

"Still The Second Best Thing About Payday"

The NIH Record

Meets the Press

Healy Outlines Framework of Her Directorship

By Rich McManus

At a media briefing Apr. 25, NIH director Dr. Bernadine P. Healy outlined four initiatives that will distinguish her directorship—nurturing the talent base of science, long-term planning, good financial management and technology transfer—then answered two of the biggest criticisms the public has leveled at NIH recently with solid programs—a women's health initiative and buttressing for a declining research award rate.

Healy took immediate control of two new powers—a discretionary fund and budget transfer authority—to craft what she calls the "James A. Shannon Director's Award." Some 300-500 of these grants, limited to \$50,000 per year, would fund research proposals that just missed the cutoff for funding through regular channels.

"The Shannon awards are expected to provide a stabilization, so that you won't have a scientist suddenly going from a grant that may be funded at the rate of \$250,000 a year to nothing at all," she said. "That \$40,000 or \$50,000 can go a long way toward sustaining (scientists') effort."

Healy cautioned that the grants won't reverse a declining award rate—they won't even be counted in the research project grant



Dr. Bernadine P. Healy

success rate—but they will "help tide someone over" and may keep promising investigators from leaving science altogether.

Investigators won't apply for the Shannon grants, which are scheduled to begin in September. Rather, new and competing renewal R01 and R29 grant applications with priority scores just above the cut-off would serve as the basis for nominations by ICD staff.

The women's health initiative (see sidebar), (See HEALY, Page 4)

Director Backs Heightened Technology Transfer at NIH

Asserting that technology transfer will be among the top priorities of her directorship, Dr. Bernadine P. Healy opened the second annual NIH-PMA Technology Transfer Conference Apr. 25 by emphasizing the prime reason NIH scientists should collaborate with industry—because it helps patients.

"Patients are the direct beneficiaries of cooperation between NIH scientists and their colleagues in industry," she told the gathering, organized jointly by NIH's Office of Technology Transfer and the Pharmaceutical Manufacturers Association (PMA). "A strong partnership is vital."

Healy also announced the release of a portfolio of NIH inventions related to the major areas of AIDS research: diagnostics, therapeutics, research reagents and vaccines. Access to the portfolio will enable industry to decide whether it wishes to enter into CRADAs—cooperative research and development agreements—with government investigators.

While restating a commitment to technology transfer that had marked her testimony before Congress, Healy also conceded that

(See TECH TRANS, Page 6)

Wen-Hwa Lee To Give NIH Lecture, May 23

By Joyce Doherty

Dr. Wen-Hwa Lee, professor in the School of Medicine, University of California, San Diego, will present an NIH Lecture, May 23, in Masur Auditorium, Bldg. 10 at 3 p.m. His topic is "Molecular Genetics of Cancer Suppression."

For years, researchers associated cancer with defective genes. In the early 1980's, researchers identified certain genes—called oncogenes—that undergo mutations that lead to cancer development. In theory, once mutated, the genes begin to overexpress protein, which, in turn, causes uncontrolled cell growth.

In the past 6 years, researchers have found another way that defective genes can cause cancer—namely, by failing to produce a protein needed to control, or suppress, inappropriate cell growth. By manipulating the genetic content of tumor cells that have these defective suppressor genes, Lee has been able to reverse the tumor activity and, in so doing, suggest some intriguing possibilities for reestablishing control of cell activity in certain types of cancer.

In 1986, Harvard researchers identified the first malfunctioning suppressor gene in a rare childhood eye cancer called retinoblastoma

(See LECTURE, Page 2)

A Stay-in-School Success

Rivera Passes Up Gang Life, Music for Scientific Distinction

By Rich McManus

Put yourself for a moment in the shoes of Juan Rivera, a 14-year-old kid born in Ft. Apache, the Bronx. It's the early seventies and you're a percussionist in a Latin dance band—"Johnny Costase and His Combo"—playing weekend gigs around the city, earning \$300-\$500 a week.

Already in your life, the Young Lords, a local gang, has tried to dress you in its colors, but music has you by the throat. Your mom and dad—both Puerto Rican immigrants, both passionate about expelling their three sons from lives of poverty—never made it out of grade school. How likely, even 20 years down the road, is a life of NIH research labs, highest academic distinction, and bright professional prospects?

Few individuals go from the brink of inner-city gang membership to immunoglobulin receptor research, but Juan Rivera (better known as John) did it, with a lot of help from his friends.

"I owe—I mean really owe—the NIH for being in this position," says Rivera, a biologist who today holds senior staff fellow status

in the Arthritis and Rheumatism Branch's section on chemical immunology, NIAMS.

Rivera's NIH odyssey began in April 1975 under circumstances typical of his family's emphasis on ambition and personal independence.

"I had come to the Washington area after my sophomore year in high school to live with my brother, who was a freshman studying business at Columbia Union College in Takoma Park."

A teenager going off to live in a strange city with his older brother?

"Very early on, we were taught to develop a sense of independence," says Rivera in an English so resolutely uninflected that it is impossible to believe he either grew up in New York or ever spoke Spanish. "My oldest brother left home at 14 and never lived home after that. The next brother left at 15."

Juan Rivera had bidden his parents goodbye at 14 when he elected to remain with cousins in New York City while his parents moved to suburban New Jersey.

(See RIVERA, Page 8)

LECTURE

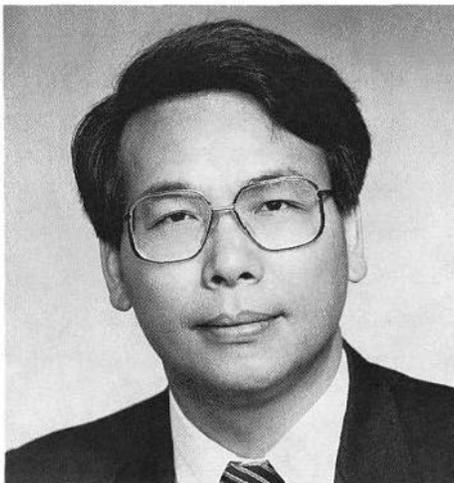
(Continued from Page 1)

(RB). Other researchers soon found mutant RB genes in bone and soft tissue cancers that often develop in young people who had retinoblastoma as children. Thanks in great measure to research done in Lee's laboratory, mutated or missing RB genes have now been implicated in a range of cancers that usually develop much later in life and consequently were not associated with retinoblastoma.

Soon after the RB gene was identified, Lee and his fellow researchers deciphered the complete organization of the normal RB gene. They found that it has 27 coding regions dispersed over 200,000 DNA units and that it also contains the promoter sequence needed to initiate normal protein expression. They also determined that an RB gene can become defective because DNA units are lost, incorrectly duplicated, or transposed.

By using the normal gene to compare defective RB protein products in several types of cancer, Lee's group deduced which domains of the protein are essential for its normal tumor-suppressing function. For example, the scientists found that a mutant protein in a primary small cell lung cancer was missing 25 amino acids (protein components) that one coding region of a healthy RB gene would express. They also found that the protein functioned only in the cell nucleus and could not interact normally with other cellular components.

