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Senator Bond

Julian Bond Main Speaker At Program to Honor Dr. King

The 13th Annual Commemorative Program for Dr. Martin Luther King Jr. will be held Jan. 18, in the Masur Auditorium at noon, with Georgia State Senator Julian Bond as the principal speaker.

Senator Bond has long been in the forefront in the fight for Civil Rights. He is a spokesman for politics at the human level, carried out for human ideals and concerns, not just for the politicians and power blocs.

For further information, call O. H. Laster, 496-6504. □

NICHD Starts Collaborative Study to Reduce Mental Retardation in Children of PKU Mothers

By Tineke Boddé

Four clinical centers across the United States have launched a 7-year research project designed to reduce the high rate of mental retardation and congenital defects in offspring of mothers with controlled phenylketonuria (PKU).

Dr. Mortimer B. Lipsett, Director of the National Institute of Child Health and Human Development, announced that a pilot study will start soon and that large-scale patient recruitment is expected to begin in late 1984 or early 1985.

PKU is an inborn error of metabolism in which the individual is unable to convert phenylalanine, a naturally occurring amino acid which is essential for normal growths,

NINCDS Scientists Study Parkinsonism: How to Reverse and Possibly Prevent It

Neuroscientists at the National Institute of Neurological and Communicative Disorders and Stroke are studying Parkinson's disease with the hope of halting or reversing its severe and crippling defects.

Dr. Irwin J. Kopin, director of the Intramural Research Program at NINCDS described some of these scientists' efforts in a recent "Medicine for the Layman" lecture.

He noted the use of chemical tests, therapeutic trials and a recently discovered toxin which produces an animal model for studying the diseases in humans. Work on how to replace the neurotransmitters, the decline of which apparently produces the brain degeneration, and tremors which characterize the ailment are also underway, he said.

Other facts noted by Dr. Kopin:

Parkinson's disease, a chronic, progressive disorder of the central nervous system, attacks approximately 1 in every 100 Americans over the age of 60. A disease of later life, it can lead to severe and disabling symptoms, many of which can often be reversed with appropriate treatment. The disease affects the brain centers which control and regulate movement, but the intellect is usually left unimpaired.

The condition was first described in 1817 by the London physician James Parkinson who had the disease himself. He was the first to distinguish between the tremor of Parkinson's disease and other tremors. His "Essay on the Shaking Palsy" is regarded by neurologists as one of the classic monographs describing Parkinson's disease.

Cause Unknown

What causes Parkinson's disease is not known, but some cases are believed to follow a viral infection. Many cases appeared 25 to 30 years after the 1919-1924 epidemic of viral encephalitis.

Parkinsonism also sometimes follows exposure to certain toxins. Manganese miners in Peru have developed the disease and other cases have followed exposure to carbon monoxide poisoning. The process of how the brain is damaged, however, remains a mystery.

In the 1950s, it was discovered that parkinsonian symptoms appeared in mentally ill patients after treatment with antipsychotic drugs. The symptoms usually disappeared after the drugs were withdrawn. This evidence supported the theory that a chemical change in the brain could be associated with Parkinson's disease.

Based on studies of autopsied brains of deceased Parkinson's disease patients, scientists found that certain pigmented nerve cells in the brain stem were damaged. It is believed that fiber tracts from this area—the substantia nigra—are involved in regulating the basal ganglia which control voluntary movements.

Shortage of Dopamine

Studies by Dr. Oleg Hornykiewicz of Vienna in the 1960s showed a marked reduction of dopamine in the basal ganglia. Dopamine is a neurotransmitter necessary for transmitting

(See PARKINSONISM, Page 11)

into tyrosine. PKU affects 1 in every 14,000 births—or five newborns a week—in the United States. Since the early 1960s, neonatal screening programs have been successful in identifying most infants with PKU within a few weeks of birth.

Initiation of a low phenylalanine diet soon after birth has prevented thousands of infants from developing the severe intellectual and neurological handicaps characteristic of untreated PKU. Ironically, these advances in early diagnosis and treatment of PKU have created new challenges. "In the past, almost all phenylketonuric women of childbearing age were mentally retarded and had few, if any, children," said Dr. Felix F. de la Cruz who is the NICHD project officer for this

(See PKU, Page 10)



Principal investigator Dr. Richard Koch, of the University of Southern California School of Medicine, discusses PKU protocol with his staff (l to r): Eva G. Friedman, Priscilla Shannon, Rita Kelly, and Colleen Azen, M.S. of the Children's Hospital of Los Angeles, a USC affiliate.—Photo Courtesy of Children's Hospital of Los Angeles.

The NIH Record

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NIH Record Office

Bldg. 31, Room 2B-03, Phone 496-2125

Editor

Herschel Cribb

Staff Writers

Joyce F. McCarthy
Anne Barber

Editorial Assistant

Marilyn Berman

Staff Correspondents:

CC, Richard McManus; DCRT, Joan P. Sobel; DPM, Harry Marshall; DRG, Sue Meadows; DRR, Barbara Menick; DRS, Jim Doherty; FIC, Susan P. Stark; NCI, Patricia A. Newman; NEI, Marsha Corbett; NHLBI, Larry Blaser; NIA, Claire McCullough; NIAID, Jeanne Winnick; NIADDK, Barbara Weldon; NICHD, James Hadley; NIDR, Jody Dove; NIEHS, Hugh J. Lee; NIGMS, Wanda Wardell; NIMH, Harry Bell; NINCDS, Carol Rowan; NLM, Roger L. Gilkeson.

TRAINING TIPS

The following courses are sponsored by the Division of Personnel Management, Development and Training Operations Branch.

	Course Starts	Deadline
Administrative Systems (Call 496-6211)		
Basic Time & Attendance	2/14	1/31
Travel Orders & Vouchers	2/14	1/21
Delpro (for new users only)	2/4	1/21
Technical/Occupational Related Training (Call 496-6211)		
Career Development Workshop	2/26	2/5
Computer Literacy	2/19	2/7
Programs (Call 496-6211)		
Adult Education Program		
Training and Development Services Program		
Executive, Management and Supervisory		
Managing for Productive Work Relationships	2/6	1/20
Understanding and Managing Stress	2/27	2/8
Introduction to Supervision	1/28	1/15

Blood Donors Needed

January is National Blood Donor Month. On behalf of the Clinical Center patients and their families, the Department of Transfusion Medicine would like to take this opportunity to thank those who have participated in the volunteer blood donor program at NIH.

The demand for blood and blood components is increasing daily. The weeks following the holidays are notorious for critical blood shortages.

"We solicit the support of all NIH employees in meeting our needs," said a spokesman for the department. "And we appreciate your continued support of the blood donor program. Touch a life—give blood." □



To promote acceptance and understanding of handicapped children, the Audiovisual Branch, OD, in cooperation with NICHD, has written and produced two national television public service announcements titled, "Different But the Same." The spots feature the internationally acclaimed puppet group, "Kids on the Block," who donated their performance. The public messages are scheduled on network and local TV. Presenting a special NIH Certificate of Appreciation to one of the stars, Mark Riley, and creator of the "Kids" group, Barbara Aiello (center) is l to r, Jerry Hecht and Gerri Blumberg of AV and Michaela Richardson, information officer, NICHD.

Women in Clinical Research Careers Subject of Recent NICHD Workshop

Women in medicine have come a long way since 1849 when the first woman graduated from a U.S. medical school. In 1983-84, more than 32 percent of entering medical students were women. But, despite the increase in the number of women entering medical schools, women have not kept pace with men in attaining medical school faculty and clinical research positions.

What are the barriers that deter women from such careers and what factors influence the success of a clinical researcher? These questions were the focus of the recent NICHD-sponsored workshop, "Clinical Research Careers for Women," convened by Dr. Mortimer B. Lipsett, Director of the Institute. Twenty-eight women, at various career stages ranging from senior medical student to associate professor, participated in the workshop along with representatives from NIH and the Association of American Medical Colleges.

The participants described the typical career progression of a research clinician, the disadvantages this career path holds for women, and recommended possible solutions to overcome the obstacles these women face.

The success of a clinical researcher is measured in large part by the number and quality of published research papers. This requires an intense work cycle after graduating from medical school, with the highest research productivity and grant support occurring during the first 15 years of independent research.

Although obvious problems exist for either sex in the demanding career of a clinical researcher, the problems are especially difficult for women. Women who combine a clinical

research career with household responsibilities and/or motherhood face an additional burden, not only because of these added personal responsibilities, but also because of the structure of the career ladder.

The present structure of the career ladder does not allow much flexibility for women to develop both a career and a family. The pressure to publish early in their career, combined with the limited number of childbearing years, puts women who want to have a family at a definite disadvantage.

Most postdoctoral fellowships and grants require full-time, continuous training that usually runs concurrently with a woman's childbearing years. More women would be interested in research careers if institutions offered part-time and time-sharing positions, according to workshop participants.

Redesigning fellowships and career development grants to allow for maternity leave could improve women's status in research positions. The participants recommended that NIH modify fellowships and grants by incorporating a 6-month maternity leave policy.

Because historically men have dominated the medical profession, they have developed a superior information network among colleagues at institutions nationwide. To assist women in developing a network about training and funding opportunities, the participants suggested that such workshops be an annual event. They also encouraged NIH to take a more active role through a central office in describing career development opportunities and research training and grants available to medical students and recent graduates interested in research careers. □

Dr. Teruzo Konishi, Dies; Acoustics Researcher

Dr. Teruzo Konishi, 64, a distinguished researcher on the functions of the inner ear, died of cancer Dec. 1, at his home in Raleigh, N.C.

