

*"Still
The Second
Best Thing
About Payday"*

The NIH Record

Is Knowledge Power?

Seminar Examines Effects of Genetic Testing

By Carla Garnett

The first women's health seminar of 1995 reflected a fundamental truth about the current status of genetic testing: Rapidly burgeoning DNA technology raises many more thorny questions than can be readily or definitively answered.

"The implications of the information gleaned from this new technology are numerous, and there are many, many questions we must ask," said NIH deputy director Dr. Ruth Kirschstein, in opening remarks. "The promise and the perils of human genetic information are particularly striking."

In a state-of-the-science update, Dr. Neil A. Holtzman, professor of pediatrics at Johns Hopkins, discussed the "Scope of Genetic Testing: Past, Present, Future," including the development of recombinant DNA technology, which has greatly expanded the field.

A grantee of NIH's Ethical, Legal, Social Issues (ELSI) component of the Human Genome Project, Holtzman said several key points summarize the power of DNA-based genetic testing: tests can now be performed on any cell containing DNA, not just blood or urine, as was the case in identification of early hereditary disorders such as phenylketonuria, in which a biochemical manifestation of disease was necessary; with

Dr. Neil A. Holtzman

(See **GENETIC TESTING**, Page 8)

Women's Health Initiative Moves into Top Gear

The NIH Women's Health Initiative (WHI), the largest U.S. study ever to address some of the major health concerns of postmenopausal women, is surging ahead. Next month will mark the second anniversary of the funding of the 16 Vanguard Clinical Centers, the first of a total of 40 that will conduct the WHI studies. To date, almost 10,000 women nationwide have been enrolled by the Vanguard Centers. This past September, the next 24 clinics were awarded NIH contracts, and recruitment of women into the WHI by these centers began this month. Enthusiasm for WHI is high among women nationwide. Every time WHI is mentioned in the press, large quantities of mail are sent to NIH from postmenopausal women eager to participate in the study.

(See **WOMEN'S HEALTH**, Page 4)

Generators Bridge Gap

Power Transfusion Benefits Children's Inn

By Rich McManus

The Children's Inn at NIH underwent a near-seamless transfusion of electric power on Feb. 9 when workers from the Office of Research Services' Electric Shop weaned the facility from Pepco's Bethesda grid to a more reliable power grid feeding out of Bldg. 10.

Several years ago, inn authorities recognized that summer storms frequently resulted in temporary power outages at the facility, an especially worrisome occurrence when patients are involved.

"Just about every time there was a thunderstorm, the power would go out," said Ed Burns of the Electric Shop. "It went out frequently."

To rectify the problem, Tony Clifford, acting director of ORS' Division of Engineering Services, determined that the inn's power needs would be better met by feeder lines

(See **POWER TRANSFUSION**, Page 6)

NIH Observes Nutrition Month During March

These days people are becoming more health conscious and concerned about foods they eat. While we often choose foods because of their taste and convenience, more people are looking for foods considered healthful. During nutrition month in March, the NIH nutrition coordinating committee, in conjunction with the NIH Health Promotion Program, the Clinical Center nutrition department, and the R&W, is promoting the theme "Choose from a World of Food."

Many exciting foods that are traditional for various ethnic or cultural groups can increase the variety of foods we can choose to eat and make healthful eating an adventure. When advised to eat a variety of foods—which is the first of seven USDA/DHHS Dietary Guidelines for Americans—including foods from other cultures can open up a world of food choices.

During nutrition month, try new foods or an ethnic favorite fixed in a more health conscious way. This doesn't mean giving up foods you love. There are ways to modify recipes, including favorite family recipes or ethnic foods, to lower them in fat, saturated fat, cholesterol, salt, and sugar without compromising their taste.

At various times during March there will be featured entrees from NHLBI's "Stay Young at Heart" heart-healthy nutrition education program and NCI's Hispanic Education

(See **NUTRITION MONTH**, Page 4)

Pitching in during the recent power switchover at the Children's Inn were (from l) Michael Williams, Ed Burns and Gordon Hinkle of the Electric Shop, part of the Shops Branch, ORS. Twin 250-kilowatt portable generators (at rear) provided electric power during the changeover in source lines feeding the inn.

Neural Prosthesis Workshop Celebrates 25th Anniversary

By Norman Oliver

In January 1971, a handful of scientists gathered in a small NIH conference room to talk about how electrical devices might be used to stimulate the nervous system, bypass damaged nerves, and help people with neurological disabilities hear, see, and move. The meeting was the first of what was to become the longest running series of scientific workshops at NIH. The Neural Prosthesis Workshop celebrated its 25th session recently with a retrospective look at achievements in the field as well as its customary probe into the future. More than

microcomputer-controlled, multielectrode device that is inserted into the defective inner ear to provide electrical signals directly to the auditory nerve.

Dr. Robert Pudenz, a neurosurgeon at Huntington Medical Research Institute in Pasadena, Calif., told the audience how little was known about safe electrical stimulation of the nervous system 25 years ago. He reported how research has resulted in major advances such as the FDA-approved techniques that are now being used to explore the possibility of restoring sight to the blind. Dr.

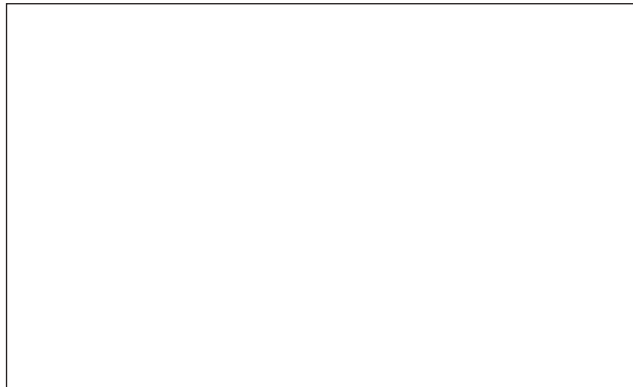
David Rushton, a neurophysiologist at the Royal London Hospital, described how his experiments on visual prostheses in the early 1970's were hobbled by the lack of today's sophisticated implant technology.

Dr. Tom Mortimer reviewed the work done at Case Western Reserve University in Cleveland to help people who are paralyzed regain the ability to move. He explained that his best friend in high school was paralyzed in a car accident, and his desire to find a way to help his friend has been the driving force in his career for the past three decades. Today, neural prostheses that can

restore hand function to quadriplegic individuals are becoming commercially available.

Researchers recounted not only their struggles with difficult technological problems but also their efforts to overcome skepticism from the clinical and basic science establishments. According to Mortimer, the real boost to his program came when he obtained NIH support and a long-term collaboration with investigators in the Neural Prosthesis Program.

Hambrecht, who has an M.S. in electrical engineering as well as an M.D., concluded the historical symposium with a review of earliest attempts by mankind to use electricity to treat malfunctions of the nervous system. One of the first experimenters was Benjamin Franklin, but a lack of basic knowledge about electricity and the nervous system doomed his experiments. It was basic research on electricity by scientists such as Galvani, Volta, Faraday, and Maxwell that laid the technological foundations for neural prostheses. At the conclusion of the symposium, the participants presented Hambrecht with an award for his vision in guiding the Neural Prosthesis Program. □



Dr. F. Terry Hambrecht (l) receives an award for his role in guiding the Neural Prosthesis Program from Drs. William Agnew (c) of Huntington Medical Research Institute and Tom Mortimer of Case Western Reserve University. Pictured on the award is Dr. Karl Frank, Hambrecht's mentor and head of the NINDS Laboratory of Neural Control from 1967 to 1975.

230 people attended the 4-day meeting, which was jointly sponsored by NINDS and NIDCD.

"There was a terrible snowstorm during the workshop in January 1974, and we nearly had to cancel," said Dr. F. Terry Hambrecht, head of the NINDS Neural Prosthesis Program. "So, later in 1974, we changed the month of the workshops [so that there were] two in the same year. This explains the mystery of how we can celebrate the 25th 'anniversary' in only 24 years."

Hambrecht, who has organized the workshops for the entire period, has seen the program grow from a few pioneers sharing a common dream to a \$7 million-a-year program that played a major role in the development of the cochlear implant, restoring a degree of hearing to about 13,000 deaf people.

A special historical symposium added to the silver anniversary agenda reviewed the origins of neural prostheses and progress in the field over the last 25 years. Among the speakers was Philip Seitz, historian at the American Academy of Otolaryngology—Head and Neck Surgery. He related how the cochlear implant for the deaf progressed from a primitive single-wire device to today's

Wednesday Lectures Continue

Upcoming talks in the Wednesday Afternoon Lectures series include a presentation by National Academy of Sciences president Dr. Bruce Alberts on Mar. 8 at 3 p.m. in Masur Auditorium, Bldg. 10. His topic is "Avoiding a Train Wreck: What Happens When RNA Polymerase and DNA Polymerase Collide." The talk is hosted by the Drosophila Interest Group.

On Mar. 15, also at 3 p.m. in Masur, Dr. Dirk Bootsma, professor of genetics at Erasmus University in Rotterdam, The Netherlands, will speak on "DNA Repair, Transcription and Chromatin Structure: An Intimate Engagement," hosted by the DNA Repair Interest Group.

For more information on the series, contact Hilda Madine, 4-5595.

Male Volunteers Needed

The Biological Psychiatry Branch, NIMH, is seeking male volunteers ages 18-45 to participate in a 5-month study of the effects of reproductive hormones on brain and behavior. Volunteers must be free of medical illnesses and not taking any medication on a regular basis. They will complete daily rating forms and be asked to participate in one of several protocols. Payment will be in accordance with the duration of each visit and the type of protocol. For more information, call Jean Murphy or Nazli Haq, 6-9675. □

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Researchers Find Clues to Neural Tube Defects

By Robert Bock

A research team led by an investigator from NICHD has identified the metabolic defect that may be responsible for the majority of cases of neural tube defects (NTDs).

It was known that the vitamin called folic acid could prevent NTDs, but the study offers a possible explanation as to why. The study also suggests that administering folic acid does not merely correct a deficiency but that women at risk for having a child with an NTD may have a metabolic abnormality requiring additional folic acid.

The study was funded by both NICHD and the Health Research Board of Ireland and appeared in the Jan. 21 issue of *The Lancet*.

NTDs are a class of birth defects affecting the brain or spinal cord. They occur in about 1 per 1,000 pregnancies in this country.

Among the most common NTDs are spina bifida, which causes paralysis in parts of the body below the defect, and anencephaly, a fatal condition in which the brain fails to develop normally.

Women who give birth to children with an NTD apparently have a defect in the enzyme methionine synthase, according to the study's principal investigator, Dr. James Mills, chief of NICHD's pediatric epidemiology section. This enzyme plays a key role in many important reactions, including the production of myelin, the substance that coats nerve cells.

To arrive at their finding, the researchers undertook some ingenious biochemical detective work. They knew that high doses of folic acid taken around the time of conception could prevent NTDs. From previous work by the Health Research Board, they knew, also, that women who gave birth to children with NTDs were themselves more likely to have lower levels of vitamin B12

than were women carrying normal fetuses.

These facts led them to hypothesize that since in humans, the only chemical reaction that required both folate and B12 was the conversion of homocysteine to the amino acid methionine by the enzyme methionine synthase, a defect in this enzyme might cause neural tube defects.

To test this hypothesis, the researchers began by collecting blood samples from women at their first prenatal visits to the three major maternity hospitals in Dublin, Ireland. The study was undertaken in Ireland because children born to area women have unusually high rates of NTDs and also because it was more economical to collect the large number of blood samples needed for the study in Ireland than it would have been to collect them in the United States.

When the outcomes of the pregnancies were known, the researchers found they had obtained 81 blood samples from women who gave birth to children with NTDs. The researchers matched these samples with samples taken from 247 women whose newborns were normal.

To rule out the possibility that low B12 levels alone could have resulted in NTDs, the researchers also obtained blood samples from 76 women who had low B12 levels but who had otherwise normal pregnancies.