In other experiments, Lee's group modified the genetic makeup of laboratory cultures of several types of cancer cells that contained mutant RB protein. The researchers introduced, or transfected, copies of normal RB genes into the cancer cells and then implanted the cells in experimental mice. The cells with the transfected gene lost their ability to form tumors.



Dr. Wen-Hwa Lee

In other transfection studies, Lee recently used the gene for a cellular protein (p53) that is often mutated in human cancer cells. When he transfected cultures of bone cancer cells with copies of normal p53 gene, the cells stopped their tumor activity. However, when he transfected other bone cancer cultures with copies of mutant p53 genes, the tumor activity increased slightly. Lee's transfection work with the RB and p53 genes further confirms the theory that suppressor genes cause certain types of cancer. His work also suggests that gene replacement some day may be a way to treat these types of cancer.

Lee received his M.S. and B.S. from National Taiwan University, Taipei, and his Ph.D. from the University of California, Berkeley. He has been at U.C., San Diego, since 1984, but will soon move to San Antonio to become the first director of the new Institute of Biotechnology at the University of Texas Health Science Center. □

Bicycling Facts

If you've seen *Harper's* magazine recently, you may have noticed a feature called Harper's Index, which assembles various thought-provoking factoids from all areas of American life. In that spirit, Dr. Jay Miller, president of the NIH Bicycle Commuting Club, has assembled the following list of bicycle facts:

- Percentage of urban space in the U.S. devoted to roadways: 50
- Cost of traffic jams to commuters in 29 U.S. cities during 1986: \$24.3 billion
- Number of bicycles that can be placed in an automobile parking space: 12
- Number of bicycles that can be produced for the energy and resources it takes to build one medium-size automobile: 100
- Percentage of U.S. household income devoted to maintaining an automobile: 20
- Rank of auto emissions among all causes of air pollution: 1
- Number of barrels of oil consumed daily for driving cars in the U.S.: 7.31 million
- Number of times U.S. commuters would need to bicycle to work each week to eliminate the need for Middle East oil: 1.25
- The NIH Bicycle Commuting Club welcomes new members; for information call Miller, 496-6941. □

The NIH Record

Published biweekly at Bethesda, Md., by the Editorial Operations Branch, Division of Public Information, for the information of employees of the National Institutes of Health, Department of Health and Human Services, and circulated to nonemployees by subscription only through the Government Printing Office. The content is reprintable without permission. Pictures may be available on request. Use of funds for printing this periodical has been approved by the director of the Office of Management and Budget through September 30, 1991.

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Amid a bevy of his zany counterparts, Kapitool Klowns' president Bob "Bunky" Gretton presents a check for \$11,000 to Randy Schools, treasurer of the Children's Inn board of directors, and Margo Bradford (r), day manager of the inn. The presentation brought to \$17,000 the total contribution from the Klowns to the inn. The next big fundraiser for the inn will take place Thursday, May 16, when the Klowns host the Great American Circus at Rio-Washingtonian Center, Gaithersburg. Advance tickets from R&W are \$7; gate tickets are \$10. Kids under 13 get in free with an advance ticket pass. Performance times are 5 and 8 p.m.

Herkenham To Give Mathilde Solowey Lecture, May 21

By Marilyn Weeks

It took Dr. Miles Herkenham 4 years and dozens of lectures to convince the scientific community that his exceptions are the rule in locating opiate receptors in the brain.

On May 21, the scientific community will honor Herkenham's work by inviting the NIMH scientist to lecture, this time as the 1991 recipient of the Mathilde Solowey Award for outstanding achievement in scientific research.

His talk at 3:30 p.m. in Lipsett Amphitheater, Bldg. 10 is entitled "Understanding Drug and Neurotransmitter Actions in the Brain." The lecture by Herkenham, chief of the section on functional neuroanatomy, Clinical Neuroendocrinology Branch, NIMH, will include his work in localizing both opiate and cannabinoid receptors.

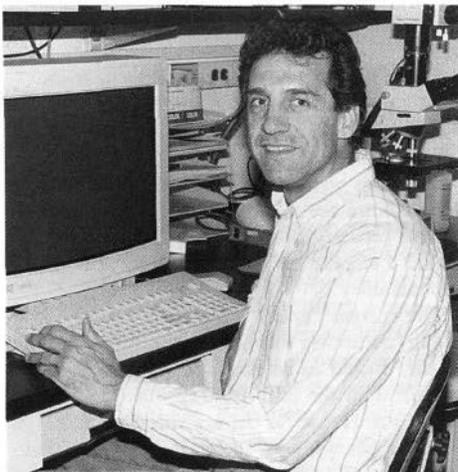
The Mathilde Solowey lecture award, which was established in 1973 by the Foundation for Advanced Education in the Sciences, annually honors a scientist for his or her outstanding research in neurobiology or diseases of the central nervous system. The award is named for a former scientist at NIH.

Scientists first identified opiate receptors in 1973, so when Herkenham began work in this field 6 years later, he expected to "fill in the blanks on the chemical code map" charted in earlier studies. But, what Herkenham and his collaborators discovered was that "the receptors were not where they were supposed to be."

Herkenham's group had decided to localize opiate receptors and work backwards from these sites to deduce where the endogenous neurotransmitter attached itself to the receptor, the protein molecule embedded in the surface of a cell. The neurotransmitter, the chemical messenger released from the nerve terminal, enables the brain to communicate by relaying impulses from one cell to another at contact sites called synapses. Typically, when the messenger locks onto the receptor, the new impulse generated at the synapse passes the message on to target cells responsible for carrying out the brain's orders.

But, instead of the distribution pattern of opiate receptors anticipated, Herkenham consistently found what became known as mismatches between the neurotransmitter and the receptor. Areas of the brain, including the hypothalamus, which is the brain's emotional control center, are rich in enkephalin, the brain's own opioid peptide molecule, but are remarkably sparse in opiate receptors. In turn, other regions of the brain, including the thalamus, which helps relay messages from the muscles and sense organs, are poor in enkephalin, but rich in opiate receptors.

The findings revealed that receptor and neu-



Dr. Miles Herkenham

rotransmitter release sites can be distributed independently of each other in the brain, suggesting that neurotransmitters can communicate nonsynaptically between cells that are not contiguous, and, therefore, that enkephalins function as endocrine-like messengers at many locations in the brain and spinal cord.

"It reorganized my thinking when we realized there was a long-distance and nonsynaptic mode of transmission," Herkenham said.

What Herkenham saw through his "window on what the brain is doing" is what he calls "a swamp of neurochemicals," which provides endogenous molecules with plenty of room to float around in a brain 20 percent of which is extracellular fluids.

"It's really not that much different than the situation that exists when the brain is given drugs delivered systemically," Herkenham said. "When you take a drug, it has access to these receptors as it is swimming around in the brain."

Although the mounting evidence left no doubt in the minds of the investigators, the scientific community remained skeptical. After more than 3 years on a lecture circuit that stretched across college campuses and neuroscience association meetings here and abroad, Herkenham and his colleagues published the paper that "closed all the loopholes so the scientific community could no longer deny that the mismatches were the reality.

"I got 900 requests for reprints and no more requests to talk," he said, laughing.

