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PET Scanning Expands Diagnostic Knowledge Of Major Diseases of the Human Brain

(This is the second of two articles on new findings about human brain functions arrived at through the use of positron emission tomography (PET), a new technology for directly observing the living brain.)

Positron emission tomography (PET), a new way of observing the living, active human brain, has disclosed some new understanding of Alzheimer's disease as well as epilepsy, stroke and cerebral tumors.

infarct dementia.

Since some types of dementia are treatable, Dr. Kuhl emphasized that it is important to distinguish among them as soon as possible after patients present with symptoms.

Patients with dementia therefore represent a fourth area of clinical research usefulness of PET, he said, the other three being focal epilepsy, stroke, and cerebral tumors.

Further findings in patients with Alzheimer's disease were presented by Dr.

NIAID Funds New Center To Study Sexual Diseases

The National Institute of Allergy and Infectious Diseases (NIAID) has announced funding for a new sexually transmitted diseases research center at Indiana University School of Medicine in Indianapolis.

The 3-year grant, totaling \$1.1 million, supports studies of three common sexually transmitted disease agents that cause gonorrhea, chlamydial infections and genital warts. These infections affect an estimated 5 million Americans each year.

The center is directed by Dr. Robert B. Jones, associate professor of medicine, microbiology and immunology at Indiana University, and will involve investigators with expertise in many different areas.

A combination of laboratory facilities and a clinic will enable the scientists to study both the basic biology of the organisms, *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and human papilloma viruses, and the symptoms they produce in patients.

Gonorrhea, the most commonly reported communicable disease in the United States, is an important cause of pelvic inflammatory disease in women. Although 1 million cases of gonorrhea are reported each year, physi-

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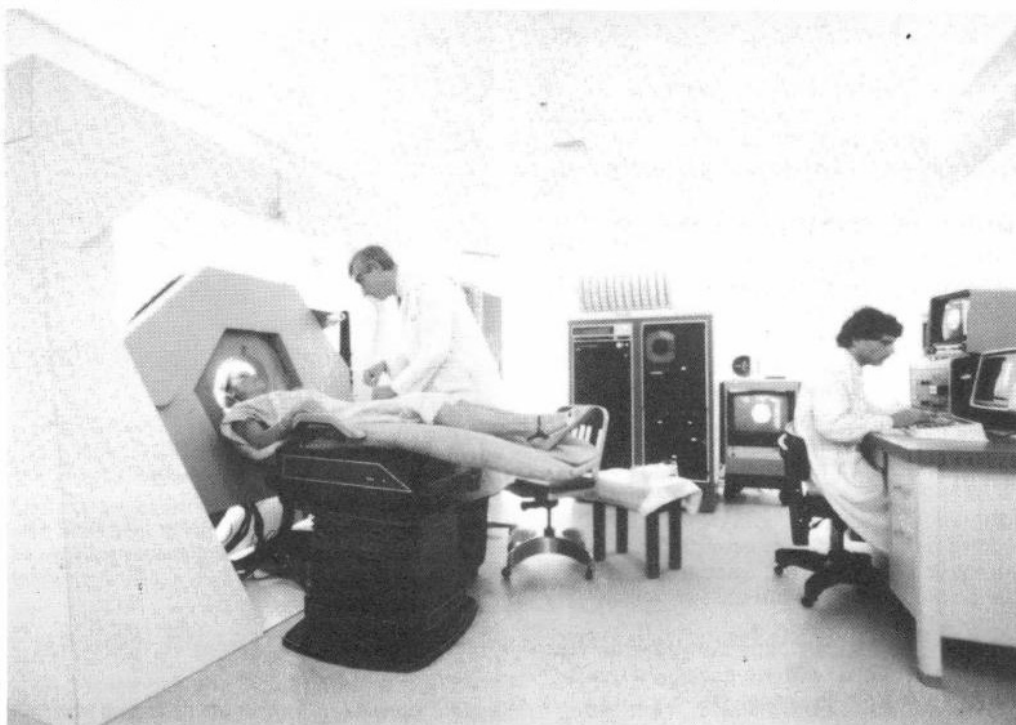
AIDS Epidemiology Workshop Scheduled For Sept. 12-13

A Workshop on the Epidemiology of Acquired Immune Deficiency Syndrome (AIDS), sponsored by the National Institute of Allergy and Infectious Diseases, the National Cancer Institute, and the National Heart, Lung, and Blood Institute, will be held at the Holiday Inn, Crowne Plaza, 1750 Rockville Pike, Rockville, Md. on Sept. 12-13.

The purpose of this workshop is to develop recommendations for research on the epidemiology and natural history of AIDS, and to exchange information and educate clinical investigators about epidemiological study design.

This 2-day workshop will consist of invited speakers and panel members and official participants. Other interested persons who wish to participate in the goals of the workshop are invited to attend.

A program is available from Joni Grigsby at 496-5717. Because there is limited seating, those wishing to attend this meeting should confirm by contacting: Mark S. Brown, Social and Scientific Systems, Inc., 4405 East West Highway, Suite 508, Bethesda, MD 20814; telephone (301) 656-6346. □



Dr. Thomas Chase (c), chief of the NINCDS Experimental Therapeutics Branch, demonstrates the use of the PET scanner.

Dr. David E. Kuhl of UCLA reported some of these findings at the recent international scientific conference on PET held at NIH under the sponsorship of the National Institute of Neurological and Communicative Disorders and Stroke.

New Ideas on Alzheimer's Disease

Dr. Kuhl reported that the ratio of glucose metabolism in the cerebral cortex to that in the caudate-putamen region of the brain differentiates patients with Alzheimer's disease from those with other types of dementia, such as Huntington's disease and multiple

Thomas N. Chase of the NINCDS Experimental Therapeutics Branch. These patients displayed substantial decreases in glucose metabolism in both the cerebral cortex and the basal ganglia. "There was a close correlation between the degree of clinical dementia and the decrease in metabolism," Dr. Chase reported.

When Dr. Chase looked at the pattern of decrease in glucose metabolism in the cortex among all patients, he found the greatest decrease was in an area in the back of the brain—the parietotemporal region—"which

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The NIH Record

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Training Tips

The following courses, sponsored by the Division of Personnel Management, are given in Bldg. 31.

Office Skills	Course Starts	Deadline
Travel Orders and Vouchers	9/26	9/7
Travel Orders and Vouchers	10/3	9/19
Travel Orders and Vouchers	11/14	10/26
Medical Terminology I	9/13	8/23
Proofreading	9/19	8/26
Time and Attendance	9/13	8/26
Executive, Management and Supervisory		
Effective Communication	9/27	9/12
Federal Budget	9/13	8/26

To learn about these and other courses, contact the Development and Training Operations Branch, DPM, 496-6371.

R&W Plans Labor Day Weekend Trip

R&W plans to make your Labor Day weekend "special" this year with a whitewater outing on the Youghiogheny River in southwestern Pennsylvania. Drive up on Sat. Sept. 3, and swim or fish in the river, hike in Ohiospyle State Park, or visit Falling Waters, one of Frank Lloyd Wright's architectural masterpieces. The one-day canoe trip (a small amount of whitewater canoeing experience is necessary) will be on Sun., Sept. 4. The cost will be \$22.30 per person including lunch. Monday, Sept. 5, is for rafting on the Youghiogheny River. You must be 12 years or older to participate. Fee for the rafting trip is \$22 which includes lunch. Choose either trip for day or combine the two at a discount rate of \$42.50. Sign up now at the R&W Activities Center, Bldg. 31, Rm. B1W30. □



Each year outstanding science students from medical schools, colleges, and high schools throughout the United States are chosen to spend the summer working on special projects at the Rocky Mountain Laboratory. The facility in Hamilton, Mont., houses 3 of the 13 NIAID intramural laboratories. This year, 14 students were selected to work in such diverse areas as slow virus research and research on Lyme Disease, whose causative organism was most recently identified by RML scientists. Students are back row (l to r): Timothy Wilson, Melchisedek L. Margais, David C. Olson, Joe Lucero, Ronald Smith, Ramona Heiland, Dave Waag; front row (l to r): Arthur Rivera, Jon McCarty, Greg Tierney, Albert Olszewski, Tom Bartkoske, Lori Jansen, Joe Wen Wu.

Building 10 Parking Areas Will Change August 22

On Monday, Aug. 22, parking assignments in several parking areas near Bldg. 10 will be changed. This reshuffling of parking assignments is being done to accommodate the increasing numbers of outpatients and visitors who come daily to the Clinical Center.

