconception analysis (sperm sorting and biopsy of oocytes), and analysis of fetal cells in maternal blood.

During the past 20 years, the gestational age at which these tests can be done has been decreasing. In the early 1970's, the new technique was amniocentesis, which is done at about week 17 of pregnancy. In 1978, researchers developed the technique of fetal blood sampling, which can be done at 18-22 weeks of pregnancy. In 1981, doctors began doing fetal tissue biopsies of skin, liver and other organs, which are carried out at about week 11 of pregnancy, and in 1983 the new method was chorionic villus sampling, done at 7-10 gestational weeks.

To diagnose a fetal disorder, these sampling techniques are combined with methods of analysis. Today, the most promising of these

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### Gottesman To Present First NIH Lecture of 1992

By Nancy Volkers

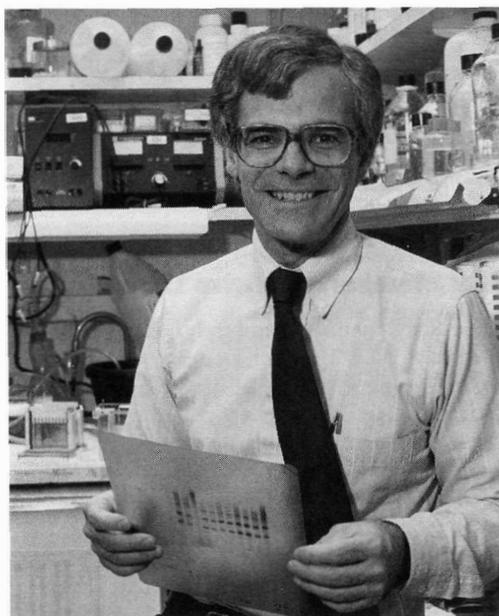
Tumor resistance to chemotherapy presents a major barrier to effective cancer treatment. Determining mechanisms of multidrug resistance (MDR) has been a research goal of Dr. Michael M. Gottesman, chief of NCI's Laboratory of Cell Biology in the Division of Cancer Biology, Diagnosis, and Centers.

Gottesman will review progress in understanding MDR when he presents the NIH Lecture, "Molecular Analysis of Resistance to Anti-Cancer Drugs," on Wednesday, Jan. 22, at 3 p.m. in the Clinical Center's Masur Auditorium.

Though MDR probably stems from several sources, Gottesman and his coworkers have been instrumental in unearthing and helping to explain what is now the best understood mechanism of resistance.

Dr. Alan Rabson, director of DCBDC, said that Gottesman "has made important contributions to our understanding of the genes involved in multidrug resistance and characterizing the (MDR1) gene product."

In 1985, Gottesman, as part of a long-term collaboration with Ira Pastan, chief of NCI's Laboratory of Molecular Biology, found that drug-resistant cells contain lower levels of administered drugs and higher levels of certain DNA and RNA sequences than do comparable drug-sensitive cells. Gottesman isolated the gene (MDR1) responsible for this resistance.



Dr. Michael Gottesman

He then found that the membranes of MDR cells contain a specific protein, called gp170, which is encoded by the MDR1 gene.

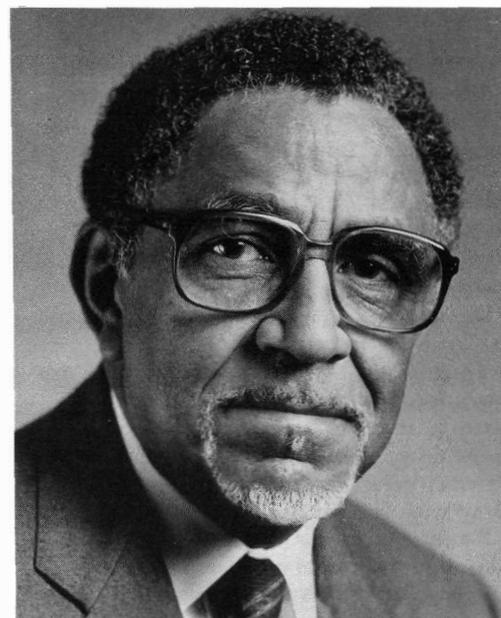
His evidence supported the proposal, now widely accepted, that gp170 is an energy-

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### Lowery To Keynote King Commemorative Program

NIH is sponsoring a program in commemoration of the birth, life, and legacy of Dr. Martin Luther King, Jr., on Friday, Jan. 17, from 11:30 a.m. to 1 p.m. in Masur Auditorium, Bldg. 10.

The theme of this year's program will be "Love Is the Only Force." It will feature Dr. Joseph E. Lowery, national president of the Southern Christian Leadership Conference (SCLC), a national civil rights group founded by King more than 30 years ago.



Dr. Joseph E. Lowery, national president of the Southern Christian Leadership Conference, is featured speaker at this year's ceremony in honor of Dr. Martin Luther King, Jr.

Lowery is the winner of the 1990 Ebony Black Achievement Award in Religion and Human Rights and other numerous honors and awards. He is one of the founders of the SCLC and served as a vice president from 1957 to 1967, when he was nominated by King to serve as chairman of the national board of directors.

As SCLC president, Lowery has led the organization to new levels of vigor, effectiveness and visibility. He organized and led the 2,700-mile pilgrimage that helped gain meaningful extensions and strengthening for the Voting Rights Act. He has led campaigns against the Ku Klux Klan and police brutality and has fought for increased employment, job training, and economic opportunities in both the private and public sectors for Black and other ethnic groups.

A native of Alabama, he studied at Knoxville College, Payne College and Wayne University. He also studied at Payne Theological Seminary and Chicago Ecumenical

(See **LOWERY, Page 2**)

**LECTURE***(Continued from Page 1)*

dependent pump, ferrying molecules of toxins or of drugs out of the cell.

Gottesman and colleagues soon discovered that normal human cells from adrenal, kidney, liver, and colon tissue also contain high levels of gp170. Since these tissues are exposed daily to a variety of toxic compounds, gp170 may be part of their natural defense mechanism. Furthermore, when tumors arise at these sites, they are known to be naturally stubborn to chemotherapy.

Several compounds known as reversing agents—verapamil and quinidine are two promising examples—can compete with anti-cancer drugs in binding to gp170, slowing transport of the drugs out of the cells and combating resistance.

For several years, Gottesman has been examining clinical applications of his gp170 findings using gene therapy, monoclonal antibodies, and reversing agents to fight MDR. He recently observed that derivatives of verapamil and other gp170 inhibitors reverse MDR in human renal carcinoma cells *in vitro*, and in transgenic mice.

The mice express MDR1 in their bone marrow, making it resistant to chemotherapy. Potential reversing agents can be administered to the mice, and if white blood cell counts decrease, researchers know the agent is interfering with the gp170 resistance mechanism.

Recent studies in Gottesman's laboratory have examined causes of MDR unrelated to expression of MDR1. Present research is painting a complex picture of MDR that stretches far beyond gp170.

His research has earned him many awards, including the Milken Family Foundation Award for Cancer Research in 1990. Gottesman received a B.A. from Harvard College and an M.D. from Harvard Medical School. He first came to NCI in 1976, and has served as chief of the Laboratory of Cell Biology since 1990.

Gottesman has also been involved in several education initiatives at NIH. He has been the coordinator of the NIH-Howard Hughes Medical Institute Summer Scholar program for high school students for the past 4 years, and has organized a program under the Foundation for Advanced Education in the Sciences to bring high school teachers to NIH to work in laboratories. □

**Healthy Volunteers Needed**

Volunteers are needed to serve as subjects for magnetic resonance imaging (MRI) research. Participants must be in good health, between ages 18 and 55, cannot have metallic foreign bodies, cannot be pregnant at the time of the study, and will be paid \$50. Contact Nancy Wigle, 496-3658, for more information. □



Work of two artists in the Medical Arts and Photography Branch, NCCR, was recognized with red ribbons at the 1991 annual exhibition of the Illustrators Club of Washington. Chosen for honorable mention were Al Laoang's poster illustration for an NIH consensus development conference on "Treatment of Panic Disorder" (above) and Margaret Georgiann's poster illustration for a seminar on "Major Diseases and Health Behaviors of Women" (below).

**R&W Membership Drive Under Way**

The R&W annual membership drive is now under way. Now through Jan. 31, you can purchase a yearly membership for only \$4, a savings of \$1 off the regular price, and receive a free gift. You will also be eligible to win prizes, including a "Year of Fun with R&W," which includes a year's worth of tickets, outings, and entertainment.

R&W membership entitles one to shop in any of the gift shops on campus, rent videos, use dry cleaning service, join a club, take a trip, buy discount tickets and stamps, etc.