The discovery was the researcher's biggest breakthrough as well as a significant step forward in the scientific community's efforts to explain the success of a variety of medical treatments including transplant grafts and drugs.

Less than a year later, Herkenham's interest

in localization of receptors turned to cannabinoids. The researchers, in collaboration with Drs. Kenner C. Rice and Brian R. DeCosta of NIDDK, Allison B. Lynn of NIMH, and Drs. M. Ross Johnson and Lawrence S. Melvin of Pfizer, Inc., located and mapped the brain's cannabinoid receptors. The findings more fully established these receptors as mediators in many, if not all, of the known effects of cannabinoids.

Earlier this year, Herkenham and colleagues published papers on their discovery of the precise location in the brain where the psychoactive ingredient in marijuana binds to receptors. The studies found that receptors hosting for the psychoactive agent known as delta-9-tetrahydrocannabinol (THC), are most densely distributed in the basal ganglia, hippocampus, cerebral cortex and cerebellum, regions of the brain that control learning, movement, and emotions.

Locating receptors stimulated by marijuana (*cannabis sativa*) suggests that the body uses a natural form of the drug and may help scientists eventually develop a drug with the medicinal but not the mind-altering properties of marijuana.

Herkenham sees receptor localization as an important scientific tool in learning more about the cause and treatment of mental disorders, including Alzheimer's disease.

He holds undergraduate and advanced degrees in psychology and physiological psychology from Amherst College and Northeastern University. In addition to the Mathilde Solowey Award, he has received the Administrator's Award for Meritorious Achievement from the Alcohol, Drug Abuse, and Mental Health Administration, the Grass Foundation Lecture Award, and the Washington Academy of Sciences Award for Scientific Achievement in the Biological Sciences. □

Research Festival Poster Deadline Is May 24

This year's Research Festival will be held Monday, Sept. 23 and Tuesday, Sept. 24. The program begins with morning and afternoon symposia; topics range from molecular developmental biology to cellular proliferation.

There will be two poster sessions this year, an evening session Monday and a lunchtime session on Tuesday. The final deadline for submitting poster session applications is Friday, May 24. Flyers have been distributed desk-to-desk, but if you need additional application forms, contact the NIH Visitor Information Center, 496-1776.

More than 30 workshops have been scheduled on campus this year. Topics range from transcription factors in the nervous system to yeast, weeds, slime molds and other uncommon but important models.

HEALY*(Continued from Page 1)*

on the other hand, would be a massive undertaking that Healy imagines could one day rival the Framingham heart study in scope—maybe lasting 50-60 years in its surveillance aspect. The \$500 million project, spanning six ICDs, would have implications “for every woman in this room,” Healy said.

Reporters pressed Healy for comment on her position regarding research with fetal tissue recovered from abortion. She used the opportunity to explain that the HHS moratorium on such work, in effect since November 1989, is “razor-sharp” in its application, restricting federal scientists only from using tissues recovered from elective abortion for use in human transplantation. Far from abandoning a promising new line of research, NIH continues to pursue fetal tissue studies. Healy said such efforts “will eventually result in transplants that are safer, more targeted, and more readily available.”

As to the ban, “NIH will and must abide by the department’s ruling,” she said. “I have a moral responsibility to abide by that ruling, and I must say, I do it without hesitation.”

Healy said that NIH “must find ways to attract and train and retain the best and brightest scientists... and to help them cope with the frustrations of research. Addressing the need of science includes particular outreach for minorities and women.”

She quickly assured that these initiatives were not hers alone, but an expansion of efforts that were identified before she took office on Apr. 9.

Healy also called for long-term strategic planning, saying NIH owes the public “assurance that we know how to identify priorities, respond to emerging new scientific challenges, and remain sensitive to changing public need.”

She emphasized good financial management and accountability for biomedical research, informing the media that NIH’s Cost Management Plan, currently in draft, “is a start in the right direction.”

Earlier that day, Healy opened an NIH conference on technology transfer—her fourth major priority—with remarks that emphasized her commitment to narrowing the lag between a clinically useful invention and bedside application.

“NIH has been the heaviest user of CRADAs (cooperative research and development agreements, between federal scientists and industry) of all federal laboratories,” she said.

The new cooperation between scientists and private companies has raised questions about potential conflicts of interest, a subject Healy says will be addressed by guidelines currently being drafted.

“The idea (of technology transfer) is not to

make scientists wealthy, but to bring cures to patients who need them,” she said. “We have to ask ourselves (before entering CRADAs), ‘Are we doing this for the right reason?’ Ultimately, that answer is what matters most.”

Healy fielded a variety of questions from the 48 reporters in attendance, who hailed from television, magazines and newspapers. Topics included:

Relations with Rep. John Dingell’s oversight committee: “I have not met him in my current capacity, but I plan to in the next few weeks. I respect his authority and oversight responsibility.”

The current “crisis” in science: “A ‘sky is falling’ mentality has been around for the past decade. I used to be skeptical (about it). I can remember in the mid-1980’s, when I was at the White House (as deputy director of the Office of Science and Technology Policy) that I got about 6,000 letters describing a crisis in science. The letters ranged from all sorts of descriptions of distress including agonizing back pains from writing so many grant

applications that were not funded. I must say, things are different now. The numbers speak for themselves.”

The “scandal” over indirect costs: “I think we need to take a broader look at what is a systemic issue—it’s not subject to a quick fix. This is not a new problem, but it is the first time people have been willing to tackle it.” She said top NIH staff are part of an HHS working group on indirect costs. “NIH has scars and bruises from having looked into this issue in the past. The problem has been growing and developing for at least 20 years.” More scrutiny and a method of incentives for saving money are potential cures, she said.

Science salaries and recruitment/retention of excellent scientists: “I am delighted that the SBRS (Senior Biomedical Research Service) will enable us to pay higher salaries, and to include Ph.D.s in eligibility for bonuses. I think NIH is approaching a more competitive stance.” Healy said she recruited more than 50 scientists to the Cleveland Clinic when she directed the Research Institute there prior to joining NIH. “People don’t go into science for

Healy Proposes Historic Women’s Health Initiative

NIH director Dr. Bernadine P. Healy recently introduced a new 10-year, \$500 million women’s health initiative that will make NIH host of the largest, most definitive study of its kind ever undertaken in the United States.

A three-component effort, the initiative will include a large prospective surveillance program, a nationally based community prevention and intervention study and randomized clinical trials.

“This novel and ambitious study will be based on excellent science, exciting epidemiology and also is responsive to a pressing social need,” said Healy, announcing the initiative on Capitol Hill Apr. 19.

Healy said one of the challenges of being named NIH director is to provide the science base to adequately address the unique needs of disease prevention and health promotion in women.

“Research in women’s health is one of my personal priorities,” said Healy. “NIH can rapidly and effectively apply its scientific and administrative resources to this imperative. NIH will do so.”

The comprehensive women’s health initiative will be coordinated by NIH’s newest component—the Office of Research on Women’s Health. Established last September, the office has a mission to improve the prevention, diagnosis and treatment of illness in women and to enhance research related to diseases and conditions that affect women. Healy’s new initiative will be the office’s first major project since its establishment.