Parking In The ACRF Garage:

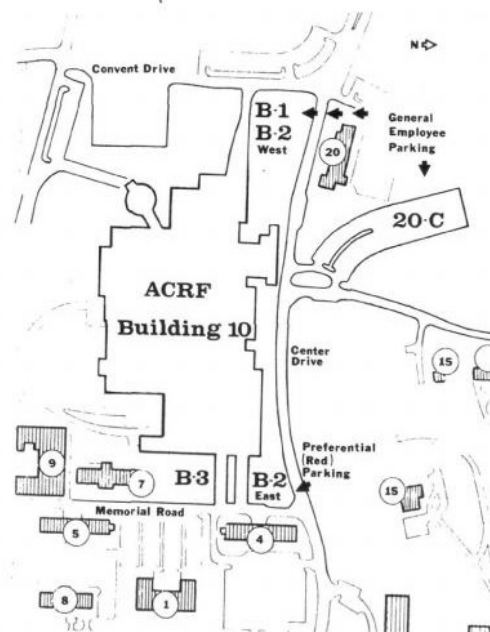
The B-3 level of the ACRF garage will remain reserved for outpatients, consultants, Red Cross volunteers and employees with current Patient Care parking permits.

All visitors will be relocated from lot 20-C, north of Bldg. 10, to the B-3 level. The only entrance to the B-3 level will be from Memorial Dr. at the east end which will continue to be regulated from a police booth.

The B-2 level, east portion only, will be reserved for personnel with preferential (red) parking permits and handicapped employees. The only entrance to the B-2 east portion will be at the east end from Memorial Dr.

There will be a barricade between the east and west portions, with no access to the B-2 east portion from the other two parking levels.

The B-2 level, west portion only, and the entire B-1 level (both east and west portions) will be reserved for NIH general employee and handicap parking. The only entrance to the B-1 level and the B-2 west portion will be



from Convent Dr.

Parking Lot Changes:

Parking lot 20-C north of Bldg. 10—now used by visitors—will be reserved for NIH general employee parking. The 18 carpool spaces and 7 CC vehicle spaces now located in lot 20-C will stay where they are. □

R&W Sponsoring Horseback Riding Weekend and Orioles Bus Trips

The R&W will sponsor a horseback riding weekend in the mountains of Western Maryland, near Deep Creek Lake. The trip is scheduled for Sept. 9-11, and the cost will be \$85 per person. Beginners as well as experienced riders can share in the fun. Non-riders are welcome to come along at a reduced rate. Sign up now at the R&W Activities Desk, Bldg. 31.

R&W will provide tickets and bus transportation to Memorial Stadium for the games Wednesday, Sept. 7, with the Boston Red Sox; bus leaves at 5:30 p.m., and Sunday, Oct. 2, against the New York Yankees; bus leaves at 12:30 p.m. Upper box seats and bus costs is \$12.50. Buses will depart from Bldg. 31C. Order your tickets now at the R&W Activities Center, Bldg. 31, Rm. B1W30. □

NIH "Gashouse Gang" Zaps TV-9 Again

The NIH "Gashouse Gang" again conquered "The One & Only TV-9" team with a "come-from-behind" victory of 10-9 in the 8th Annual Patient Emergency Fund (PEF) Softball Game on Sunday, July 17.

The "Gashouse Gang," which has become known for its power and finesse, began the game with a flourish. Debbie Rorabaugh, playing right field, scored the first run after a triple. The "Gashouse Gang" then continued on to what appeared to be an easy victory. At the beginning of the 7th inning, the score was 8-2, the NIH team leading by a 6-run margin.

The "One & Onlys," however, tied the score and then went on to a 9-8 lead, led by Jerry Grossman with a 3-run homer, Mike Buchanan, Ron Sarro and Lee Zeidman. NIH's John Garrison came home on a triple and tied the game again. At the bottom of the 8th inning, Freddie Harris hit a home run, breaking the tie and winning the game for the NIH "Gashouse Gang."



The "Gashouse Gang's" Jim Alexander (l), Maurice Miles (r) and "The One & Only TV-9's" Mike Buchanan (c) take a break between innings.



Linda Grossman, a "Gashouse Gang" pitcher and also a member of NIH's championship Women's League, continues to demoralize the Channel 9 team.



The "One & Only's" Mike Buchanan showing his catching form.



"The agony of defeat" and 99 degree temperatures were just too much for Mike Buchanan.

Putting on the PEF game involves many people: the chefs and staff of the Nutrition Department cooked the hot dogs, the Occupational Medical Service provided the first aid kit, R&W donated door prizes, Al Laoang of the medical arts section contributed the poster design, John Slovikosky volunteered his services as umpire for the 3rd consecutive year, Amy Coombs, R.N., volunteered as "game nurse" and the normal volunteers without whose help there would not have been a game.

The "Gashouse Gang," managed by Doren

Vest, and the "One & Only TV-9" deserve a thank you from all their fans and co-workers for outstanding performances.

In answer to the many questions asked about where the name "Gashouse Gang" originated—"The Gas House Gang," a fighting St. Louis Cardinals team won the National League title in 1934. Dizzy Dean, Pepper Martin and others on the team were noted for their reckless style of play.

The proceeds from donations for door prizes and food concessions were donated to the Patient Emergency Fund. □

Physical Fitness Presentation Being Offered in September

In September, the Occupational Medical Service and the NIH Fitness Center will present a 26-minute film, *To Your Heart's Content*, which emphasizes the importance of increasing our level of activity.

Appraise Fitness

In addition, staff at the Fitness Center will provide information on how to appraise your level of physical fitness. The Occupational Medical Service staff will offer the Health Risk Appraisal questionnaire on how to evaluate the effect of your lifestyle (for example, diet, smoking) on the most common causes of death for your age and sex.

The program will be offered at the following dates and locations:

Wed., Sept. 14, ACRF Amphitheater, 11:30

a.m. & 12:15 p.m.;

Thurs., Sept. 15, Blair Bldg., Rm. 10, 11:30 a.m.;

Fri., Sept. 16, Shannon Bldg., Wilson Hall, 11:30 a.m. & 12:15 p.m.;

Mon., Sept. 19, Federal Bldg., Rm. B119, 11:30 a.m.;

Tues., Sept. 20, Westwood Bldg., Conf. Rm. D, 11:30 a.m.;

Tues., Sept. 20, Poolesville Animal Center, 2:30 p.m.;

Wed., Sept. 21, Bldg. 13, Rm. G313, 2:30 p.m.;

Thurs., Sept. 22, Bldg. 38A, Rm. B1N308, 11:30 a.m. □

Experience is not what happens to a man. It is what a man does with what happens to him—*Aldous Huxley* □

Theater Group To Hold Auditions For 1920s-Style Variety Show

Auditions for the NIH/R&W Theater Group's fall variety program will be held Aug. 23, 25, and 29, from 7:30 to 10:30 p.m. in the Masur Auditorium, Bldg. 10.

The program is entitled "Remembering the 20s," so those wishing to audition should bring material relating to the 1920s. The production is scheduled for mid-November.

Performers needed include actors, singers, musicians and dancers. Also needed are a choreographer, makeup helpers, technical staff and seamstresses. Anyone interested in helping with the production is welcome at the auditions.

For more information call Alice Smyth at 496-3471, or Adele Weeks at 496-1924, or 942-7117. □

Married Men Usually Live Longer Than Single Males; But Do Some Wives Contribute to Husbands' Heart Disease?

Married men as a group live longer than single, widowed or divorced men. That fact has been documented time and again.

Married men also have lower rates of coronary heart disease (CHD), which may help to explain why husbands have a lower death rate.

However, the latest findings from the Framingham Heart Study, reported in the July issue of the *American Journal of Epidemiology*, indicate that some married men may be at higher risk of developing heart disease if they are married to women with some education beyond high school who work outside the home most of their adult life.

The study was conducted by Dr. Suzanne Haynes of the University of North Carolina, Chapel Hill; Dr. Elaine Eaker of the National Heart, Lung, and Blood Institute, and Dr. Manning Feinleib, formerly with NHLBI.

The Framingham Heart Study subgroup of married couples represented a fairly small (269 spouse pairs) and specific population.

The mean age for men was 54 years; the majority were blue-collar workers, had a high school education or less, and the vast majority reported being married only once for over 25 years. Since this data was collected in the mid-1960s and may have limited application today—given changing life styles and wider acceptance of new roles for women—generalizations to other groups must be made with caution.

General Findings

In general, men married to women with some education beyond high school are more than twice as likely to develop CHD (coronary heart disease) than men married to women with grammar school educations. The increased risk of CHD among these men was noted only among husbands of women employed outside the home.

For men of type A personality—the hard-driving, time-pressured, ambitious type—the risk of developing CHD is 3.5 times that of the more sedate type B men when both are married to women working outside the home. There is no difference in the rates of heart disease between type A and type B husbands if married to non-working housewives.

When the behavior types of both spouses were considered, *the highest rates of CHD were found among type A men married to type B wives*, among whom 25 percent developed CHD over the 10-year followup period compared with type B men with type B wives, whose rate of CHD was only 7.8 percent.

