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The NIH Record

Zero-Gravity Grub

Nutritionist Develops Diet for Space-Bound Rodents

By Anne Barber

What does an animal nutritionist working at NIH have to do with the NASA space shuttle program?

Dr. Joseph J. Knapka, an animal nutritionist with the Veterinary Resources Branch, Division of Research Services, has been working with NASA to develop a diet for rats that will be aboard the space shuttle on experimental flights.

According to Knapka, several years ago, in the early days of the shuttle program, he received a call from California asking what diet NIH feeds to its germfree animals. He answered the question but wasn't aware that this diet was used until Skylab went up and the rat food aboard started flaking and floating around in the spacecraft.

"Had I been asked to recommend a diet for a space flight, that would have been the last diet I would have recommended," Knapka said. "I would have told them to be sure to use ingredients that stick together."

After that incident, a researcher working for NASA at Cape Canaveral, Fla., called Knapka and said he would like a different concept—a paste diet. NASA said the diet must be a high-moisture one that requires no added water.

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PRB Goes High-Tech

New Technology Boosts Print Branch Capability

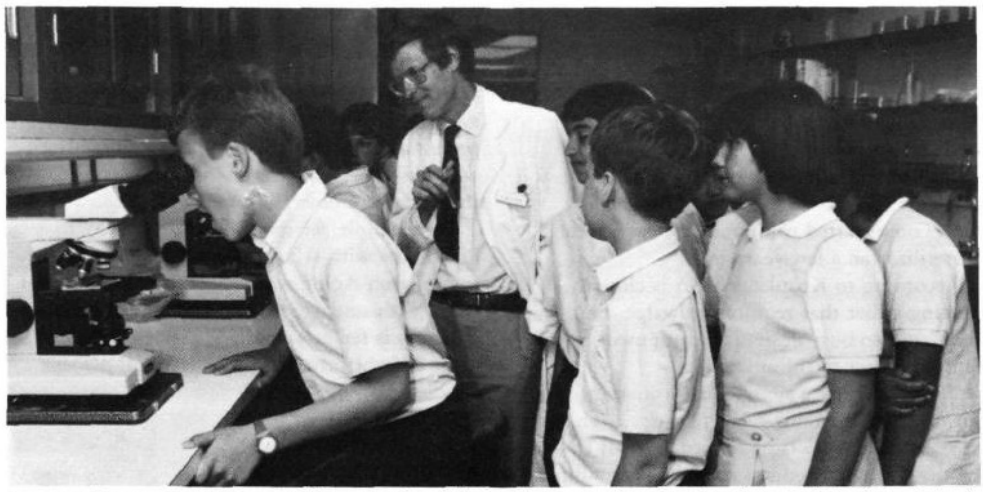
An ugly rumor has been circulating on campus during the past year suggesting that the NIH print shop has gone out of business. Not only is the rumor false, the exact opposite is true. The Printing and Reproduction Branch, part of the Office of Research Services, recently entered the high-tech age of printing. PRB is now equipped to print more NIH documents than ever before at a cheaper price and in less time.

The key to this renaissance is an agreement PRB made recently with Xerox to purchase its new XPS-701 electronic publishing system. The $150,000 system enables PRB to take copy in virtually any form of diskette or magnetic tape and generate final copy fit for high-speed duplication or offset printing.

Gutenberg's invention of movable type could not have made a bigger splash.

"There's a lot more to printing than drop-

(See PRINT, Page 4)



Dr. Eric Ottensen, NIAID, recently presented a slide-tape lecture to science students from Holy Redeemer School in Kensington, Md. During the presentation the students observed parasites under microscopes provided by the NIH Visitor Information Center, located in the Learning Laboratory on the B1 level of the ACRF. The students also toured the National Library of Medicine and the Clinical Center's Clinical Pathology and Patient Activities departments.

Changes in Light, Temperature, and Sleep May Treat Manic-Depressive Illness

By Blair Gately

Three NIMH psychiatrists who have been studying the effects of light, temperature, and sleep on manic-depressive illness say experimental modifications of these factors show promise in treating the mental disorder affecting millions.

Drs. Thomas Wehr, Norman Rosenthal, and David Sack outlined the results of their research at a recent seminar; they have been studying the cyclical nature of mania and depression, especially in people whose moods change with the seasons.

"Depression and mania represent changes in levels of energy in different systems," Wehr noted. "In their depressed phase, manic-depressives experience low energy, lethargy, and loss of interest, and they tend to sleep a lot and gain weight." On the other hand, in their manic phase, they "are elated, hyperactive, and overtalkative and tend to lose weight and suffer from insomnia."

Wehr cited studies of "highly creative" individuals such as poets, writers and musicians showing a high incidence of this bipolar illness, that is both mania and depression. In a recent study of these individuals in England, Kay Jamison, a guest researcher at NIMH, found that 30 percent of them had been treated for these types of disorders, while the figure for the general population is less than 1 percent.

The German composer Robert Schumann probably had manic-depressive illness, according to Wehr. "In some years he produced 10 to 12 works and in others, when he was plagued by depression and suicidal tendencies, he didn't finish any.

"The seasonality of depression and mania was very much discussed in the 19th century by European doctors," Wehr said in a recent interview.

So far, Rosenthal and his colleagues have studied more than 200 patients suffering from winter depression and have found that the outstanding characteristic of these seasonal disorders is their reactivity to changes in light and climate.

Patients with recurrent winter depression improve after exposure to bright artificial light and relapse after withdrawal of light. These conclusions were reached after a series of experiments.

Rosenthal conducted trials where patients were exposed to light from a 2-foot by 4-foot full spectrum fluorescent light for 3-hour periods. They experienced improvement in mood in 2 to 4 days, and then relapsed 2 to 4 days after the treatment ceased.

Rosenthal says the amount of light a patient is exposed to "is critical" in terms of its duration and intensity in the treatment of recurrent winter depressions.

The mechanism of the antidepressant effect of this treatment—known as phototherapy—is unknown.

The idea of using light to treat winter de-

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DIET

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Also, radiation would have to be used for the sterilization process.

"When you use radiation, you lose very few nutrients," counseled Knapka. "Most companies only started using radiation as a means of sterilization a few years ago."

According to Knapka, NASA is close to creating a diet that requires no water. Engineers are also busy designing equipment to dispense this diet to the animals.

"Time and space are of equal importance during space missions," Knapka says. "The astronauts have little time to feed animals aboard the flights, so procedures must be kept simple.

"Right now, we are leaning toward a cassette feeder," Knapka continues, "so all the astronauts would have to do is change the cassette as needed."

He has been working with NASA for the past 2 years. Last year, the individuals working on this project from NASA and its contractors came to NIH for a meeting; this year, plans have been made for a similar meeting in Florida.

"We may have time to thoroughly test this concept," Knapka said. "NASA is hoping to include rats in a 1989 flight, but in fact it may be later."

Developing diets for laboratory animals has been Knapka's specialty for many years. He joined NIH in 1967 and has been in the same job for the past 20 years.

He helped NIH develop open-formula diets for various species of laboratory animals. This is important because most feed companies sell closed-formula diets in which the ingredient composition is a company secret. Thus, these diets must be purchased on sole source contracts. Open-formula diets are purchased on advertised contracts, resulting in a savings of approximately $30,000 per year to the NIH programs involving animals.

Knapka serves as technical advisor on all NIH feed contracts. He site visits companies, spot checks for contamination and sets up specification standards for NIH to use in animal diet procurement.

"We can take one open-formula diet and modify it in many different ways," Knapka says. "For example, our 07 rodent diet has been modified for approximately 50 different diets."