Born in Nara-City, Japan, Dr. Konishi received both an M.D. degree and doctorate of medical science, a research degree, from Kyoto Prefectural University of Medicine in Kyoto, Japan.

Since 1973, he had been a research scientist at the National Institute of Environmental Health Sciences, where he did internationally recognized work on the physiological and biophysical functions of the inner ear and the effects of environmental factors such as noise and toxic drugs on hearing.

In 1984, Dr. Konishi received two major honors. He was named a fellow of the Acoustical Society of America in recognition of conspicuous service and notable contributions to the advancement of knowledge in the field of acoustics, and he was presented the Award of Merit by the Association for Research in Otolaryngology at the association's annual meeting in Florida.



Dr. Teruzo Konishi

Before joining NIEHS, Dr. Konishi served academic appointments at the University of Florida, the University of Chicago, and the Kyoto Prefectural Medical College. While at the University of Chicago, he was named a fellow of the China Medical Board.

Dr. Konishi became a U.S. citizen and had a long, productive career as a researcher in the United States. His research was distinctive for its elegance in method and for the meticulousness of his scientific papers, dozens of which appeared in eminent journals throughout his career. His colleagues knew him as an excellent research laboratory surgeon.

His colleagues remember him with great respect and affection. Dr. Colin Chignell, chief of the Laboratory of Molecular Biophysics, said: "Dr. Konishi was a well-respected scientist who was held in high regard by his peers both in the U.S. and abroad. He was nevertheless a very modest individual with a tendency to understatement, a virtue all too often lost these days."

Women lie about their age; men lie about their income.—William Feather

Julia Plomasen: 'The Greek Connection' For Greek Patients Who Come to NIH

Judging from outward appearances, there is nothing about Irene Kapetanakis to suggest that she has a life-threatening heart defect requiring rare surgery. The 11-year-old from the Greek island of Crete is shy, dark-haired and dark-eyed. She doesn't seem to have any business being in a hospital, let alone one thousands of miles from home.

But here she is, walking around on 2 West as if she is just one of the many international visitors whose loved ones are patients here. One would not guess that she is the patient, that correction of her heart problem lies beyond even the finely honed skills of NIH surgeons.

One of the reasons Irene appears so unperturbed can be traced not so much to the hope of treatment, which NIH physicians found for her at a hospital in Philadelphia, but to a woman named Julia Plomasen who for the past 14 years has introduced Greek patients to American medicine.

If a human face can be of therapeutic value, Mrs. Plomasen would belong at CC for that reason alone. She looks as though the weather of bad news has crossed the features of her face on many occasions. And as if her response to those storms were always warmth and endurance.

Her job here is to interpret the English language for Greek patients. For 6 years the native of Athens worked at the CC as a volunteer interpreter. Then the hospital offered her a salary for her work, which these days can stretch to 7 days a week.

Mrs. Plomasen acts as the hospital's ambassador to patients from Greece, many of whom have been referred here for heart problems.

The "Greek connection," as she calls it, started years ago when a prominent NIH heart surgeon became acquainted with a Greek physician named John Nihoyianopoulos. Many of John's patients had heart ailments of interest to American physicians, so he has referred them here over the years.

When the patients arrive in Bethesda, Mrs. Plomasen welcomes them to "Greek House," a home in Bethesda run by St. George's Greek Orthodox Church on Bradley Blvd.

"It has been open for many years," Mrs. Plomasen said. "It used to be located in an old building on church property. Then a new house was built by a man in the parish who is in real estate. The new house has three bedrooms, a fully equipped kitchen, and is almost always full."

The house accepts family members and escorts of Greek patients not only at NIH but at other area hospitals.

"The people who come are happy because they keep each other company," Mrs. Plomasen said. "It's a good atmosphere, which makes it easier to face the traumatic experience of hospitalization."

Irene Kapetanakis' father originally brought her to NIH and Greek House. Physicians in Greece had performed corrective surgery on her when she was 3. But a very unusual defect appeared later in life. Doctors in her homeland told the family that nothing could be done.

In stepped the Greek connection, who had the young lady referred here on Oct. 6. Dr. Richard Clark, NHLBI chief of cardiac surgery, examined her and determined that the surgery she needed could not be done here. The specialized surgery would have to be done by an outside expert.

Record Search

Physicians at NIH searched their records for a surgeon who could do the required work. They finally located the best doctor in the country for this kind of surgery in Philadelphia, at Children's Hospital.

On Sunday, Dec. 16, Mrs. Plomasen accompanied Irene to Philadelphia and had her admitted to the hospital for surgery. Also present was Irene's mother Zenia, who took her husband's place here when his leave ran out and he returned to Greece to work.

Mrs. Plomasen had gone so far as to contact members of the Greek community in Philadelphia to arrange for Mrs. Kapetanakis' lodging and comfort during her stay there. Mrs. Plomasen had to return to Bethesda, however, to work.

"I don't have to travel away from Bethesda often to do my job," Mrs. Plomasen said. "A few months ago I went to Cleveland with a patient who had anemia."

Mrs. Plomasen also picks up patients at the airport and takes them back when they are ready to depart for Greece.

"The whole Greek Orthodox community, of course, is with us, helping when they can," she said.

Every few years, Mrs. Plomasen gets an excellent opportunity to brush up on her Greek. She goes home to Athens and visits her mother.

Irene Kapetanakis underwent surgery on Dec. 18. She is in stable condition.—**Rich McManus**



The Clinical Center's Greek interpreter Julia Plomasen (left) meets with patient Irene Kapetanakis and her mother, Zenia. Mrs. Plomasen has helped Greek patients understand American medicine for the past 14 years while in the United States.

Money is like manure, of very little use except it be spread.—Francis Bacon

Innovative Analyzer Enables NIA Scientists To Accurately Measure Bone Loss in Aging

An innovative analyzer which more accurately investigates bone-mineral density and bone loss in the lumbar (lower-back)—an area highly susceptible to back pain, vertebral collapse and spinal fractures, especially among the elderly—is now being used by scientists at the National Institute on Aging's Gerontology Research Center in Baltimore.

Drs. Chris Plato and Jordan Tobin are using dual photon absorptiometry, a low-risk diagnostic technique, to study the aging skeletal system in healthy men and women.

Scientists have proved that a certain degree of bone loss or osteopenia, is common with advancing age. Men and women appear to lose bone at different rates. Experts are uncertain, however, as to what degree of bone loss must occur before the start of catastrophic and potentially disabling events such as total collapse, skeletal fracture, or the disease, osteoporosis.

GRC scientists have been compiling data critical to a better understanding of the aging skeletal system since the 1960s. Their early studies focused primarily on measurements of the second metacarpal bone in the hand.

Research on healthy men and women in the Baltimore Longitudinal Study of Aging (BLSA) has consistently shown that combined cortical thickness of the hand's second metacarpal bone gradually but progressively decreases starting at about age 40 for most persons.

These studies, as well as later ones conducted to measure bone density of the ulna and radius (other arm bones), were performed through simple hand X-rays, or single photon absorptiometry. "The hand filled in (during this period) as a good though not perfect model for estimating bone mineral content for the rest of the skeletal system," Dr. Plato says.

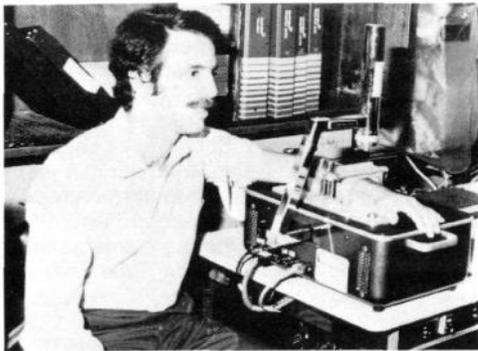
Dual photon absorptiometry allows direct measurement of vertebrae bone mineral density and bone loss in the axial skeleton, particularly in the areas between the first and fifth lumbar (lower spine) vertebrae.

These areas are prone to bone fractures over time especially among persons experiencing an accelerated rate of bone loss such as postmenopausal women and others at risk for osteoporosis and related conditions.

In the new procedure, the subject lies in a supine position with legs slanted upwards while a low beam of radiation scans the lumbar vertebrae. At the same time, the radiation produces two low-energy photons capable of measuring directly the bone mineral content through layers of soft tissue. The data is collected, analyzed, compared to normal controls, computerized, and then recorded.

Dr. Plato says that dual photon absorptiometry should yield vital information in an area not previously explored. While aging appears to be responsible for some of the changes in the skeletal system, GRC investigators feel genetic and environmental factors may play a role too.

"There are some things we definitely do know," Dr. Plato says. For example, both men and women lose cortical (long bone) and trabecular (flat) bone with advancing age. Also, postmenopausal women usually undergo accelerated cortical bone loss following meno-



Studies conducted at the NIA Gerontology Research Center using single photon absorptiometry show that certain skeletal changes do commonly take place with age. For instance, GRC studies demonstrate that combined cortical thickness of the second metacarpal bone in the hand gradually but progressively decreases from about age 40 on in most healthy persons.

pause, a decline that levels off after age 65 or 70.

Yet it's uncertain whether there's an accelerated loss of trabecular bone in postmenopausal women. This is one of the main objectives for using the dual photon scanner, Dr. Plato explains; to find out if accelerated trabecular bone loss does occur and if so why?

The scientists hope the machine will tell them more about the clinical manifestations of bone loss. They wish to identify those factors besides age that make some persons especially prone to osteoporosis and its end results such as hip fracture or vertebral collapse.