Six NIH institutes—NCI, NHLBI,

NIAMS, NIA, NIDDK and NICHD—were named to conduct the research of the multidisciplinary initiative, which will investigate the effects and/or benefits of such lifestyle factors as diet modification and dietary supplements, smoking cessation and physical exercise.

Hormone replacement therapy, an important but so far controversial treatment for the symptoms accompanying menopause, will also be studied. According to Healy, women in today’s society can expect to spend one-third of their lifespan in the postmenopausal state.

“The good news is that women live longer,” said Healy, noting the society’s “awakening” to the fact that women’s medical problems differ significantly from men’s. “The bad news is that women’s quality of life, from a medical and behavioral perspective, is not what it could be.”

Cancer, cardiovascular disease and osteoporosis are the three leading causes of death and disability among women in the United States, according to Healy, who also noted that women have greater morbidity and chronic debilitating illness than men and that women seek medical attention more often, take more medicine—especially antidepressants and tranquilizers—and undergo more surgical procedures.

“In this era,” Healy said, “we understand that while women are equal to men, they are also different from men. That differences may be present, without loss of equal opportunity, must now influence the health and behavioral research agenda, and continue to do so for the future.”

the money. They go for the excitement of new knowledge and intellectual pursuit. It is a joyous career."

On fraud in research: "I personally don't think that fraud is that widespread." Healy did acknowledge, however, that the Office of Scientific Integrity "has been busy."

The new director demurred from answering questions about her private life, keeping the focus on her role as director.

Reminded by a reporter that, during Senate confirmation testimony, she insisted that science must make room both for its journeymen and its prodigies, Healy concluded, "Science cannot ultimately be regulated or contained in a box." □



NIGMS director Dr. Ruth L. Kirschstein will receive an honorary doctorate from Long Island University on May 29. The degree, a doctor of humane letters, will be presented at the university's commencement ceremony at the Brooklyn Academy of Music. This recognition is of special significance because Kirschstein received a B.A. from Long Island University in 1947. It is her fourth honorary doctorate.

ECS Video Series Continues

The Employee Counseling Service is continuing to present its new video series on work, career, and personal growth issues. The next tape in the series is titled "Stress Management for Professionals." It is divided into four 50-minute segments. They will be shown on consecutive Tuesdays in June from noon to 1 p.m. in the Little Theater in Bldg. 10. A question-and-answer session led by Dr. Michael Bowler of ECS will follow each session. The segments are as follows:

- June 4 "Mastering Change and Balance"
- June 11 "Coping with Feelings of Powerlessness"
- June 18 "The Truth about Seeking Approval"
- June 25 "The Difference Between Anger and Hostility"

Contact the ECS, 496-3164, for more information about this program. □

Judith LaRosa Named Deputy Director, NIH's Women's Health Research Office

Dr. Judith H. LaRosa recently was named deputy director of NIH's Office of Research on Women's Health. She comes to ORWH from NHLBI, where she coordinated the National Heart Attack Alert Program, one of five national educational programs sponsored by the institute, since 1989, and the NHLBI Workplace Initiative, since 1978.

Established last September, ORWH's mission is to strengthen NIH's efforts to improve the prevention, diagnosis and treatment of illness in women and to enhance research related to diseases and conditions that affect women.

Among LaRosa's major responsibilities will be activities related to the coordination of the women's health initiative recently announced by NIH director Dr. Bernadine P. Healy.

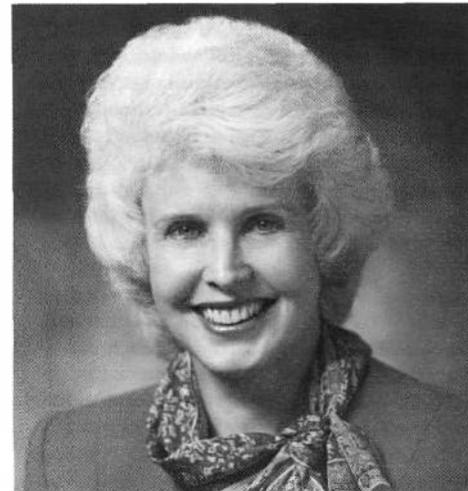
"Dr. LaRosa's professional skills in the areas of health education and nursing, her long-standing interest in women's health issues, and her extraordinary enthusiasm and energy will make her a tremendous asset to the Office of Research on Women's Health," said Dr. Ruth L. Kirschstein, ORWH acting director and director of the National Institute of General Medical Sciences.

An assistant adjunct professor in the University of Maryland's health education department and a faculty associate at Johns Hopkins University School of Nursing, LaRosa, who is also a registered nurse, conducts her own research and writes and lectures on the interrelationship between women's health, work and home life.

Affiliated with NHLBI since 1976, LaRosa has served as the institute's spokeswoman and liaison in a number of national planning groups including the federal interagency committee on worksite health promotion and disease prevention, the American Heart Association Council on Cardiovascular Nursing and the DHHS committee to coordinate environmental health and related programs.

Before coming to NIH, LaRosa served in a number of investigative and education roles including clinical specialist and research assistant for the Substance Abuse Project at George Washington University School of Medicine's Center for Family Research, and psychiatric nursing instructor at Boston University's School of Nursing, where she was honored as teacher of the year in 1966. She has served as a staff nurse at Peter Bent Brigham Hospital and Jamaica Plains VA Hospital, both in Boston, and Presbyterian University Hospital in Pittsburgh.

LaRosa is a 1963 graduate of the University of Pittsburgh School of Nursing, where she earned her master's degree the following year in nursing education. She earned her doctorate in health education in 1989 at the University of Maryland.



Dr. Judith H. LaRosa

A member of several professional organizations including the American Public Health Association and the National Commission for Health Education Credentialing, Inc., LaRosa received a 1989 Performance Award and a 1988 Award of Merit from NHLBI's Office of Prevention, Education and Control. □



Valerie Barbour, NEI personnel officer, was selected as this year's recipient of the Distinguished Senior Professional Award presented by the Montgomery County Chapter of the International Personnel Management Association. Barbour was cited for her "dedicated and outstanding contributions in the personnel management field, and her continual efforts to initiate total quality management at the NEI." She has worked at NIH for 23 years, 15 of which have been in the personnel management field. Barbour has been NEI's personnel officer since 1987.

TECH TRANS*(Continued from Page 1)*

"clear guideposts are needed" to define the extent of private-public collaboration so that federal scientists "can steer an honorable path.

"We must assure that NIH technology transfer continues to evolve in a successful, responsible and appropriate manner," she said.

Healy was welcomed to the assembly by Rep. Connie Morella (R-Md.), who foresees "a new era of scientific cooperation" between government and industry. She has introduced a bill that would allow government scientists to obtain copyright protection for software developed as part of a CRADA. Lack of copyright protection for government-owned software has been seen by many firms as an impediment to its successful development.

Quoting Healy's predecessor Dr. William F. Raub, Morella defended the grounds for collaboration: "Modern biomedicine is a meeting ground of conviction and hope... new knowledge will make us the masters of disease and disability rather than their victims."