Right now, there are seven open-formula diets that NIH is buying under contract—two rabbit diets, two monkey diets, two mouse and rat diets and one guinea pig diet.

Presently Knapka is working with NIEHS' National Toxicology Program developing a diet for rats with less fat and less protein than conventional diets. The program will conduct a parallel study using the old NIH-07 open-formula diet and the new formulation.

"Most of my time," Knapka said, "is spent doing anything from answering questions regarding specific diets to actually designing projects, formulating diets, and collaborating with institute scientists to assist in meeting their program objectives."

For example, he recently spent the day in Poolesville with scientists from the National Institute on Aging who have initiated a 15-year study with restricted diets. One group of monkeys is fed as much food as they will consume and the other group receives 80 percent of that amount. Knapka has to make sure the animals receiving the restricted diet continue to get all the nutrients needed, just less quantity.

Knapka spends a lot of time on the phone answering questions about NIH's animal diets.

According to Knapka, not too many people are trained in laboratory animal nutrition; most are trained in nutrition of farm animals where the philosophy is basically to get the animal fattened up as fast as possible.

"I'm not sure that, for the lab animals, the same philosophy should be used," he stated. "The animals gaining weight the fastest may not be the best models for biomedical research."

Knapka also serves as technical advisor to the Pan American Health Organization, with whom he has been associated for more than 10 years. With NIH assistance, PAHO helps Latin American countries operate primate breeding and conservation programs.

A member of the International Council on Laboratory Animal Sciences' working party on nutrition for 10 years, he is presently helping to write a nutrition manual to help third-world countries improve their research status. He has also been a member of National Research Council committees that have issued reports on the nutrient requirements of various species of laboratory animals. □

FERS Briefings Scheduled

Employees who are currently under the Civil Service Retirement System (CSRS) may stay in the CSRS or they may transfer to the Federal Employees Retirement System (FERS) during the special "Open Season" that runs from July 1 through Dec. 31, 1987. If you choose FERS, you may not at a later date change your mind; so you want to choose the plan that has the retirement features most advantageous to you. If you have not already attended a briefing session on FERS, arrange to attend one of the following scheduled briefings.

Date	*Time*	*Location*
July 1	1-4:30 p.m.	Masur Aud.
July 7	8:30 a.m.-Noon	FCRF Bldg. 549 Aud.
July 9	8:30 a.m.-Noon	Wilson Hall
July 15	1-4:30 p.m.	Federal Bldg. Conf. Rm. 5C01
July 21	8:30 a.m.-Noon	Blair Bldg.
	1-4:30 p.m.	Conf. Rm. 110
July 22	8:30 a.m.-Noon	Landow Bldg.
	1-4:30 p.m.	Conf. Rm. E.
July 23	8:30 a.m.-Noon	Wilson Hall
July 29	1-4:30 p.m.	Masur Aud.
Aug. 12	8:30 a.m.-Noon	Westwood Bldg. Conf. Rm. 428
Aug. 13	8:30 a.m.-Noon	Masur Aud.
Sept. 2	8:30 a.m.-Noon	Masur Aud.
Sept. 17	8:30 a.m.-Noon	Baltimore, GRC
Sept. 23	8:30 a.m.-Noon	Wilson Hall
	1-4:30 p.m.*	Wilson Hall
Sept. 28	8:30 a.m.-Noon	Masur Aud.

*For CSRS Offset employees □

The NIH Record

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Scientist Outlines AIDS Situation in Africa

By Blair Gately

AIDS in Africa is emerging as a major problem, but the extent of the disease can be limited by mounting public health campaigns, according to an NIH scientist.

At a recent presentation at the Clinical Center's Grand Rounds, Dr. Robert Biggar, AIDS international coordinator at NCI's Environmental Epidemiology Branch, gave an update on AIDS infection on the continent.

"Geographically, AIDS is spreading very fast—but in selected groups, like prostitutes," he said. "In capital cities in Africa the rate of infection among prostitutes is high because they tend to migrate from city to city." He said that in Abidjan, Ivory Coast, prostitutes have a 30 percent infection rate, while the figure reaches about 60 percent in Nairobi, Kenya.

Biggar cautioned that even though certain groups are highly infectious, he does not think AIDS has so far affected as many people in Africa as has been estimated by some international health organizations, which have estimated that 10 million Africans may be infected.

Biggar estimates that "less than 1 million people" in Africa were infected, based on 1985 data.

In Europe, Belgian and French physicians who initially treated Africans exhibiting symptoms similar to those suffered by U.S. AIDS patients were not sure if the Africans indeed had AIDS.

"The African AIDS patients seen in Europe were about equally divided between men and women and that confused clinicians," he said. "There was considerable discussion and dispute since the disease seen in the United States was primarily affecting homosexual men."

It was only after the AIDS virus was identified, according to Biggar, that the puzzle was solved and the disease was recognized as AIDS "with the clinical condition in Africa virtually identical to that in the United States."

In addition, Biggar said that a form of Kaposi's sarcoma, a cancer found in U.S. AIDS patients, has been common for the past 30 years in an area of eastern Africa from Ethiopia to Zambia. In its endemic form in Africa, it is unrelated to AIDS infection and primarily affects the rural poor, he said.

Ten percent of the cancer cases in that region are diagnosed as Kaposi's, as opposed to "far less than 1 percent" in the United States, said Biggar.

Even though the strain of Kaposi's found so frequently in Africa is not related to AIDS, he said, there is a form exhibited in AIDS patients that is "acutely overwhelming with opportunistic infections."

During his lecture, Biggar also related some potentially disturbing news about the possible transmission of the AIDS virus through breast milk. He told of a case in Australia where a baby tested positive for the AIDS virus after having been breast fed. Its mother had received a blood transfusion after giving birth, and physicians assume she passed it on to the baby through breast milk.

This development "has terrible implications for societies dependent on breast feeding—like those in Africa," Biggar said. "Women there can't afford packaged milk and there is no refrigeration. Also, the cessation of breast feeding can lead to malnutrition and weight loss in children."

Biggar has made several trips to central and eastern Africa to study the AIDS epidemic. He says that African countries do not have the financial resources to afford wide-scale drug therapies for AIDS patients—at an estimated cost of $10,000 per patient per year—but he says public health campaigns can increase awareness of the disease and limit its transmission.

"We can make progress by educating people, but ultimately we will need a vaccine" to eradicate the disease in Africa and elsewhere, he said. □

NIEHS Geneticists Lauded

Two geneticists at the National Institute of Environmental Health Sciences, Research Triangle Park, N.C., received awards from the Environmental Mutagen Society at its recent annual meeting in San Francisco. The awardees were Dr. Errol Zeiger, of the Cellular and Genetic Toxicology Branch, Division of Toxicology Research and Testing; and Dr. John W. Drake, of the Laboratory of Genetics, Division of Intramural Research.

Zeiger received the Environmental Mutagenesis Recognition Award for his inspired work on behalf of the society, and his role in setting and maintaining scientific standards of mutagenesis testing. The award citation states that these standards, "serve as a model for the field of genetic toxicology."

Drake received the 1987 EMS Excellence Award for contributions to research in mutagenesis. He was cited, "for his pioneering work on the specificity of ultraviolet mutagenesis and the discovery of antimutators in bacteriophage T4 together with his early contributions to education and policy development in environmental mutagenesis." Both scientists received plaques and cash awards.

