

"The Second
Best Thing
About Payday"

The NIH Record

Closing the Gap

Blacks, Other Minorities Trail in U.S. Health Care

By Carla Garnett

Individual effort can help close the wide margin between blacks and whites in American health care, according to eight panelists who discussed "The State of Black Health Care: America's Shame," presented recently by NIH's chapter of Blacks in Government (BIG).

"The United States has a health gap," said Dr. James Moone, chief of career counseling in NIH's Division of Personnel Management.

Blacks, Hispanics, Asian/Pacific Islanders and Native Americans have more illnesses and higher death rates than any others in the nation, according to information Moone cited from the DHHS Office of Minority Health publication, *Closing the Gap*.

Other noted disparities were equally disheartening for nonwhites in the U.S.:

Blacks have a life expectancy of 69.6 years compared to 75.2 years for whites—a gap of 5 years.

Hispanics die from stomach cancer and American Indians die from injuries about

twice as often as nonminorities—gaps of 100 percent each.

Chinese American women have a much higher rate of pancreatic cancer than non-minorities—a gap of 20 percent.

"Statistics like these are alarming," said Moone, who chairs BIG's distinguished lecture series committee.

"There is a caste system in this country," suggested Dr. Allen Dollar, former NHLBI senior fellow, "a caste system that is as rigid and unbendable as . . . can be found in India."

The caste system—America's health care delivery system—features four major classes of individuals, according to Dollar, who now works at the Washington Hospital Center and also volunteers his medical services at the Zacheus Medical Clinic in Washington.

The first two classes include those who have private health care insurance and those who receive Medicare, which covers inpatient and outpatient visits but does not cover medication, he said. The third class on Dollar's list includes those covered by Medicaid.

"There are few private physicians in this country who willingly accept Medicaid patients," he said. "This is entirely understandable when one looks at the level of reimbursement that the government offers."

Dollar explained that medical practices that accept large numbers of Medicaid patients can usually expect to go bankrupt quickly.

(See **MINORITIES**, Page 4)

Fortieth Features

Pedigrees Are People



Third in a series to commemorate the fortieth anniversary of the NINDS

By Frances Taylor

RFLP, DNA, LOD, and FAD. Gene marker, linkage, chromosome, and label. This is the language of genetics.

Your father has Alzheimer's. And you have a fifty-fifty chance of developing it too. That is the language of human disease.

Linda Nee speaks both tongues. Her job at the National Institute of Neurological Disorders and Stroke requires it. As the social worker who's charted the world's largest Alzheimer's disease family tree, she brings geneticists and patients together, and then she translates.

"This is a unique responsibility—being the liaison between the laboratories and the families," says Nee, who is the institute's only social science analyst. "I establish pedigrees, which one has to do in order to supply data to laboratory scientists. On the other hand, my role is to interpret what the laboratories do—for the families."

During the last 12 years, Nee has traced 10,000 members of a family now spread across Canada and the United States. Within this family tree, there is a diseased branch. Over the span of eight generations, nearly half of the children in this branch have developed Alzheimer's disease.

Alzheimer's disease, the most common form

(See **PEDIGREE**, Page 6)

Longtime Grantees Win Nobels In Medicine or Physiology

Drs. E. Donnall Thomas and Joseph E. Murray, who shared the 1990 Nobel prize in medicine or physiology for pioneering transplant therapy in humans, are both longtime NIH grantees. Thomas was on campus for Research Festival 1990 last month; he lectured on marrow transplant as a therapy for leukemia.

An investigator at the Fred Hutchinson Cancer Center in Seattle, Thomas, 70, has been an NIH grantee continuously since 1953. Institutes supporting his work have included NCI, NIAID and NIDDK. He has received grants from PHS totaling more than \$65 million in his career, said Robert F. Moore, head of DRG's special projects and presentation unit.

"Thomas was also a member of a cancer study section in the late sixties and early seventies," Moore continued.

Murray, 71, a professor emeritus at Harvard Medical School, received funding of more than \$3 million during the period 1956-1973 from NHLBI and NIAID.

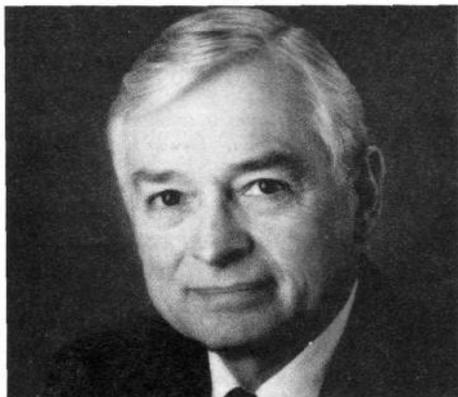
The work for which the scientists were honored began in the 1950's, at about the time they began winning NIH grants.

"We did recognize the two of them early on," Moore observed.

The researchers will share a prize of \$703,000.



"The Assessment of Speech and Voice Production: Research and Clinical Applications," an international conference sponsored by NIDCD, was held recently in Bethesda. More than 200 individuals participated during the 2-day meeting, which included presentations by leading scientists in speech and voice research from the U.S., Japan and Europe. The conference focused on clinical research assessment needs (illustrated above as Dr. Karen Rhex examines a patient), currently available laboratory measures, technology transfer, and clinical applications. The proceedings of the conference will be published as an institute monograph.



Dr. James B. Snow Jr., director of NIDCD, presented "Disorders of Smell and Taste" at Clinical Center grand rounds on Oct. 3 and recently gave keynote addresses at the American Indian Research Symposium in Montana and the centennial address at the Alexander Graham Bell Association for the Deaf.

Annual Leave: Use or Lose

Annual leave in excess of the maximum carryover balance is normally forfeited if not used by the end of the current leave year. If you have not already planned to take those excess hours of annual leave, you should discuss your leave with your supervisor now while there is still time to schedule it. Your biweekly Earnings and Leave Statement tells you how much annual leave you must use so that you will not lose it when the leave year ends on Saturday, Jan. 12, 1991.

In spite of planning, circumstances sometimes arise that prevent you from taking leave that has been scheduled and approved earlier during the leave year. In such cases, you and your supervisor are jointly responsible for ensuring that any "use or lose" leave is rescheduled in writing before the last three biweekly pay periods of the leave year. This year, your "use or lose" leave must be scheduled in writing not later than Saturday, Dec. 1.

If you or your supervisor have any questions regarding "use or lose" leave, contact your ICD personnel office. □

Discount 'Nutcracker' Tickets

R&W has discount tickets to two productions of *The Nutcracker*, performed by the outstanding Washington Ballet, at Lisner Auditorium (21st & H Sts. NW). Adults and children alike will enjoy this dazzling performance—it's a must for the holiday season! Performance dates are Saturday, Dec. 22 at 7 p.m., and Saturday, Dec. 29 at 2 p.m. R&W price is \$21.50—no service charges! Order your tickets early at any R&W location—last day for reservations is Monday, Dec. 3. Call 496-4600 for more information. □

Seminar Series on Women's Health Begins Oct. 24 in Lipsett

A four-part NIH seminar series entitled "Women's Health and Behavior" gets under way Oct. 24 in Lipsett Amphitheater, Bldg. 10, with the presentation, "Women's Health and Behavior Issues for the 21st Century."

The program starts at 3:30 p.m. with remarks by Constance Horner, undersecretary of HHS. Dr. Gail R. Wilensky, administrator of the Health Care Financing Administration, will speak next.

Also on the program are Dr. Phyllis Moen, associate professor of human development and family studies at Cornell University, who will discuss multiple roles of women in the U.S.; and Dr. Elena Bastida, associate professor in the department of sociology at the University of Texas, who will offer a look at changes in the ethnic/demographic profile of American women over the next decade and the implications of these changes for primary health issues.

Joining in the discussion that follows these presentations at 4:55 p.m. will be Dr. Genell Knatterud, president of the Maryland Medical Research Institute, Baltimore.

Due to limited seating in the amphitheater, the event will be open to ticket holders only. However, the meeting will be broadcast via NIH closed-circuit television to a variety of conference rooms both on and off campus.