Join R&W today at any gift shop or send a check for \$4 (made payable to R&W of NIH) to: R&W of NIH, 9000 Wisconsin Ave., Bldg. 31, Rm. B1W30, Bethesda, MD 20892. For more information call 496-4600. □

**LOWERY***(Continued from Page 1)*

Institute. He holds B.A., B.D., D.D., and L.L.D. degrees. He recently received honorary doctoral degrees from Dillard University, Morehouse College, Miles College, Clark College, and Atlanta University.

Following the keynote address, musical selections will be provided by Thomas J. Flagg, a professor of piano at Howard University who has performed throughout the United States and Italy. In addition to performances on radio and television, he has played at the Kennedy Center concert hall.

The program is sponsored by the NIH Office of Equal Opportunity and its 1991 planning committee. For more information, call 496-6301. □

**Research Volunteers Wanted**

The Laboratory of Neurosciences, NIA, seeks healthy volunteers to participate in a study of the effects of aging on brain functions. Volunteers must be in excellent health, medication free, and without past or present major health problems. Men above age 60 are particularly needed. Procedures require approximately 13 hours; participants can receive up to \$300 depending on time involved. For more information, call 496-4754, Monday through Friday, 9 a.m. to 5 p.m. □

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NIH Record Office  
Bldg. 31, Room 2B-03  
Phone 496-2125  
FAX 402-1485

Editor  
Richard McManus

Assistant Editor  
Anne Barber

Staff Writer  
Carla Garnett

Editorial Assistant  
Marilyn Berman

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Correspondents:  
CC, Karen Riedel  
DCRT, Anne P. Enright  
DRG, N. Sue Meadows  
FIC, Jim Bryant  
NCI, Patricia A. Newman  
NCHGR, Leslie Fink  
NCNR, Esther McBride  
NCCR, Polly Onderak  
NEI, Linda Huss  
NHLBI, Louise Williams  
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NLM, Roger L. Gilkeson

## NEI Emphasizes Testing for Blindness, Glaucoma Causes

NEI recently issued recommendations for the detection of two leading causes of blindness, glaucoma and diabetic eye disease, and warned that many Americans who are at high risk for these diseases are not seeking adequate eye care, based on findings from a new national survey.

NEI recommends people with diabetes should undergo an eye examination through dilated pupils at least once a year; and people at high risk for glaucoma, especially Blacks over age 40 and all people over age 60, should receive an eye examination through dilated pupils every 2 years.

"Millions of people could be saved from vision loss, even blindness, by following these recommendations," said Dr. James Mason, HHS assistant secretary for health, who announced the recommendations. "There are 120,000 Americans currently blind from glaucoma alone. And about half of the 14 million Americans with diabetes will develop eye problems."

HHS also launched the National Eye Health Education Program—the first federally sponsored, nationwide eye health education program. NEI will coordinate the program, working with 37 private and public organizations.

At the news conference, a videotape was shown of HHS secretary Dr. Louis W. Sullivan having a dilated eye examination for glaucoma to help publicize the importance of early detection of this disease. Sullivan is at high risk for glaucoma, as are all Blacks over 40. Blacks are five times more likely to develop glaucoma than whites and four times more likely to become blind from the disease.

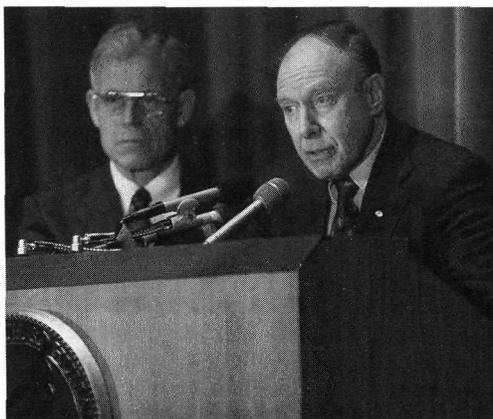
"When one considers how dependent most Americans are on their vision," said Sullivan, "it is troubling that so many who are at risk for glaucoma either are not having their eyes examined, or are receiving inadequate testing."

NEI officials also released findings from a national survey conducted earlier this year to determine the public's awareness of the facts about eye disorders and what constitutes proper eye care. The survey of 1,250 adults was cosponsored by NEI and the Lions Clubs International.

The survey found that about three-fourths of the nearly 450 respondents at high risk for glaucoma said they were examined for the disease in the last 2 years. However, less than half of those tested said their pupils had been dilated during the examination, an essential part of effective glaucoma detection.

Glaucoma is a disease that occurs when the eye's fluid pressure rises, leading to progressive optic nerve damage. If left untreated, glaucoma may lead to blindness.

Dr. Carl Kupfer, NEI director, said many



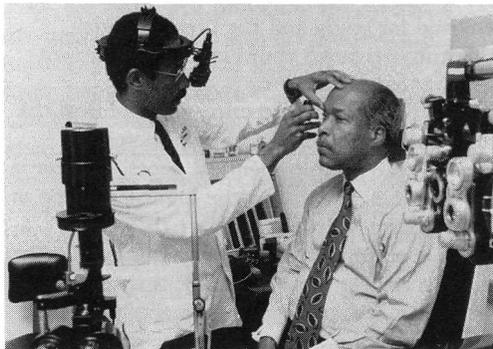
*Dr. Carl Kupfer, NEI director, responds to media questions during the Dec. 12 press conference that launched the National Eye Health Education Program. In the background is Dr. James Mason, head of the Public Health Service.*

Americans are screened for glaucoma with tonometry, a test that measures the pressure within the eye.

"Studies show that although tonometry is useful in detecting glaucoma, this test alone does not provide an eye care professional with enough information to diagnose the disease," he said. "People at high risk for glaucoma should have an eye examination through dilated pupils every 2 years, in addition to tonometry, to find glaucoma early, when it is most controllable."

Kupfer said complete glaucoma testing should include pupil dilation, where drops are placed into the eyes to allow a thorough examination of the retina and optic nerve for signs of damage; tonometry; and when indicated, a visual field test, which can detect early loss of peripheral vision.

About 3 million Americans have glaucoma, but about half of them do not know it. The most common form is open-angle glaucoma, which is most prevalent in the general United



*HHS secretary Dr. Louis Sullivan (r) is given a dilated eye examination by Dr. Claude Cowan of Howard University Hospital. A dilated eye exam is crucial for the early detection of glaucoma, a leading cause of blindness among Blacks over age 40 and all people over age 60.*

States population over age 60 and Blacks over age 40.

In addition, many of the country's 14 million people with diabetes are unaware that they are at risk for diabetes-related eye problems, and many are not obtaining regular eye examinations through dilated pupils, according to NEI.

Diabetic eye disease is a group of sight-threatening complications that people with diabetes may develop, including diabetic retinopathy, which damages the delicate blood vessels of the retina; cataract, a clouding of the eye's lens; and glaucoma.

Although laser surgery can significantly reduce the risk of vision loss from diabetic retinopathy, the most common of the diabetic eye diseases, thousands of Americans still lose their sight each year to this retinal disorder because they do not receive laser treatment.

To enhance awareness of glaucoma and diabetic eye disease in high-risk groups, the National Eye Health Education Program is launching a nationwide mass media campaign and community-based programs. In addition, a joint effort with many of the nation's pharmacists will encourage people with diabetes to have their eyes examined regularly.

For more information about glaucoma or diabetic eye disease, people may write: National Eye Health Education Program, Box 20/20, Bethesda, MD 20892. □

### Readers for Blind Needed

The Washington unit of Recording for the Blind (RFB) needs volunteers with backgrounds in the sciences who are able to donate their expertise for about 2 hours each week to record textbooks for blind, dyslexic, and other visually and perceptually impaired students.

The Washington unit has been selected to participate in a project funded by the National Science Foundation (NSF) that makes available recordings of technical texts for students through all stages of their studies. RFB and NSF are working together to encourage more students with disabilities to enter scientific fields with the aim of helping reduce the anticipated shortage of workers in these areas.

Because of the highly specialized nature of these books, professionals capable of deciphering complicated formulas and highly technical material are needed at every stage of the production process—from recording monitors who run tape machines and listen for errors in the reading to the readers who actually read the books, to those who assist the staff in choosing and implementing an approach to describing the charts, graphs and diagrams in a text. Readers must pass a reading proficiency test and must begin as monitors.

For more information call (202) 244-8990. □

## FETAL THERAPY

(Continued from Page 1)

methods, according to Dr. Joseph Schulman, director of the Genetics and In Vitro Fertilization Institute in Fairfax, is the polymerase chain reaction (PCR). This technique, which can generate 1 million copies of DNA from a single copy of a gene, analyzes the DNA of the specific disease-carrying gene of the gamete, embryo or fetus, Schulman explained. This type of analysis is genotypic, meaning the defect does not have to be expressed clinically in a specific fetal tissue, but can be detected throughout the DNA of the fetus.