Dr. David P. Rall, director, NIEHS, said, "I congratulate Dr. Zeiger and Dr. Drake on their awards, and on their contributions to the field of genetics, which is among the most rapidly developing disciplines within the environmental health sciences." □

Dr. Evie Dennis, president of the National Lupus Foundation of America, Inc., presents Dr. John Decker, NIH Clinical Center director, with the 1987 Distinguished Service Award. The foundation selected Decker for the award because of meritorious contributions to clinical studies, training of physicians and investigators, and clinical care of patients with autoimmune diseases, Dennis said.

PRINT

(Continued from Page 1)

ping off work at our office and picking it up a few days later," said George Mendez, chief of PRB. He and his staff have been holding a series of seminars around campus in recent weeks, announcing the benefits of the new system.

NIH currently does $14 million a year worth of printing through the government's main printing procurer, the Government Printing Office. That includes documents as sophisticated as the *Journal of the National Cancer Institute* and institute annual reports to the *NIH Record* and desk-to-desk memos from the director. NIH makes copies equal to 100 million sheets of paper in our facilities per year, added Mendez. Tons of that work are taken up just in grant applications. The new technology being installed in PRB's renovated headquarters on the B4 level of Bldg. 31 can put a sizable dent in the number of print orders that have, until now, had to go outside.

Recent advances in print technology have been "almost miraculous," Mendez said. The XPS system can handle any size floppy disk, whether it is 8-, 5¼- or 3½-inches wide. The system's "media conversion" unit can make sense out of almost 800 different disk formats or create new ones. Not only can it handle print, but also photos and line art can be electronically scanned and reproduced; optical scanning of text is shortly down the road.

"In several years we hope to use telecommunications, enabling clients to send us copy through the phone lines," said Mendez. A sophisticated network of fiber optic and coaxial cables is to be laid at NIH in the next few years, making use of the old pneumatic tube system on campus. "We've got to walk before we can run, though."

As the system is currently arranged, clients would come to PRB with disks, mag tapes or copy, and fill out the traditional NIH Form 26 (soon to be revised and shortened). Many jobs at this point would go out on contract to a typesetter. Days or weeks later the typesetter would return galleys to be proofread. Using the *Record* as an example, the galleys would then be cut up and pasted on dummy layout sheets. The contractor would then have to deliver page proofs prior to getting an "OK to print." The XPS system saves all these steps, preparing camera-ready copy, or press-ready copy electronically.

Xerox says XPS can save NIH a substantial amount of its typesetting costs, and can further economize by condensing documents an average of 35 percent. Added advantages include quick turnaround time and easy access to the document in case of last minute changes; the document never leaves the PRB.

"Right now I'm looking for more customers—but not 1,000 more next week," quipped Mendez.

In addition to XPS, Mendez' shop also has high-speed laser printers in two locations and six new high-speed copiers capable of printing 120 copies per minute. Other copiers can use black, green, red or blue ink and even pastebind.

"We're constantly trying to improve our services as we go along," he said.

PRB is in the middle of a 90-day trial with the XPS system. Xerox has committed a full-time system analyst to NIH until PRB staffers are thoroughly familiar with the system.

Impetus for improving printing at NIH came a few years ago when Dr. Edwin D. Becker, NIH associate director for research services, asked for a review of the printing operation here.

"He asked us to put printing in the same posture as research at NIH—on the cutting edge," said William Brodt, Mendez' assistant. According to Brodt, every conceivable sort of machine for storing information electronically is being used on this campus. XPS can take virtually all of them on, he said, "even European systems and some that are obsolete."

The PRB will hold an open house this summer after its renovation is complete. Look for an announcement in the *Record*. □

At a recent meeting of the National Heart, Lung, and Blood Advisory Council, NHLBI Director Dr. Claude Lenfant presented awards to the winners of a poster and essay contest on the theme of cardiovascular disease; the competition was sponsored by NHLBI's Framingham Heart Study for Framingham (Mass.) school students. Shown here are (from l): middle school winner Carole Morse, Framingham Heart Study Director Dr. William Castelli, Dr. Lenfant with grammar school winner Sarah Joiner, and high school winner Suresh Mulukutla. The contest was held as part of NIH centennial and NHLBI 40th anniversary observances.

NIA Sponsors Film Series

The National Institute on Aging will present a noontime series of films in the ACRF Little Theatre during the month of July and early August as part of the NIH Centennial Celebration.

The series begins on Monday, July 6 at 12 noon with *Chillysmith Farm*, an outstanding documentation of one family's experiences with birth, aging, and death. Photographs, tape recordings, and motion picture footage explore ways in which family members dealt with these events (55 minutes).

Artist Georgia O'Keeffe, best known for her semiabstract paintings influenced by nature, talks about her life and work in the film, *Georgia O'Keeffe*. Old photographs, scenes of the New Mexico countryside, and displays of her paintings are included with the narrative. The film, which was produced when O'Keeffe was 90 years old, will be shown on Monday, July 13 (60 minutes).

Until recently most Americans assumed that Social Security was something they could depend on in their later years. Many are now becoming aware of inadequacies and financial problems facing the system. *Social Security: How Secure?* which examines the philosophy, fairness, financial status and degree of security the Social Security system offers, will be presented on Tuesday, July 21 (52 minutes).

On Monday, July 27, Maureen Stapleton stars in the award winning film, *Tell Me Where It Hurts*, a probing story of a middle-age housewife who begins to question the meaning of her existence and wonders about her future. She joins a discussion group where the women uncover disturbing, hidden attitudes about their marital relationships (78 minutes).

The series concludes on Monday, Aug. 3, at 12 noon with *Aging: the Methuselah Syndrome*. This film, originally broadcast as part of the PBS "Nova" series, features segments on the effects of antioxidants on aging, findings of NIA's Baltimore Longitudinal Study of Aging, and the controversial results of research on underfeeding and the longevity of mice. Some researchers believe that human longevity, like that of the laboratory mice, may be significantly increased by a reduction in food intake. Others contend that dietary restriction plays no significant role in determining longevity (57 minutes).

All films are presented free of charge. For further information contact Calvin Jackson, NIA Information Office, 496-1752. □

NIH Scientists Address Meeting Via Live Video Teleconferencing

By Pat Miller

How to be in two places at the same time?

Problem. Seven NIH researchers are invited to speak as a panel at a medical meeting in Europe; most cannot justify the travel time to participate in a 1-hour program.

Solution. A two-way video teleconference via satellite allows meeting participants in Europe and the U.S. to see and hear each other simultaneously.

The satellite-telecommunication technology represents a new, cost-effective method for achieving rapid worldwide video communication.

Last month such a video teleconference was arranged through the NIH Division of Computer Research and Technology. The NIH panel discussion on "Digital Image Processing" was part of the first European Conference on Imaging and Visual Documentation in Medicine, DOCUMED EUROPE 87, held in Amsterdam, The Netherlands.

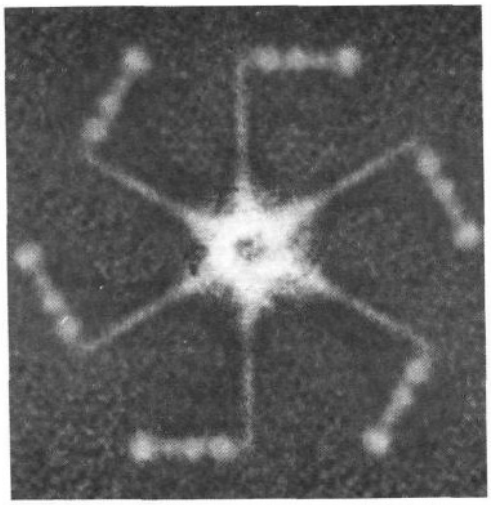
DOCUMED was a forum in which physicians, audiovisual professionals, and decision-makers from every field of medicine could examine imaging technologies and their medical applications.