By working with this model for detecting bone loss the GRC researchers can relate their findings to other ongoing studies of the BLSA subjects—such variables as diet, exercise, smoking habits, caffeine intake and use of medications, especially steroid drugs which may promote accelerated bone loss.

In addition to examining the lumbar region the investigators hope to eventually use the dual photon scanner to make mineral analyses at the head of the femur (thigh) bone, another vulnerable area for skeletal fractures in the elderly.

Other advantages in using dual photon absorptiometry are the procedure is painfree, it takes only about 30 to 35 minutes and is diagnostically accurate, with only a two to three percent error rate. And most significantly the scanning device emits only a small amount of radiation or about the equivalent of a standard chest X-ray.

These facts and figures compare very favorably with other techniques used to assess bone density such as computerized tomography.

Since the GRC dual photon absorptiometry studies have only recently begun the findings are very preliminary. The investigators are currently performing meticulous measurements of spinal bone on as many as 8 to 10 BLSA volunteers each week.

Then Dr. Plato says perhaps more answers will surface regarding the aging skeletal system, allowing researchers and physicians to find better ways to treat the many bone diseases that often mar the quality and sometimes shorten the quantity of life for elderly men and women.—Jan Ehrman □

Four New Members Named To NIEHS Advisory Council

Appointment of four new members to the NIEHS' 15-member National Advisory Environmental Health Sciences Council has been announced by Dr. David P. Rall, Director of the National Institute of Environmental Health Sciences.

The appointees, who will serve 4-year terms, are:

- Dr. Robert J. Becker, president of a health care consulting firm headquartered in Joliet, Ill., which assists companies, insurance carriers, administrators, etc., in evaluating hospital utilization and other health care costs. Before starting the consulting firm, Dr. Becker practiced internal medicine for 26 years, specializing in allergy and clinical immunology.

Among many professional affiliations, he is a member of the Joint Council of Allergy and Immunology, a former president of its board of directors, and a current member of the board and executive vice president.

- Nadyne C. Bicknell serves as a city council member in Albuquerque, N. Mex., and since 1973 has been a member of that city's environmental planning commission. She is currently chairperson of the commission's environmental guidelines subcommittee, and a member of both the industrial development liaison and comprehensive plan subcommittees.

Active in the Albuquerque League of Women Voters, she was a member of the committee to write a citizens guide to local government. She earned a master's degree in guidance and counseling at University of Michigan, where she also did her undergraduate work in psychology.

Mrs. Bicknell served a previous term on the NIEHS Advisory Council, 1977 to 1980.

- Dr. John T. Hagenbucher has practiced medicine in Washington, D.C. since 1960, specializing in internal medicine and pulmonary disease. He serves as a consultant to the Pulmonary Function Laboratory at Doctors Hospital in Washington, is office practice preceptor for the George Washington University School of Medicine, and a consultant to the university's department of student health. He is also assistant clinical professor of medicine there. Dr. Hagenbucher received his M.D. at the George Washington University School of Medicine, and his bachelor of science from the Philadelphia College of Pharmacy and Science. He was decorated for his service as an Army doctor during the Korean War.

- Dr. Stephen H. Safe, who received his Ph.D. at Oxford University, England in 1965, is professor of veterinary physiology and pharmacology and a senior scientist at the Institute of Occupational and Environmental Medicine at Texas A & M University. His research interests are in the biochemical toxicology of pollutants and the mechanisms of toxicity. Among other honors, Dr. Safe held the Chester J. Reed Chair in Toxicology at Texas A & M in 1983. He is also partner and manager of an environmental consulting firm which has provided services to Federal and state government agencies as well as private firms. □

Dr. Paul Velletri Joins Grants Associates Training

Dr. Paul A. Velletri, a staff fellow since 1983 with the National Heart, Lung, and Blood Institute, has joined the Grants Associates Program for training as a health scientist administrator.

Dr. Velletri, a native Washingtonian, received his Ph.D. degree in pharmacology from the George Washington University in 1981. While attending George Washington, he received a teaching fellowship in pharma-



Dr. Velletri

colony and was awarded the Goddard Prize for Achievement in Pharmacology.

After receiving his Ph.D. degree, he became a national research service fellow in the laboratory of Dr. Walter Lovenberg, National Heart, Lung, and Blood Institute. In 1983, he became a NIH staff fellow.

He has published 25 articles and abstracts and is a member of the American Society for Pharmacology and Experimental Therapeutics and the New York Academy of Sciences.

Dr. Velletri's preceptor during his year of training as a grants associate will be Dr. Jim L. Shields, associate director for Review, Division of Extramural Affairs, National Heart, Lung, and Blood Institute. □

4 WD Vehicles and Volunteers Needed To Haul Crisis Personnel

Do you have a four-wheel drive vehicle, and would like to volunteer to help in transporting essential patient care personnel to and from local hospitals, including the NIH as well as the Montgomery County Dialysis Center?

If your answer to both questions is "yes," the Montgomery County Emergency Planning Office will gladly accept your offer. However, do not wait until the first storm is here to volunteer. It is necessary that they have your name and telephone number(s) in advance so that they can call you as soon as they need you.

They will also send you a letter explaining how the system works as well as how mileage and insurance are covered.

To volunteer, and for more information, call Debbie Hamilton at 251-2464. If you would rather consult the Division of Safety Emergency Preparedness Office before volunteering, call 496-1985. □

Oncogenes Don't Just 'Cause' Cancer; Perform Normal Functions as Well

(This brief overview on oncogenes was prepared for the Record by Dr. David Givol, Fogarty Scholar, following a recent international conference on the subject.)

Oncogenes are the active form of genes which have been implicated in causing some cancers, but otherwise have a normal function in cell growth and differentiation.

Paradoxically the study of oncogenes is becoming a major tool to learn about the normal cell. It appears that the difference between the normal cell and the cancer cell becomes very small and is more a matter of control of gene function rather than the function itself.

A large fraction of the cancer problem is a problem of somatic genetics, that is somatic (body) mutations (such as a change in gene structure) and selection and therefore, the study of genes is important. In the *ras* family, the transforming lesion is mainly due to point mutations which alter the protein sequence. In other oncogenes (for example, *myc*) the lesion is in the regulatory, nontranslatable region of the gene leading to deregulation of expression (production of proteins) while the protein structure is unchanged.

The more we learn about the normal function of various oncogenes, the better we are able to link their action to a regulatory cascade on the pathway of cell growth and response to growth stimuli. There are indications that the various proto-oncogenes form a network of control signals, regulating cell growth at different levels. As a result, there are multiple targets where gene alteration can lead to a malignant growth.

Cancer, as viewed from the oncogenes angle, is even more diseases than was previously apparent from pathological classification. Even a tumor of one sort may have a different set of activated oncogenes. For example, in various tumors of small cell lung carcinoma, one or another of three different *myc* genes is involved. Hence, from a viewpoint of basic research as well as clinical diagnosis, it is important to identify the possible oncogenes and to classify them in relation to their function in cell physiology.

Although the recent international confer-

ence dealt with basic mechanism of oncogenes functions—with the conference being held at NIH, one could not help but raise the question whether "molecular biology will be coming to the bed side." Of course, the general answer is that "with better understanding comes the knowledge how to act" but more specific directions were also pointed out by some of the speakers.

It is clear that the first impact will be in diagnosis. The use of new probes which are associated with particular chromosomal translocations will help in diagnosis of leukemias.

We are able today to classify tumors according to the oncogenes involved.

The malignancy of certain tumors like neuroblastomas or lung carcinoma was shown to progress with gene amplification. The diagnosis of the type and stage of the lesion in the cellular oncogene may be very important for directing the therapy. Understanding the pathways by which oncogenes function may also help to devise new methods of therapy.

Concerning *prevention* it is more clear today that mutagens (gene-altering substances) are carcinogens (cancer-causing substances).

Although this fact has been known for quite a while, today we know in some detail that oncogenes are the targets of mutations leading to cancer. It is a matter of public health to know where and how to limit exposure to mutagens.

Concerning *cure*, we are still far away and the question is whether our better understanding improves our wisdom in designing better drugs and better targeting. On the one hand, this goal seems to be more difficult since we learn how similar the cancer cell is to the normal cell. On the other hand, the new knowledge can direct our thinking about therapy.

Even this short discussion demonstrates that recent information from oncogenes research can be used for new thinking about cancer therapy. The distance between a scientific discovery and its application becomes shorter and with the rapid pace of molecular biology in basic research we should not be surprised if useful applications follow. □

NIH Surpasses CFC Goal

The NIH Combined Federal Campaign Coordinating Committee has announced that NIH employees have contributed over \$358,000 to the 1985 Combined Federal Campaign (CFC). The NIH 1985 goal of \$357,000 has been surpassed with 49.8 percent participation of employees. This total represents a 12 percent (\$38,000) increase over last year's contributions.

NIH employees have shown their concerns for the health and well-being of people in our communities and throughout the United States by their willingness to support the 1985 CFC.

As of Jan. 2, 1985, several BID units have achieved more than 70 percent participation of employees. They are: Fogarty International

New Library Hours in Effect

As of Jan. 4, 1985, the NIH Library began closing on Fridays at 6 p.m. This change was based on a study that showed very low use of the library on Friday evenings.

The closing time Monday through Thursday remains at 10 p.m. Saturday and Sunday library hours also are unchanged.