Unlike genotypic analysis, phenotypic analysis is possible only when the defect is expressed in specific defective tissues of the fetus. Using this method, tissue biopsy can detect certain fetal disorders. Depending on which disorder is suspected, doctors can take samples of fetal tissue from the relevant organ and test them for the defect. In contrast to genotypic analysis, which requires the precise identification of the disease-carrying gene, phenotypic analysis can be applied to diseases for which the primary genetic defect is unknown by using appropriate molecular probes to identify genetic markers.

Once a fetal disorder is diagnosed, doctors must determine what, if any, therapy is indicated. The prime benefit of fetal therapy is, in some instances, prevention of more serious debilitation. For example, urinary tract obstruction can be surgically treated *in utero*, thus preventing irreversible kidney damage that otherwise may result if the obstruction is left untreated.

One of the most exciting new developments in fetal therapy is gene therapy, which basically involves the transfer of genes into cells. "The fetus is an important target for gene therapy," said Dr. Fred Ledley, associate professor in the department of cell biology and pediatrics at Baylor College of Medicine. "I think increasingly you'll see attention turned to the fetus."

Another important treatment method is drug therapy. Since it is known that substances ingested by the mother traverse the placenta and eventually reach the fetus by way of the umbilical cord, this same route can be used to administer therapeutic drugs to the fetus. As with any medical intervention, however, there are many factors to be considered including maternal and fetal side effects, and the pharmacokinetics of the drug in pregnancy.

"Drug therapy is a challenging domain," said Dr. Annabelle Azancot-Benisty, chief of services for the department of cardiovascular and respiratory functions at Hopital Robert Debre, Paris. "We've been helped by investigational tools, but we still have a lot to learn about placental metabolism and receptors at the level of the fetus."

Despite the promise of gene and drug therapies, they may not be effective interventions for certain diseases that may require more immediate and extreme treatment. For some disorders, such as congenital diaphragmatic hernias, fetal surgery may be the only alternative. A major benefit of fetal surgery is that, unlike more mature tissue, fetal tissue possesses a remarkable ability to repair itself.

Like any new area of experimental therapy, fetal therapy raises serious ethical questions, including risk/benefit assessment, informed consent, treatment in twin pregnancies, the right to refuse treatment, and selection of patients for treatment.

In addition, not all diagnosed fetal disorders are treatable today. Certain diseases, including most of those carried by a single pair of genes (monogenic diseases), are extremely variable in their clinical presentation, with symptoms that may range from silent to severe, noted Dr. Jacques Elion of Hopital Robert Debre.

For example, sickle cell anemia, which results from a single-point genetic mutation, may be entirely unnoticeable in some people, while others may be critically ill.

"The future of fetal diagnosis is not only to improve the techniques that we are using," noted Elion, "but also to find genetic markers that would predict the outcome of disease." □

## New Technique Promises to Simplify Gene Mapping

Researchers at NIH have developed a new method of cutting fragments of DNA out of the human genome that promises to revolutionize gene mapping and may one day be useful for treatment of human genetic diseases. Gene maps, which show the locations of genes on chromosomes, are proving important in cloning human disease genes, diagnosing genetic diseases and researching how genes are turned on and off.

In an article published in the Dec. 6 issue of *Science*, Dr. Daniel Camerini-Otero of NIDDK and his collaborators have shown that any large genomic sequence can be targeted and removed. Previous methods limited the size of the DNA "snippets" that could be removed for study and the precision with which investigators could target the sections they wanted to cut out.

"We designed an experiment to address the question of whether the protein 'homing devices' that pair up identical genes in bacteria can find their targets on the human genome in the test tube. It turns out that they can, which is an important finding. But even more exciting are the implications of this technique for human genetics and gene mapping," said Camerini.

To create these "molecular scissors," the researchers used the common bacterial protein called rec A and a novel form of DNA. They constructed strands of nucleotides, the building blocks of DNA, and coupled them with the rec A. The rec A bound to the intended



Dr. Milos V. Novotny, an NIGMS grantee, will receive the American Chemical Society's Award in Separations Science and Technology for his work in developing important analytical separation techniques. A professor of chemistry at Indiana University, he has also received the ACS Award in Chromatography and the Chemical Instrumentation Award from the ACS Division of Analytical Chemistry. He will receive his award at the April 1992 ACS national meeting in San Francisco.

sites along the human DNA, temporarily forming three-stranded DNA. These added strands of nucleotides protected the cutting sites while the rest of the DNA was treated to make it resist cleavage.

"We then removed the protective strands and proteins and used special enzymes to cut the DNA at the only two sites still receptive to the enzymes' cutting action," Camerini said.

Gene maps may one day give researchers exact distances, measured in nucleotides, between genes in the entire human genome. In the meantime, the best similar information may be found in genetic linkage maps, which only show certain landmarks—like the number of traffic lights you must pass on an automobile journey—and are not yet complete and available.

"If you know you are close to the gene you seek, say a few million bases away, it's not a trivial matter. With current methods it could take several man-months or man-years to determine the exact distance to that gene. But with this technique, it is essentially one experiment," Camerini explained.

Camerini and his colleagues are now investigating how this protein-coated, three-stranded DNA is related to a protein-free new form of triplex DNA that they described last year. The first triplex nucleic acid, triplex RNA, was described in 1957 by NIDDK researchers Drs. Gary Felsenfeld, David Davies and Alexander Rich. □

## Mouse Model Developed for Alzheimer's Disease

For the first time, scientists have developed a genetically engineered mouse model that mimics full-blown Alzheimer's disease (AD). The mice developed all the telltale signs characteristic of human late-stage AD, including amyloid plaques, tangles and massive nerve cell death. Until now, researchers have not had a reliable animal model to test possible drug interventions and conduct behavioral studies.

In the Dec. 12 issue of *Nature*, Shigeki Kawabata at Mount Sinai Medical Center in New York City, Dr. Gerald Higgins at NIA, and Dr. Jon Gordon, also of Mount Sinai, reported their successful insertion into mouse embryos of the human gene believed to cause the neurological changes seen in AD. The mice develop the same full-blown lesions in the brain that lead to the death of nerve cells in humans with AD. The researchers are able to reproduce the dense, insoluble deposits called plaques that riddle the brains of late-stage AD patients. The plaques consist of the common brain protein beta amyloid.

In some families with Alzheimer's disease, a mutation in the gene that produces beta amyloid causes the substance to accumulate abnormally in the brain. Previous lines of genetically engineered mice have produced only mild, diffuse accumulation of beta amyloid by the time the animals reached old age. However, these mice exhibit the heavy buildup of the protein typical in AD that results in dense, mature plaques at an age corresponding to middle-age in humans.

These mice are unique in that they also display the tangled nerve fibers that make normal communication between nerve cells impossible in AD patients. In addition, the mice exhibit extensive neuronal cell death in the hippocampus, the area of the brain responsible for learning and memory that is severely affected in people with AD.

"This result brings us a step closer to our major goal to fundamentally alter the course of the disease by the end of the decade," said Dr. Gene Cohen, acting NIA director. "If we can delay the onset of AD by 5 years we could cut the incidence of the disease by 50 percent."

The new mouse model demonstrates that a single disturbance—the overproduction of a specific portion of the beta amyloid gene—leads to all the neuropathological features of AD. Scientists still do not understand the mechanism that causes increased synthesis of the gene fragment to produce plaques, tangles and massive nerve cell degeneration. However, the new model finally provides the means to study this process.

"The new mouse line gives us a clearer picture of the biochemical changes that induce Alzheimer's disease, and a way to study the behavioral characteristics as well," said

Higgins, chief of molecular neurobiology at NIA. "Behavioral tests will confirm that the markers we see in the pathology are true signs of AD. It will provide a more useful model for scientists everywhere to test new treatments."

Gordon, principle investigator of the study, said, "This animal exhibits at 8 months of age a pattern of tissue damage very similar to that seen in symptomatic Alzheimer's-like lesions. This will enable us to study the evolution of the abnormalities at the cellular and molecular level, and may give us a better understanding of the role Amyloid precursor protein plays in causing brain degeneration."

The next step for Higgins and his colleagues is to try to prevent the development of

plaques and tangles and slow the cell death in the mice by adding an infusion of a certain brain nerve growth factor, called brain derived neurotrophic factor (BDNF) that is thought to be affected in AD. Higgins believes it may be possible to alter the course of the disease by replacing BDNF in brain tissue.