When DCRT's Dr. James J. Bailey was approached by the Dutch organizers to assemble and moderate such a panel, he was able to enlist the members of the NIH-Wide Image Processing Group. The six panelists, from three BIDs, represent a broad range of medical imaging interests.

Dr. Benes L. Trus, DCRT, is a research chemist in charge of a facility for processing images from the electron microscope. DCRT's Margaret A. Douglas is a project leader investigating minicomputer and microcomputer workstations for laboratory image processing. Michael Green, CC, is chief of the imaging physics section in the Department of Nuclear Medicine. Dr. Richard Carson, also from the Clinical Center, is a senior investigator in nuclear medicine. NIDR contributed the talents of Dr. Richard Webber, chief of the Diagnostic Systems Branch, as well as senior staff scientist Dr. Urs Ruttiman.

The NIH panel showed examples of digital image processing methods illustrating how development proceeds from basic research to clinical usage. They focused on complex data acquisition as exemplified in tomosynthesis, image enhancement techniques such as correlation averaging, the proper use of color in display techniques, and the power of the computer to perform quantitative analyses.

Teleconferencing the message from comfortable armchairs at the Washington Hilton, the panelists enjoyed the absence of glaring lights and intrusive equipment operators typical of broadcast arrangements.



Several biomedical images were transmitted during the DOCUMED teleconference to illustrate speakers' remarks. This is an electron micrograph of a "tail" of bacteriophage T7 imaged at high resolution. Trus computer-processed this picture using correlation averaging methods, where multiple images are put together mathematically with computers to create a composite photo.

Moderator Bailey summed up the panelists' reactions: "Our teleconference was much like a real face-to-face meeting. It is a convenient, efficient way for several of us to present our ideas before a large meeting, without the time and expense of traveling."

Conference organizers paid approximately $750 for use of the hotel facility and $1,000 for the AT&T two-way international service.

Video teleconferencing will certainly become more common. A week after DOCUMED, the Washington site was being used daily to communicate with France for the III International Conference on AIDS. □

NIMH Seeks Volunteers

The National Institute of Mental Health is seeking healthy men and women, ages 18 to 65, to participate in medical research studies.

Participants must be unmedicated and free of medical and psychiatric illness. Financial compensation will be provided.

For further information, contact Dr. Murray Stein, 496-6825. □

More Than 300 Receive Free Skin Cancer Screening

More than 300 persons attended the D.C. Dermatology Society's Annual Skin Cancer Screening Day held recently at the Clinical Center.

"I think the exam eased my mind," said John, a 27-year-old computer specialist and outdoorsman from Rockville, after finding out that the mole on his chest was not cancerous. "If it hadn't been for the free clinic, this is one doctor's exam I would probably let go for a long time."

During the clinic's first 2 hours, the 20 dermatologists made 76 referrals for skin cancer, said Dr. Douglas N. Robins of the society.

Each year, the society sponsors the free clinic to increase public awareness of the importance of skin cancer prevention. Skin cancer is one of the most curable of cancers. Yet, more than 500,000 cases are diagnosed each year. Malignant melanoma—the most serious of the skin cancers—strikes about 26,000 Americans each year.

Skin cancer is more common among persons with fair skin. Most cases of skin cancer are of two types: squamous cell and basal cell. Squamous cells make up most of the skin's surface. Basal cells occur in smaller numbers and are located in the lowest part of the epidermis, the surface layer of the skin.

Most skin growths are not cancerous. The average person has between 20 and 40 moles. But experts say any new growth on the skin, or a sore that does not heal, should be brought to a doctor's attention. Any mole that changes color or that has rough irregular borders should be examined by a doctor. Melanomas often begin as small, mole-like growths that increase in size, change color, become ulcerated, and bleed easily.

Treatment for early skin cancer is relatively simple. The cancerous mole or growth is removed under a local or topical (skin) anesthetic, a small band-aid is applied, and the patient goes home. Other treatments for early skin cancer include radiation therapy, and electrodesiccation (tissue destruction by heat).

Skin cancer is sometimes preceded by a precancerous skin condition called actinic keratosis. Actinic keratoses are red, rough patches that develop on areas of the skin exposed to the sun, usually the face, neck, or hands. They do not always turn into cancer, but they should be treated to prevent cancer from developing.

Skin cancer experts recommend avoiding the sun between 10 a.m. and 3 p.m. when ultraviolet rays are the strongest, and wearing protective clothing. Use of sunscreens is also helpful, especially those containing PABA (para-aminobenzoic acid).—**Francis X. Mahaney, Jr.** □

NIMH

(Continued from Page 1)

pression was originally inspired by animal studies which showed that seasonal changes in daylight are responsible for seasonal changes in reproductive function. These effects of light in animals were found to depend on the capacity of light to alter the pattern of nocturnal secretion of a hormone, melatonin, by the pineal gland. Because light can suppress melatonin secretion in human beings, the scientists thought phototherapy might work by altering the pattern of nocturnal melatonin secretion in patients with recurrent winter depression. They have carried out a series of experiments which cast doubt on this theory, however, and they are now searching for other possible mechanisms of the treatment.

Sack, who has been focusing on the effects of sleep on manic-depressive illness, says that depressed patients complain that they feel unrested when they awaken, even when they sleep a lot.

Paradoxically, many depressed patients improve dramatically if they remain awake for one night. Although patients often relapse after they resume sleep, sleep deprivation therapy may be more effective when it is done for only part of the night and carried out for several nights. It can also be used in conjunction with drug treatments. On the other hand, sleep deprivation can sometimes trigger a manic phase, and this finding may help to explain how patients become manic in certain situations.

The physicians think that the timing of sleep and waking may be a critical factor in these mood changes, and that manipulation of sleep habits may be an effective treatment for depression, and also may be a way to prevent the recurrence of manic phases.

The mechanism of the antidepressant effect of sleep deprivation is also unknown. Research in this area is currently focused on the possible role of body temperature changes in patients' responses to sleep manipulations.

This summer the three scientists plan to begin studying patients who experience a different seasonal pattern of illness, with depression in summer and normal or manic periods in winter. Triggering factors for recurrent summer depressions are not yet known.

"It's a detective story," Wehr said. "We don't have any experimental evidence about possible causes of summer depression. We're going to begin by looking at light and temperature to see if either might be responsible for the mood changes." □

Neuroscience Talks Set

NINCDS will present a lecture series on neurosciences for summer students on three Tuesday mornings in July at 11:30 in the ACRF Amphitheater:

- July 7 "The Biology of Myelin: Relevance to the Study of Multiple Sclerosis" Dr. Monique Dubois-Dalcq, chief, neural and molecular ultrastructure section, Laboratory of Molecular Genetics, NINCDS.
- July 21 "New Developments in the Therapy for Genetic Diseases" Dr. Roscoe O. Brady, chief, Developmental and Metabolic Neurology Branch, NINCDS.
- July 28 "Recent Advances in the Understanding of Neurological Diseases" Dr. Dale E. McFarlin, chief, Neuroimmunology Branch, NINCDS.

For additional information, call Levon O. Parker, 496-5332. □

More than 60 people attended the Montgomery County High Technology Council's June breakfast meeting, sponsored by NIH and held at the Clinical Center. Dr. Ruth Kirschstein, director, NIGMS, spoke on "Opportunities at the National Institutes of Health." The Council is a private, non-profit corporation formed by businesses and government agencies to promote a system of education and research to assist in Montgomery County's high technology development. Dr. Jay Moskowitz, NIH's associate director for program planning and evaluation, serves on the Council's board of directors.