The researchers next measured homocysteine levels for all three groups of samples. High homocysteine levels, they theorized, would suggest that the conversion of homocysteine to methionine had failed to take place at the normal rate, probably because of a defect in methionine synthase.

As expected, the women pregnant with children who had NTDs had higher homocysteine levels than either of the two groups of women who had normal pregnan-

cies. Samples from the NTD group who had low B12 levels also had higher homocysteine levels than did women who had low B12 levels but normal pregnancies.

"Thus, cases in the low normal range of B12 had more difficulty metabolizing homocysteine than control subjects with comparable B12 levels," the researchers wrote.

Similarly, red blood cells taken from the NTD group also had low levels of folate, another indication of impaired methionine synthase function, because methionine synthase is necessary to incorporate folate into cells.

The researchers noted that some NTD cases may involve other enzyme abnormalities. Other researchers have reported that abnormalities in the enzyme cystathionine synthase account for a minority of NTD cases. In addition, deficiencies in an enzyme known as 5,10 methylene tetrahydrofolate reductase could also result in high homocysteine levels.

More work needs to be done before it would be practical to develop a screening test to identify women at risk for having children with NTDs, Mills said.

Nonetheless, the study does have enormous public health implications. The U.S., Great Britain and a number of other countries are considering fortifying food with folic acid to prevent NTDs. However, some public health experts fear that this would expose large segments of the population not at risk for NTDs to higher-than-recommended levels of folate.

"If confirmed, our findings suggest that adding B12 to either food or vitamin supplements could decrease the folic acid dose required to prevent NTDs," the investigators wrote. □

Talk on Gastroenteritis

Dr. Harry B. Greenberg of the Division of gastroenterology at Stanford University will discuss "Rotavirus Gastroenteritis" on Monday, Mar. 13, from 10 to 11 a.m. at Stone House. □

Celebrate the Fourth in Alaska

Celebrate July 4 on an Alaska Cruise, July 1-10, sponsored by R&W. Price is \$1,755 per person, double-occupancy, and up. Package includes roundtrip air, two nights in Vancouver, seven nights aboard the Cunard Crown Dynasty, all shipboard meals and entertainment, and memories to last a lifetime. Call 6-4600 to book your reservation on this popular trip. □

Bermuda Cruise Seats Available

R&W has a great Mother's Day gift—a Bermuda Cruise on May 6-12. Price is \$875-\$1,055 per person, double-occupancy. The MV Royal Majesty sails from Baltimore to Bermuda. Fare includes shipboard meals, entertainment, sun and fun. Call 6-4600 for reservations. □

NIH-Community Forum Set, Mar. 11

The NIH Office of Community Liaison will sponsor the "First NIH-Community Forum," on Saturday, Mar. 11 in the Natcher Bldg. conference center. This forum is an opportunity for NIH staff, neighbors, community organizations, and county and state agency representatives to come together in an open and deliberative process to identify specific joint collaborative projects for future action.

NIH director Dr. Harold Varmus will address the participants, and topics concerning NIH-community interests will be discussed during breakout sessions open to all registrants. The discussion groups will focus on:

- ◆ NIH growth, including the master plan and construction-related issues;
- ◆ Environmental matters such as waste management and recycling, and noise abatement;
- ◆ Transportation management including traffic control activities;
- ◆ Cultural, recreational and educational programs available to the public; and
- ◆ A new NIH-community information exchange.

Complimentary coffee will be furnished by the Bethesda Ramada and Holiday Inn. The forum will be held from 8:30 a.m. to 2:30 p.m., with discussion group summaries presented at a 1:30 plenary session. (Lunch will be available at 12:30 p.m. in the Natcher Bldg. cafeteria at a minimal cost.) Interested participants may tour the Clinical Center at 2:45 p.m.

NIH staff are urged to attend not only to contribute their perspectives as members of the NIH community, but also to inform neighbors of NIH's unique mission and contribution to health.

For more information, call Miriam Randall, 6-3931. To register, call (703) 684-2116. □

WOMEN'S HEALTH

(Continued from Page 1)

The WHI program office has recently been strengthened by two new appointments. Dr. Loretta Finnegan has been named director of WHI. She previously held the positions of associate director for office for treatment improvement and for medical and clinical affairs of the Office for Substance Abuse, ADAMHA, and senior advisor on women's health issues, NIDA. Dr. Linda M. Pottern, a commander in the commissioned corps, has joined WHI as project officer for 20 clinical centers. She was previously senior epidemiologist in the Division of Cancer Etiology, NCI. Dr. William Harlan, associate director, Office of Disease Prevention, and Dr. Vivian Pinn, associate director, Office of Research on Women's Health, are study coauthors for WHI. Dr. Jacques Rossouw, who has been with WHI since its inception, is the lead project officer and provides scientific expertise in cardiovascular disease and trial design. Other project officers are Dr. Joan McGowan, chief of the Bone Biology and Bone Disease Branch, NIAMS, and Dr. Carolyn Clifford, chief of the Diet and Cancer Branch, NCI. Analytic and administrative support is provided by Nancy Morris. Administrative contract support is provided by Betty Nordan of the Research Contracts Branch, Office of Contracts and Grants Management, assisted by contract specialists Linda Gardner, Carl Newman, Barbara Oxenham and Michael Walker, and procurement specialist Rhonda Stroman.

NIH investigators from 10 institutes and centers with expertise in clinical trials, epidemiology, geriatrics, and cardiovascular disease, to name a few, contributed to the design of WHI. "Without the scientific input and enthusiastic support of these individuals and their institutes, the WHI could not have been launched on such a timely basis," said Pottern.

What is the Women's Health Initiative and why is it important? In the words of Dr. Bernadine Healy, former NIH director, "this novel and ambitious study will be based on excellent science, exciting epidemiology, and also is responsive to a pressing social need." The primary focus of WHI is on prevention of cardiovascular disease, breast and colon cancer, and osteoporosis—common causes of death, disability, and impaired quality of life in postmenopausal women. The WHI will bring the nation one step closer to narrowing the gap in clinical research on women's health. Attention will now be focused on preventing and treating diseases that are unique to, or are more common in, women. Reductions in morbidity from these common diseases may translate into substantial improvements in the quality of life of postmenopausal women and result in major societal benefits if successful treatments are widely adopted by U.S. women. It is likely that these diseases can potentially be

The WHI team includes (front, from l) Dr. Jacques Rossouw, Dr. Loretta Finnegan, Dr. William Harlan. At rear are (from l) Nancy Morris, Betty Nordan, Dr. Carolyn Clifford, Dr. Joan McGowan and Dr. Linda Pottern.

prevented or forestalled by dietary, behavioral and drug interventions.

Currently, WHI comprises randomized controlled clinical trials that will test the risks and benefits of various interventions, and an observational study. Future community prevention activities will involve approaches to improve the health of minority women and will be planned in the context of other completed and ongoing research throughout NIH. The clinical trials will enroll approximately 64,500 postmenopausal women 50 to 79 years of age. Women can enroll in one or more of the three trials. The first will evaluate the influence of a low-fat dietary pattern on prevention of breast and colon cancer and coronary heart disease. The second will examine the effect of hormonal replacement therapy on prevention of

coronary heart disease and osteoporotic fractures. The third will assess the impact of calcium and vitamin D supplementation on prevention of osteoporotic fractures and colon cancer. Women will be enrolled in the trials through 1998 and followed for 8-12 years. Women who are ineligible or unwilling to participate in the clinical trials will be offered the opportunity to enroll in a concurrent long-term observational study that will delineate new risk factors and biological markers for diseases in post-

menopausal women. It is expected that about 100,000 women will join this component of WHI.

NIH employees and families are invited to participate in WHI. All women in the age range 50-79 are encouraged to enroll. There are two WHI centers located in Washington, D.C.: George Washington University, (202) 676-5150, and Medlantic Clinical Center/Howard University, (202) 675-4770. Interested individuals outside the D.C. metropolitan area should phone 1-800-54WOMEN to be referred to the nearest WHI clinical center. By taking part in this large intervention study, participants will help increase scientific knowledge about the prevention of breast cancer, colon cancer, heart disease and bone fractures in women from all backgrounds and lifestyles. □

NUTRITION MONTH OBSERVED AT NIH IN MARCH

(Continued from Page 1)

Program in many of the NIH cafeterias. There also will be a workshop offering techniques on recipe modification.

Three activities for nutrition month are geared toward helping people make health conscious food choices from the world of foods available in today's marketplace:

- Recipe Modification Workshop for NIH employees—Mar. 23, 11 a.m.-noon, Bldg. 10, Little Theater. Learn about making wise food choices and adapting your favorite recipe to be lower in fat, saturated fat, cholesterol, salt and sodium, and sugar and higher in starch and fiber. Discover techniques on substituting foods or decreasing amounts of certain ingredients to lower the calories in a recipe. This workshop will be conducted by dietetic interns from the Clinical Center nutrition department. Bring a recipe to "dissect."

- Recipe Modification Workshop for members only of the NIH International Women's Group—Mar. 2, 7-8 p.m. at St. Luke's Episcopal Church, 6030 Grosvenor Ln., Bethesda, Md.

- Nutrition Month Lunch League—Mar. 6-31. Join the lunch league with participating NIH cafeterias managed by Guest Services, Inc. and Maryland Vending Program for the Blind. Look for a lunch

league card at the bottom of the nutrition month desk-to-desk flyer or obtain one from a cafeteria cashier. Get it stamped each time you buy a lunch league menu feature, snack, or beverage during March. When fully stamped, turn in the card for a free 6 oz. 100 percent fruit juice, 4 oz. nonfat frozen yogurt, a piece of fresh fruit, or bagged pretzels (every item may not be available at each location). All fully stamped cards returned to a cashier at participating locations will be eligible for 1 of 5 grand prize drawings (compliments of R&W) on Apr. 3. Participating cafeterias: Bldgs. 1, 10B, 31, 35, 38A, 45, and Solar.

Other NIH nutrition month activities include:

- NIH Nutrition Month Hotline—Call 6-2222 during March for nutrition messages and information about NIH nutrition month activities.

- NIDDK Clinical Nutrition and Obesity Lecture Series—the first lecture in this series will be held on Mar. 23, 7 p.m., Lipsitt Amphitheater. Dr. Walter Pories, professor and chairman, department of surgery, East Carolina University School of Medicine, will speak on "Severe Obesity, the New Epidemic: Surgical Update." □

DNA Analysis Sheds Light on Origin of New Mutations

DNA mutations passed down from one generation to the next are at the root of genetic disorders. But how do the mutations get started in a family lineage in the first place? Researchers at NCHGR's Laboratory for Human Gene Transfer and Quebec's Centre Hospitalier de l'Université Laval have begun to answer that question with information from an extended Canadian family prone to severe combined immunodeficiency (SCID). Marker studies of the family members identified a grandmother as the initial source of a mutation for the X chromosome-linked disorder. Although the marker studies identified the woman as a carrier of the SCID mutation, direct examination of DNA from her blood cells showed she did not have the alteration herself. Yet several of her children and grandchildren did. Where then, did the mutations in the woman's descendants' DNA come from?

Discovery of the SCID gene in 1993 gave researchers a direct way to find SCID mutations in families prone to the disease. Before that, researchers relied on indirect methods to sort out which family members were carriers of the mutation. But such procedures could not detect individuals who were carriers due to a phenomenon called "mosaicism," in which some progenitor cells

in early development carry the mutation and some do not.

NCHGR researchers and their coworkers used direct DNA analysis to identify the founder of the mutation, a grandmother, whose egg cells contained both normal and altered copies of this SCID gene, as the source of new mutations leading to SCID in her descendants. This is the first time scientists have explained how new mutations enter the lineage in SCID families.

This form of SCID has been traced to errors in a gene located on the X chromosome. The gene, called IL2RG, encodes for part of the receptor that binds immune cell growth factors. SCID is a rare disease, estimated to occur once in every 10,000 to 100,000 births. Infants born with this disorder, also known as the Bubble Boy disease, usually die within the first 2 years from immune system failure unless they are successfully treated by bone marrow transplant.