These effects were seen regardless of the husband's occupational status or his other risk factors such as high blood pressure or cigarette smoking.

These conclusions were part of the findings of a 10-year study of spouse pairs, correlating social status, behavior types, educational levels and personality characteristics to the rate of coronary heart disease among husbands. The Framingham Heart Study has been in progress since the

1950s, and is funded by the National Heart, Lung, and Blood Institute.

Psychological and Social Variables

Between 1965 and 1967, an extensive questionnaire measuring psychological and social variables was given to 269 spouse pairs. At that time, the husbands ranged from 45- to 64-years-old. The researchers followed the couples for 10 years and recorded the development of heart disease among the husbands.

When the men enrolled in the study, their standard risk factors were also assessed. These included age, cholesterol levels, blood pressure, and number of cigarettes smoked per day. *The findings reported here are independent of these factors, however.*

Educational levels, employment status and occupation of both spouses were recorded, as was the occupation of each person's father.

Employment and Education

Overall, the results of the study show that men married to women with some education beyond high school were 2.6 times more likely to develop heart disease than men married to women with a grammar school education.

The man is at high risk if married to a woman of high education, regardless of his own educational level.

The study showed that men married to women in white-collar jobs were 3 to 5 times more likely to develop heart disease than men married to women in the blue-collar or clerical categories or to housewives. This was true whatever the men's occupations. Of the 15 men in the study who were married to white collar women, 7 (46.7 percent) developed heart disease during the 10-year study.

When the combined effect of the wives' education and employment status was correlated with their husbands' rate of heart disease, increased risk among men married to women with some education beyond high school was limited to those whose wives worked outside the home.

These men were 7.6 times more likely to develop heart disease than were men married to women with grammar school educations.

In the Framingham spouse subgroup, there was no association between the husband's own educational level and his rate of heart disease. The rate of disease was slightly higher among blue-collar compared to white-collar workers.

The apparent effect of wives' educational level to disease rates among husbands is independent of the husband's educational level, except for blue-collar men married to women working outside the home. This suggests that the heart disease association reflects more than social status as such, perhaps, a more complex interaction between spouses.

Several hypotheses were put forth by the researchers to explain their findings with the suggestion that each be explored in future studies.

Among these: the possibility of role conflicts for the women; that is, the dual responsibility of holding a white-collar job and raising children. Or, perhaps women who worked in high-status jobs outside the home may have threatened their husbands' self-esteem, creating stress in the relationship. *Although these explanations seem logical and appealing, they were not supported in the Framingham analysis.*

Self selection of high-risk men to marry women of high social status also was ruled out as an explanation. However, these possibilities should be examined in larger and more contemporary populations, the researchers indicated.

The Real Reason

Further analysis revealed that highly educated working wives whose husband developed heart disease were significantly more likely to have had a nonsupportive boss and fewer job promotions than wives of men who remained healthy.

This indicates that it may not be the woman's status as such that is associated with her husband's risk of heart disease, but the stressful environment in which she works.

The husband may feel sympathy for his wife's stressful job situation, but be helpless to ease her situation.

These men who developed heart disease did not report more marital dissatisfaction or marital disagreements than noncases. □

Women 'Pill' Users Who Exercise Sought For Blood Clotting Test

The Exercise Laboratory, Departments of Physiology and Medicine, at the Uniformed Services University of the Health Sciences in Bethesda needs volunteers to take part in a study on how exercise and use of birth control pills affect blood clotting and clot dissolving.

Three groups of pill users are needed: women who do no regular endurance exercise such as running, swimming, or biking; women who run between 5 and 15 miles per week; and women who run more than 50 miles per week.

All volunteers must be non-smokers between the ages of 18 and 45.

Also needed are women pill users and non-pill-users who run over 50 miles a week and are experiencing menstrual irregularities connected with their running.

Volunteers will run on a treadmill while oxygen consumption and temperature are monitored. Testing will be supervised by a physician. Benefits include an extensive physical fitness evaluation and screening for atherosclerotic heart disease and risk factors.

For further information, contact Sue Wigutoff or Janet Yu-Yahiro, Department of Physiology, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Rd., Bethesda, MD 20814, or call (301) 295-3623. □

NIH Symposium on Eye Epidemiology Published

Eye epidemiology, a field in its infancy only 10 years ago, drew 130 epidemiologists, ophthalmologists, statisticians, and other vision researchers to the National Institutes of Health last year for the first symposium of its kind in the United States. Selected presentations from this meeting will be published in the August issue of the *American Journal of Epidemiology*.

In his opening address at the symposium, Fred Ederer, chief of NEI's Office of Biometry and Epidemiology (OBE), remarked on the growing interest in eye epidemiology and traced factors contributing to the increase in the number of scientists working in this specialty.

NEI support of randomized clinical trials and other epidemiologic studies has provided on-the-job training in epidemiologic principles and methods.

It has also spurred departments of ophthalmology to add biostatisticians and epidemiologists to their staffs, and epidemiology departments to include staff members with a major interest in eye disease, he said.

In addition, educational activities of the OBE have stimulated interest in eye epidemiology and encouraged researchers to develop the skills needed for such work. OBE educational projects other than the epidemiology symposium have included workshops, publications, annual courses for clinical vision researchers, and an epidemiology fellowship program for ophthalmologists.

The focus of the symposium was on chronic eye diseases and vision disorders occurring in the United States. Critical reviews of the literature on the epidemiology of cataract, senile macular degeneration, diabetic retinopathy, amblyopia, and glaucoma were presented as well as 28 reports on individual research projects. Four of the literature reviews and nine of the reports are presented in this special issue of the *American Journal of Epidemiology*.

Insulin-Dependent Diabetes Study

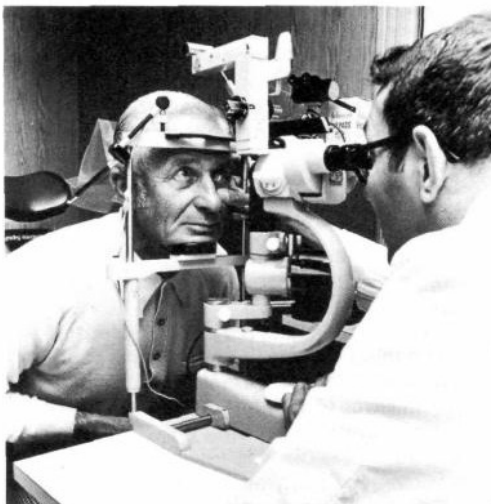
In one report, Dr. Lawrence I. Rand at the Joslin Diabetes Center, Boston, discussed his case-control study of insulin-dependent diabetes and presented preliminary results.

The objective of his study is to identify personal, biological, familial, or environmental factors that could explain why some diabetics develop diabetic retinopathy and lose vision while others do not. He is investigating such risk factors for diabetic retinopathy as control of diabetes, blood pressure, smoking, growth hormone levels, and HLA antigen types.

Senile Macular Degeneration Study

A case-control study of risk factors for senile macular degeneration (SMD) was presented by Dr. Leslie Hyman, a researcher at the State University of New York at Stony Brook. Statistically significant associations were found between SMD and a maternal and sibling history of the disease and between SMD and light iris color.

The study suggested that genetic factors were strongly associated with SMD in both men and women, and that exposure to industrial chemicals and cigarette smoking



Eye diseases affecting older Americans are of particular interest to eye epidemiologists. A potentially blinding form of senile macular degeneration (SMD) is associated with increased age as well as certain risk factors.

were weakly linked to development of the disease.

Dr. Hyman and her colleagues, Drs. Frederick Ferris, Stuart Fine, and Abraham Lilienfeld, also looked into risk factors for the neovascular form of SMD, a potentially blinding disease which is characterized by the growth of abnormal new blood vessels in the eye.

They found associations between this more critical form of the disease and increased age and cardiovascular disease. Decreased hand grip strength (an indication of physiological aging) was a significant factor only when cardiovascular disease was present.

Visual Acuity Impairment Survey

Also discussed at the symposium was the Visual Acuity Impairment Survey (VAIS). This study was designed to provide prevalence data on impairment of distance visual acuity and on the diseases which cause it, and study cases of impairment from the major eye diseases: cataract, senile macular degeneration, glaucoma, diabetic retinopathy and amblyopia.

A pilot study was undertaken first to determine the feasibility of conducting the VAIS in 15 to 20 metropolitan areas. In the pilot study, the NEI, in collaboration with the National Center for Health Statistics and the Bureaus of the Census, gathered data on visual impairment and its causes.

Summary Statement

In a summary statement at the end of the meeting, Mr. Ederer said the conference revealed needs for the following:

Standardized definitions of eye diseases; more studies analyzing differences in the prevalence and incidence of eye diseases in different populations.