New 'Atlas' Maps U.S. Ca

By Linda Anderson

The National Cancer Institute recently released a new atlas that shows the geographic distribution of cancer death rates and trends for the U.S. white population for 1950 through 1980.

The atlas pinpoints geographic areas with average, below-average, and above-average cancer death rates. Maps on cancer death rates for the black population will be available in about a year.

NCI published its first atlases for whites and nonwhites in the mid-1970's, covering cancer death rates for 1950–1969. Those atlases did not show trends.

"The earlier atlases successfully generated leads for in-depth research on risk factors for cancer," said Dr. Vincent T. DeVita, Jr., director of NCI. For example, he said an earlier atlas identified elevated death rates for oral cancer among white women in the rural South. A followup study linked the high rate to their practice of snuff dipping.

"This finding contributed strong scientific evidence for current efforts to warn the public about the health hazards of smokeless tobacco products and to regulate advertising practices for them," said DeVita.

"We hope that the new atlas will continue to stimulate research and provide a tool that can help in reaching the institute's goal to reduce the nation's cancer death rate by up to 50 percent by the year 2000," he added.

The atlas contains color-coded maps that illustrate variations in the average annual U.S. cancer death rate for adult white men and women for the three decades 1950–1969, and 1970–1980. Rates were calculated for all cancers combined and separately for 33 types of cancer. Other maps are color-coded to indicate the trends for death rates.

The atlas covers the 48 contiguous states and the District of Columbia. Data for Alaska and Hawaii were not available for the 30-year period.

It was prepared by NCI epidemiology and biostatistics program scientists Drs. Linda W. Pickle, Thomas J. Mason, Robert Hoover, and Joseph F. Fraumeni, Jr., and by Neil Howard, ORI, Inc., under contract to NCI.

"The geographic patterns of death rates seen in the earlier atlas generally have persisted in the new atlas with its 10 more years of data," said Fraumeni, who directs the epidemiology and biostatistics program.

"The most notable new pattern is the emergence of elevated death rates for lung cancer among women in areas of Florida and along the mid-Atlantic and west coasts. The lung cancer pattern for women is strikingly different

ncer Death Rates

from that for men. The reason for the new pattern is not certain, but cigarette smoking may be the main factor. Further research will be needed, however, before this is certain," he said.

"It is not that easy to sort out why cancer rates vary among geographic areas and why they might be changing," Fraumeni said. "It is human nature to want to know why cancer rates are elevated in a particular area, but it is important not to jump to conclusions before careful studies can be conducted in these areas."

The U.S. death rate for all cancers combined for women decreased 1.8 percent every 5 years over the three decades. The average annual cancer death rate was 132.0 (per 100,000 women) for the 1950's and dropped to a rate of 122.6 for the 1970's.

For men, the U.S. death rate for all cancers combined increased 3.8 percent every 5 years. The average annual cancer death rate was 162.5 for the 1950's and increased to 189.0 for the 1970's.

For both men and women, lung cancer death rates increased over the three decades in every one of the 506 state economic areas, the geographic units analyzed.

Cancer death rates across the country have become more homogeneous over the three decades, Fraumeni pointed out.

"The differences in death rates among the 506 geographic areas diminished over the years for every type of cancer studied," he said,"except for lung cancer among women and lip cancer among men. Perhaps this is happening because we have become more alike in our life styles such as in the foods we eat and our cigarette smoking habits. Our mobility probably has something to do with it, too."

For example, the atlas shows a North-South difference in death rates for colon cancer for both men and women in all three decades, with the higher rates seen in the North. However, the North-South difference has faded over the years, with rates for both sexes increasing more in areas of the South than the North.

For female breast cancer, the atlas also shows a North-South difference in death rates for the three decades, with the higher rates occurring in areas of the Northeast. This difference has diminished too, with rates increasing in areas of the South.

To prepare the atlas, death rates were computed according to the state economic area (SEA) of usual residence of the deceased. SEAs, as defined by the U.S. Census Bureau, are counties or groups of counties with similar economic and social characteristics. The boundaries of the SEAs as they existed in 1960 were used throughout the atlas for consistency.

Data for the analysis came from death certificates and were obtained from the National Center for Health Statistics.

The atlas includes tables and graphs that give the range of death rates for each cancer seen among all the SEAs, death rates by age groups, and the percentage of change in rates that occurred every 5 years.

Data on deaths for the population under age 20 were excluded because of the different time trends for death rates seen in this group compared with adults.

During the 1970's, the highest cancer death rates for men were for lung, colon and prostate cancers. Rates for lung and colon cancers increased over the three decades, while rates for prostate cancer remained stable.

For women, the highest rates in the 1970's were for breast, lung and colon cancers. Over the three decades, rates for breast cancer remained stable, rates for lung cancer increased, and rates for colon cancer decreased.

The largest increases in death rates (up more than 10 percent every 5 years) were seen for lung cancer, malignant melanoma, multiple myeloma, and connective tissue tumors in both sexes and for laryngeal cancer in women.

The largest decreases in rates (down more than 10 percent every 5 years) were seen for cancers of the stomach, lip, bone, rectum, and nonmelanoma skin cancer in both sexes; for cancers of the liver, cervix, endometrium, nasal cavity, and thyroid in women; and for Hodgkin's disease in men. □

Compiling the NCI atlas were (l to r) Dr. Thomas J. Mason and Dr. Linda W. Pickle, of NCI's Epidemiology and Biostatistics Program, Division of Cancer Etiology; Neil Howard, ORI, Inc. (under contract to NCI); Dr. Joseph F. Fraumeni, Jr. and Dr. Robert Hoover, of the Epidemiology and Biostatistics Program.

Nominations Being Solicited For GA Seminar Series

The Grants Associates Program is one of four training opportunities offered by the Health Scientist Administrator Development Programs Office. Each year a series of seminars are offered to complement the working assignments of GAs and the working experience of HSAs. Applications are now being accepted for the 1987–88 GA seminar series, scheduled to begin on Friday, Sept. 11. These weekly seminars of 10 months duration are usually held on Friday mornings in Bldg. 31.

The seminar series addresses a broad spectrum of philosophical, political, and policy issues relevant to the administration of federal programs in the support of biomedical research. The series is not designed as an orientation or introduction to extramural programs. Topics to be covered include: the roles and interactions of DHHS, NIH, other PHS and non-PHS agencies; policy and ethical considerations in biomedical and behavioral research; factors affecting extramural programs and their administration; program planning and evaluation; and the legislative/budget process.

Interested individuals should forward a curriculum vitae (with emphasis on current duties and responsibilities) and a statement of interest, as it relates to their current positions, through their immediate supervisor to their BID director. Each BID director is being asked to forward no more than three nominations with the above noted information and any other supporting documents, no later than Monday, July 28 to A. Robert Polcari, director, Health Scientist Administrator Development Programs, Bldg. 31, Rm. 1B62.

For further information, contact Polcari or Roberta Light, 496-1736. □

The Aging Population

Quality of Life, As Well As Longevity, Improving

By Calvin Jackson

Average life expectancy is increasing, not only in the United States, but worldwide. Because of the rise in the average life expectancy and an increase in the overall world population, more people are surviving past the age of 60. The number of people age 60 and over in the world rose from 234 million in 1960 to 370 million in 1980. By the year 2025 there will be well over 1 billion people age 60 and above worldwide.