Alzheimer's disease, a progressive brain disorder that slowly erodes the mind, causing subtle to severe memory loss, disorientation, and impaired thinking, affects about 4 million Americans, with approximately 250,000 new cases diagnosed each year. The incidence of the disease increases dramatically with age, although it is not a normal part of aging. □

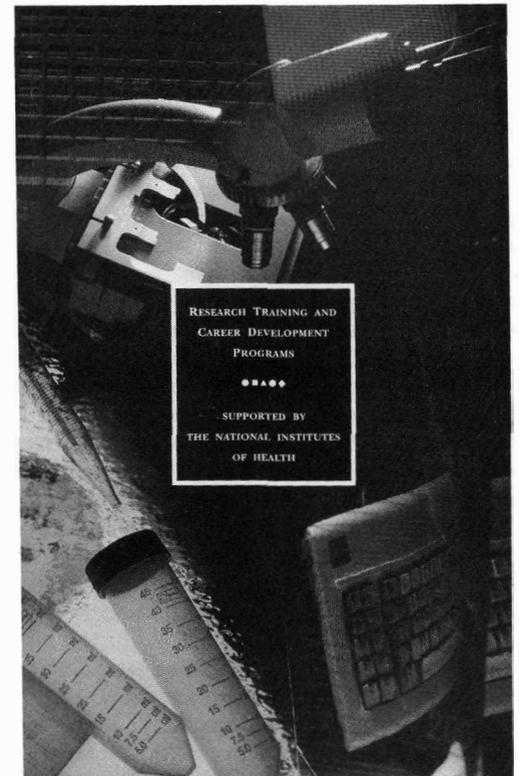
## New Publication Available for Recruitment Purposes

A new publication—*Research Training and Career Development Programs*—designed to attract students into research careers and to help facilitate transition to independence as a researcher has recently become available. "It is a guide and compendium of opportunities for research training and career development available from NIH's intramural and extramural programs," says Dr. Walter T. Schaffer, director of the Research Training and Special Programs Office, whose office produced the booklet.

"When I arrived here in May 1990, there were several pamphlets, each describing a separate segment of NIH's career development programs. Barbara Wargo (RTSP) took these pamphlets, updated the information, and added a section describing the Fogarty International Center's programs into a nice state-of-the-art publication.

"This publication may be the first thing people see about NIH," he continues, "so it should be attractive and make a statement about the NIH. All programs are covered in one book—including support mechanisms available to high school students; college students; postbaccalaureate students in graduate schools, medical schools, dental schools, or other health-professional schools; and postdoctoral trainees, which includes scientists developing into independent researchers, as well as foreign nationals who wish to study or conduct research in the United States and for U.S. citizens who wish to study abroad."

In addition, he states, the book gives the name, address and telephone number of the person to contact regarding a particular program. "The contact will then provide the student with information about eligibility, other programs that may be of interest, opportunities available in that particular geographic area, how to apply, and when appropriate the



expected funding rates during the current fiscal year."

While Schaffer expects the booklet to be used widely in recruitment, there are only a limited number of copies available now, though more are on order. To request a copy, contact the Research Training and Special Programs Office, Bldg. 31, Rm. 5B44. □

## NIEHS Summer Program Enriches Faculty, Student Science Talent

Three high school teachers from the Research Triangle Park, N.C., area and a college professor went to a national meeting in Washington, D.C., recently to relate their summer experiences in laboratories at NIEHS.

The four were participants in the NIEHS Summer Science Education and Minority Outreach Program, which encourages direct involvement in basic biomedical research for precollege and college faculty as well as students from high school through graduate school.

The four educators attended the national meeting, "Building a Shared Vision for Environmental Education," sponsored by the federal task force on environmental education and EPA. The meeting featured presentations by distinguished environmental educators and researchers; two of the teachers participated in a workshop in which they described their experiences in the NIEHS summer program.

Workshop facilitator was Dr. John A. McLachlan, director of NIEHS intramural research, whose office coordinates the summer program. Also participating was Dr. Frank Young, HHS deputy assistant secretary for health, science and environment.

The meeting dealt with science education in general and education about the environment in particular. The conferees discussed and shared experiences on the current state of environmental education in the nation and world and planned strategies to improve educational opportunities at all levels.

The educators in attendance included Mary E. Bradbury, biology teacher and science department coordinator at Southern High School in Durham, N.C.; Cleopatra Carr, physical science/chemistry teacher at Cary High School, Cary, N.C.; Zannie Efrid, biology teacher and department chairperson at W.G. Enloe High School, Raleigh, N.C.; and Dr. Gustav A. Ofosu, professor of biology, Delaware State College, Dover, Del.

The 2-year-old program brought more than 100 students and faculty members into NIEHS laboratories in the summer of 1991 to work with research scientists on the NIEHS staff, who acted as mentors. College faculty members in the program are selected from schools traditionally serving women and underrepresented minorities, and all participants are selected on the basis of their interest in science and the availability of a mentor with similar scientific interests.

A special seminar series gives highlights and an overview of research being done throughout NIEHS. Faculty participants join in working lunches featuring presentations on curriculum development, application procedures for NIH research grants, and other



Participants in the recent national meeting on environmental education included (from l) Dr. John McLachlan, NIEHS intramural research director; teacher Cleopatra Carr; Dr. Frank Young, HHS deputy assistant secretary for health, science and environment; and teachers Zannie Efrid and Mary E. Bradbury.

relevant topics. Last summer, the program was topped off with a scientific poster session on the participants' summer research and activities. One mentor described the poster session as the best attended he had seen in his 13 years at the institute.

Dr. Kenneth Olden, NIEHS director, said, "The institute has seen that it can offer a deepened understanding of basic research to summer program participants, invigorating faculty with new information and research contacts, and introducing students to the excitement of basic research. We know this experience can strengthen students' career interests in biomedical research. In turn, these summer program participants share with the institute enthusiasm and energy that is stimulating and refreshing."

Olden pointed out that a number of summer program participants will be listed as co-authors on publications of studies they worked on, and several college faculty participants have continued research collaborations with NIEHS staff.

Faculty are nominated for the program by their department chairpersons or school principals, and students may apply directly. All nomination and application material must be received between Jan. 1 and Apr. 15 for the following summer. For application material write: NIEHS Personnel Office, Mail Drop 1-01, P.O. Box 12233, Research Triangle Park, N.C. 27709. □

## NICHD Seeks Volunteers

The NICHD seeks healthy volunteers ages 18-45 to participate in evaluation of a new vaccine against *Staphylococcus aureus* infection. Volunteers will be tested for HIV, liver function and females will also be tested for pregnancy. A positive test for any of the above will exclude participation. For information call Dottie, 496-1185. □

## 'Are You Plugged In?'

How savvy are you about the National Library of Medicine's services—particularly Grateful Med, the library's clever means of gaining friendly access to its many information resources?

On Tuesday, Jan. 21, NLM will present "Are You Plugged In? The NLM and Grateful Med—Great Resources for People Like You," an NIH Public Affairs Forum. The program, to include a film, a demonstration of Grateful Med, and a question-and-answer session, will be held in the library's Lister Hill Center auditorium from 1:30 to 3:30 p.m. Optional tours of NLM will be available following the formal presentation.

The Grateful Med demonstration will include applications of particular interest to the staffs of NIH public affairs offices. For example, while Grateful Med is most often used to search for particular journal articles or books in the library's collection, it also enables quick access to information about thousands of medically related organizations throughout the country.

All are welcome to attend. The LHC auditorium is easily reached via the campus shuttle (Bldg. 38A). For more information call Roger Gilkeson, 496-6308. □

## New Orleans Getaway

Mardi Gras here we come—spend 5 jazzy days in New Orleans with R&W and Collette Tours. Enjoy tours of the Bourbon St. jazz section, the residential district along St. Charles Ave., St. Louis Cathedral, and a cruise along the Mississippi aboard a paddle wheeler. There will be time on your own to browse in the French Quarter and other areas of interest. Trip departs Feb. 29. Cost is \$999 per person double occupancy and includes round-trip airfare and transportation, accommodations, and six meals. For an informational flyer, call or stop by the R&W Activities Desk in Bldg. 31, 496-4600. □

## David Lim To Direct NIDCD Intramural Science

Dr. David J. Lim, a noted otolaryngologist, has been named the first director of the Division of Intramural Research for NIDCD.

Lim comes from Ohio State University College of Medicine, where he was director of the otological research laboratories in the department of otolaryngology. His laboratory is recognized as one of the foremost in auditory research in the country. Lim is a world leader in the study of the ultrastructures of the ear, and his particular area of interest is the common middle ear disease otitis media.

He began his scientific career as an assistant professor in the department of otolaryngology at Ohio State in 1967. Advancing rapidly, he became professor in the department of otolaryngology in 1976 and professor in the department of anatomy in 1977.

In his new position, Lim will oversee the institute's intramural basic and clinical research programs, which currently consist of four branches and five laboratories. He will be responsible for directing a multidisciplinary program that encompasses hearing, balance, smell, taste, voice, speech and language, and for integrating new research activities into the division's structure. The division currently has a staff of approximately 62 employees and an annual budget of \$7 million.