Also well-designed case-control and cohort studies of eye disease in clearly defined populations; studies to evaluate observer error; and technological advances to simplify and increase the reliability of observations by ophthalmologists. □

SEX STUDY

(Continued from Page 1)

cians estimate the true incidence is closer to 2 million cases.

Another 3 million Americans suffer from chlamydial infections. Chlamydiae are the major cause of nongonococcal urethritis in men. They also cause 20 percent of diagnosed cases of pelvic inflammatory disease in women, and thousands of cases of eye infections and pneumonia in infants born to chlamydia-infected women.

The 1980 Status Report on Sexually Transmitted Diseases by an NIAID study group estimated that, in this country, genital warts caused by human papilloma viruses are the fourth most common sexually transmitted disease in men and the third most common in women; the total incidence is at least one-half million cases a year. Treatment is difficult and recurrences are common. Some evidence has also linked human papilloma viruses to cervical cancer.

Four specific research projects have been approved for the new center. One study focuses on the cell wall structure of *N. gonorrhoeae*, or gonococcus, to learn more about how the immune system responds to particular components of the organism. This information is important for better treatment of patients with gonorrhea as well as for vaccine development.

One study on chlamydia will provide basic information on the development of the organism. Another will search for immunologic methods to study the epidemiology of genital chlamydial infections and also to define the role of immunity in protection against relapse and reinfection.

The goal of the fourth project is to devise immunologic tests that can be used for epidemiologic and other studies of human papilloma virus infections. □



Diana S. Parker of the Laboratory of Chemistry, NHLBI, played a pivotal role in the recent victory of her team, the McLean Redshins, in the U.S. Soccer Federation-Budweiser National Challenge Cups held in Houston, July 2-3. During the semi-final game against the Region II team from Missouri, Diana allowed only one goal to be scored by the opposition, for a 3-1 Redshins victory. In the finals against the Region IV team from Oregon, Diana led the Redshins to a 2-0 shutout, making them the Women's Over 30 National Champions.

Cancer Communications Interns Functioned Like Staff; Planned Projects, Wrote Reports, Answered Public Queries

Susan Oehme and Dave Moore answered thousands of phone calls from cancer patients, their families, and other members of the public. Ina Silverman helped write the third edition of *Cancer Rates and Risks*, a book in progress for laymen. Ruth Mattingly helped coordinate and publicize a new toll-free phone number for the 23 Cancer Information Service Centers in the United States.

All four were part of a group of 10 graduate students who recently completed a 6-month communications internship with the National Cancer Institute.

Created in 1975 by the Office of Cancer Communications (OCC), the internship program now has 89 alumni. Each intern gains professional experience in one of several areas: science writing, health education, public inquiries, information science, and health planning. Intern groups begin each January and July.

Interns in OCC's Information Projects Branch receive intensive experience in mounting health education programs of national scope. They have contributed to programs in antismoking, breast cancer and patient education, and to special efforts to reach minority audiences.

Often, interns take on a specific aspect of each education program. Some help pretest educational materials with representatives of the intended audience, gaining feedback that improves communication.

For example, Paul Kerns, a graduate student from the University of Southern California, revised a patient education booklet, "Chemotherapy and You," after the manuscript was pretested with cancer patients. Kerns also continued a project begun by one of his predecessors, Donna Maxwell of the University of Missouri, to produce a videotape for orientation of new NCI employees.

Television and radio announcements and cancer education materials are often written by interns. "We treat the interns just like staff, with the same responsibilities," said Barbara Blumberg, a public health educator in OCC.

"The great thing about the program is that interns aren't observers, but active participants," said Nancy McCormick-Pickett, director of the internship program. "They're immersed in the work immediately."

After 2 weeks of intensive training in OCC's Public Inquiries Section, Susan Oehme and Dave Moore (Marquette University) began responding each week to an average of 250 callers who were seeking information about cancer.

"Public Inquiries was my first choice for an internship experience," said Oehme, a graduate student in journalism at Kansas State University. "I wanted the contact with people."

Penny Passikoff interned in OCC's Document Reference Section, where over 300 data bases can be searched by medical librarians experienced in retrieving both technical and lay-oriented information on cancer. A candidate for a master's degree in library science from Syracuse University,

Passikoff already holds an M.A. in psychology.

"Because of my interest in library research and in science, the internship seemed perfect for me," she noted. The computer link to the nearby National Library of Medicine, other data bases and our own computerized files are used to gather information the OCC staff needs to answer a question for a cancer patient or a reporter on deadline."

J. Paul Van Nevel, NCI's associate director for cancer communications and founder of the internship program, commented:

"Aside from the immediate benefits we gain from work the interns do while they're here—work that often would not get done otherwise—the program develops a cadre of people who go out to other institutions or become science writers, who have knowledge about cancer and the National Cancer Institute, and who improve the communication of cancer information."

Former intern Steve Findlay (University of Maryland) writes about science for *USA Today*. Janet Raloff (Northwestern University) is at *Science News*, and Sana Siwolop (Massachusetts Institute of Technology) is a science reporter for *Discover* magazine.

"Cancer is a hard topic to write about," Siwolop said. "Before my internship at NCI, I was always on the receiving end for press releases about science research, rather than writing them. At NCI I learned to appreciate the special kind of decision-making process involved in writing background material for the press."

"It may not be clear if a cancer drug is good or not, or how effective a medical treatment is. It's important to get enough information and as balanced a perspective as possible when you're dealing with people's lives," she said.

Rose Mary Romano joined the permanent staff of OCC after her internship ended in 1978. She is now in charge of developing an awareness program about cancer prevention for the public.

During her internship, she conducted a study of public service announcements and other health messages to see which were effective in reaching their audiences. Later, she helped OCC pioneer in developing pretesting and evaluation techniques for health education programs.

Now Romano has interns of her own: Kathy Fitzpatrick, a journalism graduate student from West Virginia University, recently helped Romano in planning the cancer prevention campaign.

Science writing interns are assigned to OCC's Reports Section where their work may include reporting Congressional hearings on health issues, writing press backrounders on cancer research and treatment, and reporting some of the weekly NIH science lectures.

"It was great interviewing scientists whose journal articles I had read in school," said Ina Silverman, a science-writing intern from Yale's School of Public Health. Silverman met with the scientists as part of her work in writing an NCI book on cancer rates and risks.

The interns visited the *Washington Post*, the *Voice of America*, attending a taping of NBC's "Meet the Press," and took a day-long trip to the Frederick Cancer Research Facility. McCormick-Pickett, who organized the trips, repeats them for each group of interns.

Others who completed their internship in July were Ron Cowen (University of Maryland) in the Reports Section, Gladys Borges (University of Miami) in the NCI Systems Planning Branch, and Marylou Warwick (University of Denver) in the International Cancer Research Data Bank office. Information about the internship program is available from McCormick-Pickett at 496-6792. □



NCI OCC Interns—Back row, l to r: Ina Silverman, Dave Moore, Marylou Warwick, Ron Cowen, Paul Kerns. Front row, l to r: Gladys Borges, Ruth Mattingly, Kathy Fitzpatrick, Susan Oehme, Penny Passikoff.

Growth Factor, Simian Virus: Common Clues to Cancer

Protein produced by a gene responsible for the cancer-causing activity of a monkey virus has been found to be strikingly similar to a wound-healing protein found in human blood cells known as platelets, a team of scientists has reported.

Called platelet-derived growth factor (PDGF), the blood protein triggers the process of healing after injury by stimulating cells around the wound site to begin multiplying.

Authors of the July 15 *Science* report entitled, "A simian sarcoma virus *oncogene*, *v-sis* is derived from the gene(s) encoding human platelet-derived growth factor," are: Drs. Russell R. Doolittle, University of California, San Diego; Michael W. Hunkapiller and Leroy E. Hood, California Institute of Technology, Pasadena; Sushilkumar G. DeVare, Keith C. Robbins and Stuart A. Aaronson, National Cancer Institute; and Harry N. Antoniades, Center for Blood Research and the Harvard University School of Public Health, Boston.

"The finding may help us understand how cancer genes transform normal cells into rapidly dividing cancer cells with uncontrolled growth," said NCI's Dr. Aaronson.

The research team suggests that this cancer gene, *v-sis*, may either produce an altered protein product after damage to its DNA, or "turn on" production of this protein in a cell where it is not normally made.

In either case, the cell somehow responds inappropriately by continuing to grow in the uncontrolled fashion typical of cancer.

The partial amino acid sequence of PDGF was described in an article by Drs. Hunkapiller and Antoniades in the May 27 issue of *Science*.

Dr. Doolittle had been storing the amino acid sequences of proteins in a computer bank for his studies of protein evolution. When he entered the amino acid sequence of PDGF into this data bank, he discovered that 87 percent of the 70 amino acids in the known segments of PDGF matched those in the sequence of amino acids of the *v-sis* protein.