The 2-day conference then focused on three major areas critical to the sharing and transfer of research results and the accelerated development of needed health care products: the government-wide challenge of technology transfer, a proposed uniform biological materials sharing agreement and PHS-specific technology transfer programs for industry.

A Government-Wide Challenge

Dr. D. Allan Bromley, director of the White House Office of Science and Technology Policy, remarked in the conference keynote address upon the need to "find ways to create a link to society from what the federal government invests. NIH is a leader in developing a bridge between government and industry," he emphasized. "Its technology transfer program is viewed as one of the most aggressive and effective in the entire federal government."

In noting how NIH, with its Office of Technology Transfer (OTT), helps to see that taxpayers benefit from the transfer of technology developed from the funds it invests in R&D, Bromley also called attention to changes in research funding that make this effort so vital.

Generous post-World War II funding of academic research led to "the burning of bridges between industry and universities—bridges that must be rebuilt, as the federal government is very much aware," he said. Bromley also called for more interaction and job mobility for scientists between these sectors as a means of reconnecting this gap.

Turning to the subject of overseas technology transfer, Bromley disagreed with the idea that joint venturing between the United States

and other nations should be viewed with alarm.

"A lot of people worry that the taxpayers subsidize research that we then give away. But our major strength has been openness, and we must maintain this in all but a few critical areas." Nonetheless, he said, "in international technology agreements, we have to be tougher and more professional than in the past, and we must make sure to get reciprocal agreements.

"During the 1980's, many of the legal barriers to government-to-industry technology transfer were removed," Bromley added, "but unfortunately there has been a huge lack of trust between industry and the federal government. It's not the regulations themselves that cause problems, but nervous lawyers who explain to industry why it would be perilous to do anything." We need more lawyers who break this mold, he said.

Materials Sharing Agreement

Sending samples of cell lines, clones, or other useful biological materials from one institution to another often calls for "material transfer agreements" that protect the rights of both parties. But without uniform standards for such agreements, transfers trigger "a tide of calls, faxes, and papers in situations where there is a material that scientists desperately want, with no commercial value per se," said Joyce M. Brinton, director of Harvard University's Office of Patents, Copyrights, and Licensing. "We can stop wasting time on the agreements by forging an acceptable model for such transfers."

Biological materials can give rise to progeny, adding new layers of complexity to property rights involved in this kind of technology transfer, she said.

Brinton outlined the latest draft of a Uniform Biological Materials Transfer Agreement (UBMTA) developed in conjunction with OTT and other major research institutions. This agreement could serve as a common document for materials sharing among the various sectors (academia, industry, and government), and is especially needed for transfer from one non-profit institution to another. When a cell line is licensed to another lab, its progeny may differ from the parent cells either structurally or functionally. If these differences, created by a licensee, improve or otherwise alter the materials, who owns the improvements? Because of this potential for confusion, says Brinton, "agreements that should have been trivial have been difficult to conclude. It's time to stop reinventing the wheel."

Efforts toward a UBMTA, initially for nonprofit-to-nonprofit exchanges, have yielded an evolving consensus that progeny made in the recipient's lab containing functional subunits of the original materials can be classified as "unmodified derivatives." The functional subunits were there, in a sense, when the

materials were transferred and are not considered the intellectual property of the recipient.

"Modifications," on the other hand, are instances in which the recipient has indeed made an intellectual contribution. The progeny with the modification happen to contain a subset of the original. Those on the recipient side may own part—but not all—of the modifications. Brinton explains this concept by likening the original material to a book, and modifications to chapters in that book. "Authors" may have copyrights to these "chapters" (the modifications), but not to the book as a whole.

PHS Tech Transfer Programs

Dr. Sandra L. Shotwell, chief of the Technology Licensing Branch at OTT, gave a "tour of the opportunity landscape," outlining various ways for companies to access PHS research. Points of transfer include: publications, public meetings such as the OTT-PMA conference, contacts with federal research personnel, CRADAs, informal collaborations, material transfer agreements (MTAs) and licensing.

Getting to specifics, Shotwell told the audience who to contact for each type of technology transfer: for MTAs, she said, contact the researcher directly; to investigate a CRADA opportunity, contact the technology development coordinator for the specific institute, center or division. OTT is the contact for licensing PHS-sponsored inventions. Its licensing specialists currently manage portfolios in AIDS, cancer, central nervous system, infectious diseases (non-AIDS), molecular and cellular biology, and other health care categories.

In addition to licenses and CRADAs, companies may also obtain limited-term commercial evaluation licenses as well as biological materials licenses that cover commercially valuable items lacking patent protection, said Shotwell.

Technology transfer programs of other federal agencies were also highlighted at the meeting, as well as other sessions discussing how new drugs are priced by pharmaceutical companies, policy constraints on materials transfer, and how to value licensable technology.

Thought to be the leader among federal labs in technology transfer, NIH has about 160 CRADAs, 115 of which are active and some 40 of which are close to finalization, reports OTT. □

NIMH Needs Volunteers

NIMH seeks volunteers to participate in a study using an innovative treatment for depression. Treatment involves sleep manipulation and the use of medication. All services and medications are free. For more information call Sarah, 496-6981 or 496-2141. □

NIH Employees Recognized at DHHS Honor Awards Ceremony

Dr. Bernadine P. Healy, director, NIH, assisted HHS secretary Dr. Louis W. Sullivan with the presentation of awards to eight NIH staff members at the DHHS Honor Awards Ceremony held May 3 in the Hubert H. Humphrey Bldg.

Distinguished Service Award (Administrative Category)

Dr. William F. Raub
Former Acting Director
National Institutes of Health

"For his distinguished stewardship of the National Institutes of Health and visionary leadership for the most significant issues in biomedical and clinical research."

Dr. Jay Moskowitz
Associate Director for Science Policy and Legislation
Office of the Director

"For exceptional leadership in initiating and managing major national programs while concurrently guiding the establishment and operation of the NIDCD."

Distinguished Service Award (Biomedical Research Category)

Dr. Louis H. Miller
Head, Malaria Section, Laboratory of Parasitic Diseases
National Institute of Allergy and Infectious Diseases

"For sustained outstanding research in malaria, and the organization and leadership of a highly productive research group investigating critical issues of this globally important disease."

Dr. Francis W. Ruscetti
Microbiologist, Laboratory of Molecular Immunoregulation
National Cancer Institute

"In recognition of fundamental codiscoveries of Interleukin 2, the first human leukemia virus, and for discovery of hematopoietic regulatory activities of transforming growth factor β ."

Secretary's Award for Exceptional Achievement (Compassion)

Karen A. Montrella
Nurse Specialist (Research), Division of Cancer Treatment
Pediatric Branch
National Cancer Institute

"In recognition of personal energy and skills on behalf of children with cancer through her achievements of coordinating/supporting the Nursing Team for Camp Fantastic."

Secretary's Award for Exceptional Achievement (Efficiency)

Dr. Claudia A. Baquet
Associate Director, Cancer Control Science Program
National Cancer Institute

"For her innovative development of nationally recognized cancer research initiatives for medically underserved populations and for inspiring youth as future research scientists."