The second seminar in the series will be held Dec. 12 on "Women's Childbearing Years and Beyond." Look for announcements in future issues of the *Record*. □



Marian Emr has been appointed information officer for the National Institute of Neurological Disorders and Stroke. She comes to NINDS with 14 years of experience in medical writing, media relations and public information at NIMH and NIH. In her most recent position as NIA's deputy information officer, Emr oversaw all public affairs activities, specializing in projects concerning the neuroscience and neuropsychology of aging.

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NIH Record Office
Bldg. 31, Room 2B-03
Phone 496-2125
FAX 496-0019

Editor
Richard McManus

Assistant Editor
Anne Barber

Staff Writer
Carla Garnett

Editorial Assistant
Marilyn Berman

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Staff Correspondents:
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DCRT, Anita S. Ferguson
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Joyce Forsythe of NIMH and Steve Shaffer (r) of the NIH Evening Speakers Club were winners of the Toastmasters Area 15 fall speech contests held recently. They are shown with club president Dr. Padman Sarma of NCI.

NIAID Funds National Tick Collection at Georgia Southern University

By Karen Leighty

The world's largest tick collection, representing 90 percent of all known tick species, has been established in a new home at Georgia Southern University. Through a grant awarded by NIAID, the collection comes under the purview of Dr. James H. Oliver Jr., head of the institute of arthropodology and parasitology at the Statesboro, Ga., university. The present curator, NIAID scientist Dr. James E. Keirans, the world's foremost authority on tick classification, will join the Georgia Southern faculty and continue in his role as curator. Oliver's research facility is already highly regarded for the expertise it offers in tick biology, genetics and Lyme disease. Enhanced by the tick collection, the facility will provide a national center for tick studies.

NIAID's award represents an innovative approach in the use of grant monies. The collection will remain the property of the Smithsonian Institution, but it will be on long-term, collection-enhancement loan to the university. NIAID's award provided for moving, operation costs, and staffing. Georgia Southern, in turn, has made a major personnel commitment—at the end of the 5-year grant, it will continue its support of the curatorial staff as researchers in tenured track positions. In addition, the university has built a 2-story building to house the collection and staff.

In announcing the award, NIAID director Dr. Anthony S. Fauci said that the move "offers a significant opportunity to advance studies in medical entomology. It will not only increase the collection's accessibility, it will undoubtedly stimulate interest in acarology and vector biology—specialized but very relevant areas of science." In Lyme disease, for instance, recognition of the deer tick as the vector of the spiral-shaped bacterium that causes the disease was critical to understanding the recently recognized arthritic ailment.

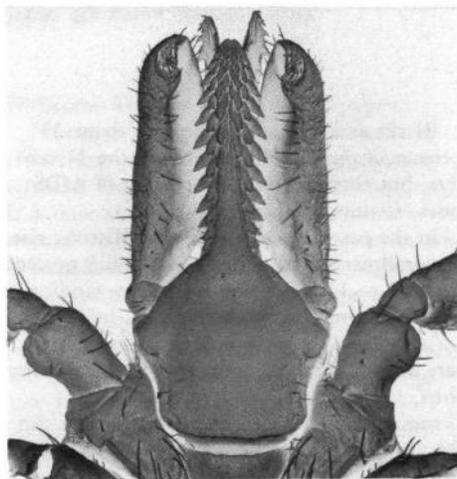
Lyme disease is becoming increasingly prevalent and is creating a surge of interest in tick identification, but it is only one of many tick-borne diseases that affect man. In the state of Georgia alone, doctors have seen Lyme disease (715 cases in 1989), Rocky Mountain spotted fever, and ehrlichiosis ("rash-less" spotted fever). Acarology students, clinicians and epidemiologists are in need of a central resource for identifying sample specimens or supplying samples for comparison studies. The collection staff will be able to provide expertise on tick systematics, species distribution in nature, epidemiology of tick-borne disease, and the biology and life cycle of the tick. Oliver and his colleagues are also using PCR (polymerase chain reaction), a new technique that can amplify tick DNA. With PCR, they can develop DNA probes to differentiate geo-

graphic populations of ticks.

The collection originated as part of Rocky Mountain spotted fever research in Montana's Bitterroot Valley. Just after the turn of the century, researchers sent in by the Public Health Service uncovered the cause of spotted fever, began collecting local tick species, and continued research in tick-borne diseases (they even ground up ticks to prepare a crude, but



Dermacentor variabilis (top) is the tick that carries Rocky Mountain spotted fever spirochetes. Scanning electron micrograph (bottom) shows head of tick that transmits Lyme disease. Tick's outer mouth parts splay outward to attach to the host animal. With the serrated, sword-shaped inner portion, the tick slowly pierces the host's skin to reach blood source.



effective vaccine). By the start of World War II, the collection included species from all over the United States, Canada and Mexico. Researchers, stationed as G.I.'s all over the world during the war, sent specimens back to the collection. Later, when the Montana Laboratories came under the purview of NIAID, so did their tick collection. Keirans became cura-

tor in 1969. Since that time, the Montana collection has been combined with that of the Smithsonian and the extensive international collection of Dr. Harry Hoogstraal (who worked at the Naval Medical Research Unit in Cairo, Egypt) to form the National Tick Collection.

Until recently, the collection was housed at the Smithsonian Institution's Museum Support Center in Suitland, Md. Row upon row of cabinets with slide-out drawers stored more than a million specimens. Each specimen, preserved in alcohol in a glass vial, is documented as to place of origin and, where possible, identity of the animal from which it was taken.

The Georgia Southern facility formally opened last week. More than 300 type specimens are available for study there, in a setting that includes laboratories, a tick library and conference room, preparation rooms and staff offices. Not only will the collection be more accessible to researchers, it can now involve live specimens in addition to the preserved material. Oliver refers to the collection as a "national treasure," and through cooperation between government and academe, this scientific gold-mine will be even more accessible to the needs of the research community. □

Calendar of Meetings Available

The 1990-1991 Calendar of Biomedical Meetings, which includes meetings sponsored by NIH as well as those of major medical societies and biomedical research associations, is available from the Division of Public Information, OD.

To obtain a copy, call Bea D'Aguzzo, 496-8855. □

Infant Center Eligible for CFC

The NIH infant/toddler day care program run by Childkind, Inc., is eligible to receive donations through the Combined Federal Campaign; the CFC number is 2339. All funds collected go toward Childkind's tuition subsidy program. For more information about this program and Childkind, call 496-8357. □

MINORITIES*(Continued from Page 1)*

In the Washington metropolitan area, Medicaid provides approximately \$12 to the primary care physician for a patient's office visit, he said.

"This fee does not even cover the cost of overhead for most practices, let alone the cost of the physician's time," Dollar said.

The fourth class, he said, are the "untouchables"—the uninsured.

"This is a large and unfortunately growing segment of the U.S. population," Dollar said.

"For a country as large as ours, and as wealthy as ours, which spends 11 percent of its gross national product on health care, to have a health care system with such gross inequalities, with such insensitivity to the poor, is truly America's disgrace," he said.

Another panelist, Dr. Maxie T. Collier, Baltimore City Commissioner of Health, agreed with Dollar's assessment.

"We have one of the most advanced health care systems in the world and yet we have a poor health status, particularly amongst our poor and minority citizens," he said. "This indeed is a shame."

However, according to one panelist, apathy in the country's attitude and not segregation in its system is America's major cause for concern.

"America's shame is less the shame of the health care system, which is merely a symptom," claimed Denise Rouse, director of the D.C. Women's Council on AIDS. "America's shame is its lack of will. America's shame is its acceptance of the notion that people are disposable, that when people have a problem or get into substance abuse or come from a dysfunctional family, that these people can be written off."

In addition to attitude, several more concrete problems in health care among minorities—access to hospitals, education of normally hard-to-reach populations, debilitating diseases such as AIDS and diabetes—were examined by panelists.

Dr. Vincent Roux, medical director at Howard University Hospital, advocated freer access for the poor and disadvantaged to institutional health care services.

"While it seems incredible that the year 2000 is only about a decade away," he said, "traversing that decade will be the hardest job existing hospitals have ever had to do in their organizational lives—and some of today's hospitals will not make it into the year 2000."

America should place a higher priority on funding, and thereby saving, its failing hospitals, he said.

One seemingly insurmountable gap that continues to widen is the impact of the AIDS crisis on minorities.