Lim received his A.B. degree from Yonsei University, Seoul, Korea, in 1955, and his M.D. degree in 1960 from the same university. He began his research training in 1965 at Massachusetts Eye and Ear Infirmary and Harvard University Medical School, where he was a research fellow in the department of otolaryngology. In 1966, he served as a research associate in the department of otolaryngology at the Ohio State University College of Medicine, and in 1982 was a visiting scientist of the Swedish Medical Research Council in the department of physiology at



*NIDCD director Dr. James B. Snow, Jr. (l) welcomes his new director of intramural research Dr. David J. Lim.*

the Karolinska Institute and in the department of otorhinolaryngology at the King Gustav V Research Laboratory in Stockholm.

Lim has received numerous awards and honors for his contributions to biomedical research. He received the Award of Merit from the American Academy of Otolaryngology in 1978 and the Distinguished Scholar Award from the Ohio State University in 1985. He received the Javits Award from the National Institute of Neurological and Communicative Disorders and Stroke in 1986 and the Claude Pepper Award from NIDCD in 1989.

Lim's scientific accomplishments also have been recognized by his peers throughout the world. He has been an invited lecturer at national and international symposia including the Nobel symposium on cellular mechanism in hearing in Sweden and the International Symposium on Otitis Media.

The results of his research have appeared in more than 180 papers in major scientific journals. He has received 38 research grants and 10 research contracts from various federal and private agencies.—Patricia Blessing □

## DCRT To Lend Workstations to Interested Scientists

DCRT has an offer that NIH scientists can't refuse. The division's advanced laboratory workstation project has Unix-based computers it is willing to lend to researchers who are considering purchasing similar machines. DCRT's Computer Systems Laboratory sponsors the project.

Advanced laboratory workstations are particularly suitable for scientific applications, including molecular graphics and modeling, medical image processing, gel analysis, and DNA and protein sequencing and searching. Scientists who currently use the machines also perform statistical analysis and scientific desktop publishing. Software programs that address a variety of scientific problems are available with the workstations: for example, *Analyze* and *Xcalibur* for medical imaging, *S-Plus* and *SPSS* for statistics, *Linkage* for genetic linkage analysis, and *FrameMaker* for

scientific desktop publishing. The Unix-based systems provide high-performance computing power, and connection to the campus-wide computer network completes the package with access to electronic mail and news and an international distributed file system. DCRT centrally provides backup and software maintenance services for these workstations.

Sun SPARCstations are available to scientists who wish to try applications in their own labs or offices. Machines are typically loaned for 1 month, and some familiarity with Unix is recommended. In order to be eligible for a "loaner" you must have an Ethernet network connection to the campus-wide computer network (either RESnet or NUNet).

If you are interested in finding out more about the loan program, call Keith Gorlen, 496-1111. □

## Genetics Lectures Planned At Smithsonian Institution

Nine experts in molecular genetics, including several prominent NIH scientists, will discuss the scientific and social ramifications of their work as part of the Smithsonian Science Forum this winter.

Dr. Jeffrey E. Green, an NCI medical geneticist, is coordinator of the series held Tuesdays at the Smithsonian from 8 to 9:30 p.m., Jan. 28 through Mar. 17. Cost for the series is \$91 for NIH employees, \$55 for students.

The schedule of dates, topics and speakers is as follows:

Jan. 28 "The Foundation of Life: Gene Structure, Regulation and Cloning," by Dr. Richard Klausner, chief of NICHD's Cell Biology and Metabolism Branch.

Feb. 4 "Targeting Genes for Therapy: First Trials and Future Prospects," by Dr. Michael Blaese, deputy chief of NCI's Metabolism Branch.

Feb. 11 "Gene Mapping: The Search for Faulty Genes," by Dr. Ray White, University of Utah.

Feb. 18 "Viruses and Genes That Cause Cancer: Can They Be Controlled?" by Dr. Takis Papas, chief of NCI's Laboratory of Molecular Oncology.

Feb. 25 "The Human Genome Project: A Revolution in Biology and Medicine," by Dr. Leroy Hood, California Institute of Technology.

Mar. 3 "Genetic Origins: Evolution Revisited," by Dr. Stephen J. O'Brien, chief of NCI's Laboratory of Viral Carcinogenesis.

Mar. 10 "Altering the Genes of Animals and Plants," by Dr. Robert Wall, of the U.S. Department of Agriculture, and Dr. John Pierce of DuPont Agricultural Products.

Mar. 17 "The New Genetics: Promise or Peril?" by Dr. Eric Juegst, director of the Ethical, Legal and Social Implications Program, National Center for Human Genome Research.

For more information, call Green at the Frederick Cancer Research and Development Center, (301) 846-5177. □

## R&W Seeks New Clubs

R&W has been approached by interested individuals on campus about starting three new clubs: a single parents support group, which would plan activities and lectures in support of the single-parent lifestyle; a board games club, which would match people who wanted competition in Scrabble, backgammon, chess, etc.; and a book-of-the-month club, which would discuss bestselling novels or other literary works. If you are interested in helping organize any of these groups, call 496-6061. □

## Jeanne Waggoner Retires After 34 Years at NIH

By Jim Fordham

Jeanne Gravely Waggoner, a chemist in the liver diseases section of NIDDK since its inception in 1973, retired recently after 34 years at NIH. She began her career as a chemist in NCI's Metabolism Branch in 1957, working with Dr. Nathaniel Berlin.

"I got my job here at NIH because of the Russians," Waggoner says. "As soon as the Russians sent up their Sputnik in 1957, a lot of government jobs opened up in science."

Describing how she became interested in a scientific career, Waggoner says: "Both of my sisters majored in dietetics and institutional management, but I hated cooking. I had a neighbor who worked with a chemist and she thought I might be interested in chemistry, so I took chemistry in high school and liked it. When I went to college, I decided to major in chemistry and minor in mathematics."

Graduating from the University of North Carolina at Greensboro with a B.A. in 1954, she then served as a naval officer at the Naval Air Station in Pensacola, Fla. There she met and married Ed Waggoner, a Navy pharmacist, and eventually she left the Navy to have a baby. When Ed was transferred to the Naval Hospital in Bethesda, Jeanne sought work as a chemist at NIH.

"I interviewed with Dr. Berlin and we liked each other, so I came to NIH to work with him as a chemist and I've been here ever since," she said.

At NCI, Waggoner did red cell kinetics studies relating to body composition changes in cancer patients and bilirubin transport studies relating to Gilbert's syndrome and other diseases. When Dr. Paul Berk became the first chief of NIDDK's liver diseases section, Waggoner worked for him and, for a while, they continued doing the same kinds of research they had done at NCI.

Berk, who is now chief of the Division of Liver Diseases at Mount Sinai Medical Center, wrote to Waggoner later: "The first time I was brought into the laboratory, you were sitting on a high stool at one of the lab benches with a maze of apparatus and equipment arranged around you. My recollection is that your speech was slow and Southern, but that your actions were perpetual motion. I subsequently figured out that you were performing three separate laboratory procedures simultaneously as you sat there and chatted with me about the projects that I was to become involved with."

Later, when Dr. Anthony Jones became chief of the section and Dr. Jay Hoofnagle arrived, Waggoner's work began to focus on hepatitis, hepatic encephalopathy, and other studies relating to liver diseases.

"One of the things I always liked at NIH," she said, "was that I constantly learned new things."



Jeanne Waggoner

Waggoner catalogued samples for the research of Jones, Hoofnagle, and Dr. Adrian Di Bisceglie, logging the samples in and out, and disseminating them for research by scientists across the United States and in other countries. Often she performed assays for scientists elsewhere who sent samples to her. Over the years, this work grew into an extensive program of collaboration with scientists around the world.

Much of her work consisted of performing radioimmunoassays relating to various types of hepatitis and primary biliary cirrhosis. Once she calculated that she had performed more than 16,000 DNA polymerase activity assays during her career.

Dr. Edward Rall wrote to her: "As I look back and note that you worked with Nat Berlin, David Nathan, Don Tschudy, Paul Berk, Bruce Scharschmidt, Paul Plotz and, of course, Jay Hoofnagle and Tony Jones, I must say you've managed to choose some of the great scientists in the NIH and have supported them for (more than) 30 years."

Waggoner also trained scores of young scientists in laboratory techniques. Many of them came to study at NIH from Australia, Japan, Korea, France, Spain, Italy, England, and other countries.

"Anyone who has ever worked in the NIH liver unit would agree that you, Jeanne, have been an integral force in contributing to the long success of the unit," Dr. Gary L. Davis wrote to her when she retired. "You have been involved to some degree in the training of every scientist, the completion of every project, and the enrichment of everyone's experience."