The Friday change was announced in July 1984 to take effect in January 1985. □

Center, National Institute of General Medical Sciences, Clinical Center/OD, National Library of Medicine, Office of Director/NIH, Division of Research Grants and National Institute on Aging. □

New NICHD Branch Studies Biological Messengers in Cells

The Pony Express was extinct long before cell biologist Richard Klausner was born. Still, around Dr. Klausner's laboratory these days, that rider and the messages he carried has become somewhat of a metaphor.

He and his colleagues study how biological messengers carry information into a cell, drop the message off, and return to the depot for another pickup, says Dr. Klausner, who on Oct. 1 became chief of NICHD's new Cell Biology and Metabolism Branch.

Dr. Klausner came to NICHD from the NIADDK laboratory of Dr. Gilbert Ashwell, where Klausner and coworker Dr. Joe Harford studied the fate inside the cell of receptors, prickly molecules embedded in the cell surface, and their ligands, free-roaming molecules that receptors recognize and bind to.

These researchers showed that when certain protein ligands bind to their receptors, both the glycoprotein and the receptor enter the cell together as a complex. But, to satisfy the cell's biological demands, the ligand and its receptor must separate, so the cell can send the receptor back to the cell surface and metabolize the ligand.

Drs. Klausner and Harford showed that although the glycoprotein and receptor entered the cell together, the two molecules quickly split within the endosome, an organelle in the cytoplasm. The endosome's acid interior changed the chemical bond that linked the receptor and ligand. This, they showed, was how the cell freed the glycoprotein from its receptor.

These experiments turned Dr. Klausner's attention toward the receptor that binds transferrin, a blood protein that transports the iron from the bloodstream to the cell surface. Until recently, this messenger and its message, once inside the cell, seemed to disappear into perplexing area of the unknown that scientists call the "black box."

"No one knew what happened after the receptor entered the cell," says Dr. Klausner. "It's an important question because iron is essential for normal cell growth and division." (Answers to this question will help scientists understand the mechanisms that control cell growth and division during human development, and how errors in these control mechanisms may produce disease.)

By tracking the receptor-transferrin-iron complex on its journey through the cell's interior, Dr. Klausner and Harford lit up the black box. They mapped the complex's complete pathway—now called the transferrin cycle—from the cell surface, through the cell's interior, and back to the cell surface. The researchers discovered that like other receptor-ligand complexes, these molecules in fact disappeared into the endosome where the acid interior caused the iron to separate from receptor-bound transferrin.

Currently, studies in Dr. Klausner's lab focus on how the level of iron within the cell may turn on and off the gene that encodes the transferrin receptor and how this element influences cell division.

In other experiments, researchers in the new branch study how cells store or get rid of iron. Although iron is essential for normal cell growth, it is a powerful oxidizing agent and too much iron will damage cells.



NICHD Cell Biology and Metabolism Branch chief Dr. Richard Klausner (l) and coworker Dr. Joe Harford in their laboratory.

Applying their laboratory research to human disease, Dr. Jos van Renswoude and coworkers are exploring cellular defects that may cause hemochromatosis, a genetic disease in which cells store harmfully large amounts of iron. Untreated, the disease eventually causes permanent damage to vital organs such as the heart and liver.

Besides heading a laboratory with such diverse research interests, Dr. Klausner, a PHS commissioned officer, also conducts a hemochromatosis clinic at the Clinical Center, and teaches internal medicine at the National Naval Medical Center.

After his graduation from Yale University in 1973, Klausner attended Duke University School of Medicine. After interning at the Massachusetts General Hospital in Boston, he began his research career on biological membrane domains at Harvard. Dr. Klausner is a member of the scientific advisory board of the Sarnoff Foundation for Cardiovascular Research, and the cell biology study panel of the National Science Foundation. He has co-authored several medical textbooks, including *Medical Immunology*, and *Medicine*, the widely used textbook of internal medicine.

Although work in the Cell Biology and Metabolism Branch began officially on Oct. 1, the facilities that will permanently house the group in Bldg. 18 will not be completed until January. In the meantime, scientists in the branch are conducting their work in Bldg. 10.—**Leslie Fink** □

Pals Volunteers Needed

The Pals Program, sponsored by the Mental Health Association of Montgomery County, is seeking volunteers (especially males) over 17 years of age who would like to be a big pal to a boy or girl in need of friendship, and can spend time with a little pal at least twice a month. Training for the program will begin Feb. 4.

For an application and interview or for further information call 949-1255. □

Frances Y. Legallais Dies; Former NCI Technician

Frances Y. Legallais, a retired longtime employee of NCI, died Nov. 24 in Pennsylvania.

"She was one of the most outstanding technicians we ever had in our laboratory," said Dr. Harold Stewart, NCI scientist emeritus, who worked with Ms. Legallais in the Laboratory of Pathology. "She was especially kind to the people she had contact with, always a jovial spirit and ready to share her knowledge of technical matters."

Born in England, Ms. Legallais moved with her family to Pennsylvania as a child. She grew up near Philadelphia, attended the University of Pennsylvania and worked there with Drs. Eliot R. and Eleanor L. Clark before coming to NCI. She helped them develop a "window" in rabbit ears that let them observe blood flow in a living animal.

In 1942 Ms. Legallais came to NCI as a biological technician with Dr. Glen Algire in the Laboratory of Biology. She brought her know-how with the "window" to Dr. Algire's lab where she modified the technique to study tumor growth in mice.

Later, Ms. Legallais joined Dr. Joseph Leighton in the Laboratory of Pathology and helped him develop new techniques for tissue culture. Dr. Leighton said, "We were very close and she was fabulous to work with. There wasn't a 5-day work week in her mind when there was work to be done."

In 1956, when Dr. Leighton left NCI, Ms. Legallais moved to Dr. Alan Rabson's laboratory where she studied cancer viruses and helped develop human cell lines widely used in cancer research.

"She was a superb biologist as well as a good friend to all her coworkers," said Dr. Rabson, now director of the NCI Division of Cancer Biology and Diagnosis.

She retired in 1978 after working 36 years at NCI, 22 of them in Dr. Rabson's laboratory.

Her main interest outside NCI was bridge, and she had several master points for winning officially recognized tournaments. Some of her other interests were traveling and watercolor painting. "I thought she was quite talented," said Helen Park, a friend of Ms. Legallais' since 1942, when both began working at NCI.

After she retired, Ms. Legallais continued to live in Bethesda until last summer, when illness required moving to Philadelphia, Pa., to be closer to her family.

Ms. Legallais is survived by a brother, Victor Legallais, in Broomall, Pa., and a sister, Uriel McLeod, in New Jersey.

Still Time to Join Classes At the NIH Fitness Center

Join with fellow coworkers and begin fitness classes now! Classes now in session include: QUIK FIT; a coed total workout with cardiovascular endurance exercises. ALIVE; ballet-like exercises for muscular strength and endurance and the "Y's Way to a Healthy Back." Call 496-TRIM for times and rates, or the R&W Activities Desk, 496-4600. □

Stereotype of Elderly as Hypochondriacs Not Valid, NIA-GRC Psychologists Say

For many elderly, the problem of not having one's medical complaints taken seriously is a common and frustrating experience. The widespread belief that older people are prone to be hypochondriacs has not only generated a negative stereotype of aging Americans, but may also lead to "half-hearted" examination and treatment by medical workers, say two gerontology experts in this month's (January) *American Psychologist*.

New thinking by these researchers, however, suggests that exaggerated medical complaints are no more common in the elderly than in younger people, and in fact, may have little to do with age at all.

"The individual who makes excessive and exaggerated (medical) complaints in old age is probably the same person who has made them all of his or her life," say Drs. Paul T. Costa, Jr., and Robert R. McCrae, in the official journal of the American Psychological Association.

A documented history of unrealistic medical concerns in the minority of older people who experience them "might help persuade physicians that age in itself does not lead to 'hypochondriasis'—the tendency to make unfounded medical complaints. Instead, say Drs. Costa and McCrae, such complaints often stem from poor psychological adjustment.

"There are several reasons to suspect that the stereotype of older people as hypochondriacs" is not valid, say Drs. Costa and McCrae of the Gerontology Research Center at the National Institute on Aging in Baltimore, Md.

Based on their own studies of personality, stress, and coping in elderly individuals and reviews of other research, the psychologists say that overreporting of medical symptoms is related to neurotic behavior that does not increase with age.

Such people, explain Drs. Costa and McCrae, are "exceptionally high in neuroticism," a broad dimension of normal personality that includes self-consciousness, vulnerability to stress, and inability to inhibit cravings, and a tendency to be anxious, hostile, or depressed. Poor morale and low self-esteem are also closely related.

"Well-founded or not," say Drs. Costa and McCrae, people's bodily complaints remain stable over time. Tests that ask people about the kinds of physical symptoms they experience are more a measure of a person's "habitual pattern of describing disease" than the presence of a particular ailment.

"Even within a population of ostensibly normal individuals, there is a clear pattern of association, with individuals high in neuroticism reporting two to three times as many symptoms as the best adjusted men," note Drs. Costa and McCrae, who studied 900 men (ages 17 to 98) using a range of questionnaires measuring personality and emotional stability and medical symptoms.

The men, all generally healthy and well-educated, returned for medical evaluation and psychological testing at regular intervals between 1959 and 1977. Other researchers

have found similar results.

People may report more medical complaints "not because they are sicker, but because their personality dispositions lead them to different styles of perceiving, recalling, and reporting bodily events," explain Drs. Costa and McCrae.

Anxiety, for example, can amplify pain and may lead to different perceptions of physical symptoms. Likewise, panic attacks—which are accompanied by palpitations, speeded heart rates, and chest pains—are often interpreted as heart attacks.