According to some panelists, increased

education and prevention campaigns about AIDS must reach the hardest-to-reach—intravenous drug users.

"Blacks and Hispanics will soon represent the majority of (AIDS) cases," said Dr. George Counts, chief of the Clinical Research Management Branch in NIAID's Division of AIDS.

Despite success preventing AIDS in the male homosexual community, which has seen a decline in the number of new AIDS cases reported, no headway has been made in the intravenous drug user community, he said. "In order to correct that problem, we will have to devote much more to education and prevention."

About 12,000 patients have been enrolled in the government's 47-center AIDS clinical trial program, according to Counts.

"One problem with the system is under-represented populations among these 12,000 persons," he said, noting that about \$8 million in federal funds was earmarked in fiscal year 1990's budget to try to increase minority and pediatric participation in government trials.

"We have one of the most advanced health care systems in the world and yet we have a poor health status, particularly amongst our poor and minority citizens."

—Dr. Maxie T. Collier, Baltimore City Commissioner of Health

Blacks and Hispanics represent about 23 percent of the 12,000 patients in the 47 centers, but they represent 43 percent of AIDS cases, Counts said.

In the past 3 years, however, a distinct rise in enrollment of minorities—from 6.5 percent in 1987 to 13.9 in 1989 for blacks—indicates that some progress has been made, he said.

"AIDS simply exacerbates a failing health care delivery system," said Iris W. Lee, acting chief, Office of AIDS Activities in D.C.'s Commission of Public Health. "We have—in the 10 years that we've been dealing with the epidemic—learned something."

"There's an upside if you can look at it that way," she continued. "As with any crisis, there are opportunities. AIDS presents us as health professionals with opportunities to change the way we live and to change the way we define health."

Health care should not only attend to patients' medical needs but also address their social, spiritual and emotional needs, she said.

"We have learned the lesson that health is holistic," Lee said. "It's not just medical care, although medical care is clearly important."

According to Lee, the way people are labeled has a tremendous effect on their health.

"It impacts the way they view themselves and it impacts the way we serve them," she said. "We have to develop certain systems for HIV that speak to the whole person and to the whole person within the context of a family."

"We can no longer look at a diseased organ or, in the case of HIV, a compromised immune system," she continued. "We have to look at that person in their entire social, economic, political, cultural (situation) . . . their whole self."

With proper health education, blacks can control another serious disease that is rampant in minority communities—diabetes.

"Blacks comprise 27 million of the U.S. population and diabetes is extremely common in the black population," Dr. John Townsend, professor of medicine at Howard University, informed the audience.

Blacks comprise a very large percentage of non-insulin-dependent diabetes cases but few realize that controlling diet can stop the onset of diabetes in a large number of cases, Townsend said.

Combining education, dietary therapy and exercise "will be a very important step to at least retarding complications of the disease as well as its onset," he said.

Panelist Lee said that people working in health careers must lead the way to better national health.

"We as health professionals have to be the message we bring," she said. "Our walk has to match our talk."

Dr. Beverly Coleman-Miller, special assistant for medical affairs, D.C. Commission of Public Health, said individuals must remember the big picture but act on their small part of it.

"The real secret is that we need to begin to control what we can control," she said.

"We've got to speak loudly and say America, change global policy, don't just add a few doctors here and add a few new technologies there," emphasized Baltimore commissioner Collier. "We've got to be vocal, whether we're inside government or outside of government."

"You heard how bad it is and it's worse than you think," said Coleman-Miller. "Please take what the panel has said and do something. Do something because there's no time left to do nothing." □

Getchell To Give NIDCD Second Anniversary Lecture

The National Institute on Deafness and Other Communication Disorders will sponsor its Second Anniversary Lecture on Friday, Oct. 26. The noted chemosensory neuroscientist, Dr. Thomas V. Getchell, will present "The Molecular Neurobiology of Olfactory Reception," at 11 a.m. in Wilson Hall, Bldg. 1.

Getchell received his Ph.D. in neuroscience from Northwestern University in 1969. He obtained postdoctoral training in olfactory neurobiology in the department of physiology at the University of Pennsylvania School of Medicine, as a University of Pennsylvania Plan Scholar to Develop Scientists in Medical Research, and at the internationally renowned Monell Chemical Senses Center. Getchell continued his training in synaptic neurophysiology as an NIH special research fellow in the department of physiology at Yale University in 1973. He went to Wayne State University in 1978 as professor of anatomy and cell biology and associate dean of the graduate school.

More recently, during a sabbatical year, Getchell obtained "hands on" training in molecular biology as an NIH senior fellow in the department of neuroscience at the Roche Institute of Molecular Biology. He joined the University of Kentucky College of Medicine in 1989 as professor of physiology and biophysics and associate dean for research and basic science.

The NIDCD will emphasize the use of molecular biological techniques to investigate

sensory processing and communication disorders, Getchell ranks among the leaders who have contributed to our current understanding of the molecular neurobiology of chemosensory systems. He is an acknowledged expert on the integrated cellular and molecular neurobiological activity of the olfactory sensory mucosa and olfactory receptor neurons. He, together with members of his laboratory and collaborators, has made significant contributions leading to an understanding of: the sequence of membrane events underlying the odorant activation of olfactory receptor neurons, the regenerative cycle of the olfactory mucosa, the odorant and neuropharmacological regulation of secretion in the olfactory mucosa, and the role of perireceptor events in olfactory transduction. Among his most recent interests are the peptidergic regulation of receptor cell activity and the secretory cycle in the olfactory mucosa, and the *in vivo* translation and expression of olfactory-specific gene products in *Xenopus* oocytes.

Getchell's publications include seminal findings on the fundamental neurobiology of the degenerative and recovery cycles on the olfactory mucosa following axotomy of olfactory receptor neurons and on the role of secretion and secretory events on olfactory transduction. Since 1973, he has authored 40 research articles in refereed journals, 14 symposia and book chapters, 3 invited review articles and has coedited a book entitled *Molecular Neu-*

robiology of the Olfactory System.

Getchell's professional accomplishments include membership in prestigious societies, including current service as executive chairperson of the Association for Chemoreception Sciences. He has held several editorial positions, including executive editor of *Chemical Senses*, and is an active member on several national and international boards and committees.

He also served as a program director in the biological, behavioral and social sciences division of the National Science Foundation and as chairperson of the sensory disorders and language study section at NIH. Getchell is the recipient of numerous honors and awards, including the Board of Governor's Faculty Recognition Award at Wayne State University, a Sen. Jacob K. Javits Neuroscience Investigator Award from NINCDS and a Claude Pepper Award from NIDCD in recognition of his research creativity, scholarly activity and substantial productivity.

Getchell's research associates include his wife, Dr. Marilyn L. Getchell, Dr. John DeSimone at the Medical College of Virginia and Dr. Frank Margolis at the Roche Institute.

For additional information about the lecture or about an open house in NIDCD intramural and extramural programs from 2:30 to 4:30 p.m. on Oct. 26, contact Dr. Marin Allen, 496-7243. □

FIC Announces U.K. Fellowships Open to NIH Scientists

By Louise Williams

NIH usually hands out research awards. Now, NIH scientists have a chance to be on the receiving end.

The opportunity comes from a new fellowship program to send junior United States scientists to the United Kingdom. Administered by the Fogarty International Center and funded by two arms of a British-based pharmaceutical giant, the Hitchings-Elion Fellowship program is a joint U.S.-U.K. effort intended to spawn collaborations between American and British scientists.

"The program offers a unique opportunity for young American postdoctoral scientists," says FIC director Dr. Philip E. Schambra. "It uses private funding to let them conduct research abroad in a wide variety of areas."

"We are excited over the prospect of promoting transatlantic research collaboration through this program," adds Martha Peck, executive director of the Burroughs Wellcome Fund, located in Research Triangle Park, N.C. It funds the fellowships, along with the

Wellcome Trust of the United Kingdom.

Named after the 1988 Nobel laureates in physiology or medicine, Drs. George Hitchings and Gertrude Elion, the fellowships send U.S. scientists for 2 years of collaborative research in a U.K. laboratory. Projects may be in a basic or clinical research field, or require the use of or develop skills with special techniques or equipment not available in an investigator's home laboratory. Applicants also are eligible for a third year's support in the U.S., but only in a nonfederal laboratory.