Recalling her years with Dr. Nathaniel Berlin, Waggoner remembers that he was very strict about laboratory procedures and safety precautions. "He was a stickler for safety," she said. "At that time there was nothing special here in the way of safety precautions. Now, of course, they have courses. Learning safety techniques is very important. I think everybody should take a course on safety before they even step in the door (of an NIH lab). You really need to be safety conscious because there are so many ways that you can, not so much blow the place up, but harm yourself, because here you are around diseases."

Looking back, Waggoner is impressed with how much medical research has advanced during the past 30 years. "Considering that research as we know it didn't start until around 1900," she said, "and medical research didn't really get started until after World War II, we have made progress by leaps and bounds since then." It makes her feel "very, very good," she said, to know that she has helped so many patients through her work. "I just wish I could have done more."

Asked what she will do in the years ahead, Jeanne said: "I hope to do gardening and reading, to catch up on all of the *National Geographic* I haven't read, and to travel." She wants to visit her son soon, who is in the Air Force in Oklahoma. "And I would like to go to Spain for the Olympics," she said. □



George S. Luhn, inventory management specialist for the Supply Branch, Division of Logistics, retired recently after 44 years with NIH; his total federal service encompassed 48 years. Luhn came to NIH in 1946 and began his career as a file clerk in Bldg. T-6. In 1951 he transferred to the Supply Unit and worked as a store worker in the sub-basement of Bldg. 1. "NIH is a wonderful place to work," he says. "To watch it grow and change over the years has been exciting." In retirement, Luhn is planning on traveling with his wife Ruth, taking care of his lawn in Olney, and just relaxing.

## Recognition for NCI Journal on Rise

The *Journal of the National Cancer Institute* (JNCI) now ranks among the top 10 scientific journals cited in newspaper stories by the media. These findings are from a poll conducted in the second quarter of 1991 by the pharmaceutical company Searle. The poll shows JNCI finished eighth, ahead of the *Proceedings of the National Academy of Sciences* and the *Annals of Internal Medicine*.

Another survey of 11 major daily newspapers in the United States indicated that JNCI was mentioned in news articles more often than the *New England Journal of Medicine*, *Annals of Internal Medicine*, and *Journal of Clinical Oncology* combined. During the first 9 months of 1991, JNCI was cited 273 times in news stories, while the three other journals were cited a total of 269 times. The survey was conducted by NCI's International Cancer Information Center and was based on data from the DIALOG newspaper database.

"We're particularly pleased and surprised because the new journal is less than 4 years old and is already making a substantial mark as a quality publication," said Julianne

Chappell, JNCI managing editor. "The journal's rigorous standards and explanatory editorials probably contribute to its popularity."

Among clinical oncologists, JNCI is the fourth most frequently read journal for information about cancer, according to Gallup poll results released in 1991. As NCI's principal peer-reviewed publication, JNCI prints research papers on all aspects of cancer, including molecular and tumor cell biology, biochemistry, carcinogenesis, clinical trials, and epidemiology. It also features a news section, with coverage of research and clinical issues, health policy, scientific conferences, and other important cancer-related events from around the world. NCI deputy director Dr. Daniel C. Ihde is editor-in-chief.

Recently, JNCI received a second-place 1991 Blue Pencil award from the National Association of Government Communicators in the category of best four-color periodical for a technical audience.

NIH'ers interested in subscribing to JNCI can call Jana Johnston, 496-4907. □

## CC Passes Accreditation, Receives Commendation

After submitting to an intensive survey, the Clinical Center has passed review and received accreditation with commendation from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

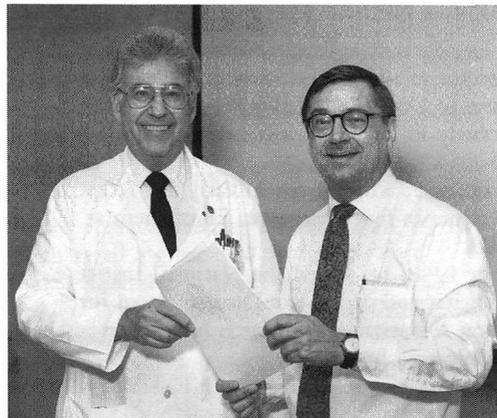
"Not only did we pass the review, we did so with no contingencies," said acting CC director Dr. Saul Rosen. According to JCAHO, some 5 percent of the 1,476 hospitals applying for accreditation in 1990 received a commendation.

In the notification letter from JCAHO, Dr. Kenneth G. Hermann, vice president for accreditation surveys, wrote, "This outstanding level of achievement reflects the successful efforts of your organization to provide high quality care for those you serve."

The Joint Commission evaluates and accredits more than 5,400 hospitals and 3,600 other healthcare organizations that provide home care, mental health care, ambulatory care and long-term care.

JCAHO reviewers inspect all departments and aspects of a facility, including nursing services, medical staff, administrative and management procedures, quality assurance, fire safety, disaster plans, and handling of hazardous materials and wastes. Hospitals accredited by JCAHO must reapply every 3 years.

Throughout the review process, JCAHO investigators looked at the ways the CC staff anticipated potential problems, trained and prepared workers to avoid problems rather than waiting until problems happened, and



Dr. Saul Rosen (l), acting director of the Clinical Center, accepts notice of the JCAHO accreditation with commendation from Ray Becich, CC executive officer.

instilled a "corporate spirit" within the organization. The commission is asking hospitals to begin "total quality management" programs in 1992, a process the CC undertook in November 1990.

Preparation for the review involved the entire hospital, but the efforts paid off. The reviewers were impressed by the teamwork and commitment of the staff.

"We have made substantial improvements since the last JCAHO review," said Rosen. "They arise from all the hard work of the hospital and people from all the institutes, centers and divisions of NIH who collaborate with us." □

## DCRT Offers Seminar Series On Genetic Linkage Analysis

DCRT will hold a series of seminars on human gene linkage analysis to be given by Dr. Jurg Ott of Columbia University's College of Physicians and Surgeons. The lectures by this world-renowned geneticist will take place in Lipsett Amphitheater on Jan. 8, 9 and 10.

As professor of genetics and psychiatry, Ott has presented workshops and seminars on his genetics research from Finland to Utah to his native Switzerland. His DCRT-sponsored presentations come in a three-part series.

Wednesday, Jan. 8, 2-4 p.m., "Principles of Human Linkage Analysis"—This seminar is intended as a refresher on genetics or as an introduction to the basic genetic principles involved in linkage analysis.

Thursday, Jan. 9, 1:30-3:30 p.m. "Advanced Topics in Human Linkage Analysis"—Ott will be joined by his colleague, Joseph Terwilliger, for this session, which is for those who have attended the previous session and for individuals with some prior experience in linkage analysis.

Friday, Jan. 10, noon-1:15 p.m. "Strategies for Linkage Analysis of Complex Traits"—The final session is a continuation of the first two and is for people who are very familiar with linkage analysis.

Ott is editor-in-chief of *Human Heredity* and author of *Analysis of Human Genetic Linkage*, which was recently published in a revised edition. His book provides a definitive treatise on the theoretical, mathematical, statistical, and computer analysis of "lod scores" and gene linkage analysis. He has been personally involved in the mapping of more than a dozen disease genes including those for Huntington's disease, X-linked retinitis pigmentosa, cystic fibrosis, and manic-depressive illness. He was the first to develop a practical computer program, LIPID, for this analysis, and his approach is the basis for virtually all other such programs in use today.

No registration is required for the lectures. For more information, call 496-5703. □

## Bahamas Cruise, Disney Tour

R&W, in conjunction with Collette Tours, is offering a combination Walt Disney tour and Bahamas cruise departing Apr. 17. Spend 3 days in Orlando visiting Walt Disney World, Sea World, Universal Studios and more. On the fourth day board the S.S. Dolphin IV headed for Key West, Nassau, and Blue Lagoon Island. This package is \$1,199 per person (double occupancy, outside cabin—call for other price categories) and includes round-trip airfare and transportation, accommodations, theme park admissions, and 17 meals.

For more information, call the R&W Activities Desk, 496-4600, to obtain a flyer complete with itinerary. □

## Jean Stein Retires from NCI, Had More Than 27 Years Here

Never again will she get up at 5:45 in the morning and neither will she ever pack another lunch. Those are two of her most solemn vows, Jean Stein says with a straight face quickly betrayed by the twinkle in her eyes. After more than 30 years in government service, 27½ years at NIH, Stein retired Jan. 3 as an administrative officer with NCI's Epidemiology and Biostatistics Program.

Other things she says she won't miss about NIH include campus parking (although she has been at the rumored "E-Z park" Executive Plaza for the last 3 years) and the blue moods suffered during postvacation returns to work.