Departmental Management Award (Executive Management)

Dr. W. Sue Shafer
Associate Director for Program Activities
National Institute of General Medical Sciences

"For her creative leadership and effective management of National Institute of General Medical Sciences grant activities."

Secretary's Special Citation for Ten Outstanding Employees of the Year

Delphine Moeller
Secretary, Pharmacy Department
Clinical Center

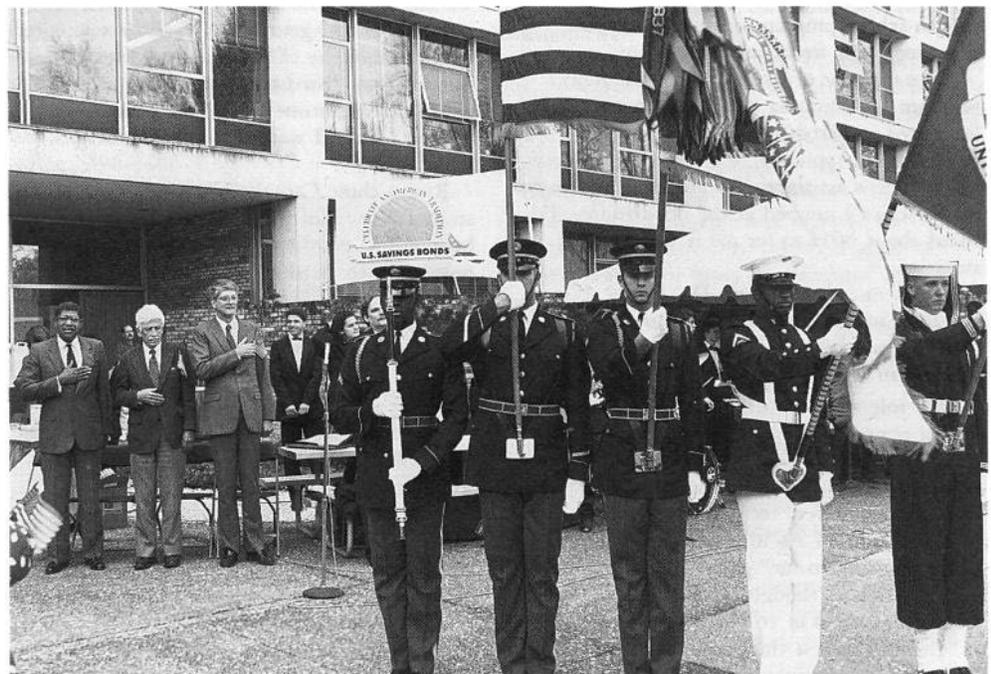
"For sustained outstanding performance and dedicated support to the Clinical Center Pharmacy Department and the National Institutes of Health."

Thrift Plan Has Open Season

The Thrift Savings Plan is having another open season from May 15 through July 31, 1991. FERS employees who were hired before Jan. 1, 1991, as well as CSRS employees, have an opportunity to change their current election, or make an initial election.

A number of significant changes in the Thrift Savings Plan became effective last open season because of legislation enacted July 17, 1990. Eligible CSRS and FERS employees may now elect to contribute to the C Fund (stocks) and F Fund (bonds) without restrictions. For CSRS employees, this means that not all of their funds must go to the G Fund. For FERS employees, this means that the 1 percent automatic agency contributions and the agency matching contributions may also be put into the C and F Funds. FERS employees who are not contributing their own money may elect to put all or part of the 1 percent automatic contribution in the C and/or F Funds.

The features of the plan and directions on how to make a plan election or to change your current withholding are described in the *Thrift Savings Plan Open Season Update* pamphlet, which will be distributed to eligible employees by their ICD personnel office. More detailed information is provided in the *Summary of the Thrift Savings Plan for Federal Employees* booklet and is available in your ICD personnel office. □



The Joint Armed Forces Color Guard presents the colors at the recent kickoff of NIH's U.S. Savings Bonds campaign. Standing are (from l) Eugene Kinlow, deputy assistant for personnel administration, DHHS; Dr. J. Edward Rall, NIH deputy director for intramural research; and Dr. Philip Schambra, director, Fogarty International Center, NIH.

RIVERA

(Continued from Page 1)

"I played drums and percussion for 9 years," he recalls of his days with Johnny Costase. "We played Latin jazz and salsa. That was a lot of fun—probably the best years of my life."

His plans for completing high school in suburban Maryland were quashed when his brother, with whom Juan had planned to share an apartment, learned that freshman at Columbia Union must live in school dormitories. Ever resourceful, Juan used money he had earned as a musician to attend Highland View Academy, a boarding school in Mt. Aetna, Md., near Hagerstown.

"I was on work/study, which helped pay my way," he explains. "I stayed on at school while everyone else went home on vacations. When I graduated in 1974, the school owed me \$200."

Highland View had a particularly strong science curriculum, Rivera recalls. "It was one of the few schools at that time with computers. They were these mammoth things that do about the same thing as today's pocket calculators."

It was at Highland View that he was first turned on to science by a valued mentor. The school also afforded him the chance to build on values reinforced by his parents: education is the only way out of the cycle of poverty, the only way a man can better himself.

Following his brother's footsteps to Columbia Union, Juan was introduced to NIH's stay-in-school program during the second semester of his freshman year.

"The director of the medical technology program at Columbia Union asked if I was interested in part-time lab work at NIH," says Rivera, who, typically, was already employed as a teacher's assistant. "I knew it would pay a lot better so I jumped at the opportunity. I'd heard about NIH so for me it was an ideal situation."

Rivera interviewed with Dr. Henry Metzger, who is now scientific director at NIAMS, and the late Dr. Chaviva Isersky, a senior staff fellow.

"My role was to work with Dr. Isersky," Rivera remembers. "I was involved early on in tissue culture, media preparation, running experiments, and maintaining lab equipment. It was sort of a very technical role."

Rivera worked 20-30 hours a week—"It was interesting to me"—and was willing to work weekends, though the program stipulated a maximum of 16 hours a week.

"One of the best things about the program is the freedom it gives supervisors to set your hours," he said. "I could leave when I had exams at school and come in when I wanted."

From 1975 to 1979, Rivera worked, largely under Isersky's tutelage, as a stay-in-school.

Mainly because he was exposed to basic research at NIH, he left Columbia Union after his freshman year and entered the University of Maryland, where he earned a B.S. in 1981.

"After 1979, I stayed on at NIH under a different appointment for 2 years," Rivera said. Once he had a bachelor's degree, he began full-time work as a technician with Isersky.

"She was my first mentor at NIH," he said. "She was the type of individual who would clearly try to get you to be your best in science. She kindled the desire to ask questions and try to answer those questions, to form ideas for answering questions. She was a very special person, very willing to take her time with people. She took you through the process of thinking, and where you might want to think differently."

Metzger remembers Rivera as a rare find among stay-in-schools: "Dr. Isersky hired him to perform routine lab duties. She was responsible for his early development and training. We hired him as a technician when he graduated college, and he continued to do well. I was very impressed with his continued development."

Rivera credits Isersky with helping him grow as a scientist. "She was very willing to allow one to develop. The more you could do, the more she gave you to do."