The application deadline is Jan. 10, and officials expect to fund 15 awards in the program's first year.

FIC solicits and submits applications for review by the NIH Division of Research Grants. The final funding choices will be made by the Wellcome Trust and the Burroughs Wellcome Fund.

Both Wellcome groups owe their existence to a 19th century American-British collaboration: Back then, two Americans, Sir Henry

Wellcome and Silas Burroughs, settled in England and started a pharmaceutical business that eventually grew into the major international conglomerate. After their deaths, the business came under the direction of the Wellcome Trustees.

In 1955, the American Burroughs Wellcome Co. created a nonprofit foundation, the Burroughs Wellcome Fund.

Today, the Wellcome Trust of the United Kingdom funds research in the biomedical sciences and the history of medicine, while the Burroughs Wellcome Fund supports underfunded areas of biomedical research and education.

Scientists interested in finding out more about the Hitchings-Elion Fellowships should contact the FIC International Research and Awards Branch, Bldg. 31, Rm. B2C21; telephone 496-1653. □

PEDIGREE

(Continued from Page 1)

of dementia, strikes in middle or late life. In Alzheimer's, early symptoms such as forgetfulness give way to profound mental impairment. As the disease progresses, victims lose such fundamental abilities as speech, movement and thought.

In a fraction of cases, including that of the Canadian family, the disease runs in an inherited pattern. Children born to a father or mother with the inherited form of Alzheimer's have a 50 percent chance of developing it themselves. Using a code of lines, circles and squares to symbolize family relationships and denote affected members, the pedigree records these children's fate.

For researchers hunting the inherited Alzheimer's gene, this complicated chart is an invaluable road map.

"The pedigree is a backbone; it is the blueprint," Nee says. "Everything else done in the laboratory or thereafter relies on this blueprint." With a pedigree to guide them, scientists can compare the genes of normal and affected children to find the fatal difference. If this gene—or at least a nearby marker—is found, genetic testing would be possible.

However, recent studies comparing genes from the Canadian pedigree—known to researchers as FAD-1—and those of other Alzheimer's pedigrees suggest the disease may be triggered by several causes. The genes among these groups have diverse abnormalities—suggesting that more than one genetic defect or even environmental factors may contribute to Alzheimer's disease. As a result, the likelihood of a straightforward genetic test to find a single, faulty gene is dwindling.

Even if such a test were developed, Nee says, it wouldn't necessarily bring good news for some patients. In fact, she says the possibility of genetic testing can spur fear rather than hope among those at risk for inherited Alzheimer's. If the gene were found tomorrow, for example, family members could be told of their eventual illness, but would have no guarantee of treatment.

"As one patient said, 'Gee, if I took a predictive test, if there was some way you could tell me, then you would have raped me of my hope that I wasn't going to get it. And then what are you going to give me? What are you going to replace that hope with?'" Nee recalls. Her answer? "We'd want to replace the hope that you wouldn't get it with the hope that a treatment will come for it."

"Genetic research is extremely exciting for us—the researchers," Nee continues. "But when patients come in they're scared to death of what we may find—and what this finding is going to mean to them in their day-to-day life. They fear what it's going to mean to



Linda Nee, a social science analyst at NINDS, has been bringing neurologists and patients together for more than 20 years. "To be the liaison between the two, you need the knowledge of both," Nee says. "And also you must know how to handle that knowledge."

their relationships, what it's going to mean to their reproductive practices."

That's why Nee's responsibilities go beyond translation. In addition to helping patients understand the increasingly technical language and science of genetics, she assists them in coping with the implications of research findings.

Typically, she follows patients for 10 to 15 years, bringing a background in social work to the difficult task of building long-term relationships. "It's not an easy thing of course, but relationships make all the difference in the world," Nee says. Such relationships have been particularly vital to the Alzheimer's work, Nee notes, because "people have to trust you with family information, some of which can be very painful."

She also sees more of individual patients than the typical scientist. "I've made countless trips to Canada," she says. "I've stayed in these people's homes."

In fact, Nee plans to share some of her unique experiences working with Alzheimer's patients in a future book chapter titled "Pedigrees are People." Part of a case manual for Alzheimer's caregivers, this chapter's title represents an important theme for Nee. "Very often people forget that pedigrees are people," she emphasizes. "It's very easy to look at circles and squares and not appreciate that. And as the field of genetics gets more technical, it gets further away from people."

Through her work with Alzheimer's patients, Nee hopes to promote awareness

among scientists of the personal consequences of genetics research. At the same time, she has a message from scientists for the patients.

"We hear what they are saying—that they're suffering, that coming here to NIH isn't a picnic—and we respect them."

"We couldn't do clinical research, we couldn't be charting these family trees—if it weren't for people risking their psyches, their blood, their skin, and everything else to advance the cause." □

R&W Theatre Group Presents 'Wonderlands of Broadway'

On any of the first three weekends in November you can enjoy the NIH R&W Theatre Ensemble's annual musical revue with a magical tour of music from four Broadway shows highlighting musical favorites from the fifties.

Featured songs include "Hey There," and "Hernando's Hideaway," from *Pajama Game*; "Thank Heaven for Little Girls," "I Remember It Well," and "The Night They Invented Champagne," from *Gigi*; "I'm Getting Married in the Morning," "The Rain in Spain," "On the Street Where You Live," and "With A Little Bit of Luck," from *My Fair Lady*; and "Maria," "Climb Every Mountain," "Do Re Mi," and "Edelweiss," from the *Sound of Music*, along with many other selections from these well-loved Broadway shows.

For 10 years the nonprofit NIH Theatre Ensemble has consisted of volunteers of NIH employees, and many talented participants from the area who donate their time, energy and talents for a very worthy charity. The proceeds from the show go to the NIH Patient Emergency Fund.

Performances are Nov. 2, 3, 9, 10, 16, and 17 at 8 p.m. and two Sunday matinee performances Nov. 4 and 11 at 3 p.m. All performances are in Masur Auditorium, Clinical Center. □



New officers of the NIH advisory committee for employees with disabilities were recently elected. Shown are (from l) Claudia Goad, outgoing chairperson; Mary Glenn, outgoing secretary; new chairperson Dr. Ron Geller; and new secretary Lois DeNinno. (Outgoing vice-chairperson Richard Shaff and new vice-chairperson Janet Pomerantz are not pictured.)

Intravenous Treatment Bolsters Immune System, Panel Says

By Mary Jane Walker

Immunoglobulins are disease-fighting proteins, or antibodies, that are produced by the immune system. People with certain immune system deficiencies may not produce immunoglobulins and are therefore susceptible to a variety of infections.

Since 1952, immunoglobulin preparations made from human blood have been available to bolster the immune system. When first developed, they were administered intramuscularly (injected into a muscle) in order to prevent or treat the variety of infections that can occur in these patients.

In the last decade, seven preparations of immunoglobulin made to be injected intravenously (into the vein) have become available in the United States. Use of intravenous immunoglobulin (IVIG) has rapidly increased in the past several years as a result of improvements in its preparation and the unexpected benefits it showed in the treatment of certain diseases. However, important questions regarding its use still remain.

In an effort to make recommendations regarding the safe and effective use of IVIG, NIH recently held a consensus development conference on intravenous immunoglobulin: prevention and treatment of disease. A 13-member panel developed a consensus statement after considering scientific presentations and discussions from several physicians, scientists, health care professionals, and others. Following are the panel's conclusions.

IVIG is a safe and effective replacement therapy for people with primary immunodeficiencies, i.e., immune deficiencies not due to other diseases, in which lack of production of antibodies against common infectious agents can be demonstrated.

The usefulness of IVIG in pediatric AIDS has not yet been documented, but it will be evaluated upon the conclusion of two ongoing NIH-supported clinical trials.

Currently available data are insufficient to support the use of IVIG to prevent late onset infections in low birth weight, premature infants. Its use in treatment of neonatal infections also is not supported by available data.

IVIG can significantly reduce the number of infections that occur in certain patients with chronic lymphocytic leukemia. Although its use has no effect on long-term survival, IVIG can decrease the amount of time these patients spend in the hospital or convalescing.