"Female Germ Line Mosaicism as the Origin of a Unique IL-2 Receptor gamma-Chain Mutation Causing X-linked Severe Combined Immunodeficiency" appeared in the February issue of *Journal of Clinical Investigation*. □

Structural Biology Group Holds Spring Symposium

The NIH Structural Biology Interest Group will hold a spring symposium Mar. 2-3 in Masur Auditorium, Bldg. 10, entitled, "Regulatory Conformational Changes in Macromolecules." The symposium is divided into three main parts, each of which features several speakers. The parts are:

- Thirty Years After the Determination of the Structure of Hemoglobin, What Have We Really Learned About Allostery? Chair: Adrian Parsegian, DCRT. Speakers: Arthur Arnone (U. Iowa), Walter Englander (Penn), Gary Ackers (Washington U.), Stuart Adelstein (U. Geneva), William Eaton (NIDDK).

- Conformational Changes in Virus Infection and Assembly Chairs: Sue Garges (NCI) and Lindsay Black (U. Maryland). Speakers: Robert Blumenthal (NCI), Peter Kim (MIT), Steve Fuller (EMBL), Jim Hogle (Harvard), Alasdair Steven (NIAMS), Mark Yeager (Scripps).

- Proteins Folding Proteins—the Structural Framework of Chaperonin Activity Chairs: Martin Kessel (NIAMS) and Mike Maurizi (NCI). Speakers: Helen Saibil (U. London), Paul Sigler (Yale), John Hunt (U. Texas), Ed Eisenstein (CARB, U. Maryland), Judith Frydman (Sloan-Kettering), George Lorimer (DuPont).

For more information, contact Craig Hyde (fax 2-6030, email cch@discus.niams.nih.gov). All sessions will be accessible to people with disabilities.

Scott Whitcup Appointed NEI Clinical Director

Dr. Scott Whitcup, NEI associate clinical director since October 1993, has recently been named clinical director. He received his M.D. degree from Cornell University and completed residencies in internal medicine at UCLA Medical Center and ophthalmology at the Massachusetts Eye and Ear Infirmary at Harvard Medical School. He then obtained fellowship training at NEI and became a senior clinical investigator in 1990.

Whitcup is director of the uveitis fellowship training program at NEI and a principal investigator on several clinical research protocols that

examine new methods of diagnosing and treating uveitis and AIDS-related ocular disease. He is currently studying the role of cell adhesion molecules in the development of ocular inflammation, and is planning a clinical trial to test a monoclonal antibody against ICAM-1 for the treatment of patients with sight-threatening uveitis.

As NEI clinical director, Whitcup is responsible for the intramural clinical research program and is establishing a section to provide resources for the design and conduct of intramural clinical trials. □

Dr. Scott Whitcup

The National Contract Management Association (NCMA) recently named Rosemary McCabe Hamill as an NCMA fellow, one of the organization's highest honors. She is only the third NIH'er to receive this award, which is based on academic achievement, work experience and contributions to the contract community. She began her career at the Department of Education in 1979 following graduation from the University of Maryland. She joined NIH in 1983 as a member of the Division of Contracts and Grants, OD, moving to NIAID in 1984, where she is currently a section chief within the Contract Management Branch. Hamill received a master's degree in acquisition management from American University in 1986 and was certified by NCMA as a professional contracts manager in 1989. Active in NCMA since 1984, she has served as education chairperson, membership chairperson, and treasurer and is now the national director of the Bethesda/Medical chapter.

Talk on Gene Therapy Set

"Human Gene Therapy," is the subject of the next presentation in the Science for All series sponsored by the Staff Training in Extramural Program (STEP) committee. The program will be held on Thursday, Mar. 23, from 1 to 3 p.m. in Wilson Hall, Bldg. 1.

Only 5 1/2 years ago, the first human gene transfer clinical trial began, involving insertion of a marker gene into lymphocytes (immune system white blood cells) to follow their fate in cancer patients. That trial took place only after prolonged public debate of the scientific and ethical merits and dangers of gene transfer. Some of the questions that will be addressed are: What is gene therapy? What is its scientific basis? What tools are used to accomplish gene therapy? What are some of the ethical issues involved? How does the current regulatory process protect human subjects?

The speaker will be Dr. Harry L. Malech, deputy chief, Laboratory of Host Defenses, NIAID.

No advance registration is required. Attendance will be on a first-come, first-served basis. Sign language interpretation will be provided. For more information call 6-1493. □

POWER TRANSFUSION (Continued from Page 1)

coming out of Bldg. 10, which would be part of the more reliable NIH power grid. Coordination for the project was handed over to Marc Guarin of the Electric Shop who, along with DES's senior electrical engineer Dave Epley, planned the intricate steps of the project that included coordinating the efforts of in-house forces with those of Pepco. Though Pepco normally supplies all electric power to both Bethesda and NIH, NIH can back up any Pepco blackouts with its assembly of permanent and portable generators. On Feb. 9, the inn joined the family of NIH buildings protected by this back-up system.

The transfer, designed to provide total immunity for the inn from storm-related power outages, was accomplished with the help of several titans—portable diesel-powered generators that boast 250 kilowatts of power each and low-decibel operation.

"This is the first time in NIH history that we could parallel two portable generators to handle a load this large," said Burns, who worked on the project during the bitterest week of February cold. "We had to pick the coldest 3 days of the year to do this," he cracked.

Since it was built in 1990, the inn has gotten its electric power from Pepco power lines on Cedar Ln. The power entered a large transformer on the north side of the inn and was stepped down from 13,200 volts to 120/208 volts, the amount required by a facility that, like a small motel, features individual heat pumps for each of its 36 rooms.

About 3 years ago, NIH purchased three 250-kW portable generators, each 27-foot long and weighing 7 tons, and all of which can be arranged in parallel. "We use them any time we need to provide temporary power to a facility, or if the backup generators are out of service," said Burns. "They're the whisper-quiet type. You can hardly hear them running."

Parked directly in front of the inn, the generators, manned by Shops Branch personnel, whirred into action on Feb. 9 when Pepco workers removed power lines coming in from Cedar Ln. Actually, there was a brief period of no power when the Electric Shop crew installed the feed from the generators. Half a day later, the generators were shut down when cables linking the inn and a power vault on the clinic side of Bldg. 10 were joined.

ORS shops section workers were proud that they handled almost all of the work in-house. "The urgency of the situation dictated that we do something quickly, and we were able to respond," said Bill Strine, chief of the Electric Shop.

The grounds maintenance and landscaping section dug a trench between the inn and Bldg. 10 and the Electric Shop put in the duct bank. "A duct bank is basically a set of pipes encased in concrete that carry electric

power or communication lines," explained Gordon Hinkle, a shop electrician (and recent graduate of the NIH Apprenticeship Program, see p. 13). He and Electric Shop colleagues including Dave Vahsen laid the pipe, which includes a spare in case the inn ever expands, and encased it in concrete to protect the high-voltage lines from inadvertent puncture by construction crews in the future.

"The job started in mid-December," said Hinkle. "By the second week of January we had the pipe installed, and a week later we laid concrete over top of the pipes."

Pepco crews removed the old transformer

with a large crane on the morning of Feb. 9 and replaced it with a smaller version. Bringing the inn on line to the NIH power grid also briefly involved the NIH residences along West Dr. and Cedar Ln., which were temporarily powered by another, smaller diesel generator while main feeder lines originating in Bldg. 10 were spliced.

As workmen tramped through ice and snow to complete the link-up in subfreezing weather, the inn gained a measure of security for those hazy, hot and humid summer afternoons when thundershowers pelt the campus and play havoc with vulnerable neighborhood power lines. □

NIAMS Council Gains Five New Members

Five new members have been appointed to the National Arthritis and Musculoskeletal and Skin Diseases Advisory Council: Sylvia E. Joice, a public health analyst; Dr. Manohar Panjabi of Yale University School of Medicine; Dr. Robert Recker at Creighton University School of Medicine; Dr. Ralph Snyderman of Duke University School of Medicine; and Ladonna G. Williams, a specialist in health programs liaison.

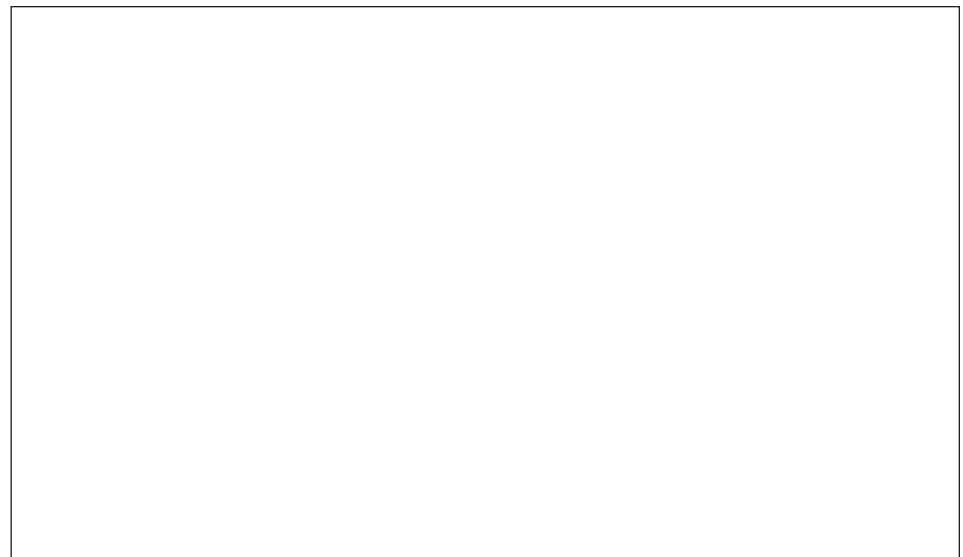
Joice is a consultant to the HHS Office of Maternal and Child Health and to the District of Columbia's Commission of Public Health. She has a special interest in children's health issues.

Panjabi, professor of orthopaedics and rehabilitation and director, biomechanics laboratory at Yale, is an expert in orthopaedic research and bioengineering, particularly the biomechanics of the cervical spine. He has served as associate editor of the *Journal of Orthopaedic Research* and the *Journal of Spine Research*.

Recker, professor and chief of endocrinology at Creighton, is a recognized expert in calcium metabolism and metabolic bone disease. He has published widely in the field of clinical endocrinology, is a member of the scientific advisory board, National Osteoporosis Foundation, and has served on the editorial board for the *Journal of Orthopaedic Research*.

Snyderman, chancellor for health affairs and dean of the School of Medicine at Duke, is a leader in the fields of immunology and rheumatology. He has more than 300 scientific publications, is a member of many national and international scientific societies, and has served on the boards of several respected journals.

Williams is coordinator for the parent resource center for the Newport News School System in Newport News, Va. Her professional experience has been in pediatric nursing.



NIAMS acting director Dr. Michael Lockshin (front, c) welcomes new members to the National Arthritis and Musculoskeletal and Skin Diseases Advisory Council. They are (front, from l) Ladonna Williams, Sylvia E. Joice, (back, from l) Dr. Ralph Snyderman, NIAMS deputy director Dr. Steven Hausman, Dr. Robert Recker, and Dr. Manohar Panjabi.

Melanoma, Tanning Risks Examined at STEP Lecture

Look out—although summer and fun in the sun are just around the corner, this year more than 32,000 people in the United States will learn they have melanoma, the most serious form of skin cancer.

Dr. Stephen Katz, chief of NCI's Dermatology Branch, will speak on "Melanoma and the Suntan Generation," at a STEP Science for All presentation on Tuesday, Mar. 28 from 1 to 3 p.m. in Wilson Hall, Bldg. 1.

This presentation will focus on the latest research findings and facts about melanoma. Learn more about this serious disease and find answers to such questions as: How does one get melanoma and can it be cured? What is the survival rate? Do sunblocks work and, if so, how?