In 1983, Rivera decided to return to school, taking the graduate exams in business, medicine and liberal arts.

"I was somewhat unsure of what I really wanted to do," he recalls, "so I applied to med school and grad school." He was accepted at the University of Maryland medical school, but was wait-listed for a year.

"In the meantime I decided on graduate school. I knew I wanted a career in basic science."

Rivera chose Catholic University for his studies because of its proximity to NIH and because CU permitted him to continue his research with Isersky. He earned a master's degree in 1986. "Unfortunately, it happened after Dr. Isersky had died of breast cancer."

Metzger then became Rivera's Ph.D. thesis advisor, guiding him towards completion, just last year, of a Ph.D. with highest honors.

"He did very, very well at Catholic University," Metzger says. "They were very happy with him."

Rivera credits Metzger's availability as an advisor with his academic success: "Henry, in no uncertain terms, has been available to me, both scientifically and otherwise."

Why does one stay-in-school thrive on the ladder of success in science while others fail?

"I think it is up to the student to show interest," says Rivera, "and then the rewards follow. That's very true for science in general. Most scientists are very happy to talk about their research if a youngster shows interest."



Dr. Juan Rivera, known as John to many here, has worked his way from being an NIH stay-in-school in 1975 to obtaining a Ph.D. with highest honors in 1990; today he is a biologist in the Arthritis and Rheumatism Branch, NIAMS.

Rivera calls the period 1986-90 his years of maturing as a scientist. "Dr. Metzger was my second NIH mentor. His combination of support and independence was very unusual for a graduate student to get. I got to explore my own ideas. I've learned to go from a technical level to a level where I'm thinking like a scientist who can carry out and evaluate ideas."

Rivera is quick to point out that "I'm certainly not the only success story of the (stay-in-school) program." Other of his peers have continued medical careers and done well. For his part, Rivera is determined to play the mentor role wherever appropriate.

"I like to take on students, I really do," he said. "I get satisfaction from answering their questions." At the tip of his tongue are biographical details about recent colleagues who are rising quickly in medical careers, both here and abroad.

At the moment, Rivera is helping acquaint three sisters who work in his lab with the intricacies of basic research in signal transduction. Two of the Liu sisters—Jackie and Jennifer—are helping Rivera complete various aspects of his research project: synthesis and assembly of the high-affinity receptor for IgE.

"We're trying to understand how the receptor transduces a signal from the extra- to the intracellular environment," he says. "It plays a role in allergies—it's the central protein in the allergic response. We'd like to find some specific signal to target for drug therapy."

In addition to his scientific work, Rivera has been an EEO counselor for 3 years. He recently received an EEO Achievement Award recognizing his work on behalf of NIAMS EEO goals. Fluent in Spanish, he travels to NIH minority symposia around the country and has also participated in Hispanic programs on campus.

Students who meet Rivera learn that, despite his current success, there were gaping opportunities to fail on his resume. Three crises, he recalls, threatened to derail his rise out of poverty.

"I was raised in lower Manhattan, right outside the Village," he remembers. "There was lots of peer pressure on me as a kid. At around 10, I started initiation in a gang. I was a sort of cub or cadet for the Young Lords. Maybe the music got me out of it, got me off the streets. Between the band and school, I didn't have time for anything else.

"Also, my parents were very restrictive. They wanted to know where we were at all times."

Rivera's second temptation involved choosing between school and the musician's life.

"That was a very difficult decision. My parents advised me to drop music. I had an uncle in the band, a trombone player, and he got caught up in the scene. He got into drugs and alcohol."

The next critical point occurred during Rivera's third year of college.

"I was taking physical chemistry and not doing well at all," he remembers. "I became convinced that I'd had enough of school. I had a long talk with Dr. Isersky, who told me that I wasn't going to do well in everything, but that the effort was what counted. She got me to take my focus off of earning grades and onto making the effort. Her push was exactly what I needed."

Rivera is convinced that opportunities await those who are willing to search them out. "(Opportunity) is there, but it's a matter of trying to grab onto its shoelaces," he said. "Among the poor, the very basics of education are not very well emphasized. Even in the better high schools, survival skills for college are lacking. Consequently it takes us longer to get

adjusted to the intellectual environment.

"Patience," he emphasizes, "is crucial in allowing kids from the inner city to develop. They also need help and resources."

Looking toward his own future, Rivera is intent on heading his own laboratory some day, even if it means having to leave his beloved NIH.

"Without question, NIH is the best environment to do research," he declares. "I am in debt to many people around here for being in this position."

To those who know him, Rivera is paying back that debt every day. □

Cancer Prevention Fellowship Program Announced by NCI

The Division of Cancer Prevention and Control (DCPC) is accepting applications for the Cancer Prevention Fellowship Program. Depending on funding, the program can take up to 10 fellows for a period of 2 to 3 years.

Designed to attract those in the health sciences to careers in cancer prevention/control, the program provides for: master of public health training (available during the first year; independent research at NCI will comprise the two pay-back years following the M.P.H.); participation in the DCPC cancer prevention and control academic course; work at NCI directly with preceptors; field assignments at other institutions.

Deadline for receipt of applications is Sept. 1, 1991, for a program that begins July 1, 1992 (date may vary for M.P.H. applicants). Eligibility requirements include a doctoral degree in the sciences.

For more information, contact Barbara Redding, 496-8640. □



Local radio station DC-101 FM recently cited Ana M. Ferreira as the "Secretary of the Day" during National Secretary's Week. It also mentioned her special abilities as a secretary and an administrator and sent her a DC-101 t-shirt, a tote bag, and a certificate for a large bouquet of flowers. Ferreira is the secretary for the Laboratory of Neurobiology, NINDS, where she has been working for the past 5 years.

Campus Claims Two Awardees

Two individuals working on campus have been named winners of the 43rd annual Arthur S. Flemming Awards, given by the Downtown Jaycees of the District of Columbia. The awards honor outstanding federal employees who have also contributed to their communities.

Dr. Susan F. Leitman, chief of the blood services section in the Clinical Center's department of transfusion medicine, was recognized for work that has improved the safety of blood and transfusion practice around the world.

Dr. Robert Desimone of NIMH's Laboratory of Neuropsychology was honored for "his landmark contributions to the elucidation of the neurobiological bases of perceptual and cognitive processes."

The winners were feted at a dinner May 9 featuring remarks by Sen. Wendell Ford of Kentucky. □

FOCC Seeks Board Members

The Friends of the Clinical Center is currently accepting applications for membership to its board of directors.

The FOCC is a private, nonprofit organization that provides emergency financial aid to NIH patients and their families. It seeks dedicated and energetic members who can contribute their time and services in decision-making and fundraising efforts.

Send applications to Bldg. 10, Rm. 1C119. For further information, call 402-0193. □



Relishing the opportunity to be a mentor, Rivera offers guidance to students in his branch, including the Liu sisters (from l) Jennifer, Ann and Jacqueline.