The *v-sis* gene and its protein product were discovered, sequenced, and studied in detail by Drs. DeVare, Robbins, Aaronson and colleagues in the NCI Laboratory of Cellular and Molecular Biology.

"Considering the species differences," said Dr. Aaronson, "we would expect a 13 percent mismatch between human and monkey proteins with the same functions."

"It is too early to assess the clinical importance of these findings," he said. "It is possible, however, that once the protein products of cancer genes are identified and scientists determine how they function, steps can be taken to alter cancer progression by interfering with or inhibiting the biologic activity of those proteins," Dr. Aaronson added.

The scientists are planning future collaborative research to determine whether the function of the monkey protein made by the *v-sis* cancer gene is identical to the human PDGF, and whether other cancer gene proteins may be matched with other normal growth proteins. □

Nine NIHers Graduate From Apprenticeship Class at MC



NIH Apprentices, front row (l to r): Caldwell, Jones, Biser, Reggia, and Badua. Back row (l to r): Orrison, Oliver, Craig, and Welborn.

Nine members of the 1983 NIH apprenticeship class received certificates for having completed the related technical instruction portion of the program.

They are:

Daniel Reggia, Air Conditioning/Refrigeration; Thomas Caldwell, boiler operator; Rodney Jones, boiler operator; Gerald Oliver, boiler operator.

Ildefonso Q. Badua, electrician; Robert C. Welborn, electrician; Anita L. Biser, carpenter; Herman M. Orrison, carpenter; Robert B. Craig, plumber.

The ceremony was held June 25, 1983 at Montgomery College's Rockville Campus.

Included with the NIH graduates were 23 other apprentices from eight other businesses or agencies in the area.

These apprentices are completing a 4-year structured program combining on-the-job training with related technical instruction, leading to the development of skills at the full mechanic level.

Speakers at the college's ceremony included Dr. Robert E. Parilla, president of Montgomery College and Dr. Theodore F. Rybka, Maryland State Dept. of Education. Stanley Allen, chairman, NIH Apprenticeship Committee, represented the NIH on the program. □

Gerontology Research Center Celebrates Native Americans Week



Tony Kaminski, GRC Personnel, and Elizabeth Locklear perform an Indian "jig" at GRC's Native American Powwow.

Peace pipes, war clubs, medicine rattles, and memory sticks used by Indians of the Northeast United States were plentiful recently when the NIA Gerontology Research Center (GRC) held Native Americans Week. The event was organized and sponsored by the GRC's Cultural Committee in cooperation with the NIH Division of Equal Opportunity.

John Moore and Sandra Clark-Linkins of Baltimore's Indian Education Project fascinated GRC staff with legends, crafts, and historical data on Baltimore's Lumbee Indian population, numbering some 4,000. The Lumbees are believed to be descendants of Sir Walter Raleigh's "Lost Tribe of Roanoke."

The 3-day event also featured Dr. Larry Brant, GRC/NIA who described the customs and living conditions of Alaska's Indian and Eskimo populations.

Native dancers in feathers, beads, and buckskins were joined by enthusiastic GRC employees to close the celebration. □

Bone Marrow Donators Needed For Drug Metabolism Studies

The Clinical Pharmacology Branch of NCI is seeking normal volunteers willing to donate single bone marrow aspirates for use in drug metabolism studies. Volunteers will be paid \$75. For details contact Dr. Gregory Curt, 496-4522. □

NHLBI Sets Workshop On Heart Arrhythmias

A scientific workshop on electrical control of tachyarrhythmias by implantable devices will be held at the NIH Lister Hill National Center for Biomedical Communications, Sept. 1-2. It is being sponsored by the Devices and Technology Branch of the NHLBI.

Battery-powered devices can be used in humans to correct overly fast heartbeats by administering a mild electric shock. These devices can be implanted without major surgery. They can save lives of patients with a high likelihood of sudden arrhythmic death, a disorder of 300,000 persons in the U.S.

The workshop will explore the current state of the art, identify gap areas in research and provide direction to the commercial companies developing and marketing these devices.

Sessions will focus on five major topics: Pathophysiology of cardiac arrhythmia; current clinical management techniques; current status of electrical control of tachyarrhythmia; safety of clinical procedures and devices, and clinical needs and research opportunities.

Chairing the five conference sessions are Drs. Arthur Moss, University of Rochester Medical Center; Michael Bilitch, University of Southern California School of Medicine; Nanette Wenger, Emory University School of Medicine; Robert Myerberg, University of Miami and Stanley Biller, University of Pittsburgh. The overall chairman of the workshop are Dr. William Hood, University of Rochester and Dr. Briller.

Advance registration is required. Further information is available from Dr. Watson: (301) 496-1586, NHLBI, Federal Bldg., Rm. 312, Bethesda, MD 20205. □

NIH Daycare Center Receives \$750 Donation

The Parents of Preschoolers, Inc., daycare center for children of NIH employees, has received a \$750 check to help the center's scholarship fund.

The check was a gift from Time-Life Books, Inc. in appreciation of the research assistance by the NIH information community over the past years for Time-Life's medical publications. □

Visiting Scientists Program Participants

6/13 **Dr. Andres Negro-Vilar**, Argentina. Sponsor: Dr. Robert L. Dixon, Lab. of Reproductive and Developmental Toxicology, NIEHS, Research Triangle Park, N.C.

6/13 **Dr. Eduardo J. Spinedi**, Argentina. Sponsor: Dr. Michael Blaese, Metabolism Branch, NCI, Bg. 10, Rm. 4N108.

6/20 **Dr. Akihiro Yachie**, Japan. Sponsor: Dr. R. Michael Blaese, Metabolism Branch, NCI, Bg. 10, Rm. 4N108.

6/22 **Dr. Yoh-ichiroh Ohno**, Japan. Sponsor: Dr. John I. Gallin, Laboratory of Clinical Investigation, NIAID, Bg. 10, Rm. 11N114.

6/26 **Dr. Tommaso Costa**, Italy. Sponsor: Dr. David Rodbard, Endocrinology and Reproduction Research Branch, NICHD, Bg. 10, Rm. 8C312.

6/26 **Dr. Takeshi Sakiyama**, Japan. Sponsor: Dr.



The National Institute on Aging held its second annual awards ceremony June 28 in Wilson Hall. A number of Institute staff received awards for their outstanding contributions to the Institute during the previous year. During the ceremony, Dr. James B. Wyngaarden, NIH Director, presented a special award to Dr. Robert L. Ringler, Acting Director, NIA, (r) in recognition of his many achievements at NIA and NIH. Other awardees not pictured: NIH Merit Awards—Pamela W. Jones, Dr. Richard L. Sprott, and Mary J. Wendehack. Group Awards—Biomedical Research and Clinical Medicine, and Grants Management Office.

New Brochure on NIA Available

National Institute on Aging, a newly revised brochure describing the Institute and its functions, is now available.

The brochure outlines NIA's extensive research activities on the biomedical, behavioral and social aspects of the aging process, the diseases of aging and other concerns of the elderly.

It also highlights the various NIA intramural and extramural programs, and summarizes findings reported by Institute scientists and researchers receiving grant support.

The brochure also focuses on the Institute's efforts to stimulate specialized training in geriatric medicine through the development of medical school curricula. Other sections review the significant events in the Institute's history and provide information on the Federal advisory groups involved with aging.

Copies of *National Institute on Aging* are available free from Expand Associates/NB, 8630 Fenton St., Suite 508, Silver Spring, MD 20910. □

Janice Chou, Neonatal and Pediatric Medicine Branch, NICHD, Bg. 6, Rm. 128.

6/26 **Dr. Marina Bojanovski**, Fed. Rep. of Germany. Sponsor: Dr. H. Bryan Brewer, Molecular Disease Branch, NHLBI, Bg. 10, Rm. 7N117.

6/26 **Dr. Juan C. Monge**, Costa Rica. Sponsor: Dr. Harry Heiser, Office of the Director, NHLBI Bg. 10, Rm. 8C103.

6/27 **Dr. Janendra Batra**, India. Sponsor: Dr. Ernest Hamil, Laboratory of Medicinal Chemistry & Biology, NCI, Bg. 37, Rm. 5C02.

6/27 **Dr. Yogendra Singh**, India. Sponsor: Dr. Gopal Krishna, Laboratory of Chemical Pharmacology, NHLBI, Bg. 10, Rm. 8N107.

6/28 **Dr. Michael Thaler**, Israel. Sponsor: Dr. Philip Pizzo, Infectious Disease Program, NCI, Bg. 10, Rm. 13C101.

Two International Authorities Discuss Alzheimer's Disease

The causes of death of Alzheimer's disease patients was one of several major unanswered questions about the disease discussed by two international authorities on the ailment at a recent informal seminar hosted by the National Institute on Aging.