Continuing education credit is not available. Sign language interpretation will be provided. No advance registration is required, and attendance will be on a first-come, first-served basis.

For more information contact the STEP office, 6-1493. □

Lunch-Hour Parenting Seminar Series Offered, Mar. 8, 15, 21, 29

NICHD's EEO advisory committee is sponsoring a lunch-hour seminar series on the development of parenting skills. The four talks in the series, held 11:30 a.m. to 1 p.m., will be presented by Linda Jessup, executive director, Parent Encouragement Program, Inc.

All employees are welcome, but space is limited to the first 40 to sign up. To register, call Mary Plummer or Kathy Jones, 6-1696.

The dates, topics and locations are as follows:

- Mar. 8, "Decreasing Sibling Rivalry," Bldg. 31, Rm. 2A52;
- Mar. 15, "Allowances—Family Money Management 101," EPN, Conf. Rm. H;
- Mar. 21, "Why Children Misbehave," 6100 Bldg., Conf. Rm. 1;
- Mar. 29, "The Family Encouragement Council," Bldg. 49, Rm. 1A50. □

'Jelly's Last Jam' Tickets

R&W has tickets to "Jelly's Last Jam," at the Warner Theater on Mar. 14-19. George C. Wolfe's acclaimed musical is a three-time Tony Award winner. It is the story of Jelly Roll Morton, the self-proclaimed inventor of jazz. Call 6-4600 for ticket prices and information. □

R&W Has Bullet Tix, \$9

On Saturday, Mar. 11, the Washington Bullets host the New Jersey Nets at 7:30 p.m. at USAir Arena. R&W has tickets to the game for \$9 (regular price for these seats is \$21, a savings of \$12). Don't miss this special offer. Call 6-4600 or visit your R&W store for tickets. □

Henderson Named CC Deputy Director for Clinical Care

Dr. David Henderson, associate CC director for quality assurance and hospital epidemiology since 1988 and acting clinical director since 1990, has been named Clinical Center deputy director for clinical care.

In announcing Henderson's appointment, CC director Dr. John Gallin said, "Dr. Henderson's depth of experience and commitment to excellence at the Clinical Center make him an ideal choice for this position."

"I am both pleased and honored to have the opportunity to work with Dr. Gallin, Mr. [Walter] Jones [CC deputy director for management and operations], CC department heads and staff, and the leadership of the institutes as we all attempt to reshape the CC to meet the needs of our changing culture," Henderson said. "For the past 15 years I have maintained a strong commitment to the CC. I anticipate redoubling that commitment as I assume this new role."

A *cum laude* graduate of Hanover College in Hanover, Ind., Henderson earned his M.D. degree from the University of Chicago Pritzker School of Medicine. He did postgraduate training in internal medicine and infectious diseases at the Harbor-UCLA Medical Center, and subsequently joined the UCLA School of Medicine faculty as an assistant professor of medicine in 1978.

He came to the Clinical Center in 1979 when named the CC's first hospital epidemiologist. During his first several years here, he also worked in the laboratory of Dr. John E. Bennett, head of the clinical mycology section in NIAID's Laboratory of Clinical Investigation.

Henderson has been elected to several professional societies and organizations and has received numerous honors and awards, including the NIH Director's Award and a special citation from the HHS General



Dr. David Henderson

Counsel. He has been an academic councilor to the Society for Healthcare Epidemiology of America. He is a fellow in the American College of Physicians and in the Infectious Diseases Society of America. He is on the editorial board of *Infection Control*

and *Hospital Epidemiology* and serves as the publication's section editor on AIDS.

Henderson has maintained an active research interest in infectious diseases, concentrating on the risk for occupational infections in health-care workers. He has published more than 70 manuscripts in refereed journals in addition to 24 chapters in medical textbooks. He has been an invited speaker at national and international academic conferences, including the International Conference on AIDS, the annual conference of the Infectious Diseases Society of America, the annual meeting of the American Society for Microbiology, and the Interscience Conference on Antimicrobial Agents and Chemotherapy.

He was one of four physicians selected as an advisor by Adm. James D. Watkins, chairman of the President's Commission on the Human Immunodeficiency Virus Epidemic, in 1987. He has served as a consultant and the NIH representative to the Centers for Disease Control and Prevention in the development of national guidelines relating to the prevention of transmission of bloodborne and airborne pathogens in health-care settings. □

Systemic lupus erythematosus was the focus of a minisymposium for physicians held recently in Orlando, Fla. The program was a collaboration between the National Medical Association, the African-American College of Rheumatology, and the NIAMS task force on lupus in high risk populations. Shown are (from l) moderator Dr. Gregory Dennis of Walter Reed Army Medical Center; Dr. Vivian Pinn, director of NIH's Office of Research on Women's Health, who introduced the session; and speakers Dr. Patricia Fraser of Harvard University; Dr. Chantel Lemoine of Inglewood, Calif.; Dr. Michael Lockshin, acting NIAMS director; and Dr. Edward Treadwell of East Carolina University.

GENETIC TESTING

(Continued from Page 1)

the development of the polymerase chain reaction in the last 10 years, as little as a single cell is needed for testing, removing the earlier problem of access to an adequate amount of tissue for testing; the specific function of the gene need not be established prior to testing; and testing can be done now on the early embryo.

As powerful as these advances are, Holtzman cautioned, they must be balanced with a broad limitation of genetic testing—false results. Why, he questioned, are there false negatives and false positives in such a sophisticated science?

"For one thing, we discovered many years ago that more than one mutation can cause disease," he answered, noting that in sickle cell anemia, the first major genetic disease discovered, one predominant mutation was found to cause disease. "[Sickle cell] was the exception rather than the rule. In some sense, it's unfortunate that the exception was the first genetic disease discovered. It tended to make people unaware of the tremendous degree of genetic heterogeneity that underlies most genetic diseases."

In contrast, he continued, more than 500 mutations have been found of the gene that causes cystic fibrosis, and more than 50 mutations have been found so far of BRCA1, the recently isolated gene that causes hereditary breast cancer. More than one gene can also account for disease, he said, particularly in cancers and other complex disorders. In Alzheimer's disease, for example, genes have been identified on three different chromosomes.

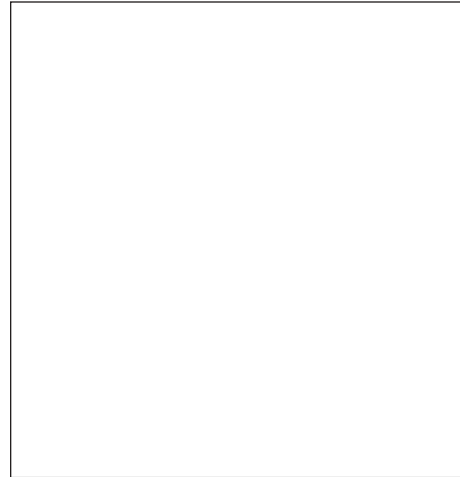
In addition, Holtzman noted, testing cannot account for disease not caused by inherited factors. For example, scientists believe only about 10 percent of breast cancers result from inherited genetic sources. The vast majority of cancers, he said, occur from "acquired mutations."

Finally, the accuracy of genetic testing is limited by what he described as a major problem: laboratory error. The methods are new, Holtzman said. The chance of error is significant, and few quality control measures have been established. Accurate interpretation of results, he continued, may also be difficult to accomplish.

Dr. Nancy L. Fisher, professor of pediatrics at the University of Washington and director of Medical Genetic Services, stressed the need for increased education about genetic testing for the public as well as for health professionals in her presentation, "U-Genetics, My Genetics, Our Genetics: Culture, Women and Genetic Technology."

"The genetic revolution is here," she began. "It will have a huge impact on medicine—more than antibiotics—and it will have a profound effect on society. In order to understand the impact, we need to understand not only genetic technology, but also our society and our culture."

The Western culture, she asserted, may be on a collision course with genetic technology. For example, in general, Westerners believe individuals control their own destiny. Consider a typical Western family when faced with a serious medical problem. They research the problem fully, consult with experts in the field and exhaust all efforts to treat or cure the condition, Fisher said,



Dr. Nancy L. Fisher predicts genetic testing will clash with some facets of Western culture.

because the Western culture encourages independence and personal control over situations.

"Only Americans believe there is an option about dying," she said, only half-jokingly. "Most of us believe that our culture is the only way. Maybe if we looked at other cultures we'd find there are better ways to do things."

Other cultures may react far differently to bad health news, she said. Some, more spiritually inclined, may believe in a principle of reincarnation, for example, that suggests the family's medical woes are retribution for a past-life transgression, and that curative efforts, no matter how well documented, will be futile.

These cultural differences, Fisher stressed, need to be considered even more deeply when applied to the issue of genetic testing. A closer look at genetic advances, she said, may reveal that the technology "attacks the very fiber of our lives."

She gave examples in which such admittedly generalized Western characteristics as materialism, autonomy, privacy and individualism were challenged by the promise of new scientific predictive capabilities. In one instance, the employer of Mrs. Smith and Mrs. Jones is told the results of each woman's genetic test. Mrs. Smith, it seems, has a 30 percent risk of developing diabetes, and Mrs. Jones has a 70 percent risk of contracting the disorder. Making a decision based purely on business, their employer decides against sending Mrs. Jones for expensive, although beneficial job training. After all, she is more likely to become ill down the road, and

therefore, she is a poor business investment. Materialism—focusing on the bottom line—and genetic testing have clashed in this case, Fisher pointed out.

In another hypothetical situation, Mrs. Brown is told that in order to fully assess her medical condition and that of any children she may plan to have, her physician would like also to examine another family member with whom Mrs. Brown has had a rift. Mrs. Brown is now in the position of needing the cooperation of someone with whom she has not spoken for more than 15 years; her autonomy and privacy, and that of the other family member, are challenged by the potential of genetic technology.

"I like to think of the genetic revolution as a big, magnificent entity that holds promises of exhilaration and discoveries for a better life," said Fisher, likening the science to a fast, but wild horseback ride. "But there's also danger because power must have some control, and there are obstacles to overcome."

Attorney Karen H. Rothenberg, founding director of the Law & Health Care Program at the University of Maryland's School of Law, introduced legal and public policy thorns into the discussion of genetic testing. In her presentation, "Genetic Accountability and Women," she verbalized what had become apparent throughout the seminar.

"While a woman is pregnant," she said, reflecting on her personal experience and

"The genetic revolution [is] a big, magnificent entity that holds promises of exhilaration and discoveries for a better life, but there's also danger because power must have some control..."

those of friends and colleagues, "getting more information, or even the possibility of getting more information, is somewhat of a mixed blessing."

Among themes Rothenberg explored were access and what she described as "the genetic underclass," people to whom basic medical care is scarcely provided and to whom genetic testing, counseling and followup would be rarely available.

"You don't get prenatal testing," she said, "if you don't get prenatal care."

She cautioned against relying on genetic testing to be what she called "a quick fix," noting that the United States spends as much on prenatal testing as on all other aspects of prenatal care. Prevention of the birth of a child born with a disorder, she maintained, should not be equated with prevention of the disorder.

"Pregnancy now is a lot like a roller coaster ride," she said, "with lots of ups and downs,

Estrogen Stimulates Blood Vessel Development, Study Says

Estrogen stimulates angiogenesis, or blood vessel development, scientists at NIH reported in the February issue of *Circulation*. This finding may have implications for wound healing, tumor growth, and diseases that are exacerbated by angiogenesis, the scientists said.

Angiogenesis is the sprouting of new vessels from preexisting mature vessels and is a relatively rare event. Only under certain conditions do tissues exhibit an increase in blood vessel formation. Angiogenesis is part of wound healing and tumor growth. It also occurs in certain inflammatory diseases such as rheumatoid arthritis, in which small vessels called capillaries invade and damage joint cartilage.