Older people do use a large proportion of hospital days, note Drs. Costa and McCrae, "but this is primarily due to the chronic care needed by a small minority of the elderly. As few as 2 percent of the elderly account for 20 percent of the hospital days used by all the elderly."

The psychologists explain further that, instead of diffuse complaints (typical of hypochondriacs), they have observed rising numbers of complaints "only in the specific categories in which increasing complaints" are likely to be genuine (such as sensory loss and cardiovascular disease)."

In fact, say Drs. Costa and McCrae, "given the incidence of many other diseases (among the elderly), it is remarkable that so little change is seen." Age appears to influence the number of medical complaints "only insofar as age increases the burden of actual disease."—*American Psychological Association News Report*

Pamphlet for Students Describes Reasons for Basic Research

Why Do Basic Research? a new brochure that focuses on the reasons scientists conduct nondisease-oriented basic biomedical studies, is now available from the National Institute of General Medical Sciences' Office of Research Reports.

Aimed primarily at high school and college students, the brochure is also designed for other members of the public who want to know more about the excitement and complexity of modern biomedical research.

In the long run, the brochure points out, the basic research supported by all the Institutes of NIH, is the key to understanding diseases for which there are still no satisfactory treatment or means of prevention.

For copies of *Why Do Basic Research?* Contact: NIGMS, Office of Research Reports, Building 31, Room 4A52, (301) 496-7301. □

Johns Hopkins Biology Chairman To Discuss Human Evolution

Dr. Alan Walker, chairman, department of cell biology and anatomy at Johns Hopkins Medical School, will discuss "Recent Advances in the Study of Human Evolution," in a special lecture sponsored by FAES.

The lecture will be presented at 8 p.m. Thursday, Jan. 24, in the ACRF Amphitheater. □

NLM's Joe McGroarty Retires After 33 Years

"It's hard to imagine the library without him ... he's been an integral part ... he's the man who really makes this place run!" said National Library of Medicine deputy director Kent Smith. Now, after 33 years with NLM, Joe McGroarty, chief, Office of Administrative Management Services, has retired.

"We called his office when we needed equipment, supplies—anything from paper clips to computers. If our office was too hot or too cold, we'd call Joe's office and he'd take care of it. If we needed printing done, furniture moved, pictures hung properly, or typewriters repaired, Joe's office came to our rescue," Mr. Smith added.



Mr. McGroarty

Born in Wilkes Barre, Pa., Joe came to Washington after serving in the Army Infantry in Europe during World War II. After brief periods at the Immigration Department and Veteran's Administration, he joined NLM as a GS-4 supply clerk. During the years he saw the Library evolve into a national biomedical communications center occupying two buildings on the NIH campus.

As the Library grew, Joe rose from stock clerk to become head of all administrative management services. In 1962 when NLM moved to NIH, his office coordinated the move of over 2 million books and journals, many of them historical in nature and irreplaceable.

NLM executive officer Ken Carney spoke of the position Joe occupied for 33 years as one involving public trust, honesty and trustworthiness, and lauded Joe for his reputation of "absolute honesty in the exercise of his authority."

Joe said he plans to "take things as they come" in his retirement though a part-time job will probably be part of his new life. He looks forward to someday taking a leisurely cross-country trip by car, "just stopping wherever I like," and to becoming more active in several veteran's clubs that he now belongs to. □

Unhappiness is not knowing what we want and killing ourselves to get it.—*Don Herold*

No wise man ever wished to be younger—*Swift*.

NIDR's New Computer Program Provides Fast and Easy Budget and Program Data

A new computer program that provides the latest budget and program information, yet is fast and easy to use, has been developed at the National Institute of Dental Research. The program—one of the first of its kind at NIH—is so simple to learn that even employees with computer anxiety can successfully operate the system in 15 minutes.

The Remote Information Facility, or R.I.F., provides Dental Institute staff with an immediate and economical means of obtaining information about the status of NIDR budget and programs. Previously this information was computerized on separate data files and could only be retrieved by computer experts.

Designed last May by Ronald Ruben and Carla Flora of NIDR's Research Data and Management Information Section, Office of Planning, Evaluation, and Communications, the computer program has made the concept of a "paperless office" a reality for the Institute. No longer do expensive and time-consuming reports have to be prepared by the section. The program now enables NIDR users themselves to retrieve the specific data they need.

System Saves Money

The new system is saving the NIDR considerable money in manpower, computer time, and paper costs, according to Mr. Ruben and Ms. Flora. In fact, it has reduced turnaround time from days to minutes in processing certain requests.

"The R.I.F. system ties together existing files of information that the NIDR has had for quite some time. And it does it in a way that is easy to understand and use," explains Mr. Ruben.

"It provides access to active grant reports, scientific classification reports, priority lists, status-of-fund reports, budget reports, monthly reports, grant inquiries, historical data on budget, and current versus constant dollar conversions. In addition, an "on-line" dictionary is available to help clarify various terms, as well as an NIDR telephone directory, suggestion box, and electronic mail facility."

Access Available

Access to the computer system is available through WYLBUR in any NIDR office with a computer terminal, communicating word processor, or personal computer. The system is "menu" driven, meaning that at every stage a user is presented a different series of questions asking what the user wants to do. "Help" is offered at every menu if a user does not understand what options are available or is confused about what to do next.

And at various stages, a user may be greeted by such humorous instructions as "stretch your legs and take a short break; this report will take about 10 minutes to prepare."

Mr. Ruben and Ms. Flora believe that the simplicity of this computer program will help encourage computer literacy among NIDR staff. They have demonstrated the R.I.F. system to several NIH administrators and believe that other Institutes who do not have such a computer program will use it as a model to develop their own.



Carla Flora (seated, l) and Ronald Ruben (standing, r) demonstrate the R.I.F. system to NIDR Director Dr. Harald Loe (seated) and assistant director Dr. Preston A. Littleton while using one of NIDR's GRID microcomputers. The Grid, one of the most powerful business computers available today, weighs 9 pounds, has a portable terminal and word processor. The same system was also used on board the NASA Space Shuttle.

Currently Mr. Ruben and Ms. Flora are conducting statistical analysis to determine what parts of the program are being used most often. Personnel information may soon be incorporated into R.I.F. to cover additional requests. □

Assn. of Retarded Citizens Honors NHLBI as Contractor

The National Heart, Lung, and Blood Institute was selected as the Government Contractor of the Year by the D.C. Association of Retarded Citizens (ARC). Each year the ARC selects "Employers of the Year" from both the public and private sectors.

Awards are made to one government agency for hiring "clients" of the ARC and to another government agency for contractually providing jobs for the "clients" of the ARC. It is for this latter category that NHLBI was selected.

Contract Began in 1972

The ARC has had a contract with the NHLBI since 1972 through which the D.C. association has provided mailing and special handling of publications and information materials.

Sandy Kamisar, chief of NHLBI's Publications and Distribution Section, accepted the award for NHLBI at a special awards ceremony on Nov. 30, 1984. □

The great requisite for the management of ordinary business is the want of imagination.—William Hazlitt

The golden rule is that there are no golden rules.—George Bernard Shaw

VISITING SCIENTISTS

10/15 **Dr. Brian T. Pentecost**, United Kingdom. Sponsor: Dr. John A. McLachlan, Laboratory of Reproductive and Developmental Toxicology, NIEHS, Research Triangle Park, N.C.

11/01 **Dr. Jacov Baram**, Israel. Sponsor: Dr. Charles Meyer, Clinical Pharmacology Branch, NCI, Bg. 10, Rm. 6N119.

11/01 **Dr. Lluis Bassas-Arnau**, Spain. Sponsor: Dr. Philip Gorden, Diabetes Branch, NIADDK, Bg. 10, Rm. 8N242.

11/01 **Dr. Chung Fu-Zon**, China. Sponsor: Dr. Steven Li, Laboratory of Genetics, NIEHS, Research Triangle Park, N.C.

11/01 **Dr. Panagiota A. Dalavanga**, Greece. Sponsor: Dr. John J. Hooks, Clinical Branch, NEI, Bg. 10, Rm. 10D17.

11/01 **Dr. Henri Frowein**, Netherlands. Sponsor: Dr. John Rohrbaugh, Laboratory of Clinical Studies, NIAAA, Bg. 10, Rm. 3C114.

11/01 **Dr. Eunkyue Park**, Korea. Sponsor: Dr. Howard Dickler, Immunology Branch, NCI, Bg. 10, Rm. 5B15.

11/01 **Dr. Bent Rolstad**, Norway. Sponsor: Dr. Ronald Herberman, Biological Therapeutics Branch, NCI, FCRF, Bg. 560, Rm. 31-16, Frederick, Md.

11/01 **Dr. Seiichi Totsuka**, Japan. Sponsor: Dr. George Inana, Laboratory of Ophthalmic Pathology, NEI, Bg. 6, Rm. 232.

11/01 **Dr. Shunya Uchida**, Japan. Sponsor: Dr. Joseph Handler, Laboratory of Kidney and Electrolyte Metabolism, NHLBI, Bg. 10, Rm. 6N315.

11/01 **Dr. Paul van der Stelt**, Netherlands. Sponsor: Dr. Richard Webber, Diagnostic Systems Branch, NIDR, Bg. 10, Rm. 5N256.

11/01 **Dr. Sybren Wijmenga**, Netherlands. Sponsor: Dr. Elliot Charney, Laboratory of Chemical Physics, NIADDK, Bg. 2, Rm. B1-03.