Drs. Klaus Bergmann of the Institute of Psychiatry at Maudsley Hospital in London and Franz Baro of the University Psychiatric Center at St. Kamillus in Bierback, Belgium joined about 20 NIA researchers and staff to discuss clinical and epidemiological aspects of Alzheimer's disease.

According to Dr. Bergmann, a decrease in the efficiency of the patient's immune system may lead to death.

But both Drs. Bergmann and Baro agreed that damage to subcortical neurons (for example, in the hypothalamus) may play an important role in the ultimate failure of the central nervous system.

Dr. Stanley Rapoport, chief of NIA Laboratory of Neurosciences, led the discussion.

Drs. Bergmann and Baro were in Washington to conclude a series of public lectures on the current state of knowledge and public policy on Alzheimer's disease.

The discussants also examined the role of diagnostic imaging techniques in evaluating Alzheimer's disease. NIA is one of several institutions currently studying the utility of CT (computed tomography) and PET (positron emission tomography) scans for screening and diagnosing dementias. At the present time, however, CT cannot identify Alzheimer's or other dementias in individual patients.

Dr. James Haxby of NIA's Laboratory of Neurosciences, suggested that clinically significant deficits in memory or other cognitive functions may precede the changes observed on PET scans.

All the participants agreed that autopsy is the only way to confirm the diagnosis of Alzheimer's disease and to fully understand the findings of clinical studies.

Both Drs. Bergmann and Baro stressed that the disability of Alzheimer's disease results from a combination of medical, familial, social and economic factors. They went on to say that research should pay greater attention to such things as family and social supports which may affect the patient's prognosis and survival.

Drs. Bergmann and Baro's lecture tour is the first of three to be sponsored in part by the University of Michigan's Institute on Gerontology and the Veterans' Administration's Office of Geriatrics and Extended Care. □

Judo Demonstration Set for August 17

A free Judo Demonstration by the NIH Judo Club will be held from noon until 1 p.m., Wednesday, Aug. 17, in the Clinical Center's Masur Auditorium. Dr. Thomas E. Malone, NIH Deputy Director, will head the demonstration team. □

To be good is noble; but to show others how to be good is nobler—and no trouble.—Mark Twain □

has been relatively overlooked" in earlier studies of this disorder.

"It is reasonable to say that many of the major symptoms of Alzheimer's reflect dysfunction in the parietotemporal region," Dr. Chase stated.

Stroke is being understood in new ways because of information gathered through PET scanning. Speaking for the PET research team at Massachusetts General Hospital in Boston, Dr. Robert Ackerman described an important pattern seen in some stroke patients whose CT scan was normal and whose blood flow to the brain area affected by the stroke was also relatively normal on the second or third post-stroke day.

The amount of oxygen being utilized, however, was very low. A CT scan taken a few months later showed that the tissue in the affected part of the brain had died, Dr. Ackerman reported.

This observation contradicts previous dogma that blood flow primarily dictates the outcome in stroke. The new theory suggests that tissue metabolism is more important than blood flow to the prognosis of stroke patients.

Dr. Ackerman noted that this new insight would only have come from PET studies: "No previous technique has been able to show us this, since blood flow is not always the important information," and only PET can show both blood flow and metabolism.

Dr. Marcus E. Raichle of Washington University School of Medicine described how PET's ability to measure both blood flow and tissue metabolism is helping physicians evaluate cerebral bypass surgery.

This surgery is designed to increase blood flow to the affected area of the brain, on the assumption that neurological problems in stroke victims simply result from inadequate blood supply.

But, Dr. Raichle and his colleagues found, among 17 patients studied both before and after reconstructive vascular surgery, "only six patients showed the expected and desired changes in blood flow and metabolism."

These six patients had an increase in blood flow and a decrease in a measurement called the oxygen extraction ratio, which is the fraction of the total oxygen in the blood that is taken out by the brain tissue.

When the oxygen extraction ratio is very high, as it often is after a stroke, the brain has less leeway to increase its oxygen metabolism in response to a stimulus such as the need for intense thought or heightened activity.

In the six patients where surgery reduced the oxygen extraction ratio, there is presumably a decreased chance of brain damage leading to loss of speech or muscle functions. But in the other 11, it is possible that the bypass operation didn't help.

All patients who benefited from bypass surgery had had small strokes but no residual neurological symptoms. Dr. Raichle and his colleagues are following these six patients with PET scans and studying other patients to see if they can predict who will benefit from the bypass.

Given such ability, physicians could apply the surgical procedure more efficiently, and investigators could focus their efforts on developing new treatments for patients unlikely to benefit from bypass.

Tumor Malignancy and Glucose Use

Dr. Giovanni Di Chiro of the NINCDS Neuroradiology and Computer Tomography Section presented the results of his team's 3-year experience with tumors of the central nervous system.

Confirming for the first time in the living human being, the theory advanced by Warburg more than 50 years ago, the NINCDS workers have shown a strong correlation between the malignancy of tumors and their rate of glucose utilization.

A practical application of this observation, Dr. Di Chiro suggested, is that a scientist can accurately establish how malignant a brain tumor is with this method.

The NINCDS investigators have also been able to recognize very early the transformation of a benign tumor into a malignant one. The implications of this method for the proper therapeutic management of brain tumors are far-reaching, Dr. Di Chiro said.

What Happens During a Seizure?

PET scanning is also shedding light on changes in the brains of persons with epileptic seizures.

Dr. Jerome Engel reported the UCLA research team's observations on metabolism in patients with focal seizures. In such cases, the cause of the epilepsy is localized to a specific part of the brain, and surgical removal often controls the seizures.

Among more than 100 such patients studied with PET so far at UCLA, more than 70 percent have shown a region of decreased metabolism on PET. The area of abnormal metabolism revealed by PET agreed in most cases with the area of abnormal electrical activity defined by EEG (electroencephalogram).

These findings have been reproduced by NINCDS scientists, reported Dr. William H. Theodore of the NINCDS Clinical Epilepsy Section. He raised the possibility that "PET may obviate the need for invasive EEG studies in some patients."

The UCLA group has also found intriguing information about the brain during seizures: in patients studied with PET during a seizure, the epileptic focus increased its activity.

Drugs that were effective in controlling seizures returned this hypermetabolism to normal. Further research along these lines may help guide therapy or even illuminate the cause of the altered brain metabolism in epilepsy patients.

The proceedings of the PET conference will be published as a supplement to *Annals of Neurology*. □

Stop Smoking Program Offered

The Employee Assistance Program of the Occupational Medical Service will present a 6-week Stop Smoking Program beginning Sept. 7.

The program, to be held on Wednesdays from noon to 1 p.m., in Bldg. 31, Rm. B3B57, is designed to help the smoker cut down gradually. To register, call Morris Schapiro, 496-3164. □

Dr. Gerald M. Shean Dies; Active in NIH and Community

Dr. Gerald M. Shean, Jr., executive secretary in the Review Branch, Division of Extramural Activities, NIADDK, died July 5 of cardiac arrest. He had spent the last 25 years of his career working for the Institute.



Dr. Shean

Prior to his career at NIH, Dr. Shean served with the U.S. Navy. He also held positions of high school teacher, superintendent of schools in Shumut, Mont., and petroleum geologist on wild-cat oil wells with Core Laboratories, Inc.

From 1958 to 1980, Dr. Shean worked as a research chemist in the molecular biophysics section, Laboratory of Chemical Physics.

There he collaborated with Dr. Karl Sollner, scientist emeritus, on artificial porous and liquid membranes and their use in complex membrane systems and models.

In 1980 he transferred to extramural programs as a health scientist administrator, where he was responsible for organizing and conducting initial scientific merit reviews of research training and project grant proposals.

Dr. Shean received a B.A. degree in botany from Carleton College, Northfield, Minn. and a Ph.D. in plant physiology from Missouri University, Columbia, Mo.

In addition to his scientific endeavors, Dr. Shean took an active part in other facets of NIH life. He served 2-year terms each as an EEO counselor on the NIH EEO Advisory Council, and as NIH R&W vice-president. He participated in several athletic activities, and was in the NIH Well Health Program.

A man of many talents and interests, Dr. Shean took an active role in community affairs. His diverse activities included bee-keeping (he maintained seven hives in his backyard). As a member of the Maryland Beekeepers Association he was called on several times to collect swarming bees from the yards of Montgomery County residents. Active in politics, Dr. Shean helped organize and establish Nonpartisans for a Better Montgomery County. He was a Boy Scout leader, and active in homeowner issues in his community.

An accomplished actor and singer, Dr. Shean was a member of the original NIH Hamsters, and participated in Rockville Little Theater and the Montgomery and Glenmont Players.

Dr. Shean was a warm individual with a ready smile and easy conversation. His long-time friend Dr. Harry Saroff characterized him as a "pleasant person, full of vitality and humor, whose company was always enjoyable."