Additionally, cell activities related to angiogenesis may help protect premenopausal women from heart disease, the scientists said. They speculate that vascular cell growth and migration—enhanced by estrogen—prevent the typical response to minor vessel injury that causes arteries to harden.

“The more we learn about the process of angiogenesis, the closer we are to being able to control it—something that would help in various clinical situations,” said NIDR’s Dr. Hynda Kleinman, the senior investigator. “For example, blocking angiogenesis could help us control cancer and other diseases in which conditions worsen because of uncontrolled blood vessel development. Alternatively, stimulating angiogenesis would allow us to improve wound healing.”

Evidence that the female hormone promotes vessel formation comes from a series of experiments conducted in the Laboratory of Developmental Biology, NIDR. Scientists in this lab are known for their pioneering work on basement membranes—sheets of tissue that support and hold in place all blood vessels, organs, and nerves.

“This is the first comprehensive study that identifies vascular cell behavior altered by estrogen,” said Kleinman. “It is a step toward learning how estrogen works at the cellular level to either promote or inhibit any number of human diseases.”

This latest study suggests that estrogen “turns on” or activates vascular endothelial cells—cells that line the inside of blood vessels. The scientists say these cells probably signal the angiogenesis process to begin after communicating with the mature vessel’s basement membrane. Estrogen seems to promote this communication, the scientists said.

For angiogenesis to begin, cells in an established blood vessel must break through

its basement membrane. Cells then migrate outside the parent vessel, multiply, attach to one another, and line up to form small tube-like structures, which eventually become capillaries.

In laboratory experiments using cells from human umbilical cords, the scientists tested estrogen’s effects on each step of angiogenesis. In one experiment to test cell migration, a chemical was used to attract cells through a filter. The scientists found that more estrogen-treated cells traveled through the filter than untreated cells. In a second migration test, the researchers made a small cut through a layer of cells in a culture dish,

“The more we learn about the process of angiogenesis, the closer we are to being able to control it—something that would help in various clinical situations.”

thereby creating a “wound.” The scientists found that the more estrogen the cells were exposed to, the faster they traveled and closed the “wound.”

Estrogen had a positive influence on cell growth and cell attachment as well. More cells grew on natural and synthetic surfaces when treated with estrogen. In an experiment used to test cell attachment, estrogen-treated cells showed a greater ability to stick to basement membrane components and to plastic.

Studies using female mice confirmed the scientists’ hypothesis that estrogen stimulates blood vessel formation. The scientists removed the animals’ ovaries and then implanted some of the mice with an estrogen-releasing device; a placebo device was implanted in control mice. After several days, the scientists inserted a synthetic version of basement membrane, called Matrigel, and a protein that stimulates angiogenesis, under the animals’ skin.

When the scientists removed the Matrigel plugs from the estrogen-treated mice, they found bright red plugs that contained blood vessels. In contrast, the plugs removed from the estrogen-free animals were pale pink with few visible vessels.

The fact that blood vessels formed in the mice treated with estrogen and not in the control mice is further proof that the hormone promotes vessel development, the scientists said. □

Attorney Karen H. Rothenberg discusses some legal implications of genetic testing.

anxieties with each test and then reassurance with each positive result...only until the next test. We have to put all this in context. We raise such high, and false, expectations that if the test is fine, the baby will be normal.”

Rothenberg also questioned the “illusion of choice” and genetic testing in a society where fewer and fewer ob/gyn departments of medical schools are training students in abortion, but almost all are teaching about prenatal testing.

In all these issues, she said, the public will willingly or unwillingly play a more central role in what had traditionally been private, familial matters. Does a state have the right to impose mandatory prenatal HIV testing for all pregnant women in order to prevent disease transmission to children during birth? Who has the right to know the results of these tests? If a genetic test is available for a certain disorder and the healthcare provider fails to offer it to a pregnant woman, is the provider then liable for damages if the woman gives birth to a child with the genetic disorder? Do parents have a right to genetic testing? Can states hold women liable for not having a genetic test and then giving birth to children with genetic disorders?

Public policy debates are necessary and imminent on these and many other related topics, Rothenberg concluded.

As with other issues opened for discussion through the Women’s Health Seminar Series, the topic of genetic testing and women ultimately spills over to affect the health of the entire population, as Kirschstein had acknowledged at the beginning of the seminar.

“One thing we learned early on is that we can talk about women’s health and we can talk about men’s health,” she said, “but what we really ought to talk about is health.

“What is very critical,” she continued, “is that the rapid pace at which disease genes are being discovered makes the consideration of all these factors and the social impact absolutely paramount. The significance of genetic testing to women, to their families and to society as a whole is of major importance and will impact our lives greatly.” □

Frederick Car Pool Driver, Rider Needed

A car pool needs a fourth person to join either as a driver or rider. Pool leaves Frederick at 6 a.m. from parking lot at Hillcrest and Route 40; leaves NIH campus at 4 p.m. If interested, call Pat Brown, 6-1866. □

Division of Logistics Announces Changes

Infectious Shipments: Recent regulatory changes affecting shipment of infectious substances by air require specific packaging enhancements. DL will arrange for the self-service stores to add the packaging materials to their stock. For more information, call Valerie Hood, 6-5921, or Dr. Michael Kiley, 6-3353.

Household Goods: The Shipping and Receiving Branch, DL, announces the relocation of the household goods unit to Bldg. 31, Rm. 3B65. The phone number is 6-1595 and the new fax number is 6-4509.

Surplus Property: DL recently consolidated its surplus property, trade-in equipment and refurbished furniture storage areas to the new NIH consolidated Gaithersburg Distribution Center (GDC). Previously, DL held this property at five locations on and off campus. DL plans several more initiatives to improve property management services. One is the use of the NIH LAN to place available surplus items on a computerized DL bulletin board. Another is to test incoming equipment at the GDC to reflect accurately the true condition code of property on the DL bulletin board. A showroom with refurbished furniture is now available at the new GDC. Customers can select from the available stock or place orders for delivery.

DL encourages use of excess property instead of new purchases or for trade-in credit at the time of equipment purchase. The GDC has adequate space to hold trade-in items until the purchase is complete and the vendor picks up the equipment. The DL excess property bulletin board will identify items for reuse or trade-in. Equipment specialist Dan Reggia will help customers test equipment at the GDC.

NIAMS Launches Biomaterials Research Initiative

NIAMS recently announced grant awards under a new program supporting biomaterials research. According to Dr. Stephen Gordon, head of NIAMS's Musculoskeletal Diseases Branch, "These awards are part of the federal initiative to maintain U.S. leadership in the technology and commercialization of materials sciences, which includes biomaterials that are used in medical research and health care delivery."

This national initiative was established by the President's Federal Coordination Council for Science and Engineering Technology and was adopted by the NIH Advanced Material and Processing Program.

The NIAMS grants focus on joint replacement, particularly on extending the survival of artificial joints. The research projects range from basic research on the nature of the body's cellular response to the implants to a survey of the long-term clinical results of joint replacement. Says Gordon, "The

To give the NIH community more access to the GDC, DL now provides shuttle service 2 days a week. Initially, buses will leave at 9 a.m. Tuesdays and Thursdays with stops at Bldgs. 13, 10, 31 and 1 for arrival at the GDC at 9:35 a.m. The return shuttle will depart the GDC at 11 a.m. for arrival back on campus at 11:30 a.m. If customer turnout warrants, DL will expand the shuttle service in the future. Contact Peggy Kinsella, 6-0158, for more information.

Alternate Fuel Vehicles: DL recently began to convert selected fleet vehicles to operate on compressed natural gas (CNG). With use of CNG, NIH will comply with the Clean Air Act and energy saving mandates. Through the efforts of a DL, DES and DS task force, NIH will install a CNG pumping station in early spring. The new fuel has proven less expensive, cleaner than conventional fuels and reduces vehicle maintenance costs. DL will notify ICDs with dedicated vehicles when the conversion occurs. For more information, contact Dave Rhoads, 6-0158.

Central Supply Consolidates Storage Operations: At the end of February, the new GDC will receive, store and issue all supplies from one consolidated location. Previously, supplies were in four locations on and off campus. Supply Branch will now issue orders for animal food and bedding, chemicals and general supplies from the new 150,000-square-foot center at 16050 Industrial Dr. off Shady Grove Rd. near the intersection of interstates 270 and 370. Later this year, the Supply Branch will employ automated technology such as the LAN, barcode scanning technology and electronic data interchange to provide quality service at the lowest cost. □

ultimate goals of this initiative are to extend the independence of people with artificial joints and also achieve public health cost savings."

The awards, which total \$608,000 the first year, include three grants to Rush-Presbyterian-St. Luke's Medical Center in Chicago for projects led by Drs. Jorge O. Galante, Tibor T. Glant and Dale R. Sumner, and a fourth grant to the University of Connecticut Health Sciences Center for a project led by Dr. Gloria A. Gronowicz.

The Rush-Presbyterian-St. Luke's grants were made under the new NIH Interactive Research Project Grant mechanism, which encourages interaction and collaboration among scientists with common goals. It is intended to bring together research projects from investigators who wish to collaborate by sharing ideas, data, and/or materials but who do not require extensive shared resources. □

The NIH Life Sciences Education Connection



The NIH Office of Science Education Policy (OSEP) is coordinating or participating in the following events that may be of interest to you. If you have questions or would like more information, contact OSEP, 2-2469.

BRASS (Biomedical Research Advancement: Saturday Scholars)

Twenty-four seventh grade students from Kettering Middle School in Upper Marlboro and Walt Whitman Middle School in Alexandria will come to the Cloister laboratory on the NIH campus to learn about several biomedical topics from NIH scientists. The program runs Saturday mornings from Mar. 4 through Apr. 8.

The Second Annual NIH Mini-Med School

This program generated tremendous response from the community last year. More than 1,300 people called to register for 280 spots in the class. For this year's Mini-Med School, which starts Mar. 30, people on the waiting list from last year will be admitted in the order in which they registered. If you would like to put your name on the waiting list for future Mini-Med Schools, or if you have questions, contact OSEP.

PHS Life Sciences Education Exhibit

OSEP is collecting publications for dissemination at the PHS exhibit booth at the National Science Teachers Association national convention in Philadelphia, Mar. 23-26. The PHS exhibit will also be displayed at the American Library Association's national convention in Chicago, June 24-27. If you have publications or other educational or informational materials that could be displayed at these conferences, contact OSEP.

NIH Science Education Working Group

On Mar. 31 in Wilson Hall, a panel of 16 scientists and educators from around the country will convene for a day-long session to discuss and advise on NIH's science education initiative. The panel will be chaired by Bruce Alberts, president of the National Academy of Sciences. The NIH community is invited to attend. More details about this event will appear in a future Life Sciences Education column.

NIH Open House

OSEP is helping the Office of Communications plan an NIH Open House at the Natcher Bldg. on May 20 for the general public and May 22 for local schools. Several NIH activities will be showcased. OSEP will be seeking scientists to give demonstrations of their work. More details on this event will follow.

Forum Series on Science Education

Tentatively scheduled for late spring/early summer, the proposed forum series will feature distinguished scientists who will discuss various science education topics. More details on this event will follow. □

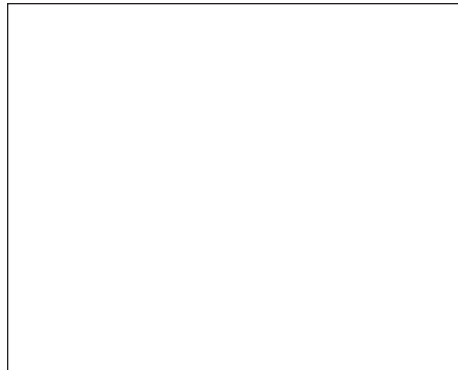
Wetle, Barros Join NIA Senior Management

By Vicky Cahlan

The NIA in recent weeks welcomed two additions to its senior management team. Dr. Terrie Wetle, most recently director of the Braceland Center for Mental Health and Aging in Connecticut, became NIA deputy director effective Feb. 5. Long-time NIH administrator Colleen Barros joined the institute as executive officer on Jan. 23.