11/01 **Dr. Tyan-Fuuh James Yan**, Taiwan. Sponsor: Dr. E.R. Stadtman, Laboratory of Biochemistry, NHLBI, Bg. 3, Rm. 222.

11/05 **Dr. Siu-Wah Chung**, Canada. Sponsor: Dr. Sandra Ruscetti, Laboratory of Genetics, NCI, Bg. 37, Rm. 2B09.

11/05 **Dr. Geraldo Pereira**, Brazil. Sponsor: Dr. Ethan Shevach, Laboratory of Immunology, NIAID, Bg. 10, Rm. 11N312.

11/06 **Dr. Alain L. DeWeck**, Switzerland. Sponsor: Dr. Michael Kaliner, Laboratory of Clinical Investigation, NIAID, Bg. 10, Rm. 11S205.

11/06 **Dr. Victor Garcia**, Mexico. Sponsor: Dr. Cary Queen, Macromolecular Interactions Section, NCI, Bg. 37, Rm. 4C17.

11/06 **Dr. Yoshiaki Kadota**, Japan. Sponsor: Dr. A.A. Zalewski, Neuronal Development and Regeneration Section, NINCDS, Bg. 36, Rm. 4D25.

11/06 **Dr. Ervin Weiss**, Israel. Sponsor: Dr. Paul Kolenbrander, Laboratory of Microbiology and Immunology, NIDR, Bg. 30, Rm. 310.

11/06 **Dr. Xu Feng-Sheng**, China. Sponsor: Dr. Norman Salzman, Laboratory of Biology of Viruses, NIAID, Bg. 5, Rm. 326.

11/13 **Dr. Paul A. Bates**, United Kingdom. Sponsor: Dr. Dennis Dwyer, Laboratory of Cell Biology and Immunology, NIAID, Bg. 5, Rm. 205.

11/13 **Dr. Bruno Di Jeso**, Italy. Sponsor: Dr. Richard D. Klausner, Cell Biology and Metabolism Branch, NICHD, Bg. 10, Rm. 9N204.

11/13 **Dr. James McCluskey**, United Kingdom. Sponsor: Dr. David Margulies, Laboratory of Immunology, NIAID, Bg. 10, Rm. 11N309.

11/13 **Dr. Makoto Sasaki**, Japan. Sponsor: Dr. George Martin, Laboratory of Developmental Biology and Anomalies, NIDR, Bg. 30, Rm. 416.

11/13 **Dr. Allan J. Saul**, Australia. Sponsor: Dr. Louis H. Miller, Laboratory of Parasitic Diseases, NIAID, Bg. 5, Rm. 124.

11/14 **Dr. Markus Haass**, West Germany. Sponsor: Dr. Irwin J. Kopin, Intramural Research Program, NINCDS, Bg. 10, Rm. 5N214.

Four New Members Appointed to NHLBI Advisory Council

Four new members have been appointed to the Advisory Council of the National Heart, Lung, and Blood Institute.

The new members are **Dr. Richard A. Carleton**, chief, cardiology division, physician-in-chief, and director, division of health education, Memorial Hospital, Pawtucket, R.I.; **Dr. Eliot Corday**, senior attending physician, Cedars-Sinai Medical Center, Los Angeles, Calif.; **Dr. Carl Franzblau**, professor of biochemistry, Boston University School of Medicine and chairman, interdepartmental biochemistry program, Boston University Graduate School; and **Dr. Charles D. Knight Jr.**, resident, vascular surgery, Mayo Graduate School of Medicine, Rochester, Minn.

The council—composed of physicians, scientists and persons prominent in public affairs—reviews applications for research and training support, reports to the President and Congress on the current status of the Institute programs, and makes recommendations concerning future programs.

Dr. Carleton, in addition to his present positions at Memorial Hospital, is professor of medical sciences at Brown University and on the consulting staffs of Roger Williams General Hospital and Miriam Hospital, both in Providence. He is presently a member of the governor's advisory committee, American College of Physicians, the American Heart Association's councils on clinical cardiology and on epidemiology, the Association of University Cardiologists, and the American College of Cardiology. He has previously

served in an advisory capacity to NIH on the Heart Training Committee "B" and as chairman, National Research Service Awards Review Committee.

Dr. Carleton has received numerous awards and honors, including the Housestaff Teaching Award from Presbyterian-St. Lukes Hospital and the University of California, San Diego.

Concurrent with his position at Cedars-Sinai Medical Center, Dr. Corday is also on the credentials committee for the Crippled Children Services Program, California Department of Public Health and the research committee and professional programs committee at Cedars-Sinai Medical Center. He is chairman of the international education committee, American College of Cardiology, and associate editor for *Echocardiography* and *Coeur et Medecine Interne*.

He is a past president of the American College of Cardiology and has served in various capacities for numerous other professional organizations. He has received many honors and awards which include the Cummings Humanitarian Award, the Distinguished Fellowship Award, the Presidential Citation and the Paul D. White Memorial Lectureship from the American College of Cardiology. He has twice received the Gold Medal of Merit from Argentina; and Distinguished Officer of the Order of the Liberator, San Martin Medal, Argentina and Cruzeiro de Sol, Brazil.

Dr. Corday has previously served the Federal Government as an advisory consultant in

cardiology to the Surgeon General, U.S. Air Force, as a member of the then National Heart and Lung Advisory Council from 1969 to 1974 and the President's Advisory Panel on Heart Disease.

Born in New York, Dr. Franzblau received his B.S. in chemistry from the University of Michigan and his Ph.D. in biochemistry from Albert Einstein College of Medicine.

Since 1962, he has held senior positions at Boston University School of Medicine.

Dr. Franzblau has served on the Task Force on Respiratory Diseases of the National Heart and Lung Institute and was a member of the Cardiovascular Study Section B, Division of Research Grants.

He is a member of the American Society of Biological Chemists; American Chemical Society; American Association for the Advancement of Science; New York Academy of Sciences; Sigma Xi and a fellow of the American Heart Association Council on Atherosclerosis. His honors include an American Heart Association-established investigatorship and a faculty membership of Alpha Omega Alpha.

Dr. Knight, a native of Rochester, Minn., received his B.A. from Vanderbilt University, Nashville, Tenn., and his M.D. from that university's School of Medicine. Prior to his residency in vascular surgery, he served his internship and a residency in general surgery at Mayo Graduate School of Medicine.

He has received several honors and awards which include the Justin Potter Medical and the Phi Delta Theta Foundation scholarships, the Howard Gray Award, the Resident Teacher of the Year. □

Two NHLBI-Supported Scientists Share Horwitz Prize For Studies on How Cholesterol Clogs Arteries

Two University of Texas scientists whose research has contributed greatly to an understanding of how cholesterol accumulates in human arteries are winners of Columbia University's \$20,000 1984 Louisa Gross Horwitz Prize.

The recipients are National Heart, Lung, and Blood Institute-supported grantees Michael S. Brown, Paul J. Thomas professor of genetics and director of the Center for Genetic Disease, and Joseph L. Goldstein, Paul J. Thomas professor of medicine and genetics and chairman of the department of molecular genetics, both of the University of Texas Health Science Center in Dallas.

The Horwitz Prize, which the two scientists are sharing, is given annually for outstanding research in biology or biochemistry.

Seventeen of the 35 scientists who have won the Horwitz Prize since it was started in 1967 subsequently have won the Nobel Prize. Cesar Milstein, the 1980 Horwitz recipient, shared the Nobel Prize in Physiology or Medicine this year.

In research that began in the early 1970s Drs. Brown and Goldstein studied the way low density lipoproteins (LDL)—carriers of very high levels of cholesterol—pass from the bloodstream into body cells.

They found that LDL normally enters a cell through a receptor, a specific molecule on the cell wall that recognizes LDL and admits it into the cell, where it performs a number of biological functions.

They also found that a defect in the gene that regulates the LDL receptor can block the pathway, causing LDL and, therefore, cholesterol to accumulate in the blood and on the arterial walls. The result is an increased incidence of atherosclerosis, an extremely common form of arteriosclerosis (thickening of the arteries) and heart disease.

Dr. Brown, born in New York City, attended the University of Pennsylvania where he earned a B.A. in 1962 and an M.D. in 1966.

He was a clinical associate in the National Institute of Arthritis and Metabolic Diseases' Digestive and Hereditary Disease Branch from 1968 to 1970 and a guest worker in the National Heart and Lung Institute's Laboratory of Biochemistry from 1970 to 1971.

He joined the faculty of the University of Texas Health Science Center in Dallas as assistant professor of medicine in 1971. He became associate professor in 1974 and was made full professor of medicine in 1976. In 1977 Dr. Brown was named Thomas professor of genetics and director of the Center for Genetic Disease at the Health Science Center.

Dr. Goldstein, born in Sumter, S.C., received a B.S. from Washington and Lee University in 1962 and an M.D. from the University of Texas Health Science Center in Dallas in 1966. From 1966 to 1968 Dr. Goldstein was an intern and assistant resident in medicine at Massachusetts General Hospital in Boston.

He was a clinical associate at the National

Heart and Lung Institute's Laboratory of Biochemical Genetics in Bethesda from 1968 to 1970 and a fellow at the Division of Medical Genetics at the University of Washington's School of Medicine in Seattle from 1970 to 1972.

Dr. Goldstein joined the faculty of the University of Texas Health Science Center as assistant professor of internal medicine and head of the division of medical genetics in 1972. He became associate professor in 1974 and full professor of internal medicine in 1976. Dr. Goldstein was named Thomas professor of medicine and genetics and chairman of the department of molecular genetics in 1977.