In immunosuppressed patients who have received bone marrow transplants, IVIG is useful to prevent and treat certain infections and may help prevent graft-versus-host disease, in which transplanted cells attack the tissues of the recipient.

A rapid increase in the blood platelet levels

of children with acute immune thrombocytopenic purpura (ITP), an immune disorder marked by blood platelet destruction, can occur with the use of IVIG. IVIG is not as effective in the treatment of adults with ITP, although it can increase the number of platelets in the blood. It is most useful in adults in special situations requiring an acute increase in platelet count such as immediately before surgery.

IVIG in conjunction with aspirin should be the standard of care for preventing damage to the coronary arteries in children with Kawasaki syndrome, a condition of unknown cause marked by acute high fever, rash and conjunctivitis.

Clinical trials of the use of IVIG are warranted in certain diseases of the nervous system such as Guillain-Barre syndrome, an inflammation of the nervous system that causes paralysis, and in intractable seizure disorder.

All IVIG preparations are safe and effective in treating the conditions for which they are licensed; however, the efficacy of various preparations in treating other conditions remains to be established. Given the large number of conditions for which IVIG may have potential value, the prescribing physician should be aware of the demonstrated efficacy of each preparation.

Effective regimens have been developed for primary immunodeficiencies and secondary immunodeficiencies, i.e., immune deficiencies resulting from other diseases such as chronic lymphocytic leukemia, as well as for ITP and Kawasaki syndrome. However, optimal dosages and treatment schedules still need to be established for patients who may benefit from IVIG therapy.

The risks of IVIG therapy are minimal. Adverse events, which are rare, can often be alleviated by reducing the rate or volume of infusion. Appropriate means should be developed to monitor IVIG preparations for the potential presence of new or unexpected disease-causing agents such as the recently identified hepatitis C virus.

The panel identified the following areas for future research:

- discern how IVIG works in the body;
- when possible, compare the effectiveness of IVIG preparations;
- design more specifically targeted immunoglobulin preparations;
- determine cost-effectiveness and effect on quality of life for patients receiving IVIG;
- examine long-term effectiveness of IVIG. □

Fall Computer Training Gets Under Way

The Fall 1990 session of the DCRT Computer Training Program is well under way, but many classes still have openings.

Due to the overwhelming response to the first "ENTER BBS" seminar on the NIH centralized bulletin board system, a second presentation has been scheduled for Oct. 24 from 1:30 to 3:30 p.m. in Bldg. 12A, Rm. B51.

NUnet, the NIH Utility Network that is connecting all NIH buildings this fall, offers users of LANs access to worldwide electronic mail via Bitnet and the Internet. On Oct. 30, the seminar "NUnet, LAN, and Mainframe Mail Connectivity" will discuss how to transmit mail via mail gateways and how to address mail to any location on the NUnet correctly. "Using the Internet" on Oct. 25 will present the principles of TCP/IP networking, use of electronic mail and file transfer via FTP, and remote login using Telnet. The use of Bitnet will be demonstrated in a seminar on Nov. 28.

Newcomers and those assuming new responsibilities may be interested in taking "Overview of Services" on Nov. 7, and "Orientation for Account Sponsors" on Nov. 16.

Those who would like to learn about UNIX, the popular operating system for scientific work that runs on computers of all sizes, can take "Welcome to UNIX" on Nov. 1, "Fundamentals of UNIX" on Nov. 13-14 or Dec. 18-19, and "Convex Topics" on Nov. 20. Emacs, a screen-oriented text editor that runs on many UNIX systems, will be discussed in two seminars, "Editing with Emacs" on Nov. 8, and "Advanced Emacs" on Nov. 19-20.

"MLAB on the PC" on Oct. 26 will discuss how the MLAB software, which is now available for personal computers, can be used for evaluating mathematical models by simulation, graphics, and curve fitting. Students will learn how to fit models to laboratory data.

OmniPage, an OCR (optical character recognition) program to read typed or printed data into IBM PCs and Macintosh computers, will be presented in two seminars, "OmniPage" on Nov. 16, and "OmniPage Tips and Tricks" on Nov. 20.

On Nov. 2, Wayne Rasband will demonstrate IMAGE 1.24, an easy-to-use image analysis system he developed for the Macintosh II. Copies of the software are available without charge.

To reserve a space in any of these classes, call the Training Unit, 496-2339. All classes are taught in Bldg. 12A and are free of charge. □

Primate Center Tests New Drug for Human Trauma Victims

University of Washington (UW) researchers have tested in rhesus monkeys a new inflammation-blocking drug that could lead to substantial improvements in the survival rates of human trauma victims. The research, which was conducted at the NCCR-supported UW Regional Primate Research Center (RPRC), was reported in the August issue of *Surgery*.

According to Dr. Charles L. Rice, the paper's senior author and UW professor of surgery, the monoclonal antibody MAb 60.3 was used to study multiple organ failure syndrome, a deadly condition estimated to kill one-half of the 50,000 annual United States trauma victims.

Many trauma victims experience severe blood loss accompanied by a rapid decline in blood pressure, creating conditions that often lead to shock. Multiple organ failure syndrome, the researchers believe, occurs following the return of normal blood pressure. As blood returns to the organs, polymorphonuclear neutrophils or PMNs—a type of white blood cell—cling to the walls of tiny blood vessels and release toxic substances that damage blood vessels and impair organ function.

"The trauma surgeon often is able to stop the bleeding and repair damaged tissues only to have the consequences of shock set off an inflammatory cascade," says Rice, surgeon-in-chief at Seattle's Harborview Medical Center.

The research, which used RPRC-bred rhesus monkeys, along with earlier results reported by Rice and colleagues using rabbits, suggests that MAb 60.3 prevents dangerous microvascular inflammation—and potentially fatal

organ damage—by quickly attaching to and preventing PMNs from clinging to vascular walls. MAb 60.3 was developed by UW scientists and colleagues.

In the double-blind *Surgery* study, MAb 60.3 injections were given to five anesthetized rhesus monkeys in shock for 90 minutes from temporary blood withdrawal. A control group of five other monkeys received equal volumes of saline solution. Their medical treatment, following induced hemorrhagic shock, was similar to the treatment humans receive, with the exception of MAb 60.3.

All five monkeys given the monoclonal antibody survived. None displayed any evidence of either stress gastritis, a common and treatable complication of hemorrhagic shock involving inflammation of the gastrointestinal tract, or of organ damage.

All five control animals, on the other hand, had gastritis as well as other complications. In addition, two died from multiple organ failure syndrome within 72 hours of the experiment.

According to Rice, a research affiliate of the RPRC, the study is the first use of PMN-blocking agents in primate shock resuscitation. Rice says the research team expects to begin clinical trials of similar drugs in human trauma patients within a year and a half.

NCCR supports seven regional primate research centers throughout the country. The centers, which have close administrative and research relationships with major medical institutions, provide specialized facilities, non-human primate resources, and appropriate research environments for many types of biomedical studies.—Michael Fluharty □

Consensus Conference Looks at Hyperparathyroidism

An NIH Consensus Development Conference, "Diagnosis and Management of Asymptomatic Primary Hyperparathyroidism" will be held Oct. 29-31 in Masur Auditorium, Clinical Center.

Sponsored by NIDDK and the NIH Office of Medical Applications of Research, the conference will be chaired by Dr. John T. Potts Jr., of Harvard University.

Hyperparathyroidism is increasingly being recognized in asymptomatic patients as a result of widespread use of multiphasic screening tests that lead to detection of hypercalcemia. Because approximately two new cases per thousand occur in women over 60 years of age per year, primary care physicians as well as endocrinologists are increasingly interested in the correct diagnosis and proper management of patients with hyperparathyroidism.

Physicians are often uncertain about how to manage patients with subtle or absent symptoms and a clear biochemical diagnosis of

hyperparathyroidism. It is especially difficult to determine indications for surgery in asymptomatic patients. It is also difficult to know how to monitor patients who are not treated surgically to detect silent organ damage, particularly progressive bone loss. Data are now available on the natural history of asymptomatic hyperparathyroidism, but the interpretation of this information and its implications for patient management are controversial.

At the conference, endocrinologists, surgeons, radiologists, epidemiologists, health care providers and members of the public will participate in 2½ days of presentations and discussion.