NIA director Dr. Richard Hodes noted that the new officials were coming on board at a particularly exciting and challenging time at NIA. "The NIA goes into its 20th anniversary year with opportunities to reexamine its research programs and the way it manages those programs. We welcome the considerable expertise and enthusiasm that Wetle and Barros bring to the tasks at hand."

Wetle, a gerontologist, has a longstanding commitment to the field of aging. Since

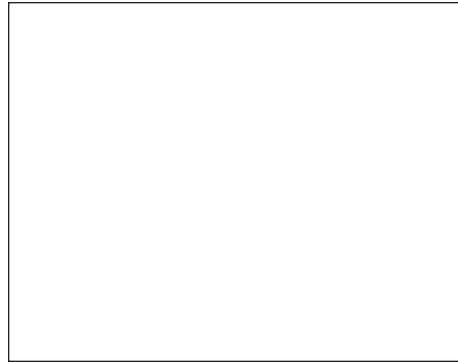


NIA director Dr. Richard Hodes appoints Dr. Terrie Wetle as institute deputy director.

earning her Ph.D. from Portland State University in the mid-1970's, she has concentrated her research in three key areas—health care and health care policy, social gerontology, and ethical issues in the care of older people. Just before coming to NIA, Wetle was lead investigator in evaluating an experimental public-private partnership in Connecticut looking at new ways to finance long-term care. That project was the latest in a body of work focused on innovative ways to deliver and finance health care for older people, including use of screening and prevention programs.

In ethics, Wetle has examined the appropriate use of advance directives and looked at the elderly's role in decisions about health care at the end of life. She was also an investigator in the NIA-sponsored Established Populations for Epidemiologic Studies of the Elderly while assistant professor of medicine at Harvard Medical School.

Wetle wanted to come back into government—she briefly worked at the Administration on Aging early in her career—for several reasons. Primarily, she notes, "This is a time of great excitement in research on the aging process and on the health and well-being of older people. At the same time, we are rethinking program priorities and allocation



An NIH administrative staffer since 1979, Colleen Barros joins NIA as executive officer.

of resources for research and programs for the elderly. Given my experience in both of those areas, I hope I can contribute a focus on gerontology and continued improvements in geriatric care to those discussions." In addition, Wetle says, she has discovered an increasing enthusiasm for the administrative and management side of research as her own involvement in managing research grants and programs has increased over the years.

Since 1988, Wetle has been director of the Braceland Center at the Institute of Living in Hartford, Conn., associate professor of community medicine and health care at the School of Medicine, University of Connecticut Health Center, and lecturer on medicine at Harvard Medical School. She has also taught at Yale University and at Portland State.

Barros is a public administrator with special expertise in managing technical and scientific information systems and in research and development management, areas for which she received her M.A. from American

University. She has been chief administrative officer for the Office of the Director, NIH, for the last 6 years, in charge of personnel, budget, information resources management, and other functions of the director's office. As administrative officer, Barros oversaw establishment of the local area network of the director's office to its current capacity of 1,200 users. She also directed efforts to set up new offices when required such as the Office of AIDS Research, the Office of Human Genome Research, the Office of Research on Minority Health, the Office of Alternative Medicine, and implemented other organizational changes. Her 15 years of supervisory experience at NIH also have included a post as budget officer for the NIH director's operations. She received an NIH Director's Award in 1986.

The well-known Bldg. 1 official says that while it was difficult to leave, she moved to NIA to be closer to the specific scientific work that takes place at NIH. "I have valued the perspective of the NIH director's office, to have the broad picture of the NIH enterprise. But I am excited about working at one of the institutes, especially aging," says Barros.

Administrative issues will be increasingly important and complex for NIA and other institutes, she points out. "The big challenge for any institute is going to be streamlining and downsizing while trying to keep up with the workload and trying to maintain morale," she says.

Barros first came to NIH in 1979 as a budget analyst. Prior to that, she worked in the Department of Labor's office of contract compliance, the Department of the Treasury's contract compliance program, and began her career as a budget analyst for the District of Columbia department of corrections. □

Joseph Gallelli Takes New CC Post

Dr. Joseph F. Gallelli has been named senior advisor for biotechnology product development in the Clinical Center's office of the director.

He will oversee and advise on the manufacture and development of

biopharmaceutical and biotechnology products for human use at NIH. Initial efforts will focus on assisting in the development of gene therapy products for the department of transfusion medicine.

"Dr. Gallelli brings a special expertise to these new initiatives and we are fortunate he will help us with these



Dr. Joseph F. Gallelli

important new activities," said Dr. John Gallin, CC director.

Gallelli is currently working on the development of good manufacturing practices (GMP) of pharmaceutical-grade, cell-culture media and assisting in the design and construction of a GMP cell-processing pilot scale production facility for ex-vivo transduction of vectors and other clinical trial gene and cellular therapy products.

Former chief of the CC pharmacy department, he has also served as chief of the department's pharmaceutical development section and as a pharmaceutical scientist in the Wyeth Institute for Medical Research at Wyeth Laboratories. He earned his undergraduate degree in pharmacy, his master's in industrial pharmacy, and a Ph.D in pharmaceutical chemistry at Temple University in Philadelphia.

Dubois-Dalcq Retires from NINDS After 22 Years at NIH

By Shannon E. Garnett

Dr. Monique Dubois-Dalcq, chief of NINDS' Laboratory of Viral and Molecular Pathogenesis (LVMP), recently retired after 22 years of service within the NIH community. Upon leaving her NINDS post, she became professor and chief of the unit on neurovirology and regeneration in the nervous system at the Pasteur Institute in Paris, France.

"I have received wonderful support for my research throughout the years and have fully enjoyed the enthusiasm of my colleagues in my laboratory as well as within NINDS and other institutes," said Dubois-Dalcq.

She began her NIH career in 1972 as a postdoctoral fellow of the Multiple Sclerosis Society in the Infectious Disease Branch, NINCDS (now NINDS), where she was in charge of organizing a new electron microscopy unit. Since then she has held many positions within the institute including visiting scientist, head of the section on electron microscopy, head of the section on neural and molecular ultrastructure in the Laboratory of Molecular Genetics, and acting chief and chief of LVMP.

Prior to coming to NIH, Dubois-Dalcq was employed by the Belgian Foundation for Scientific Research. She received her neuropathology training in the Laboratory of Pathology at Free University of Brussels, Belgium.

A native of Brussels, Dubois-Dalcq received her medical degree (*magna cum laude*) in 1963 from Free University of Brussels. She then received her neurology training at the Center of Neonatal Biological Research, Paris, and the department of neurology of the Bunge Institute in Antwerp.

At NIH during the 1970's, her work focused on neurotropism and mechanisms of assembly of enveloped RNA viruses. Later, in the 1980's, she initiated studies on the development and regeneration of myelin-forming cells in rodents and man. Her recent research focuses on HIV-1 neurotropism and how HIV affects the life and function of central nervous system cells.

Dubois-Dalcq has memberships in many professional societies, including the American Society of Cell Biology, the American Society of Microbiology, the Society for Neuroscience, the Society for Neurochemistry and the American Association of Neuropathologists.

Among her professional accomplishments are numerous published articles and volumes

and a book, *Assembly of Enveloped RNA Viruses*, published in 1984.

She is an associate editor of the *Journal of Neurochemistry* and serves on the editorial boards of *Glia*, *Journal of Neuroscience Research*, *Journal of Developmental Neuroscience*, and *Journal of Neurovirology*.

Over the years, Dubois-Dalcq's achievements have garnered her many awards including a PHS Special Recognition Award in 1991 for excellent leadership as LVMP acting chief, and a PHS Superior Service Award in 1994 for "outstanding research on cell and molecular biology of myelination and remyelination and designing new approaches to study infection of human nerve cells with retroviruses."

At the Pasteur Institute, where she will be starting a new laboratory, her team will continue her research on myelin-forming cells and how neurogenetic diseases may affect myelination. The laboratory will also pursue studies on the molecular basis of viral neurotropism and analyze how viruses and cytokines may cause nervous system dysfunction.

"I am very thankful to NIH for its support of a foreign scientist who became an American citizen in 1978. Now I will be an American in Paris," said Dubois-Dalcq. "I hope to come back regularly to NIH and to establish fruitful collaborations and scientific exchanges between the neuroscience community at the Pasteur Institute and NIH." □



Dr. Dubois-Dalcq

D.C. High School Opens NLM-Supported Media Center

Calvin Coolidge Senior High School recently opened a new media center supported by the National Library of Medicine. The center promises to make this D.C. inner city, science-oriented school one of the more communications-savvy high schools in the nation's capital.

The ribbon-cutting ceremony included remarks by NLM director Dr. Donald Lindberg and Coolidge Principal Leonard Upson, as well as by a number of representatives of the D.C. school system and D.C. Councilmember Charlene Drew Jarvis.

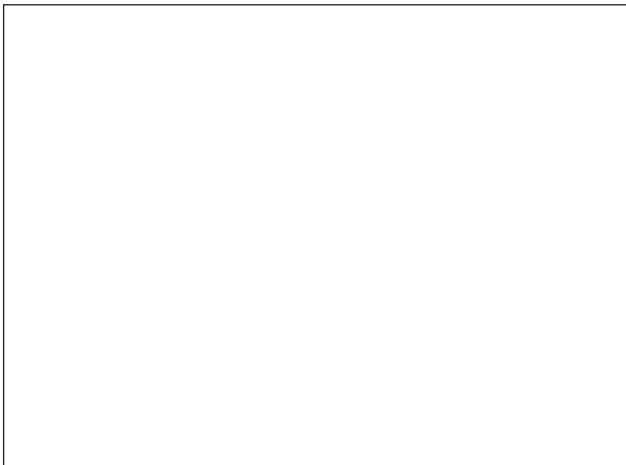
Following the ceremony, guests saw demonstrations of the new center's capabilities by Coolidge students and faculty.

The media center is one of the results of a "Declaration of Partnership" forged early in 1994 between Coolidge and NLM.

The workstations in the center have been set up to access Internet-available resources through such "browsers" as NCSA Mosaic—

allowing color, motion, and sound in addition to high-speed linkages to textual information. NLM staff members have held a number of training sessions at the library and at Coolidge to help students and faculty members gain skill in using the new workstations.

In addition to its work in helping to establish the new media center, NLM has been collaborating with the Coolidge faculty to provide a variety of programs designed to encourage students to pursue careers in science and medicine, including engineering, computer sciences, medical informatics, biotechnology, and library and information science. A number of Coolidge students and faculty members spent 7 weeks last summer at the library getting valuable training in accessing information now available directly through the school's new facility.



Coolidge Principal Leonard Upson (l), NLM director Dr. Donald Lindberg and Coolidge Librarian Pauleze Bryant open the high school's new Library Media Resource Center.

Clinical Center Boasts In-House Drug Company

By Sue Kendall

Plastic bags full of pink capsules, resembling Good 'n' Plenty candy. Plain bottles of colorless liquid with tumor-zapping potential. Boxes of vials and powders, stacked neatly on shelves. Drugs. The stuff we hope will cure what ails us.

To meet the demands of NIH research involving investigational new drugs (INDs), the Clinical Center's pharmaceutical development service (PDS) functions as an on-site drug-manufacturing plant. Says George Grimes, acting chief, "There's nothing like this at any other hospital in the country—not on this scale."

PDS currently handles about 2,000 separate drugs. Of these, one-third are formulated here from raw materials obtained from pharmaceutical companies. For example, a barrel of powdered drug is turned into tablets, capsules, or injections, depending on protocol specifications. PDS handles drugs that have not been approved by the Food and Drug Administration, and drugs that have FDA approval for at least one indication, but are being tested for other uses.

Part of the pharmacy department, PDS comprises the product development unit, the analytical and quality control unit, and the clinical pharmacokinetic research laboratory. The largest unit, product development, is responsible for registration, inventory control, and record-keeping of all INDs used at the Clinical Center.