Dr. Shean is survived by his children, Michelle, Holly Akenson, Bonnie, Valery, Deirdre, and Gerald M. Shean III.

Biofeedback, Relaxation Can Help Control High Blood Pressure

By Esther Solomon

High blood pressure or hypertension, is sometimes called the "silent killer" because it often produces no symptoms. When blood pressure stays high, it can create a strain on the heart and blood vessels, and can lead to stroke, heart disease and kidney failure.

Hypertension affects about 60 million people in the United States. In many cases, hypertension is controlled with drugs, usually continued for life to keep blood pressure at safe levels. These medicines can also cause unwanted side effects.



Patients who measured their own blood pressures daily achieved reductions in blood pressures. Relaxation training and biofeedback lowered blood pressures further.

Scientists at the Gerontology Research Center in Baltimore, part of the National Institute on Aging, are showing that behavioral training can be one alternative to drug use for some patients with borderline hypertension.

Drs. Bernard Engel, Michael Glasgow, and Kenneth Gaarder tested three behavioral techniques: daily self-monitoring of blood pressure, biofeedback (a process in which patients use monitoring devices to get signals or feedback on specific body functions—in this case, blood pressure sounds in the arteries) and relaxation training.

In this study, patients who measured their own blood pressures daily and reviewed the results once a month with a health professional, achieved reductions in blood pressures. Relaxation training and biofeedback lowered blood pressures further.

Blood pressure readings for adults depend on many factors, including age, sex, race, whether the patient is standing or reclining during testing and the level of activity before measurement.

A typical normal reading in an average healthy adult as recorded in a doctor's office is about 120 millimeters of mercury of systolic pressure (the force of the heart-beat pushing blood into the vessels) and 80 millimeters of mercury of diastolic pressure (when the heart is at rest between beats).

The NIA study began with 127 volunteers whose average diastolic blood pressures in the doctors' offices were at least 90 mm Hg.

Investigators first tested the feasibility of having these people monitor their own blood pressures.

The volunteers learned to use sphygmomanometers and monitored their own blood pressures 3 times a day for 1 month. Once a week, their blood pressures were measured by a health professional. At the end of the month, each patient reviewed the measurements with one of the investigators.

About half of the patients were receiving no antihypertensive drugs and half were taking diuretics (medications that remove salt from the body and help reduce blood pressure).

This stage of the study showed that patients could successfully monitor their own blood pressures and report the results. In addition, these patients achieved significant reductions in blood pressures.

Patients who completed the initial study were assigned to groups for biofeedback or relaxation training or to a control group which continued self-monitoring.

Those using biofeedback and relaxation took their pressures before and after practicing the techniques. After 3 months, half of the patients in each training group learned to use the other technique. Patients practicing biofeedback learned to initiate and keep the cuff of the sphygmomanometer at about systolic pressure while listening to and trying to inhibit artery sounds.

When they succeeded in reducing systolic pressure, the sounds disappeared. They practiced this technique several times daily, especially at the times of day when previous measurements had shown their pressures to be highest, which was generally in the afternoons.

Later they learned to recognize body sensations that resulted in lower systolic blood pressure. Eventually they practiced biofeedback without the sphygmomanometer to lower their blood pressures at convenient times, such as during work breaks, while waiting at traffic signals, or standing in line at a store.

Patients using relaxation techniques learned to identify and relax specific muscle groups especially tense. This allows blood to flow more freely through the tissues. They also used these techniques when their pressures were likely to be highest.

Eventually they learned to recognize feelings of relaxation which successfully lowered blood pressure and to practice these techniques at convenient times.

Both the biofeedback and relaxation techniques lowered blood pressures significantly as the patients developed their skills. A combination of biofeedback and then relaxation was better than either method used alone.

Improvements were noted in patients using diuretics as well as those taking no medications; however, the techniques were most effective for those not on antihypertensive medication.

Followup studies showed that these reductions in blood pressure could be maintained for at least 18 months. About one-third of the patients receiving diuretic therapy were asked by physicians to discontinue the medication. They were able to

keep their blood pressures down to safe levels throughout a 9-month followup period with no medications.

Having shown behavioral methods to be successful with borderline hypertension, the scientists are testing the effectiveness of these techniques on persons who have more severe high blood pressure.

Dr. Engel advises people who might be interested in trying these methods to consult a doctor. "Although these are self-administered techniques, they must be learned from properly trained professionals and the patients should be under professional supervision," Dr. Engel said. "No one should discontinue medication without consulting his or her doctor."

The Biofeedback Society of America keeps a list of clinicians who use behavioral techniques to control hypertension and other conditions in their patients. To obtain the names of clinicians in specific areas of the country or for further information about biofeedback, contact the Biofeedback Society of America, 4301 Owens St., Wheat Ridge, CO 80033. □

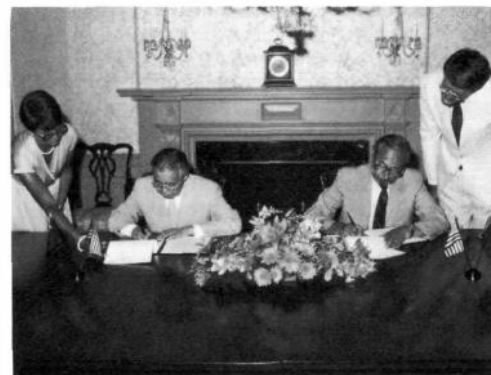
Koch Institute Seeks Director; Americans May Be Eligible

The famed Koch Institute in West Berlin is looking for a new director and says that Americans with sufficient command of German may apply.

The Institute, which operates under the Federal Republic's Health Office, is concerned with the diagnosis, prevention and control of communicable diseases in man.

An applicant for the director's post must be a physician (male or female) with above average scientific qualifications in bacteriology, virology or immunology as attested by scientific publications.

And he or she should have held a key medical administrative post in the past and have shown skill in negotiation and administration. □



Dr. Murray Goldstein, NINCDS Director (second from r), and Dr. Chang Hsiang Tung, Director of Shanghai Brain Research Institute (second from l), recently signed an agreement for research cooperation at Stone House during a ceremony arranged by the Fogarty International Center. Dr. Chang is currently a Fogarty Scholar. This agreement comes under the NIH-Chinese Academy of Sciences Agreement signed in Beijing in May by NIH Director James B. Wyngaarden. Also attending the signing were Dr. Phyllis Eveleth, FIC (l), and Dr. Philip Schambra, FIC (r).

Tardive Dyskinesia (Involuntary Twitchings): Definition, Cause and Cure Unsettled

Tardive dyskinesia is a condition manifested by involuntary, repetitive movements—most often of the tongue, mouth, and face, occasionally of other body parts.

It occurs in some individuals (estimates range from 5 to over 50 percent) who have been treated with neuroleptic drugs, a group of psychoactive medicines used to treat psychiatric and neurological disorders such as schizophrenia, mental retardation, autism, Tourette's syndrome, and Huntington's disease.

Dyskinesias can also be caused by illness, brain damage, and other neurological conditions.

Videotapes of developmentally disabled youngsters were shown recently to National Institute of Mental Health scientists by Dr. Thomas Gualtieri, University of North Carolina School of Medicine, who asked the meeting participants to diagnose the youngsters' conditions without knowledge of their histories.

Dr. Gualtieri conceded the cases were particularly difficult in terms of differentiating movements caused by tardive dyskinesia from movements associated with other disorders.

Discussion following the tape's showing centered on problems that clinicians face in treating psychiatric and developmentally disabled patients.

One such problem is the double-edged action of the drugs themselves. While neuroleptic drugs can cause dyskinesia, they can also ameliorate both drug and nondrug-related dyskinesias in many patients, which can lead to a vicious cycle. Dyskinesia is treated with a neuroleptic, which suppresses it for a time, but with continued dosage causes the reappearance of dyskinesia.

The patient is then treated with increased doses of another neuroleptic, which results in a replay of the suppression and ultimate reappearance pattern.

Nevertheless, neuroleptics remain the treatment of choice for schizophrenia. They diminish hallucinations, delusions, and bizarre behaviors, freeing many patients from institutions. For the developmentally disabled, neuroleptics may control self-destructive and aggressive behaviors as well as stereotypies (repetitive, compulsive movements).

Many techniques are available to help trained observers monitor movements associated with tardive dyskinesia. One developed by NIMH scientists called the Abnormal Involuntary Movements Scale (AIMS) was discussed by Dr. Nina Schooler of NIMH's Pharmacologic and Somatic Treatments Research Branch.

She noted that systematic examination procedures and standardized rating scales are prerequisites to diagnosing tardive dyskinesia. A onetime observation can, at best, identify a "presumable" dyskinesia.