"The thing I'll really miss is the interaction with different people," Stein says. "I've met a lot of people and made a lot of good friends. I've also seen quite a few changes at NIH."

One change that readily comes to Stein's mind is the role of women at the agency. In her early days on the job, she says most women were secretaries, clerk-typists and, in the labs, technicians. Stein herself started as a grade 4 clerk-typist.

"The situation for women has improved since then," she recalls, adding that she never thought she'd see a woman as NIH director. Stein has been a part of women's progress at NIH. In 1972, she was a member of the first STRIDE class, enabling her to return to college and attain her bachelor's degree under the auspices of the federal government.

STRIDE placed heavy demands on its participants—20 hours of work and 20 hours of coursework per week—but offered a tremendous return on the investment—more earning power represented by a broader knowledge of particular career fields, a college degree, and an enlarged network of professional contacts and mentors. This was especially important to Stein, who had returned to work a few years earlier as a newly single mother of three small children.

"I was scared to death about going back to school," she recalls, grinning. "But I must admit there's something to be said about going to school when you're older. The first time around I was looking at the guys rather than looking at the books. When I went back, I stuck to studying. Of course by then the guys looked like they could be my sons."

Stein says spending more time with her family—sons, Mike and Rick, daughter Caryn and two Labrador retrievers—will be an important part of retirement, as will spending time alone at her summer home in Ocean Pines, Md., a short distance from Ocean City.

"It's so quiet and serene," she says. "The deer come by and gambol near my place. I love it."

Originally from New York, Stein moved to the metropolitan area in 1948 and has lived in the same Wheaton residence since 1955. She says she was drawn to NIH by its reputation



Jean Stein  
in the medical community.

"I really needed a job," she explains, "and I'd heard so much about the wonderful things at NIH. I'd always been in awe of the medical field."

Stein first worked at NIH as a lab secretary in NICHD's Laboratory of Biomedical Sciences. After STRIDE, she found a mentor in

the National Heart Institute and became an assistant administrative officer in the Blood Division.

To other employees contemplating, or more, anticipating their retirements, Stein offers the following sentiment: "Yes, you really do get to a point where you can retire."

During her career here, she has also indulged what she calls her innate love for drama and comedy by being a "Hamster" in some of the Theater Group's stage productions. *Auntie Mame*, in which she twice won the title role, with the Silver Spring Stage and with the Temple Shalom Players, is one of her all-time favorite performances. Given her deep, raspy voice, her portrayal of the Rosalind Russell classic is easy to imagine.

Stein says her acting career crested and was saved for posterity when she began portraying "Every Supervisor" in a few NIH training films distributed far and wide to NIH as well as several government installations "out West." Some of her films are still being shown as an aid in dealing with problem employees. Of her experience as Every Supervisor, Stein gleefully boasts what could easily be her parting line, "I was never the *problem*."—Carla Garnett □

### Russell Hilmoe Mourned

Dr. Russell J. Hilmoe, former associate director of the NIGMS Cellular and Molecular Basis of Disease (CMBD) Program, died recently following an extended illness. He was 70.

Hilmoe, who retired in early 1977, spent 32 years in federal service, 28 of them at NIH.

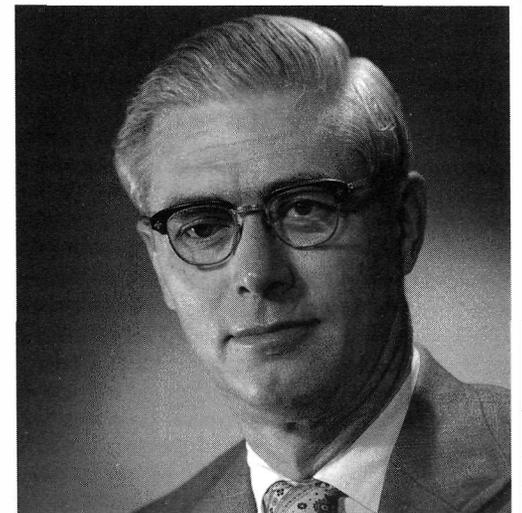
In 1948, he joined the National Institute of Arthritis and Metabolic Diseases as an intramural scientist. His research focused on nucleic acid biochemistry.

Hilmoe began working at NIGMS in 1964, as a science administrator in the biochemistry section of the Research Training Grants Branch. Following the reorganization of NIGMS in 1973, he was appointed associate director of the CMBD program. While in that post, he oversaw grant support of research in enzymology and biochemistry, as well as broad areas of graduate biomedical research training.

A native of South Dakota, he received his B.S. degree from South Dakota State University, and both his M.S. and Ph.D. degrees from Georgetown University.

From 1944 to 1946, he served as a laboratory technician with the U.S. Army Medical Corps. For the next 2 years, he served with the U.S. Army Chemical Corps at Ft. Detrick in Frederick, Md.

Upon his retirement from NIGMS, Hilmoe assumed the position of executive officer of the American Society of Biochemistry and Molecular Biology. From 1980 to 1982, he worked



Dr. Russell J. Hilmoe

at the National Academy of Sciences as staff officer of the committee on human resources of the National Research Council. This committee was instrumental in writing a series of reports on biomedical research manpower needs for the nation. During the past several years, he worked as a consultant in science administration.

Hilmoe is survived by his wife, Patricia, four daughters, and his mother, Rose. The family has suggested that contributions in Hilmoe's memory be sent to the Montgomery Hospice Society or the Chevy Chase United Methodist Church Landscape Fund.

## TRAINING TIPS

The NIH Training Center, Division of Personnel Management, offers the following hands-on IBM and Macintosh computer training courses:

Course Titles	Starting Dates
<i>Personal Computing Training 496-6211</i>	
Welcome to Macintosh	1/23, 2/6, 2/26
MacWrite	1/13
Transition to WordPerfect 2.0	(upon request)
Intro to Microsoft Word (Mac)	2/11
Excel Level-1	2/12
4th Dimension	2/3
FoxBASE-Level 1 (Mac)	(upon request)
FoxBASE-Level 2 (Mac)	(upon request)
Aldus Pagemaker	2/27
3Com PC Network-Level 1	2/10
3Com PC Network-Level 2	2/24
Intro to Personal Computing for New Users	1/17, 2/19
Disaster Recovery and Data Retrieval for the PC	1/24
Introduction to DOS	1/23, 2/7
Introduction to Windows 3.0	1/21, 2/27
Introduction to WordPerfect 5.1	1/22, 2/3
WordPerfect 5.1 — Advanced Topics	2/11
Printing With WP 5.1 & Laser Printers	2/6
Intro. to Harvard Graphics, Rel. 2.3	1/21, 2/20
Intermediate Harvard Graphics Rel. 2.3	2/7
Introduction to dBASE III+	1/14
Intermediate dBASE III+	2/4
dBASE III+ — Advanced Topics	2/24
Introduction to Paradox 1/27 Intermediate Paradox	1/28
Paradox PAL (programming)	1/29
Intro to Lotus 1-2-3, Rel. 2.2	2/10
Lotus 1-2-3, Rel. 2.2 — Adv. Tops.	2/19
IMPACT System for Personnel Staff	1/16, 2/13
IMPACT System for MSCs	1/23, 2/27
Intro to CRISP	2/25

## Secretary Agnes Poole Retires After 45 Years of Federal Service

Agnes Poole retired Jan. 3 from the Division of Engineering Services' north maintenance engineering section after 45 years of federal service. A native of New York, she came to the Washington area to work for the Veterans Administration in 1944 after a friend of hers had already left Marlboro, N.Y., for a job with the VA. Poole continued to stay in this area throughout most of her career except for a 10-month period when she moved to Dallas for the VA.

After returning to the area, she worked for several agencies including the VA, Department of Commerce, Federal Housing Administration and the U.S. Army Corps of Engineers, before joining NIH in 1963. Poole has worked in the maintenance section for more than 28 years.

Describing the 40-year service pin she received several years ago, Poole said, "I wish it was like the 30-year pin. That pin was made so you could wear it as a pendant." And that is exactly where Poole wears hers—around her neck.

Working as a secretary for the section entails managing a lot of time cards, she says. "In fact, 73 in all. We have 24 people at the Poolesville facility and 49 here in Bldg. 31. When I first joined maintenance, there were only 60 people and my day was shared between Bldgs. 13 (south maintenance) and 31 (north maintenance). I was later assigned to Bldg. 31 full-time."

Working for the building engineers doesn't



Agnes Poole

always mean your own office is trouble-free. Poole remembers a few years ago when her office was flooded and the telephone lines were out. "The cause," she revealed, "was a leaky pipe."

Joe Bladen, assistant section chief, says, "This place will probably fall apart when Agnes leaves." Coworker Renard Walker says, "I've been here 14 years and Agnes has always been my time keeper and she has never made a mistake."