Because FDA requires precise accounting for investigational new drugs, staff must track how every milligram is used. A drug might be given at different doses in several different protocols, or in combination with another drug, or substituted with placebo. Since a placebo must look identical to the study drug, keeping all compounds separate and clearly labeled is crucial to the safety of patients and to the success of a study. Staff are rigorously trained in inventory procedures, which are done in a newly built "quiet room," with no telephones or distractions, so that staff can count in peace. Says Grimes, "We do whatever it takes to keep from making mistakes."

Product development staff also advise investigators on the best way to assign patients to placebo or drug, and how to "ensure the blind," that is, make sure that neither patient nor investigator knows who is receiving what. If a patient learns inadvertently that he's receiving a placebo, data from that patient can't be used.

Researchers often have little information about the INDs they use. Product development staff write monographs similar to the detailed package inserts you may have seen in prescription drugs.

"We note any factor that could impede delivery of the correct dose of a drug," says Grimes. "For instance, is it okay to use a

different tube or bag or pump to infuse drug X?" One study drug clung to the IV tubes instead of dripping out the ends, he recalls. Instructions on proper tubes were added to the monograph. This information is also given to FDA, which confers daily with PDS on myriad legal, technical, and chemical issues.

Investigators might need a drug tailored to their unique trial. Product development staff handle such requests. For example, PDS's Dr. Shanker Gupta is working with NIAID researcher Dr. David Kaslow to formulate a vaccine that might block the transmission of malaria.

The analytical and quality control unit studies INDs to see how long they stay potent—their "shelf life." Also, after a large batch of a drug is made, quality control staff test individual doses for the correct concentrations of ingredients. Drugs are often mixed with other substances to make them easier to administer. Says Grimes, "One oral drug being studied in children with AIDS was so foul-tasting that the kids wouldn't

take it." Staff tested several flavor enhancers before settling on cherry syrup. "The kids still don't like it very much, but at least they'll swallow it," he says. The next step is to ensure that the flavoring doesn't affect the drug's effectiveness or stability.

The clinical pharmacokinetic research laboratory studies the way INDs behave in the body. They determine, for example, how much drug is absorbed, how quickly, and how long it stays in the body.

Investigators can, and often should, consult with PDS while planning their protocol. Early planning is crucial when a protocol requires PDS to make a drug. Before an IND becomes commercially available, supplies can run critically short, requiring fancy footwork by PDS. Grimes recalls an early AZT study: "The drug was so hard to get that we resorted to parceling out a 3- or 4-day supply of pills and shipping them across the country to keep the patient on medication until our supply arrived," he says. Even when a drug is readily available, planning helps ensure that all supplies will be there when needed. □

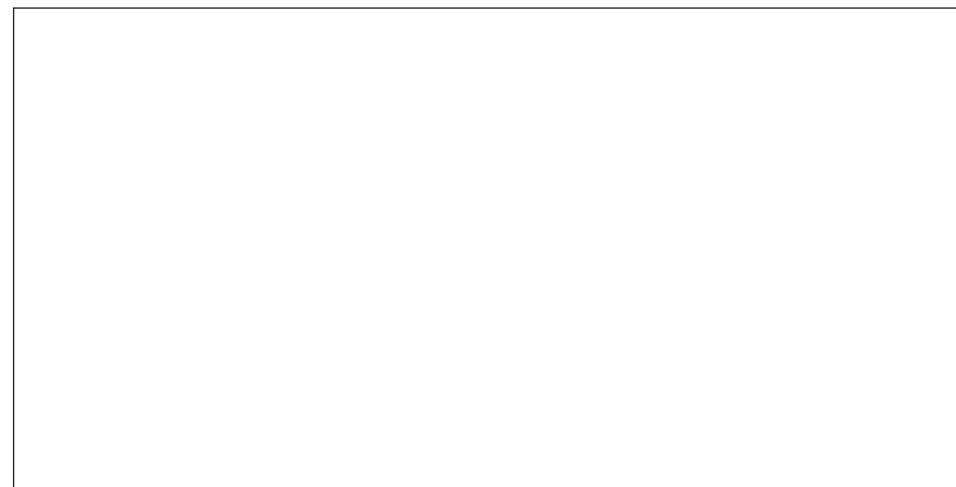
DES Apprenticeship Graduation Ceremony Held

A recent ceremony honoring six graduates marked the end of another successful NIH Apprenticeship Program. NIH associate director for research services and keynote speaker Steve Ficca congratulated the graduates for their commitment to the program and presented them with certificates from DES and the Department of Labor's Bureau of Apprenticeship and Training.

To complete the program, each graduate has finished a 4-year apprenticeship in one of nine trades. This year's graduates earned their certificates in boiler plant operation, electricity, elevator maintenance, and utility system repair and operation. Through on-

the-job training and successful completion of related academic and technical classes at Montgomery County Community College, each graduate has acquired a journeyman's trades status.

The NIH Apprenticeship Program, which is managed by the Division of Engineering Services, ORS, began in 1978 and has trained 74 employees—81 percent of them minorities and women. The program is open to all NIH employees, with recruitment and selection occurring each year in the spring. A 4-year commitment is required. For more information, contact Ron Poole, 2-3441.



NIH deputy director Dr. Ruth Kirschstein (front, c) salutes the new graduates of the NIH Apprenticeship Program. They are (front, from l) Gordon Hinkle and Patricia Fenwick, both electricians, and (rear, from l) Claude Belcher, boiler plant operator, Henry Calhoun, utility system repairer/operator, Reginald Glenn, boiler plant operator, and Robert Graham, elevator mechanic.

Levin Named NIDDK Intramural Research Deputy Director

Dr. Ira Levin was recently appointed deputy director of NIDDK's Division of Intramural Research. Deputy chief of the Laboratory of Chemical Physics and chief of that laboratory's section on molecular biophysics, he succeeds Dr. Edward Steers, Jr., who retired in September.

In addition to administering the daily operations of the intramural

research program, Levin will continue his research in vibrational spectroscopy. He is investigating the molecular reorganizations and domain structures within biological membranes using vibrational Raman and infrared spectroscopic techniques. Currently, he and members of his group are continuing their development of various vibrational spectroscopic imaging microscopies. These techniques are based on instrumental methods that provide molecular-specific images of samples at unprecedented speeds at diffraction-limited resolution with a minimum of sample preparation.

A native of the Washington area, Levin received his B.S. degree in chemistry from the University of Virginia in 1957 and his Ph.D. degree in chemistry from Brown University in 1961.

After a stint in the Army that ended in 1963, he returned to Maryland and began his NIH career. In 1985, his work in vibrational spectroscopy was internationally recognized when he received the Lippincott Award in Vibrational Spectroscopy from the Optical Society of America, Society of Applied Spectroscopy, and the Colbentz Society. In 1992-93, he was awarded the Harold A. Iddles Lectureship by the University of New Hampshire. In addition, Levin and two colleagues received the 1993 Meggers Award from the Society of Applied Spectroscopy. □

Dr. Ira Levin

What's New for Spring in DCRT Computer Training?

The Spring 1995 DCRT Computer Training Program offers more than 75 classes ranging from 1-hour seminars to week-long intensive courses. The term runs from mid-February to the end of May. Students can register by calling 4-DCRT (4-3278), by submitting a simple 1-page form, or through Wylbur's Enter Training command. DCRT support makes it possible to offer the classes without charge.

A highlight of the spring program will be the DCRT Speakers Series. This monthly series will feature speakers of interest to the NIH research community. The speakers will be: Mar. 10, Dr. Joan Aron of Johns Hopkins University speaking on "Mathematical Models in Epidemiology: Issues and Controversies"; Mar. 31, Dr. Philip S. Rosenberg, National Cancer Institute, on "Age-Specific HIV Prevalence in the United States"; Apr. 14, Dr. Jane Richardson, Duke University, on "KINEMAGES: Desktop Interactive Molecular Graphics for Publication, Teaching and Research"; May 12, Dr. James Reggia, University of Maryland, on "Computer Models of Stroke"; and June 9, Dr. Joel Cohen, Rockefeller University, on "How Many People Can the Earth Hold?"

In addition to the talks, there will be a number of new scientific seminars led by DCRT staff. Interpreting the results of experiments in protein folding will be the focus of two talks in May: "How Proteins Fold," by Dr. Joseph Bryngleson and "Experiments in Protein Folding," by Richard Feldmann. Also in May, Drs. David Chatfield and Kirsten Eurenus will discuss the progress they have made in "Chemical Reaction Mechanisms Studied with Quantum Mechanical/Molecular Mechanical Potentials."

In April, Dr. Sergey Lenkin will give a short introductory seminar on physical chemistry and thermodynamics entitled, "Temperature, Entropy, and Conformational Freedom in Biomolecular Recognition and Assembly." If students are interested, he will offer an extended course in a later term.

Imaging techniques and their application to clinical practice is an area of rapid development. Three courses this term will cover this subject from beginning to more advanced levels. A six-session course, "Introduction to Image Processing," meeting on Tuesday and Thursday mornings beginning Mar. 7, will introduce scientists and researchers to image processing techniques currently being used at NIH. Beginning May 23, a three-session afternoon series on "Introduction to the Reconstruction Algorithms" will be given by Drs. George Weiss, Sinisa Pajevic, and Srikanth Sastry.

Finally, on May 31, Dr. Peter Steinbach will discuss recent progress in use of the maximum entropy method to improve the quality of images in his seminar, "Medical Image Reconstruction."

Computer security is always a topic of great

concern, and this term a new course, "Computer Security Issues for Unix Administrators and Users," will focus on the types of systems that have been featured in the headlines on problems with break-ins and will present a case study of recent DCRT incidents. In addition to help in keeping their systems safe, Unix users will find a full range of courses and seminars from "Fundamentals of Unix" to "Andrew File System" and a new offering, "Unix Pine Mail," a 1-hour seminar on an increasingly popular mail reader program available on helix.nih.gov among other Unix hosts.

This spring's lineup of courses in statistical analysis and graphic display of data is particularly strong. A half dozen new courses have been added to the traditional offerings in SAS and basic statistics. Three brief presentations will be given on Mar. 20: "InStat: Easy Statistics for Scientists," "Data Analysis and Scientific Graphics Using Prism," and "Non-mathematical Introduction to Curve Fitting." A 3-day course in May, "Principles of Regression Analysis Using SAS/STAT," is appropriate for students with previous SAS programming experience. Finally, two popular Macintosh products will be presented in hands-on seminars in "Data Desk for the Macintosh" and "JMP for the Macintosh."

Personal desktop computers are developing ever more capable links to each other and the information superhighway. Several new classes reflect this trend including: "Windows for Workgroups Overview," "Windows NT and Novell NetWare Connectivity," "Network Printing Using lpr/lpd," and "Creating Documents for Internet Publishing." Another new seminar, "Network Security at NIH," will help NIH'ers protect themselves from the risks that come with these powerful connections.

Full information on classes in the spring program is published in a brochure, *DCRT Computer Training*, available from the Training Program, Bldg. 12A, Rm. 1017, phone 4-DCRT. The information is also available on-line from the NIH Gopher Server and via Wylbur's Enter Training command. □

Career Mentors Needed

The Career Curricula Program, a program designed to provide participants in nonprofessional job series with an enhanced opportunity to seek career change and advancement through college coursework and career guidance, is in need of mentors, particularly in the positions of personnel management specialist, administrative officer, and computer specialist. If you are willing to assist NIH employees in achieving their career goals, please call Michelle Gray of NIH's Division of Workforce Development, 2-3389. □

Protein Trafficking Group Forms

A new campus-wide special interest group that will sponsor workshops on all aspects of the intracellular traffic of macromolecules and its regulation is being established. The Protein Trafficking Interest Group will hold its first meeting on Tuesday, Mar. 14 at 3:30 p.m. in Bldg. 49, Conf. Rm. A/B. There will be a brief organizational meeting followed by a scientific presentation. Dr. Jennifer Lippincott-Schwartz of NICHD will speak on "The Mechanism of Golgi Dispersal During Microtubule Disruption." All are welcome to attend. Call Harris Bernstein, 2-4770, or Sam Cushman, 6-5953, with any questions.