Sessions run from 8:30 a.m. to 5 p.m. on Oct. 29; 8:30 a.m. to noon on Oct. 30; and 9 to 11 a.m. on Oct. 31. A press conference will take place at 12:30 p.m. on Oct. 31. The conference is free and open to the public. Additional information is available from Judy Corbett, (301) 468-6555. □

Workshop on Alopecia Areata

Researchers are invited to attend a 2-day workshop on alopecia areata, an unpredictable and psychologically debilitating disorder that causes patchy loss of hair. The workshop will be held on Thursday, Oct. 25, from 8 a.m. to 5 p.m., and on Friday, Oct. 26, from 8:30 a.m. to 1 p.m. in the Lister Hill Auditorium, Lister Hill National Center.

The purpose of the workshop is to review current information on the clinical and histopathologic features of alopecia areata, the factors controlling hair growth, autoimmune aspects of this disease, pharmacologic aspects, and animal models. Results of the workshop are expected to further research in this area.

The workshop is sponsored by NIAMS and the National Alopecia Areata Foundation. Pre-registration by Oct. 19 is encouraged; please call Suzanne Sangalan, 496-0803. □

More Frequent Shuttle Service

Beginning Nov. 5, the Transportation Branch, Division of Logistics, will provide more frequent shuttle service on campus and to the rental buildings. Service will be provided as follows:

Campus: Every 8 minutes from 6:30 a.m. to 6:28 p.m. Additionally, there will be continuous service between Bldgs. 10, 31, 1 and Metro from 4 to 5:30 p.m. and between Bldg. 10, Lot 41B and Metro from 3 to 9 p.m.

Westwood Bldg.: Every 15 minutes

Executive Plaza North/South Bldgs.: Every 20 minutes with increased service during morning and afternoon rush hours.

Federal Bldg.: No change

New schedules will be available at the end of October. For more information, call the Motor Pool, 496-3426. □

Insurance Guide Available at R&W

Federal employees can save hundreds or more in health costs next year by selecting the right health insurance plan during "open season"—the period when employees are free to switch plans.

How employees can make these savings and still be protected against catastrophic health care costs is revealed in *Checkbook's Guide to 1991 Health Insurance Plans for Federal Employees*, which is released by *Washington Consumers' Checkbook* magazine. The new guide (which applies to federal retirees as well) evaluates each of the plans available to federal employees. It will be available starting Nov. 1 in R&W Gift Shops in Bldgs. 10, 38, Westwood and 31. Discounted price is \$5.50. Pick yours up and choose the best plan for your needs. □

Marrow Transplant Therapy Fails in HIV-Infected Twins

By Margo Warren

Scientists at NIAID have published the results of treating 16 HIV-infected men with a combination of bone marrow transplantation, white blood cell infusion, and the anti-retroviral agent zidovudine (AZT). The bone marrow donors were the healthy identical twins of the infected men. The therapy showed no long-term benefits in reducing the human immunodeficiency virus (HIV) infection or in improving the immune system of the patients. However, the results of the study were used as the basis for development of a new protocol also employing bone marrow transplantation with antiretroviral therapy.

The study was conducted by Dr. H. Clifford Lane, NIAID acting clinical director, and took place at NIAID's Laboratory of Immunoregulation. The results were published in the Oct. 1 issue of the *Annals of Internal Medicine*.

Because bone marrow is the source of all the blood cells in the immune defense system, a transplant from a healthy donor can potentially restore a compromised immune system. Twins serve as ideal subjects for bone marrow transplants because their blood types match perfectly, thus eliminating the need for medical procedures aiming to avert graft-versus-host disease, a common complication in transplantation. Such procedures include either a pretransplantation course of intensive radiation and chemotherapy to destroy existing bone marrow, or posttransplantation immunosuppression.

Each set of identical twins who took part in the study consisted of one HIV-infected twin and his uninfected brother. Nine of the HIV-infected patients had AIDS, of whom five had a history of *Pneumocystis carinii* pneumonia (PCP), three had a history of Kaposi's sarcoma (KS), and one had both PCP and KS. Of the other HIV-infected patients, five had a history of swollen lymph glands, one had a history of fatigue and night sweats, and one was asymptomatic.

Both the healthy and the HIV-infected twins took AZT (500 mg every 4 hours) for the first 12 weeks, in order to suppress HIV activity in the patient and create a supply of the drug in the donor's blood. AZT has been demonstrated to reduce mortality and the incidence of opportunistic infections in patients with AIDS and to delay progression of HIV disease in asymptomatic HIV-infected persons.

At the end of the ninth week, each HIV-infected twin received six infusions of lymphocytes (white blood cells, which play a major role in the immune system) supplied by his twin brother. After the bone marrow transplantation at the end of the 12th week, the HIV-infected patients were randomized to

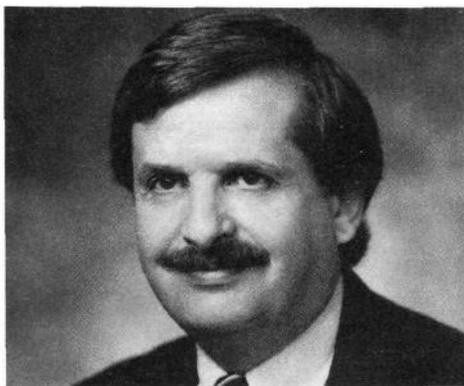
receive either AZT or a placebo for the next 12 months. The uninfected twins did not receive AZT after donating bone marrow.

Researchers reported that although the patients seemed to tolerate the treatment well, in all but one case, their immune systems were only temporarily enhanced. HIV disease progressed in all but that one patient after transplant, and there was no overall immunological improvement. No difference was reported between the patients who received AZT and those who received the placebo.

Previous studies of identical twins with HIV infection who had received bone marrow transplants revealed similar outcomes: temporary improvement followed by a gradual decline.

Three additional sets of identical twins are now enrolled in a new study, in which the donor's immune system will be boosted with an experimental AIDS vaccine consisting of an HIV protein known as gp160, before his lymphocytes and bone marrow are extracted for transplantation.

"In this new protocol, we will strengthen the immune system of the donor and use a different regimen of antiretroviral agents, including zidovudine, interferon alpha, and recombinant CD4-IgG," said Dr. Anthony Fauci, NIAID director and chief of the Laboratory of Immunoregulation. "We believe that combination therapy has a great deal of promise, and we are continuing to look for the optimal combination." □



Dr. Eliezar Dawidowicz has been appointed a program administrator in the Cellular and Molecular Basis of Disease Program, NIGMS. He will handle grants in the areas of membrane and lipid metabolism and membrane transport. Prior to this appointment, Dawidowicz was an associate professor of physiology at Tufts Medical School. From 1972 to 1984, he was on the faculty of Harvard Medical School, where he rose from instructor to associate professor of biophysics. Dawidowicz has a Ph.D. in physical chemistry from Northeastern University in Boston.

Influenza Immunization Offered at NIH

The flu season will soon be upon us and now is the time to consider vaccination to protect yourself from influenza. Vaccination is recommended for many reasons such as: to avoid infection with influenza, to reduce the severity of disease, and to avoid transmitting influenza to others.

The vaccine is not a live-virus vaccine, but is made from noninfectious viruses and therefore cannot cause influenza. The Occupational Medical Service will provide free vaccine shots to NIH employees between Oct. 16 and Nov. 9. The Clinical Center administration strongly encourages all NIH workers to obtain the vaccine, even if you have been immunized in the past.

Immunization should be a priority for some high-risk groups of people, including, but not limited to:

- Health care workers and support staff, especially those who have contact with patients and other employees who routinely visit the CC;
- Persons age 65 or older;
- Persons with chronic cardiovascular, pulmonary or metabolic disorders, kidney disease, anemia;
- Persons who are immunocompromised.

Employees embarking on international travel and other persons wishing to reduce their risk of influenza should also obtain the vaccine. However, persons with allergy to eggs and egg products should not receive the vaccine.

The vaccine will be available at a variety of NIH locations and at various times of the day. See the schedule below for a convenient time and place; no appointments are needed for these "walk-in" clinics. Additional information can be obtained from the Occupational Medical Service, 496-4411, or the Hospital Epidemiology Service, 496-2209.