The biomedical and health care challenges these enormous population increases present were discussed at an open forum, International Symposium on Research and the Aging Population, sponsored by the Ciba Foundation (a scientific and educational charity established by CIBA-GEIGY), the National Institute on Aging, and the Fogarty International Center recently.

This forum, attended by approximately 350 people, was the culmination of 4 days of work sessions that included some of the world's leading experts in aging. Researchers from the United States, France, Australia, and the United Kingdom discussed a number of problems commonly associated with aging—osteoporosis, heart disease and the growing need for institutional care.

Dr. J. Grimley Evans of the Radcliffe Infirmary, Oxford, noted that contrary to popular belief, older people don't fall more frequently than their younger counterparts. However, older people are more prone to fracture or break a bone as a result of a fall. This can be attributed, in part, to a significant decrease in "protective responses" with age. Protective responses are the reflexes that enable us to break our falls. Without these responses the impact of an ordinary fall would be enough to break or fracture a bone. Studies have shown, however, that physical training can slow the deterioration of these reflexes.

A contributing factor to fractures is osteoporosis, a bone-thinning condition that affects one-fourth of all women over the age of 60. According to Dr. B. Lawrence Riggs of the Mayo Clinic, Rochester, Minn., there are several major age-related risk factors that contribute to osteoporosis. One of the most important factors is bone loss, which begins early in adult life, not only in women, but in men as well. The two major causes of bone loss appear to be decreased bone formation and a decrease in calcium absorption.

Another major factor is peak bone density. Bone density in later life is dependent upon the amount of bone accumulated at the end of the adolescent period and the rate of loss over a lifetime. Although most research conducted on osteoporosis has focused on the rate of bone loss, researchers are now beginning to examine how starting with a high accumulation of bone affects bone density.

Riggs noted that the amount of bone accumulated may explain varying bone density between races and sexes. As a group, black men have more initial bone density, while white females have the least. Consequently, white females comprise the highest risk group, while black males have the lowest incidence of osteoporosis.

Behavioral factors may also determine one's risk of developing osteoporosis. Riggs noted that "these risk factors are particularly important because they are subject to modifications with suitable education programs." Smoking, lack of physical activity, and alcohol consumption are three factors that increase the risk of osteoporosis. Riggs added, "being excessively thin is a risk factor for osteoporosis, whereas obesity is protective." Obese individuals are at a lower risk probably because carrying a greater weight increases bone density.

The study of fractures and osteoporosis is a major area of concern. In the U.S. alone osteoporosis is responsible for at least 1.5 million fractures each year. In 12 to 20 percent of the cases, hip fractures can prove fatal; among those people who survive, hip fractures can be responsible for long-term disability. As the percentage and actual numbers of older people increase, there will be an increase in the number of fractures with the greatest potential impact on developing countries. By conducting studies with subjects of differing ethnic and racial compositions, researchers hope to find the cause of osteoporosis and the most effective method to prevent fractures.

The World Health Organization (WHO) has begun to sponsor cross-national studies on aging-related characteristics in countries throughout the world. The demographics of different geographic areas, cultures and races are evaluated to determine if climate, lifestyles, or genetic factors may predispose some people to certain diseases.

Dr. Gary Andrews of Flinders Medical Centre, Australia, reported some of the relevant findings of a WHO-sponsored cross-national study of aging in four developing countries in the Western Pacific region. The findings from the four countries—Korea, the Philippines, Fiji and Malaysia—were compared with those of an 11-country WHO study conducted in Europe. In looking at several characteristics—such as formal education, self-assessment, and independent living—the older people in the Western Pacific are very different from Europeans. In other areas, such as marriage trends and feelings of loneliness, the two groups are similar.

Feelings of loneliness or isolation are common among older people, not only in industrialized nations, but in developing countries as well. Studies have shown that people with strong social supports tend to remain emotionally and physically healthier with age. As one grows older, however, the number of social contacts usually decreases. Dr. Thomas Arie of the University of Nottingham Medical School noted that, "the old, old have extremely high institutional rates." One factor that may contribute to this high rate may be the absence of support groups and other social supports. Many of these older people, who feel isolated from other people and services, are choosing to enter some sort of institution where their needs will be met. Some older people receiving institutional care could, with proper care, return to society.

Dr. Nanette Wenger of the Emory University School of Medicine, Atlanta, Ga. pointed out that older people with cardiovascular disease, the major cause of disability and death in older people, are often misdiagnosed and may be treated with inappropriate drugs. For example, thickening arteries, which commonly occur with age, can be misdiagnosed as a poor heart valve or a murmur.

Coronary disease and its complications are more common among older people, yet an older person suffering from acute myocardial infarction may not exhibit pain the same way a younger counterpart would. Instead, the older person may experience pulmonary edema, a stroke, an arterial embolism, or show signs of being mentally confused. Physicians need special training in the diagnosis of cardiovascular disease in older persons.

Dr. Carl Hollander of Laboratories Merck Sharp and Dohme-Chibret, Riom Cedex, France, discussed the need to plan for future health care and the Dutch government's efforts to look into the future. Their "scenarios" approach has recently been applied to planning for care needs for older people in the Netherlands. □

Dr. Gee Retires

Dr. Helen Hofer Gee, chief, Analysis and Evaluation Branch, Office of the Director, will be retiring after a long and successful career at NIH which began in 1963 when she joined the National Institute for Child Health and Human Development as a behavioral sciences consultant.

After 7 years as director of research at the Association of American Medical Colleges, and visiting professorships at the universities of Edinburgh and Oregon, Gee says she came to Washington to take part in President Kennedy's plans to revitalize society. Gee was attracted to NIH because she was impressed by the peer review system of allocating funds for research projects. Under this system, scientists are given authority to evaluate the scientific merit of applications for research grants.

Although she was not present at the dawning of the computer age at NIH, she says that computers have "revolutionized" biomedical research during her time here.

In 1972 Gee became director of program evaluation. Gee defines this as an effort to use social science methods to gain a better understanding of how science progresses. She believes that "we must consider the effectiveness of the methods we are using to forward our mission." It was part of her mission to find out under what conditions increasing funds for research will lead to an increase in productivity.

Dr. Gee

Gee's major contributions are in the fields of manpower research and bibliometrics. The latter involves the analysis of research publications to assess the outcomes of research and training support programs. She used her expertise in bibliometrics to demonstrate the outstanding quality and productivity of the intramural programs at a time when their value was being questioned.

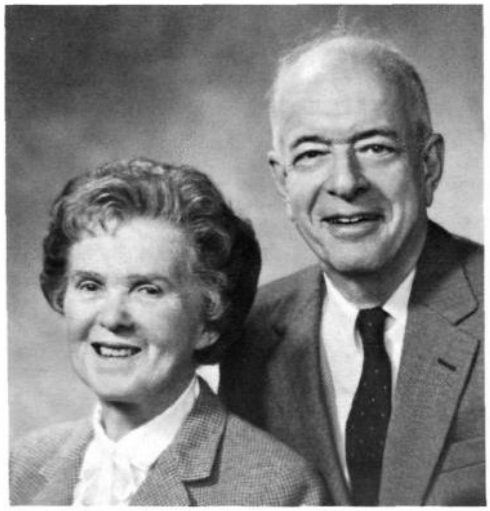
Gee stresses the need for evaluation programs to help assess the effectiveness of current program activities and to plan future directions. □

Tabors Win Prize

Drs. Celia White Tabor, staff member, and Herbert Tabor, chief, Laboratory of Biochemical Pharmacology, National Institute of Diabetes, Digestive and Kidney Diseases, have received the 1986 Hillebrand Prize. The Chemical Society of Washington's most prestigious honor, the Hillebrand Prize includes a certificate and a $1,000 award for each recipient.