TRAINING TIPS

The Division of Workforce Development, OHRM, offers the following courses:

Courses and Programs Starting Dates

Management and Supervisory, 6-6211

Preventing Sexual Harassment at NIH	4/18
Effective Presentation Skills	4/5
Congressional Operations Workshop	3/13
Introduction to Supervision	3/20
Practical Approaches to Stress	3/28
Practical Management Approaches	4/19

EEO Training, 6-6211

Preventing Sexual Harassment at NIH for All Employees	4/18
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Special Courses, 6-6211

NIH Retirement Seminar	4/19
Privacy Act Seminar	3/23
Practical Approaches to Stress	3/28

Administrative and Skills Development, 6-6211

Creating and Maintaining Filing Systems	4/18
Professional Development for Secretaries	4/5
Valuing Diversity in the Workplace	4/19

Personal Computing, 6-6211

WordPerfect 6.0A for Windows	3/13
PageMaker 4.0 for Windows	3/14
Intro to Windows	3/8
Intro to WordPerfect 5.1	3/28
DeskTop Publishing With 5.2 Windows	4/6
Intro to Personal Computing for New Users	4/12
Disaster Recovery & Data Security	3/7
CRISP	3/14
Macintosh Courses:	
Advanced Macintosh Techniques	3/23
Introduction to Pagemaker	4/13
Kaleidagraph 3.0	4/18
Intro to Microsoft Word 5.1	3/13
Intro to PowerPoint 3.0	4/5
Intro to Filemaker 2.0	4/11

Camera Club To Meet, Mar. 14

The next meeting of the NIH R&W Camera Club will be Tuesday, Mar. 14 at 7:30 p.m. in Bldg. 31, Rm. 6C07.

Guest speaker will be Hans Adler, a retired geologist who has been active in the field of photography, concentrating on portraiture and landscapes. His interests have included documentary studies of Maine, the surviving mining structures of Michigan and Victorian era buildings of the eastern United States. Adler, who has photographed for the Brazilian Embassy, is technical columnist for the North Bethesda Camera Club newsletter and is running a workshop for the Silver Spring Camera Club of 35mm black-and-white photography. He will present a slide-illustrated seminar on the function and use of the polarizing filter in pictorial color photography.

Subject for the competition of the evening is "Nature." Formats include b/w prints—novice and advanced levels; color prints; color slides—novice and advanced.

The club is open to all, but only members may submit for competition. For more information, contact Yuan Liu, 6-8318. □

CC Alum George Williams Mourned

Dr. George Zur Williams, founder and first chief of the Clinical Center clinical pathology department in the early 1950's, died Nov. 22 at his home in Tiburon, Calif., after a short illness. He was 87.

Dr. Ronald Elin, chief of the clinical pathology department, said of Williams, "He created a department with a commitment to quality and a vision to the future. Under Dr. Williams's direction, this clinical laboratory was the first in the world to report results using a computer. The legacy of his work is still with us."

A founding member of the College of American Pathologists, Williams came to NIH in 1953 to plan and establish the research clinical labs at the newly built Clinical Center. His goal was to put into place a lab with the highest accuracy and precision available with the technology of the day and to concentrate on improving precision and sensitivity. He also initiated the development of computer enhancement, control, and automation of laboratory technology. He and his hand-picked staff established a rigorous residency training program and insisted that each resident

participate in research. This lab set the national standards for computerization and automation in lab settings.

His personal research focused on cancer cytology using ultraviolet microscopic measurements of intracellular metabolic chemistry and in chemically measuring cellular effects of radiation and chemotherapy agents. His lab developed and tested the first method of apheresis for separation of white blood cells for treating leukemia.

After leaving NIH, Williams moved to San Francisco where

he established a new institute of health research in the Medical Research Institute at the Pacific Medical Center. There he was able to develop long-term studies of blood chemistry, hematology, and physiology, as well as the personal habits of nutrition, physical activity, and abuse habits of healthy men and women.

He is survived by his wife, Julie Williams, of Tiburon, Calif.; daughter, Jeannine A. Monson of San Rafael, Calif.; son, Kenneth D. Williams, of Rockville; nine grandchildren; and 12 great-grandchildren.

Dr. George Zur Williams

NINDS Summer Student Anthony Betances Dies

Anthony Nicholas Betances, a former NINDS summer student, died recently after a motor vehicle accident while vacationing in Jamaica, West Indies. He was 23 years old.

Betances was born in Queens, N.Y., and lived in Marlton Lakes, N.J. He graduated from Moorestown Friends School in 1989 and from Cook College, New Brunswick, in 1994. He would have begun medical school at Jefferson University School of Medicine, Philadelphia, in September 1995.

While at Cook College, he cofounded the Dr. Ramon Emeterio Betances Latino Scholarship Fund, and served as chairman of the service committee of the Alpha Zeta Honor Fraternity and treasurer of the Latin American Student Organization.

He was a member of the Philadelphia Orchestra Association, the Philadelphia Opera Club, the Hellenic Club of Rutgers University, the Outdoor Club of Rutgers and the intramural racquetball and soccer leagues, and was treasurer of the Rutgers Circle K Club.

Betances was a student researcher in the 1994 NINDS Summer Program in the Neurological Sciences. He was awarded a letter of commendation for the work he did in the biochemistry section of the Surgical Neurology Branch (BSSNB).

"Anthony was extraordinarily enthusiastic

about his research. He worked long and hard and contributed significantly to our understanding of programmed cell death," said Dr. Richard Youle, BSSNB chief. "His charm and happiness improved the spirits of everyone in the biochemistry section. He had immense potential in research and his future contributions to medicine will be sorely missed."

Betances also participated in the 1994 NIAID Introduction to Biomedical Research Program and was a volunteer at Robert Wood Johnson University Hospital in New Brunswick where he served as coordinator

for the "Time Out" patient intervention program in the oncology unit in 1993. As a teaching assistant and counselor at the Institute for the Gifted at the George School in Newtown, Pa., Betances taught experimental chemistry and tutored calculus, chemistry and SAT preparation.

He was a recipient of the Arthur Reich Scholarship, the Governor's Scholar in Public Issues and Future of New Jersey, a Garden State Scholarship and a Rutgers College Gold "R" for student leadership.

Survivors include his parents, Robert and Angela of Marlton Lakes; two sisters, Sandra Santos, of Blackwood, and Deborah Darrow, of Marlton; his paternal and maternal grandmothers, a niece and two nephews.

Anthony Betances

NIDCD Celebrates First Annual Research Festival

Intramural scientists from the National Institute on Deafness and Other Communication Disorders recently participated in an intensive 2-day program of presentation and discussion at the institute's first annual research festival. The festival featured 52 poster sessions as well as an

overview of ongoing work from each section. The event was developed by Dr. Jay Moskowitz, NIDCD deputy director who is also NIDCD's acting scientific director. Cochairs for the effort were Dr. Robert Wenthold, chief of the section on neurotransmitter receptor biology in the Laboratory of Neurochemistry and, from the clinical side, Dr. Christy Ludlow, chief of the voice and speech section of the Voice, Speech, Language and Laryngology Branch, NIDCD.

On the first day, there were presentations from the clinical program including the voice and speech section and an overview of the clinical audiology services unit of the Neuro-otology Branch. Scientific staff reviewed progress from the Laboratory of Molecular Biology followed by presentations on progress

from the section on gene expression and function and the Laboratory of Molecular

Genetics, and presentations from the tumor biology section, Head and Neck Surgery Branch.

A special evening session on the first day allowed scientists to explore opportunities for sharing resources and specialized equipment across NIDCD's intramural programs. The next day, the section on neurotransmitter receptor biology in the Laboratory of Cellular Biology was discussed in the morning and the afternoon session included an overview of the Laboratory of Cellular Biology, the section on biophysics and biochemistry, the section on sensory cell regeneration and development, current progress from the unit on otitis media and the section on linkage studies and molecular cloning in the Laboratory of Molecular Genetics.

The festival events were held at the institute's research facility at 5 Research Court. "This first effort emphasized the value of sharing ongoing work among our labs in a focused way, allowing for communication and collaboration. We are already looking forward to next year's festival with enthusiasm," noted NIDCD director Dr. James B. Snow, Jr.

NIDCD's first annual research festival included a poster session.

NIDCD Launches Pilot 'Partnership Program'

NIDCD, in conjunction with the Office of Research on Minority Health, has successfully launched a new program called, "The Partnership Program." This is a pilot program designed to maximize opportunities for minority students to participate in fundamental and clinical research in hearing, balance, smell, taste, voice, speech and language.

The program's long-term goal is recruitment and retention of individuals from underrepresented groups to careers in research in human communication. The program allows an opportunity for exchange of personnel between NIH and academic centers.

Four academic centers are currently participating in the Partnership Program. They are Morehouse School of Medicine/Atlanta; University of Puerto Rico School of Medicine; University of Alaska System, Fairbanks; and Gallaudet University. Each center collaborates with NIDCD in

developing a plan for that center and for the students, faculty or staff of the institution. Last summer, Nerian Ortiz and Iris Colon participated in the program working in the tumor biology section, Head and Neck Surgery Branch. They are now in their first year of medical school at the University of Puerto Rico. Ortiz and Colon returned to NIDCD to present their part at the NIDCD Research

Festival on "Tumor Cytokine

Expression as a Potential Mechanism of Immune and Metabolic Dysfunction in Squamous Cell Carcinoma of the Upper Aerodigestive Tract." Also, a postdoctoral student, Dr. Donna Kiel, participated in the Partnership Program during the summer. A graduate student at Morehouse School of Medicine, she presented research during the festival with Dr. Carter Van Waes and Dr. Zhong Chen on "Protective Immunity Induced by Recombinant Cytokines Interleukin-2 and Interleukin-12 in Squamous Cell Carcinoma of the Head and Neck."

NIDCD recently recruited Yancy Bodenstein through the Partnership Program. He is a graduate student at the University of Alaska at Fairbanks who is currently working with Dr. David Lim, chief, Laboratory of Cellular Biology, NIDCD. Bodenstein will work at NIDCD for 1 year to study sensory hair cell stereociliary organization using protein chemistry, electronmicroscopy, and molecular biology.

For more information about the Partnership Program, call 6-7243.

Dr. Carter Van Waes (2nd from r), acting chief, tumor biology section, Head and Neck Surgery Branch, NIDCD, meets with the institute's Partnership Program students (from l) Nerian Ortiz, Iris Colon, Dr. Donna Kiel and Donna Lee Jackson.

Women's History Month Fete

March has been designated Women's History Month to honor the perseverance and accomplishments of legions of women who have made the United States a better place to live. People are discovering the scope of women's historic contributions to the advancement of the scientific, cultural, economic, and social welfare of our nation.

To honor all women, the Office of Research on Women's Health, the NIH advisory committee for women and the OEO Federal Women's Program will sponsor an observance of Women's History Month on Thursday, Mar. 9 from 11:30 a.m. to 1 p.m. in Masur Auditorium, Bldg. 10. The theme is "Promises to Keep."

Kathleen Matthews, host of television's "Working Women" and co-anchor of WJLA-TV's "News 7," will be the keynote speaker for this event. On "Working Women," she combines live interviews and profiles of successful working women with feature segments and news reports on topics of interest to the working women of the 1990's. An honors graduate of Stanford University, Matthews has received eight Emmys for on-the-spot news, documentary, and news series categories. She is also the recipient of the George Foster Peabody, Scripps-Howard, Ohio State and Iris awards. The program will also feature original musical selections by KK Productions.

For more information, contact Shirley Everest, 6-4627. Sign language interpretation will be provided. For reasonable accommodation, call Carlton Coleman, 6-2906 (V/TTY).