Influenza Immunization Schedule 1990

Bldg. 10, Clinic 6: Oct. 16 — Nov. 9
Tuesdays, 1-3 p.m.
Wednesdays 7-9 p.m.
Thursdays 1-3 p.m., 7-9 p.m.
Fridays 8:15-11:15 a.m.

Bldg. 31, Rm. B2B57: Oct. 16, Tues., 1-3 p.m.
Oct. 30, Tues., 1-3 p.m.

Bldg. 13, Rm. G904: Oct. 26, Fri., 9-11:30 a.m.
Nov. 5, Mon., 9-11:30 a.m.

Bldg. 38A, Rm. B1N28G: Oct. 24, Wed., 2-4 p.m.
Nov. 7, Wed., 2-4 p.m.

EPN, Rm. 103: Oct. 18, Thurs., 8:15-11:15 a.m.
Nov. 1, Thurs., 8:15-11:15 a.m.

Federal Bldg., Rm. 10B08: Oct. 18, Thurs., 1-3 p.m.
Nov. 1, Thurs., 1-3 p.m.

Westwood Bldg., Rm. 28: Oct. 22, Mon., 9-11 a.m.
1-3:30 p.m.
Nov. 7, Wed., 9-11 a.m.
1-3:30 p.m. □

*Birds, Bees and Evolution***Sexual Reproduction May Have Evolved To Keep DNA in Good Repair**

By Anne A. Oplinger

Sure, birds do it, bees do it, even educated fleas do it—the question is, why? Sexual reproduction is not cheap. Many creatures devote large amounts of time and energy to the task of joining their gametes to ones from the opposite sex. Just think of a stag burdened down with large antlers or a peacock whose extravagant tail feathers attract predators as well as peahens. Once fertilization occurs, many animals, especially mammals, expend much energy in rearing their young. In contrast, organisms that reproduce asexually such as most bacteria, sponges, some lizards, and nonflowering plants have managed to pass on their genes for millions of years efficiently and at little cost.

Because so many organisms reproduce sexually despite the high costs, evolutionists assume there are hidden benefits to the practice. One possible benefit is that sexual reproduction creates genetic variation within a species. Unlike asexual organisms, which produce offspring exactly like themselves, the union of gametes (sperm and eggs) in sexual organisms permits a mixing of parental genes. The offspring are slightly different—and potentially better adapted to the environment—than the parents. The idea that sexual reproduction produces useful variations was proposed in 1889 by the eminent German biologist August Weissmann and has become the prevailing view, despite the fact that little theoretical or experimental evidence supports it.

Paul O'Brien Retires From NEI

Dr. Paul O'Brien, acting director, NEI Intramural Research Programs and chief, section of cell biology, Laboratory of Retinal Cell and Molecular Biology, retired Sept. 1, his 30th anniversary with the NIH, and his 20th with NEI.

A major research focus of O'Brien's laboratory has been the biochemistry of rhodopsin, a protein important for the function of retinal rod cells. Much of his research dealt with the degeneration of retinal cells in diseases such as retinitis pigmentosa (RP), a group of inherited retinal disorders that affect otherwise healthy teens and young adults and for which there is no effective treatment. He and his research staff recently discovered that the circulating plasma of dogs with an RP-like condition have inadequate levels of a fatty acid nutrient essential for rod cell function. Some humans with recessive-type RP also exhibit low blood levels of this fatty acid. This finding provides hope that dietary supplementation may slow or halt disease progression in dogs, and possibly in

Now, NIGMS grantee Dr. Richard Michod of the University of Arizona at Tucson has experimental evidence supporting a different theory for why sex evolved. According to this theory, it may have begun to meet the need organisms have to repair DNA.

DNA, which stores in its nucleotide subunits all the instructions a cell requires to function, is a very active molecule. The entire, long DNA strand is duplicated before each cell division, and small errors (mutations) in the nucleotide order inevitably occur. Minor mutations are usually not deleterious and are passed along through successive generations of cells. However, more significant changes in DNA can be caused by such agents as ultraviolet light, chemicals, or ionizing radiation. If major damage is not repaired, the cell can die. Fortunately, cells have a large "repair kit" of enzymes that find damaged sites, cut them out, and paste in new nucleotides. However, these enzymes must have a correct copy of the damaged portion from which to "read." And that is where sex comes in.

Michod postulates that early cells occasionally "mated" because they could rectify accumulated DNA damage by accepting bits of DNA from neighboring cells. To test this idea, Michod studied genetic transformation, a sex-like process seen in certain species of modern bacteria. Because transformation requires energy, these bacteria reproduce asexually

most of the time. Only about 2 cells in every 10 are "competent" for transformation—that is, they are able to take up DNA from the environment. Transformation itself means that a cell has both taken in foreign DNA and incorporated it into its own DNA. When Michod exposed transformable bacteria to ultraviolet light, and then provided the damaged cells with additional DNA, the percentage of transformed cells increased. This suggests that early cells might have been "pressured" by environmentally caused DNA damage to increase their rates of transformation. Not too many evolutionary steps separate bacterial transformation from full-fledged sexual reproduction, in which two different sexes contribute genetic material to the formation of an embryo.

This theory of why sexual reproduction arose also may explain another biological phenomenon—that DNA, as passed through the reproductive cells, is immortal. According to one theory, body cells age in part because their DNA-repair machinery eventually cannot keep up with the damage sustained by living. Reproductive cells, on the other hand, are infused with new DNA when they join and thus can effectively repair damage accrued in the previous generation. In essence, DNA is rejuvenated at each mating and thus keeps the whole species "young" even as individuals in the species grow old and die. □



Dr. Paul O'Brien

RP patients.

O'Brien plans to keep in touch with the scientific community through his new job at a private company that helps researchers prepare grant applications. He expects to travel frequently, both on job-related assignments and

to join his sons on bird-watching expeditions. He and his two sons are "hard core birders," as he calls it. Some of his favorite bird-watching areas include the Chiricahua mountains in southeastern Arizona and the Rio Grande Valley in Texas.

O'Brien first came to NIH as a research chemist in the National Institute of Arthritis and Metabolic Diseases. From there he went to work in the Ophthalmology Branch at the National Institute of Neurological Disorders and Blindness. When the NEI was created in 1970, he joined the new institute.

During his career at NIH, O'Brien served as president of the Association for Research in Vision and Ophthalmology (ARVO) and had a hand in establishing an ARVO office in Washington, D.C. At present, he is on ARVO's retinal cell biology program committee, and he has been an executive editor of the journal *Experimental Eye Research* since 1975. He is the author of more than 60 papers.—Linda Huss □



TRAINING TIPS

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

<i>Courses and Programs</i>	<i>Starting Dates</i>
<i>Management and Supervisory</i> 496-6371	
Voice for Success	10/29
Creative Basics for Changing Workplaces	10/29
Managing Stress, Maximizing Effectiveness	11/2
Working With Personnel Differences	11/6
Working With Personnel Differences for Technical and Support Staff	11/8
Practical Management Approaches	11/7
Interpersonal Relationships in the Work Environment	11/27
Positive Influence and Negotiations	11/28

Personnel Management Training and Special Courses 496-6211

Basic Employee Relations	10/24
Appropriation Law Seminar	11/5

Office Operations Training 496-6211

3 Com PC Network Level 1	11/6
Introduction to DOS	10/26
3 Com PC Network Level 2	10/29, 11/19
Lotus 1-2-3 Release 2.2	
Advanced Topics	10/30
Introduction to Personal Computing for New Users	10/31
Introduction to Harvard Graphics	11/1
Excel Level 1	11/2
Introduction to Lotus 1-2-3 Release 2.2	11/5
Introduction to PC Keyboarding	11/5
Introduction to Wordperfect (MAC)	11/5
Wordperfect 5.0 — 5.1 Transition	11/6
Foxbase on the MAC — Level 1	11/9
Welcome to MAC	11/5, 11/16
Introduction to Microsoft Word	11/7
Introduction to Symphony	11/14
3 Com Network Manager — Level 1	11/29

Training and Development Services 496-6211

Personal Computer training is available through User Resources Center (URC) self study courses. There is no cost to NIH employees for these hands-on sessions.

The URC hours are:

Mon.-Thurs.	8:30 a.m. — 7 p.m.
Friday	8:30 a.m. — 4:30 p.m.
Saturday	9 a.m. — 1 p.m.