According to the Research Diagnoses for Tardive Dyskinesia (RD-TD) developed by Drs. Schooler and John Kane, Long Island Jewish Hillside Hospital, an AIMS rating of

mild abnormal involuntary movements in two body parts or moderate movements in one body part is a criterion for diagnosing dyskinesia.

Drs. Jonathan Cole, McLean Hospital, Boston, and James Smith, Hudson River Psychiatric Center, Poughkeepsie, N.Y., both used AIMS to study psychiatric populations. They found no clear pattern for either onset of tardive dyskinesia or remission following drug withdrawal.

Dr. Smith found females had more severe forms of the disorder, and that age affects its persistence. Older, chronic schizophrenics show no improvement even after 3 years off medications, he said.

In contrast, Dr. Stephen Bruening, Western Psychiatric Institute and Clinic, reported that among the developmentally disabled, many individuals withdrawn from drugs show major improvements after 4 months.

Initially following drug withdrawal, abnormal movements and behavioral problems occurred in 34 percent of the study population. The prevalence of moderate to severe symptoms increased during the first 4 weeks, then diminished, dropping dramatically by 15 or 16 weeks.

Dr. Kane, who conducted the first prospective study of tardive dyskinesia in 800 patients with all types of psychiatric diagnoses, said he did not see the same dramatic increase in symptoms following drug withdrawal in the mentally ill population that Dr. Bruening reported in the developmentally disabled.

Dr. Cole pointed out that biological variability in patients appears to play an important role in vulnerability to tardive dyskinesia. Some patients get tardive dyskinesia after very short exposure to drugs, he noted.

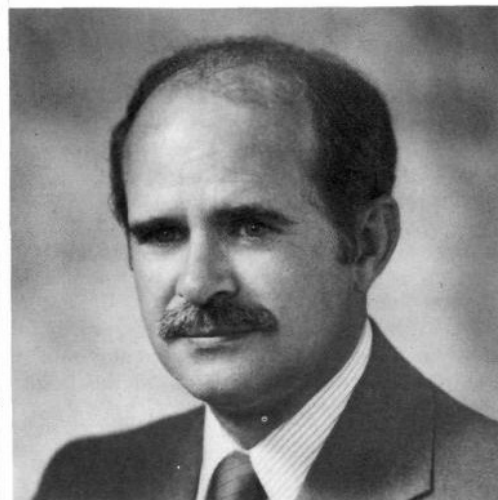
In summarizing the 2-day meeting, Dr. Arnold Friedhoff, Millhouser Laboratories, NYU School of Medicine, pointed out that the definition of tardive dyskinesia may need revision because drugs other than neuroleptics have been found to cause similar movements. Also, the variety of dyskinesias—withdrawal, illness-related—make it a confusing term.

When discussing future research needs, Dr. Friedhoff suggested more studies on specific factors placing individuals at risk for tardive dyskinesia.

Women and older people appear to be particularly vulnerable and there is evidence associating duration and dosage of medication with severity, but there are enough differences in outcome to warrant more studies, he said.

A major concern of the scientists was the need to educate clinicians and superintendents of institutions—particularly for the developmentally disabled—about appropriate use of medication and behavioral procedures to cut back both the number of those treated with drugs and dosages used to treat them.

For further information, contact Dr. Schooler or Natalie Reatig, PSTRB, 5600 Fishers Lane, Rm. 10C06, Rockville, MD 20857.—**Marilyn Sargent** □



John Campbell recently joined NCI as the chief of the Research Contracts Branch, Office of Administrative Management. He comes to the Institute from the National Institute of Drug Abuse (NIDA), where he was chief of the Contracts Management Branch. Mr. Campbell graduated from the University of Tennessee in 1965 with a B.S. in business administration and joined NCI in 1973 as a contracts specialist in the newly established Cancer Control Program. He later joined NIDA in 1978.

Two R&W Golf Groups Plan 'Shotgun Start' Outing

Members and invited guests of the NIH Golf Association (NIHGA) and the NIH Golf League (NIHGL) are planning a joint "Shotgun Start" golf outing at the Montgomery Country Club in Laytonsville, Md. on Monday, Aug. 29, 1983.

The start is set for 1 p.m. In a shotgun start, a golf foursome tees off on each of the 18 holes of the golf course at the same time. As a result, at least 72 golfers commence play almost simultaneously. Additional foursomes are set to tee off immediately after the starting foursomes until all participants are off on their 18 hole round of golf.

NIH employees who are not members of either league but wish to play should make arrangements through a League member or contact Ben Fulton (NIHGA) or Lynn Mueller (NIHGL). The only requirement is that a player have an established golf handicap which can be verified by a League member.

Costs for the outing will be \$15 per person including greens fee and cart. □

Interested in Volunteering?

The Volunteer Clearinghouses of the Metropolitan Area help individuals or groups interested in volunteer work find the best place in the community to share their time and talents.

Volunteers are needed in health, research, computer science, medical, education, arts/culture, counseling/guidance, recreation, public relations, environmental, and administrative/clerical programs.

The Volunteer Program is being coordinated by the NIH Recruitment and Employee Benefits Branch, Division of Personnel Management, Bldg. 31, Rm. B3C03, 496-5979. □

Dr. Metzger Named NIADDK Branch Chief

Dr. Henry Metzger was recently appointed chief of the Arthritis and Rheumatism Branch, NIADDK. He succeeds Dr. John Decker who, after 18 years as chief of that branch, resigned to assume new duties as Director of the Warren Grant Magnuson Clinical Center.

Prior to his appointment, Dr. Metzger served as chief, section on chemical immunology in the branch, a position he has held since 1973. His research interests have



Dr. Metzger

focused on the nature and effect of antibodies. Related to inflammation, the work of Dr. Metzger and his colleagues has broad applicability in biology, specifically in understanding the immune system.

His recent studies have focused on how antibody activates the release of inflammatory substances from cells. In reactions mediated by antigen-antibody complexes, it is necessary for antibodies to aggregate or clump together for biological action. Usually the antibodies that clump together are attached to the cell surface by receptors.

When an antigen attaches to the antibody on the cell surface, a chemical change occurs. This change is a message to the cell that an antigen is present.

Dr. Metzger is attempting to describe one such receptor—the receptor for the IgE (one type of immunoglobulin) antibody—by biochemical means. Once the structure and function of the receptor is known, it may give a clue to how the subsequent biological events can be identified.

Dr. Metzger was born in Mainz, Germany, emigrated to the United States in 1938, and became a citizen in 1945. He earned an A.B. degree from the University of Rochester in 1953, and an M.D. degree from Columbia University in 1957.

His internship and residency were served at Columbia-Presbyterian Medical Center in New York. He came to the NIH and the NIADDK in 1959, and with the exception of a 2-year fellowship at the University of California, San Diego, has remained with the Institute. □

NIH Employee Named Winner Of Shriner Scholarship Pageant

Paula C. Chandler, 21, an employee at the NIH Division of Research Services, Bldg. 13, was selected as first place winner of the Beauty/Talent Scholarship Pageant held by the Mecca Temple No. 10, Ancient Egyptian Order of the Mystic Shrine in Washington, D.C., recently.

Paula will represent the local Temple at the National Shrine Convention in St. Louis, Mo. the week of Aug. 15.

James W. Garrison, the Illustrious Potentate of Mecca Temple No. 10, an employee of NIH LBV in Bldg. 5, presented the award.

Should Paula win at the National Convention, she will receive an additional scholarship and represent Shriners worldwide for 1983/84. □

God made the country, man the town.—
William Cowper □

Fitness and Sports Medicine To Be Discussed at Symposium

The 1983 White House Symposium on Physical Fitness and Sports Medicine will be held Nov. 16-17 at the Mayflower Hotel in Washington, D.C. More than 600 health and fitness professionals are expected to attend this symposium on muscle strength, endurance development and maintenance.

Medical, research and program specialists will present current research and participate in panel discussions and demonstrations on muscle physiology and anatomy, the research basis for muscular strength and endurance in physical fitness, sports performance, work, health, and rehabilitation; and program applications of scientific principles.

Sponsors of the symposium are the President's Council on Physical Fitness and Sports, Department of Health and Human Services, American College of Sports Medicine, American Medical Association.

Also American Orthopedic Society for Sports Medicine, National Athletic Trainers Association, National Fitness Foundation, National Strength and Conditioning Association, and the U.S. Olympic Committee's Sports Medicine Council.

The Campbell Soup Company will be the primary corporate sponsor, and more than 20 additional medical and sports organizations will support the symposium as cooperating agencies.

Registration fees are: physicians, \$175; other professionals, \$90; full-time college or university students, \$35. For additional information and registration forms, contact the Office of Sports Medicine, President's Council on Physical Fitness and Sports, 450 Fifth St., N.W., Washington, D. C. 20001, or call (202) 272-3424. □

NOTE

The telephone number for the Division of Safety is 496-1985 for copies of the Air Quality Index Article. □

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