Both Drs. Brown and Goldstein are members of the National Academy of Sciences and the American Academy of Arts and Sciences. They have shared numerous awards, including the Heinrich-Wieland Prize for research in lipid metabolism, the Pfizer Award for enzyme chemistry, the Albion O. Bernstein Award, the Passano Award, the Lunsbery Award, the Gairdner Foundation International Award, the New York Academy of Sciences Award in biological and medical sciences and the Lita Annenberg Hazen Award.

The Louisa Gross Horwitz Prize was established under the will of the late S. Gross Horwitz in memory of his mother to honor scientific investigators whose contributions to knowledge in biology and biochemistry have been outstanding. □

Old Drug-Pilocarpine-Stimulates Saliva Production In Patients with 'Dry Mouth' Disease, Study Finds

Using an "old" drug in a new way, researchers at the Dry Mouth Clinic of the National Institute of Dental Research report promising results for patients with xerostomia or dry mouth caused by malfunctioning salivary glands. Until now such patients had to rely on artificial saliva products for relief.

In tests using pilocarpine, a drug found in prescription eyedrops, Drs. Bruce Baum and Philip Fox found that normal saliva production was stimulated by the drug.

In their search for effective treatment, the two dental scientists found anecdotal accounts written 20 years ago showing that pilocarpine could stimulate human saliva production.

Following Food and Drug Administration approval in January, Dr. Baum, NIDR clinical director and chief of the Clinical Investigations and Patient Care Branch, and Dr. Fox, an oral surgeon and staff scientist in the Clinical Investigations Section, conducted a controlled study with patients with malfunctioning salivary glands to test the effectiveness and safety of pilocarpine.

Given orally, the drug is slowly absorbed into the body and induces saliva production by stimulating receptors on surfaces of salivary gland cells. Results from the double-blind, crossover study indicate that not only does pilocarpine stimulate saliva production, but patients also reported their mouths felt less dry (subjective dryness). There were no changes in heart rate or blood pressure, and serum electrolytes remained stable.

In the study, five milligrams of pilocarpine stimulated saliva production for about 3 hours. The investigators are planning to have pilocarpine prepared in a time-release form to provide a longer stimulus for saliva production. Drs. Baum and Fox are now ready to begin the next phase of their study and are seeking additional patients for outpatient studies.

Since opening the NIDR Dry Mouth Clinic in 1983, the two doctors have been screening patients with xerostomia to determine the status of their salivary gland function and origin of oral dryness complaints.

The researchers are now able to more accurately diagnose salivary gland dysfunctions, and in particular, to differentiate xerostomia caused by malfunctioning salivary glands from that from other causes.

Although xerostomia is not a disease in itself, it is currently getting increasing attention in the dental and medical communities as health professionals become more aware of the disorder's frequency.

The condition is commonly associated with alterations in salivary gland function—either through a decline of saliva flow or through changes in the saliva's composition.

However, a nonsalivary gland origin, such as a neurological, sensory, or cognitive disorder, is quite possible.

Xerostomia due to salivary changes range from absolute shutdown of saliva production to normal output of saliva with changes in quality.

Xerostomia with decreased salivary gland function is associated with a variety of sys-

temic disorders, some fatal. A dry mouth complaint can be an early symptom of a polysystem disease, such as dry gland disease, polyglandular failure, or autoimmune exocrinopathy (disease of glands that secrete to the outside of the body, not internally).

The major pathological entity associated with dry mouth, however, is sicca syndrome, or "Sjogren's syndrome." This disease typically includes xerostomia, xerophthalmia (dry eyes) and a connective tissue disorder, most often rheumatoid arthritis. Decreased salivary gland function may also be associated with various other conditions.

More than 200 frequently used drugs also list dry mouth as a side effect. These mainly include antihypertensives (to control blood pressure) and antidepressants prescribed for millions of Americans, but anorexics, antihistamines, antipsychotics, antispasmodics, decongestants, diuretics, and tranquilizers have also been implicated. Other causes of dry mouth are radiation therapy to the head and neck and bone marrow transplantation.

Some patients with xerostomia may have only a dry or burning sensation in their mouths. But, in severe cases, cracking of the lips, slits at the corners of the mouth, changes in the surface of the tongue, and difficulty in eating, swallowing, tasting, and even speaking may be experienced.

A significant decrease of salivary flow usually leads to rampant caries, even in persons not previously susceptible. According to the NIDR researchers, xerostomia can have a profound negative effect on a patient's quality of life, affecting nutrition, oral health, and psychological well-being.

To include an individual in the NIDR xerostomia study, a dentist or physician should address a letter of patient referral to Dr. Bruce Baum, NIDR Clinical Director, Bldg. 10, Rm. 1S217A, 9000 Rockville Pike, Bethesda, MD 20205, (301) 496-1363. **Jody Dove** □

Ice Capades '85 Coming

The all-new edition of Ice Capades, "Hooper for Ice," comes to the Capital Centre in February for 18 spectacular performances. Scott Hamilton, the 1984 Olympic Gold Medal winner and four-time World Champion, leads an all-star cast of skaters which includes Kitty and Peter Carruthers, Elaine Zayak and many other internationally acclaimed skaters.

Also, appearing will be "The Snorks," the beguiling creatures from under the sea, and stars of their own hit Saturday morning cartoon show.

R&W will have discount tickets available for the following performances: Friday, Feb. 15, 7:30 p.m.—\$10 (Reg. \$11.50);—\$9 (Reg. \$10.50); Saturday, Feb. 16, noon—\$10 (Reg. \$11.50)—\$9 (Reg. \$10.50); and Sunday, Feb. 17, 6 p.m.—\$8.75 (Reg. \$11.50)—\$7.75 (Reg. \$10.50).

Tickets are available now at the Activities Desk, Bldg. 31. (Prices include service charge.) □

PKU

(Continued from Page 1)

program.

"Over the past 20 years, however, PKU girls have developed normally physically and intellectually. Most of them discontinued the low-phenylalanine diet before they reached puberty. More than 1,000 of these girls have since reached childbearing age and this number is growing annually. We are finding that these young women, when consuming a regular diet during pregnancy, are at a high risk of having a child with microcephaly (small head), mental retardation and other devastating defects, even though the child does not have PKU," Dr. de la Cruz added.

A recent international survey showed that among 138 or more offspring of women with no dietary management of their PKU during pregnancy and with blood phenylalanine concentrations of 20 mg/dl or higher, 92 percent of the offspring were mentally retarded; 73 percent had microcephaly; 12 percent had congenital heart disease; and 40 percent had a birth weight of 5 1/2 pounds or less.

Recent animal studies suggest that a phenylalanine level that is safe for the mother may be detrimental to the health of the developing fetus. That has prompted the Institute to initiate a special research program to determine the best method of managing PKU women during pregnancy.

The study involving some 40 states, will be coordinated by Dr. Richard Koch of Children's Hospital of Los Angeles. Contributing principal investigators are Dr. Harvey L. Levy of Children's Hospital in Boston, Mass.; Dr. Reuben Matalon of the University of Illinois College of Medicine in Chicago, and Dr. Bobbye Rouse of the University of Texas Medical Branch in Galveston.

Specifically, this cooperative study seeks to determine:

- The level of maternal phenylalanine that will maintain a normal pregnancy;
- At what stage of pregnancy a low-phenylalanine diet is most effective in preventing the effects of maternal PKU on the developing fetus;
- Whether initiation of the diet before rather than after conception improves the baby's outcome;
- Whether the diet reduces the frequency of mental retardation and other complications found among infants of PKU mothers;
- The effect that the maternal blood levels of the amino acid tyrosine and such micronutrients as zinc have on pregnancy outcome.

Referrals and additional information on the study can be obtained from Dr. Felix de la Cruz, Special Assistant for Pediatrics, Mental Retardation and Developmental Disabilities Branch, NICHD, NIH, Room 7C-16, Landow Building, 7910 Woodmont Avenue, Bethesda, MD 20205. □

Native Americans Organize

There will be an Inter-Tribal meeting for all Indians on Feb. 1, at 7 p.m. on the NIH campus.

For further information contact Gary Armstrong, 496-3144 (work) or 762-3405 (home). □

NIH Predoctoral Trainees Outshine Biomedical Peers

A study of 56,000 persons who received Ph.D.s over a 14-year period concluded that those supported as graduate students by NIH research training grants outperformed all others in every measure of career success that was examined.

The study was done under contract by the Institute of Medicine (IOM), National Academy of Sciences, in close cooperation with the NIH Manpower Evaluation Advisory Committee.

IOM compared the former NIH predoctoral trainees with graduates of the same departments who did not receive any NIH support and with all other biomedical science Ph.D. recipients and found that:

"Although the observed differences among the three groups are not necessarily large, the findings are remarkably consistent for the numerous indices examined, leading to the overall conclusion that former NIH predoctoral trainees and fellows have been more likely to pursue careers in biomedical research and have been more successful in this pursuit than their colleagues."

More specifically, the IOM found that:

- nearly 70 percent of the NIH trainees supported before 1975 had earned Ph.D.s by 1981, while the completion rate for all biomedical science graduates is under 50 percent;

- more of the NIH predoctoral trainees went on to receive NIH support as postdoctoral trainees;

- the former NIH predoctoral trainees were more likely at later stages of their careers to be involved in NIH-supported activities;

- a larger fraction of the former trainees applied for NIH research grants;

- those who applied were more successful in receiving funding than other Ph.D.s;

- the former trainees on the average published more scientific articles;

- articles by former trainees were more often cited in other scientific articles.