Training Center, DCRT, and other training information is available on WYLBUR. Logon to WYLBUR and type ENTER TRAINING

Open Season for FAES Insurance

The FAES Health Insurance Program announces "open season" Nov. 1-30. The program is open to: visiting fellows, full-time NIH employees who are not eligible for government plans, and for full-time special volunteers and guest researchers. Open season is for those people who did not enroll when first eligible and for current subscribers to change options.

FAES is offering two programs this year: Blue Cross/Blue Shield Preferred Advantage and M.D. IPA. Information about rates and benefits, which will be effective Jan. 1, 1991, may be obtained from the FAES business office, Bldg. 10, Rm. B1C18. □

NIDR's Preston Littleton Retires

Dr. Preston A. Littleton Jr., NIDR deputy director and PHS deputy chief dental officer, retired Sept. 17 to become executive director of the American Association of Dental Schools.

"Dr. Littleton has been an articulate spokesman for NIDR and his contributions to the programmatic and operational activities of the institute have been significant," said NIDR director Dr. Harald Loe. "Although he will be sorely missed, we know that the American Association of Dental Schools is gaining an invaluable asset because of the knowledge and experience that Dr. Littleton brings to his new position."

On joining NIDR in 1983, Littleton served as special assistant to the director. His first assignment was to study the declining numbers of clinicians in oral health research to determine the best approach for ensuring an adequate future supply of clinical investigators. These efforts led to the initiation of the very successful Dentist Scientist Award program, a 5-year program that prepares dentists for careers in research. He also oversaw development of the plan presented to Congress that serves as the institute's guide for the support of large-scale, categorical and multidisciplinary oral research.

Littleton began his PHS career in 1964 as a dental intern. In 1987, he was named PHS deputy chief dental officer. In this role, he helped coordinate national and international oral health activities.

Littleton's prior assignments with NIH spanned the years 1968 to 1973, when the Bureau of Health Manpower Education was



Dr. Preston A. Littleton Jr.

part of NIH. He served as chief of the Manpower Analysis Branch in that bureau's Division of Dentistry from 1974 to 1978. He then took a 2-year leave from PHS to direct a major Kellogg Foundation-supported study of postdoctoral dental education in the United States. Littleton came to NIDR after assignments with the Office of the Assistant Secretary for Health and the Health Resources and Services Administration.

He was a faculty member at the University of Iowa College of Dentistry and Georgetown University's School of Dentistry. In addition, he has held a number of committee and consultant appointments in government, professional associations and academia. □

Jerina a Contender for Nobel Chemistry Prize?

The Scientist has named NIDDK researcher Dr. Donald M. Jerina as one of 10 potential

candidates for this year's Nobel prize in chemistry. "Should the Nobel committee choose to honor research in biochemistry, then Donald M. Jerina ... is a possible contender," said the newspaper.

In selecting potential nominees, *The Scientist* examined citation data compiled by the Philadelphia-based Institute for Scientific Information. Jerina contributed to more than 60 articles that have been cited in excess of 50 times each.

Jerina, who is chief of the section on oxidation mechanisms in NIDDK's Laboratory of Bioorganic Chemistry, is best known for his research on the role of arene oxides in drug metabolism, and on the prediction and identification of ultimate carcinogens formed from polycyclic aromatic hydrocarbons, which are common environmental contaminants. He received the Hillebrand Prize from the American Chemical Society in 1979 and the B.B. Brodie Award for research in drug metabolism from the American Society of Pharmacology and Experimental Therapeutics in 1982. □



Dr. Donald M. Jerina

Russell Headlines Disability Awareness Program

Harold Russell, winner of two Academy Awards for his portrayal of a combat wounded veteran in the post-WW II movie, *Best Years of Our Lives*, headlines the 8th Annual NIH Disability Employment Awareness Program, Oct. 25, 11:30 a.m.-1:30 p.m., in Wilson Hall, Bldg. 1.

Russell, who chaired the president's committee on employment of people with disabilities for 25 years, is a hero in the classic sense. He lost both hands in World War II, and later shared with millions of people his pain, struggle and return to the mainstream in *Best Years of Our Lives*.

Russell shares the spotlight on the program with Cara Stewart, Miss Wheelchair Maryland 1988, who is an accomplished singer and certified occupational therapist. She was the first person in a wheelchair to graduate from the Medical College of Virginia with a degree in occupational therapy. Stewart has performed widely for disability awareness events around the country, including the last two annual meetings of the president's committee on employment of people with disabilities.

Eugene Kinlow, DHHS deputy assistant secretary for personnel administration, is also on the program to discuss departmental initiatives for people with disabilities. Diane Armstrong, director, Division of Equal Opportunity, will present awards for outstanding achievements in disability awareness and



Harold Russell, winner of two Academy Awards and a past chairman of the president's committee on employment of people with disabilities, will be the keynote speaker at the 8th Annual NIH Disability Employment Awareness Program on Oct. 25 in Wilson Hall, Bldg. 1.

employment. Those attending the program are invited to a reception after the program, cosponsored by the Division of Equal Opportunity and the advisory committee for employees with disabilities.

Sign language interpretation will be provided. For additional information and reasonable accommodation needs, call Joan Brogan, 496-2906. □

Vanpoolers Wanted

Drivers and riders are needed for a vanpool leaving Oxon Hill/Central Ave. area in Maryland. Working hours are 8 a.m. to 4:45 p.m. For more information, call Rosa Snell, 496-6477. □

Workshops To Explore Cultural Differences, Sensitivities at NIH

Have you ever experienced discomfort on the job and not known why? Have people ever been offended or confused, for a reason you could not fathom? These difficulties may arise over something so subtle we are not aware of it until it has been violated—our different cultures.

From November 1990 to June 1991, the Division of Equal Opportunity will sponsor monthly workshops on the various cultures and groups represented at NIH: Hispanic, deaf, African-American, women, Native American, Asian, and persons with disabilities. Topics will include interaction styles, social behaviors, eye contact behaviors, use of the telephone and TTYs (teletypewriters), and approaches to problem solving.

The first workshop will discuss Hispanic culture and will take place in November 1990. Watch for the announcement in the next *NIH Record*.

If you have topics you would like to see discussed in any of these workshops, contact Toni Pineau, 496-6301 or TTY 496-9755. □

Forum on Freedom of Information

The STEP forum series has scheduled a forum entitled "News About the Freedom of Information and Privacy Acts" on Thursday, Nov. 15 from 1:30 to 3:30 p.m. in Wilson Hall, Bldg. 1. Please note that this is a change from the previously published date of Nov. 14.

What are the Freedom of Information and Privacy Acts? How do the provisions of these acts affect our jobs? Private lives? Are you familiar with the relevant provisions of these acts? What NIH records are covered by the two acts? Who submits requests for information under the provisions of these acts?

These are a few of the questions to be addressed by the forum speakers, who include: Russell Roberts, former director of the Freedom of Information Act/Privacy Act Division, DHHS; Joanne Belk, acting Freedom of Information officer at NIH; and Susan Feldman, NIH Privacy Act officer.

The speakers will provide information on the background, provisions and implementation of the Freedom of Information and Privacy Acts, discuss how the acts have been shaped by legal and political forces, and delineate the current responsibilities of NIH staff in enforcing the provisions of the acts. Even those staff familiar with or trained in Freedom of Information/Privacy Act matters should consider attending to learn the latest about the acts.

As with all STEP forums, there will be ample opportunity for discussion and interaction with the speakers. The forum is open to all NIH staff and advanced registration is not necessary. For additional information, contact the STEP office, 496-1493. □

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U.S. Surgeon General Dr. Antonia Novello (second from r), addressed the participants of a recent workshop on pelvic inflammatory disease (PID) sponsored by NIAID and CDC. The meeting, "PID: Research, Prevention, and Management Directions in the 1990's," was held last month on the NIH campus. Pictured with the Surgeon General are (from l) Dr. King Holmes, director of the University of Washington Center for AIDS and STD, Seattle; Dr. Judith Wasserheit, chief of NIAID's Sexually Transmitted Diseases Branch; and Dr. John La Montagne, director of NIAID's Division of Microbiology and Infectious Diseases.