The Tabors were recognized for their pioneering research defining the bacterial pathways of polyamines (essential growth substances present in all cells). Their current work focuses on the use of recombinant genetics to isolate the genes responsible for the enzymes that make polyamines.

NIDDK recently honored the husband-and-wife team during an NIH Centennial event along with 12 other distinguished scientists affiliated with the institute.



Drs. Celia and Herbert Tabor

Celia White Tabor joined the PHS Commissioned Corps in 1952 and has been a staff member of the Laboratory of Biochemical Pharmacology since 1952. Herbert Tabor joined the corps in 1943 and NIH in the same year. He served as a staff member of the Laboratory of Biochemical Pharmacology until 1962 when he became chief.

The Chemical Society established the Hillebrand Prize in 1925 in memory of Dr. William F. Hillebrand, the first director of the National Bureau of Standards. It is awarded to members in recognition of original contributions to the science of chemistry. □

Animal Caretaker Paul Bowie Retires

Paul N. Bowie, Sr., animal caretaker for the National Institute of Diabetes and Digestive and Kidney Diseases since 1958, retired recently after more than 30 years of federal service.

"Paul made real contributions to science through his superb technical expertise, dedication, and willingness to assist scientists in the care and experimentation of laboratory animals," said Dr. Harvey Pollard, chief of the Laboratory of Cell Biology and Genetics.

Other NIDDK scientists in the laboratory praised Bowie for his dedication, cooperative spirit, and superb skills that enabled him to maintain the animal facilities in immaculate condition.

After 29 years with NIDDK, Bowie said that, more than anything else, he will miss coming to NIH which he referred to as "my second home," and working with "the best." The many hours formerly spent at NIH will now be enjoyed at home with his wife, Dorothy, 7 children and 10 grandchildren. □

Carper Receives Award

Cataracts are so common that virtually everyone who reaches their 80th birthday will have developed some clouding in the naturally clear eye lens that signals the onset of cataract.

What causes cataracts is a question that vision researchers like Dr. Deborah Carper, a biologist in the National Eye Institute's laboratory of mechanisms of ocular disease, are attempting to answer. Carper and her colleagues are working to improve our understanding of what causes cataracts and develop new treatments or ways to prevent them.

Dr. Carper

She has been recognized by the Rohto Pharmaceutical Co. of Japan for her studies of hereditary cataract, and for her recent work that may lead to improvements in existing drugs to prevent diabetic cataracts.

When Carper received the seventh annual Rohto Young Investigator Award last month, she and her colleagues had just completed 18 months of investigation that culminated in the discovery of the genetic structure and sequence for a well-studied enzyme—aldose reductase (AR)—that is implicated in causing eye, nerve, and kidney damage associated with diabetes.

Next, she will study the function and expression of AR in normal and diabetic tissues. Those working with her both on sequencing the aldose reductase gene and on future AR studies include Drs. Chihiro Nishimura, Toshimichi Shinohara, Graeme Wistow, Peter Kador, and Jin H. Kinoshita, of the NEI. □

Metzger Appointed NIAMS Scientific Director

Dr. Henry Metzger has been appointed scientific director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases.

He has had a longstanding research career with NIH, beginning as a research associate with NIADDK in 1959. For the past 24 years, he has held various research positions in the Arthritis and Rheumatism Branch of NIAMS (formerly a part of NIADDK).

"Dr. Metzger is a world leader in immunologic research and brings great prestige to his new role as scientific director," said Dr. Lawrence E. Shulman, director of NIAMS. "In addition to his distinguished research career, Dr. Metzger also has been a leader in educational programs and has inspired many young investigators in the field of immunology." At NIH, Metzger has been an important figure in organizing and instructing courses for the Foundation for Advanced Education in the Sciences.

Dr. Metzger

His first position with the Arthritis and Rheumatism Branch was as a medical officer. Later he served as chief of the branch's section on chemical immunology. For the past 4 years, he has been the chief of the branch, and in recent months has served as acting scientific director.

He is well-known throughout the scientific community for his research on immunoglobulin E (IgE), one of the antibodies in the immune system's defense arsenal. During an immune response, these antibodies can initiate a cascade of events that produce inflammation and allergic symptoms. The signal to start this reaction is when IgE molecules position themselves on specialized effector cells. When the IgE antibody encounters a matching foreign counterpart (an antigen), the two interlock and the antibody clumps together. These clumps or aggregates of antibodies stimulate the release of powerful chemicals from the cell and can cause an allergic reaction such as an asthma attack.

Metzger's recent work has focused on examining the attachment site of the IgE antibody to the effector cells. His projects include in-depth studies on the biochemical structure and function of these binding sites known as receptors. An understanding of the mechanisms of action of IgE receptors may lead to methods that can modify cellular response and thus avert or arrest an allergic attack.—**Patricia Blessing** □

Dr. Wu Named Maryland's Outstanding Young Scientist

Dr. Carl Wu, a research chemist in the Laboratory of Biochemistry, NCI, was named Maryland's Outstanding Young Scientist of 1986.

The citation reads, "For his pioneering and innovative work on the relation between chromatin structure and the regulation of gene expression in eukaryotic organisms."

The award was initiated in 1959 to recognize early in their professional lives the extraordinary contributions made by young scientists who live and/or work in Maryland.

Wu was honored at the 28th annual awards dinner at the Maryland Science Center in Baltimore on Monday, June 1, where he was presented with the Allan C. Davis medal and an honoraium.

TRAINING TIPS

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

Courses And Programs	*Dates*
Management and Supervisory 496-6371	
Conducting Effective Meetings	7/13–14
Interpersonal Relationships	7/15–16
Office Skills 496-6211	
Introduction to Working at NIH	7/22–23
	8/19–20
	9/16–17

Adult Education 496-6211
Training and Development Services Program 496-6211

SHARE TRAINING: An online catalog is available by accessing WYLBUR. Enter SHARE TRAINING. First time users only, enter:
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FAES Offers 'Open Season'

The FAES health insurance program announces "open season" from July 1 to 31. The program is open to visiting fellows, full-time guest workers, and full-time NIH employees who are not eligible for government insurance plans.

"Open season" is for those persons who did not enroll when first eligible and for current subscribers who wish to change their options.

This time ONLY, subscribers may change from high option or Capital Care to low option, or from low option to high option or Capital Care.

Information about rates and benefits may be obtained from FAES, Bldg. 10, Rm. B1C18. □

Anyone for Squash?

The R&W has recently opened squash courts for the benefit of all NIH employees; NIH inpatients, outpatients and normal volunteers are also eligible.