The recipient of many awards, including her most recent excellent performance in 1990, Poole says, "I am looking forward to retirement and sleeping late. I am not a morning person."—Anne Barber □

## NIAMS Advisory Council Gains Five New Members; Terms End in 1994

The NIAMS has added five new members to its advisory council. They are: Dr. Charles Epps, Jr., of Howard University College of Medicine; Dr. Karen Holbrook of the University of Washington School of Medicine; Dr. Paul Horowicz of the University of Rochester; Terry Schwantes of Milwaukee, Wis.; and Dr. John Stobo of Johns Hopkins University.

Epps is dean and professor of orthopaedic surgery at Howard University College of Medicine. His expertise is in prosthetics, the artificial replacement of a limb or other part of the body.

Holbrook is a leading expert in developmental biology of the skin. She holds several positions at the University of Washington—professor of biological structure, adjunct professor of medicine, and associate dean for scientific affairs.

Horowicz's field of expertise is biophysics, with a special emphasis on muscle physiology. He is professor and chairman of the department of physiology at the University of Rochester.

Schwantes has a deep interest in rare disorders, a major concern of NIAMS, because his daughter has osteogenesis imperfecta, a rare

disease characterized by brittle bones. He has volunteered a great deal of time to the Osteogenesis Imperfecta Foundation.

Stobo is the William Osler professor of medicine and chairman of the department of medicine at Johns Hopkins University School

of Medicine and physician-in-chief at Johns Hopkins Hospital. His field of expertise is rheumatology, with a concentration in immunology.

The appointments of these new council members expire in September 1994. □



New members of the NIAMS advisory council meet with institute director Dr. Lawrence Shulman (front, second from r). They are (front, from l) Terry Schwantes, Dr. Karen Holbrook, and Dr. Charles Epps, Jr. At rear are (from l) Dr. John Stobo, Department of Defense representative Dr. Bryan W. Fleming, Jr., and Dr. Paul Horowicz.

## NIH Information Community Lauded in Media Competition

The National Association of Government Communicators recently bestowed 18 awards on members of the NIH public affairs community for excellent work in the media of television, film (Gold Screen awards) and print (Blue Pencil awards).

Nine awards were garnered by NCI, which included four first-place honors in various categories.

The NIH winners in the annual competition, open to state and federal communication offices throughout the United States, appear below.

Winning Gold Screen awards in their respective categories were:

Television/Public Service Announcement—Honorable mention for NHLBI's "Having A Stroke."

Television/News Program—Honorable mention for the Clinical Center's "Medicine for the Public Video News Release" by Ellyn Pollack and Trish Evans.

Video-Film Programs/Public Information—Honorable mention for the CC's Ellyn Pollack and Alice Hardy on "Medicine for the Public:

Pollack, Evans and Robert Buell on "Clinical Center Crime Watch."

Winning Blue Pencil awards in their respective categories were:

News Release—First place to NCI's Kara Smigel for "No Excess Cancer Mortality Risk Found in Counties with Nuclear Facilities."

Press Kits—Honorable mention for NCI's Sharyn Sutton and Linda Bass for "Do the Right Thing Media Kit."

Campaigns—Second place to the CC's Pollack and Buell for "Clinical Center Crime Watch Campaign."

General Brochure (4 colors)—First place for NCI's "Adopt A School Program."

Publication for General Audience (2-3 colors)—Third place to NIGMS for "Inside the Cell."

Publication for General Audience (4 colors)—First place to NCI's "Patient Education Series." Third place to NCI's "Facing Forward."

Publication for Technical Audience (1 color)—First place to NHLBI's "NCEP Report of the Expert Panel on Population Strategies for Blood Cholesterol Reduction."

Publication for Technical Audience (2-3 colors)—First place to NCI and Chris Olson & Associates for "PDQ Quick Reference Guide."

Periodical for Technical Audience (4 colors)—Second place to NCI's "Journal of the National Cancer Institute."

The winners were honored at a banquet Dec. 5 at the Rosslyn Westpark Hotel. □

## USUHS Needs Volunteers

The USUHS is seeking healthy males between the ages of 18 and 45 who are non-smokers, and nondrug users, for a single 3-hour study of effects of task performance on physiological functioning. For further information call (301) 295-3278. □

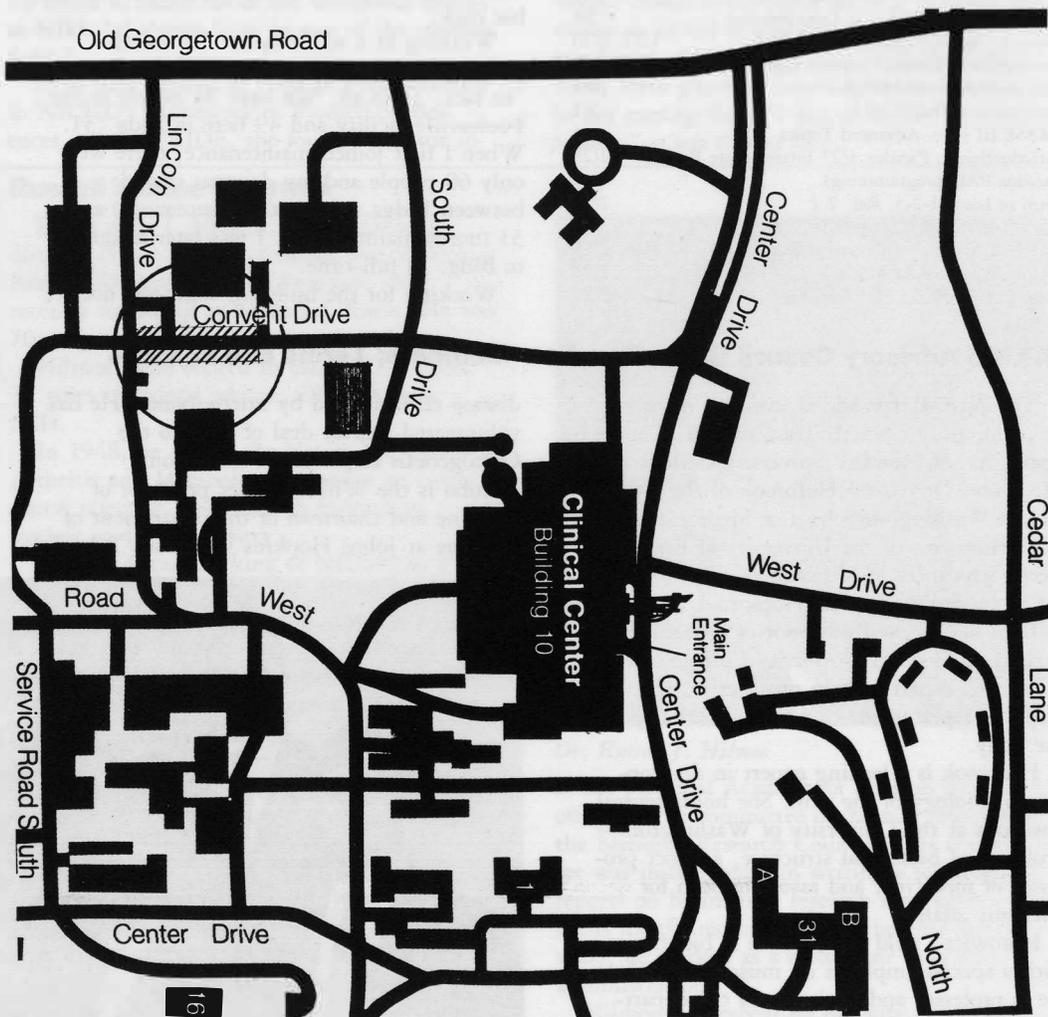


NCI's Kara Smigel won first place for a news release she wrote on cancer mortality risk near nuclear power plants.

Allergic Diseases." Honorable mention for the CC's team of Pollack, Evans and Mary Hepburn on "Medicine for the Public: Understanding Seizure Disorders." Honorable mention for NCI's Sharyn Sutton and Cori Vanchieri on "Once a Year... For a Lifetime."

Video-Film Programs/Instructional Program—Winner is NCI's "Patient to Patient: Cancer Clinical Trials and You." Honorable mention for the Division of Safety's Nancy Newman and Trish Evans, who made "Radiation Safety Refresher Training."

Video-Film Programs/Internal-Employee Communication—Honorable mention for CC's



Construction of the new FDA Bldg. 29B is scheduled to begin on or about Jan. 27. Included in this project is the realignment of that portion of Convent Dr. between Bldg. 36 and Bldg. 29A. The work will necessitate closing that section of Convent Dr. (shown in circle above), beginning Jan. 27, for about a year.