A study of postdoctoral trainees and fellows is under way. □

Three NICHD Employees Receive NIH Merit Awards

Three NICHD employees recently received the NIH Merit Award at the National Advisory Child Health and Human Development Council meeting.

Institute Director Dr. Mortimer B. Lipsett presented awards to:

- Carolyn W. Bolster, a secretary in the Office of the Scientific Director, "for exceptional competence and resourcefulness regarding secretarial and office management tasks" in support of a major reorganization of the intramural program.

- Marjorie L. Neff, council assistant in the Scientific Review Program, "for sustained superior performance as council secretary and committee management officer for the NICHD."

- Sing-Ling Lai, a chemist in the Section on Animal Viruses in the Laboratory of Molecular Genetics, "for innovative and far-reaching technical contributions to molecular studies on gene control."

PARKINSONISM

(Continued from Page 1)

nerve impulses from the nerve endings in these ganglia. Dopamine is made by the pigmented cells of the substantia nigra, the same neurons that are greatly reduced in parkinsonism. Without dopamine the nerve cells in the brain can't send the messages needed to properly control muscles, thus leading to abnormal movement.

Other studies by Dr. Arvin Carlsson produced parkinsonian-like symptoms in animals by giving them drugs such as reserpine (a drug used to lower high blood pressure) that make dopamine disappear in the brain. This evidence supports the theory that the brains of Parkinson's patients are damaged and that drugs can produce parkinsonism by interfering with either the ability of the brain to store or release dopamine.

The challenge for researchers was to try and restore normal function by replacing the depleted dopamine or stimulating the dopamine receptors. The first drug used to treat Parkinson's disease was an anticholinergic agent, originally used to treat ulcers, which also relieved the tremor and rigidity of Parkinson's disease. Anticholinergic drugs became the main treatment for Parkinson's disease from the 1940s until the discovery of L-Dopa.

In the late 1960s Dr. George Cotzias showed that large doses of L-Dopa could be safely administered if the dosage was increased gradually. This drug converts to dopamine, replaces the missing transmitter and restores function.

Dopamine's metabolic precursor, L-Dopa, was used because dopamine itself does not cross the blood-brain barrier and enter the brain.

Although treatment benefited about 60 percent of all Parkinson's patients, the large doses of L-Dopa caused many side effects, among them, nausea, low-blood pressure, heart arrhythmias, and dyskinesias (undirected, involuntary movements).

Reducing Side Effects

Through the use of enzyme inhibitors, which slow the metabolic breakdown of L-Dopa, scientists were able to reduce the heavy dosages of L-Dopa. Drug trials using the enzyme inhibitor carbidopa in combination with L-Dopa have

diminished the side effects while still alleviating symptoms of the disease.

Although L-Dopa is effective, there are still side effects; for example, some patients experience involuntary movements; also as the disease progresses, the effects of L-Dopa are less predictable. The "on-off reaction," which is a rapid switch from adequate response to lack of movement, is due to the body's failure to readjust properly to the disappearance of the dopamine. The therapeutic "window" is narrowed—excess dopamine producing uncontrolled movements and inadequate dopamine resulting in lack of movement.

End-of-dose akinesia (inability to move) is also a problem side effect, along with parkinsonian symptoms occurring 2 to 3 hours after dose of L-Dopa. NINCDS scientists are studying methods to maintain the delicate balance of drug dosage levels.

Intermittent Dosage

Some investigators have found a drug holiday reduces the side effects of continued L-Dopa treatment. The patient is taken off all L-Dopa therapy for approximately 3 to 7 days. Drug holidays have shown that a small group of patients can then resume L-Dopa therapy without on-off reactions or end-of-dose akinesia.

Scientists are also studying movement disorders which resemble Parkinson's disease. This form of disorder was found in younger people after self-administration of an illicit drug contaminated with the toxic substance, MPTP.

Recent research has shown that it is possible to chemically induce parkinsonian-like symptoms in monkeys with MPTP. Rats injected with MPTP showed marked behavioral effects, but exhibited no signs of Parkinson's disease. This discovery of an animal model offers promising new ways of looking at Parkinson's disease, it was indicated.

Dr. Kopin and other investigators hope to learn more about the Parkinson-connected brain cell degeneration by comparing normal brain degeneration with chemically induced degeneration in monkeys.

This pioneering work offers hope that one day scientists will be able to reverse and possibly prevent the progression of Parkinson's disease. —Mickey Hanlon □



Three employees of the National Institute of Child Health and Human Development recently received the NIH Merit Award from the Institute's Director, Dr. Mortimer B. Lipsett (r). The recipients are (l to r) Carolyn W. Bolster, Sing-Ling Lai and Marjorie L. Neff.

Surgeon Uses 3 Specialized Heart Models to Explain Heart Problems and Corrective Surgery to Patients

Three specialized heart models made by the Medical Arts and Photography Branch, Division of Research Services, for an NHLBI surgeon are enabling him to give patients a clearer idea of their cardiac problems and how particular operations solve them.

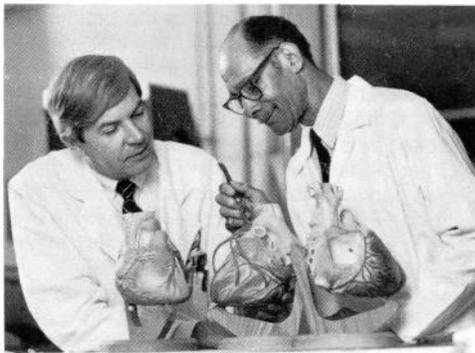
Dr. Charles L. McIntosh first approached MAPB's Medical Illustration Section about a model to explain a cardiac problem called IHSS (idiopathic hypertrophic subaortic stenosis), which produces obstruction to blood flow in some patients, and to illustrate the surgical procedure (the Morrow operation) that in most cases restores normal functioning to IHSS patients.

Exhibits specialist Marion Wilcox created a three-dimensional model, with removable parts, that proved useful not only for patients' understanding but also with medical and nursing staff unfamiliar with the Morrow operation. As a result, Dr. McIntosh had the Medical Illustration Section make additional models for two other operations: heart valve replacements and arterial bypass surgery.

IHSS occurs in the left ventricle. The right and left ventricles (lower chambers of the heart) are separated by a muscular septum, which becomes thickened and hypertrophied (enlarged) in patients with IHSS. A combination of the hypertrophied septum and the anterior (front) mitral valve leaflet, which contacts the dividing septum, produces various degrees of obstruction to blood flow from the left ventricle. Patients with IHSS are troubled by shortness of breath, chest pain, and fainting.

The Morrow operation removes part of the septum, creating a channel to increase blood flow out of the left ventricle. "When I explained the operation to patients and their families without the model," Dr. McIntosh comments, "it was hard for them to visualize how removing some muscle from the septum could help blood flow out of the ventricle into the aorta. The three-dimensional model replaces the drawings I used to make for patients—drawings that were of less than medical illustrator quality."

In some special cases of IHSS, where the septum is too thin, the Morrow operation is difficult to perform safely. Instead, the mitral valve is replaced. "It's even harder for the patient to understand how replacing a normal mitral valve corrects an obstruction to the aorta," Dr. McIntosh said. "The model makes



Dr. Charles L. McIntosh (l) and Marion Wilcox consulted frequently as Mr. Wilcox made heart models illustrating three surgical operations: the Morrow operation, arterial bypass surgery, and heart valve replacement.

it quite clear."

Experience with the IHSS model showed the advantages of an individualized model for explaining a particular heart operation to patients.

At Dr. McIntosh's request, M. Wilcox next made a model for valve replacement surgery. Its removable diseased valves—mitral, tricuspid, and aortic—illustrate the defects, and the surgeon can show the patient how an artificial valve is substituted to solve the problem.

The third model explains cardiac bypass surgery. It has no open chambers but shows all the coronary arteries that may require bypasses. Four attachable conduits represent grafts. "When I visit a patient to talk with him about three grafts to be done on him the next day," said Dr. McIntosh, "I can take the model and plug one end of a conduit into the aorta and the other end into the appropriate coronary artery; then I can do the same for the other two grafts. The patient has a fairly graphic idea of what is going to be done."

Artists at MAPB's Medical Illustration Section have training in anatomy and allied medical subjects besides their professional arts training. This enables them to meet the needs of intramural investigators for accuracy and clarity in various artistic mediums.

As is usual in such projects, Marion Wilcox and section chief Howard Bartner worked closely with Dr. McIntosh on developing the heart models. **Jim Doherty** □

Lab Furniture Display

A display of the various types of laboratory furniture on the market has been set up at NIH on the ground floor of Bldg. 13 adjacent to Rm. G-1315 just past the NIH Federal Credit Union. Enter the north door and follow signs.

NIH researchers and lab technicians are invited to see the display and fill out a questionnaire. The questionnaires will be used to help determine in which direction NIH should proceed with future lab furniture procurements, especially in view of the large renovations in store for the reservation.

Come to the display and register your opinions between Jan. 15 and Feb. 15, 9:30 a.m.-3:30 p.m. Your input is needed. □

FAES Offers Music Course

The FAES Graduate School is offering a new course, "Introduction to Musical Structure" (GFENL 122), taught by Richard Shrager, an NIH mathematician with an undergraduate degree in music. The topics include acoustics, instruments, melody, harmony, counterpoint, and form. Reading music in some form, either vocally or instrumentally, is a prerequisite, or you must get the instructor's permission to take the course.

The course begins Feb. 6. Registration is from Jan. 23-29. Class hours are 5:30-7:30 p.m. on Wednesdays. □

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