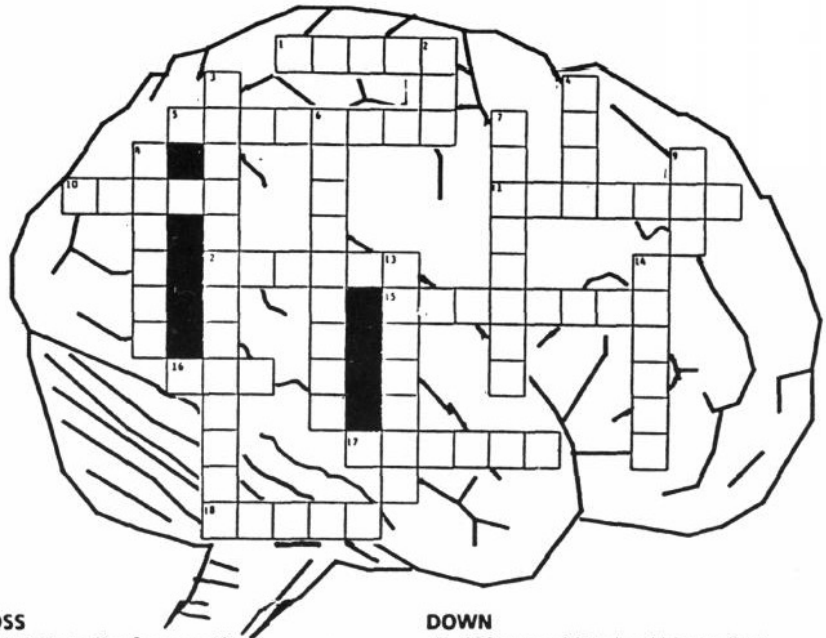
The courts are located in Bldg. 35, Rm. B101F. Players can sign up to play between the hours of 5 a.m. and 10 p.m., Monday–Friday. Those wishing to use the courts before 6 a.m. or after 6 p.m. must phone the NIH Police and give their NIH ID numbers to enter.

Although everyone who is eligible is encouraged to use the squash courts, players are cautioned not to play racquetball, handball or any other ball game on the squash courts since it will damage the walls. □

How Well Do You Know Your Brain?

How much do you really know about that 3-lb. bundle of neurons that is often called the master gland—the brain? Completing the puzzle below will give you a clue. But no matter how you perform, be sure to visit the NINCDS exhibit, **Know Your Brain,** at the Clinical Center Visitor's Lounge. The exhibit honors the NIH Centennial.

KNOW YOUR BRAIN



ACROSS

1. NINCDS studies focus on the _____.
5. The NINCDS goal is to bring hope through _____.
10. Nerve cell sending signals from the central nervous system (pertaining to movement).
11. Nerve cell sending signals to the central nervous system (pertaining to sensation).
12. Vocal communication.
15. A seizure disorder.
16. A technology revealing the functioning brain.
17. "Life is never the same after head _____."
18. Communicative sense involving the olfactory nerve.

DOWN

2. 100-year-old Federal biomedical agency.
3. Disciplines of brain investigation.
4. Sensation of discomfort, distress, agony.
6. Presenile dementing disorder.
7. The NINCDS supports studies on myasthenia gravis and the _____ dystrophies.
8. A sudden and severe cerebrovascular attack
9. A technology revealing the brain's structure
13. Sense of perceiving sound.
14. Fatty sheath around some nerve fibers.

ANSWERS:

1. Brain; 2. NIH; 3. Neurosciences; 4. Pain; 5. Research; 6. Alzheimer; 7. Muscular; 8. Stroke; 9. MRI; 10. Motor; 11. Sensory; 12. Speech; 13. Hearing 14. Myelin; 15. Epilepsy; 16. PET; 17. Injury; 18. Smell

College Student Volunteers Wanted

Researchers at the Uniformed Services University of the Health Sciences in Bethesda seek college student volunteers to participate in a study examining how environmental conditions affect the way people process information. Participants will be paid $15 for a 1½ hour session. Call Monica or leave message at 295-3278. □

Check Out the Library

NLM Opens Arms to Visitors, Whether From Abroad or Next Door

By Roger L. Gilkeson

Just as D.C. area residents often miss out on nearby attractions that tourists from thousands of miles away come especially to see, many NIH'ers are missing out on an international attraction right in their own backyard—the National Library of Medicine.

The *Record* recently featured the library's Grateful Med (a software package the library developed to make its computerized information files available to anyone with a compatible PC), and you might just want to take NLM information officer Bob Mehnert up on his offer to show you Grateful Med and a host of other surprises.

Of course NIH has its own separate and superb medical library in Bldg. 10, providing services specifically for NIH staff. But NLM, the world's largest medical library, also welcomes NIH visitors—whether you're looking for an obscure journal article or just want to find out more about what goes on under that origami-shaped roof that covers Bldg. 38.

A good way to begin exploring the library, however, is to enter the *other* NLM building—the Lister Hill Center (Bldg. 38A, named after Sen. Lister L. Hill of Alabama who in 1956, along with Sen. John F. Kennedy, sponsored legislation creating NLM) adjacent to the library proper. Inside the entrance immediately to the left is the NLM Visitors Center. Open from 8:30 a.m. to 3:30 p.m. weekdays, the Visitors Center is constructed to allow the curious to learn—on their own—about the library's 150-year history, its pioneering work in computer-based information networks, its current research and development projects, and much more.

Would you like to see a movie about the library? How's your Chinese or Japanese? People really do come from thousands of miles specifically to see the library and its programs, so the library has had special Chinese and Japanese versions made of its basic library film—"Communicating for Health." If your Asian language skills are a bit rusty, you can always catch the English-language version; a copy is available to be plugged into the center's videocassette player. Other videocassettes (English only) introduce visitors to a number of NLM's artificial intelligence projects, its world famous MEDLARS (the system the library developed for storing and retrieving information about medical books and articles), and other interesting library highlights.

What many visitors find most memorable about the NLM Visitors Center, however, in addition to the lively graphics that fill the room, are the easy-to-use, "menu-driven" terminals. A special terminal for Grateful Med, for example, makes it easy to do a "live" search of more than 600,000 references to journal articles in MEDLINE. Or, if you prefer to find a book, Grateful Med will search the library's entire catalog for you. You simply type in an author's name, or one or more subject terms, and sit back while the computer does the work. Or explore, at other demonstration terminals, the library's Toxicology Information Program databases, or check out the TIME Project (a videodisc-based Lister Hill experiment for medical education, involving patient simulations and voice-recognition technology).

Sandra Wilgus (l) of Dallas, Tex., is greeted at the National Library of Medicine's Visitors Center by Jean Conner, a librarian who volunteers to lead tours, and Roger Gilkeson of NLM's information office.

If smart machines make you nervous and you'd like at least some interaction with nonartificial intelligence, never fear. The library is filled with helpful, friendly folks, a number of whom have volunteered to spend an hour or so conducting the daily public tour (which starts in the Visitors Center at 1 p.m., no appointment necessary) or to lead group tours of 5–15 people (prearranged through Bob Mehnert, 496-6308).

Jean Conner is one such individual. Her tours start with the showing of "Communicating for Health," and continue with a walking tour from the Lister Hill Center through an underground passage to Bldg. 38.

Visitors are encouraged to ask questions, of course, and according to Conner, who is a librarian in the quality control component of the index section, the questions can be wide ranging, reflecting the great diversity of the library's facilities and services, as well as the diversity in visitors. Most visitors are primarily interested in NLM as an information resource, but many are almost as curious about its art and furnishings ("What's the meaning of that [huge, abstract] mural?" and "Where did you get that beautiful rug?") as about its services.

Tour highlights include viewing the computer room (housing the equipment that makes MEDLARS services possible, including Grateful Med), the History of Medicine Division (the oldest work is an 11th century Arabic manuscript on gastrointestinal diseases), the NLM lobby exhibit (now featuring the Centennial-related display, "The New Age of Laboratories, 1885–1915"), the library's main reading room and computerized catalog terminals, and a learning resource center, housing thousands of audiovisual materials on medical subjects.

One question often asked is, "Can I check out books from the NLM?" The basic answer is no, since NLM lends to other libraries and not directly to individuals. (You can, of course, look at the materials in its collection, and photocopy articles.)

But even if you can't check out its books, you *can* "check out" the library itself—by taking the daily tour, browsing through the Visitors Center on your own, or just coming in to the main entrance of Bldg. 38 and being a patron. And all for just a short walk across campus. □