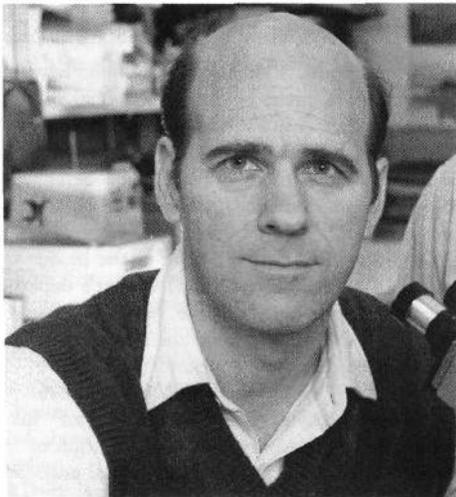
NICHD Names Three New Laboratory Chiefs

By Birgit An der Lan

NICHD recently expanded its studies of the molecular control of growth by founding a new molecular biology laboratory, the Laboratory of Molecular Growth Regulation. The lab is headed by Bruce Howard, a well-known molecular biologist responsible for many key technical advances. He is perhaps best known as the originator of the "CAT-assay," by which a bacterial gene is used to monitor recombinant promoter sequences in eukaryotic cells.

Howard earned his B.A. from Harvard and M.D. from the University of California, San Francisco. While he was a medical student, one of his mentors was Mike Bishop, who subsequently received a Nobel Prize for his work on oncogenes. Later he spent 2 years at Stanford with another Nobel laureate, Paul Berg, where together with Richard Mulligan, he demonstrated expression of a recombinant virus for the first time in mammalian cells.

In 1979 he joined NCI's Laboratory of Molecular Biology as senior investigator,



Dr. Bruce Howard

where he was the first to construct a mammalian vector containing bacterial sequences that are expressed constitutively. This made it possible to select cells that had incorporated exogenous DNA from such vectors, methods that are now used worldwide.

In the mid 1980's, Howard turned his attention to the genetic mechanisms controlling mammalian growth and differentiation, and in particular, to the role of the so-called "Alu" sequences, a class of ubiquitous repetitive human DNA whose function has puzzled molecular biologists ever since its discovery about 20 years ago. The prevailing opinion was that these sequences are redundant, but Howard's research is changing this view. He



Dr. Bruce Nisula

has shown that these "Alu" repeat sequences, so-called because of their sensitivity to the "Alu" restriction enzyme, can suppress the replication of chromosomal DNA. Largely due to his and his colleagues' studies, which will continue at NICHD, it is now becoming apparent that the "Alu" elements are part of the grand design of developmental control.

Two recent departures from NICHD resulted in the appointment of two other branch chiefs. Bruce Nisula succeeds Dr. Lynn Loriaux as head of the Developmental Endocrinology Branch, NICHD's largest clinical program. The branch conducts research into a wide range of endocrine disorders, and cares for patients suffering from these diseases, including growth disorders, disorders of female fertility, precocious and delayed puberty, disorders of the hypothalamic-pituitary-adrenal axis such as Cushing's syndrome, cortisol resistance, autoimmune states and depression.

Nisula is also a long-time member of the NIH. He is a graduate of Dartmouth College and Harvard Medical School. Since coming to NICHD in 1971, he has gained an international reputation as an authority on the structure and function of glycoprotein hormones, especially human chorionic gonadotropin (hCG) and thyroid stimulating hormone (TSH). As a postdoctoral fellow at NICHD he established that the hyperthyroidism often seen in patients with choriocarcinoma is due to hCG, which is secreted in huge amounts in these patients.

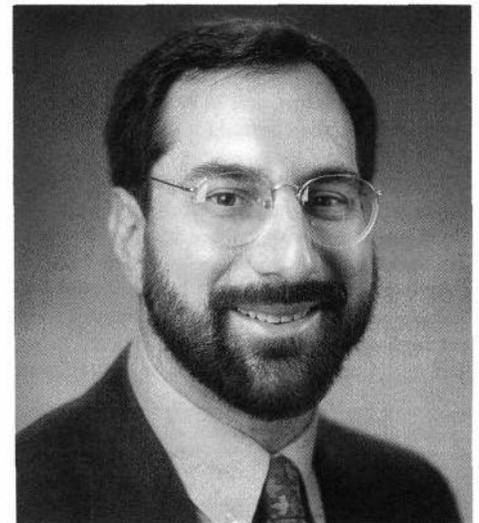
As senior investigator, and then as section chief in the DEB, he developed methods to quantify hCG related molecules and to distinguish them from hCG. One such metabolite, the so-called beta-core fragment,

is particularly important because it is a marker for non-trophoblastic cancers of the reproductive system—in these conditions circulating levels of beta-core, but not of hCG, are frequently elevated.

His work on hCG also led him to the discovery that a much higher percentage of pregnancies than is generally accepted are lost close to the time of implantation, long before women realize they are pregnant. Nisula has shown that this is a normal occurrence and a sign of fertility, rather than the converse.

Nisula is also known for his contributions to the diagnosis and management of thyroid disorders, especially for developing assays for TSH, which is the pituitary hormone regulating thyroid function. His studies on TSH have greatly simplified the diagnosis of children suffering from central hypothyroidism, a malfunction of the pituitary that is often difficult to detect, or from borderline hyper- or hypothyroidism.

Joshua Zimmerberg takes over from Dr. David Rodbard as chief of the Laboratory of Theoretical and Physical Biology of NICHD. Zimmerberg brings to his new post the expertise of an electrophysiologist, biophysicist and



Dr. Joshua Zimmerberg

cell biologist, and is widely recognized for his work on membrane fusion.

He began his scientific career while he was still in high school, participating in the NSF Summer Science Program, taking mathematics courses at Rutgers and spending time at the Weizmann Summer Science Institute. He obtained a degree in biochemistry from Harvard, and then entered the M.D./Ph.D. program at Albert Einstein College of Medicine.

Zimmerberg started working on membrane fusion when he was a graduate student, studying the phenomenon in synthetic lipid membranes for his doctoral dissertation. Dur-

ing a year as a postdoctoral fellow at Stanford, he worked on exocytosis in the sea urchin egg, being among the first to bring biophysical analysis to bear on this important biological phenomenon (membrane fusion is essential to a wide variety of vital biological processes such as exocytosis, by which cells secrete proteins, hormones, and neurotransmitters; fertilization of eggs with sperm; and invasion of cells by viruses).

His interest in the biophysics of fusion then led him in 1983 to join Adrian Parsegian at NIH. Parsegian is a world expert on surface forces—he is perhaps best known as the discoverer of the hydration force. Here Zimmerberg studied ion channels, showing how they change shape when they open and close. In collaboration with Sanford Simon and Gunter Blobel at Rockefeller, he demonstrated that rough endoplasmic reticulum contains very large channels, thought to be the conduits for insertion of membrane-spanning proteins into the endoplasmic reticulum.

He also extended his work on exocytosis by developing novel types of apparatus, which enabled him and his colleagues to disprove the generally held theory that osmotic forces drive fusion. A further discovery was that in biological systems one of the first events of membrane fusion is the formation of a fusion pore too small to be seen by electron microscopy. It forms very slowly compared with the fusion pore in synthetic lipid membranes—Zimmerberg believes this is because proteins, for which he is now searching, are involved. He envisages that, during fusion, such proteins pull membranes close enough together that the forces repelling the lipids are overcome. In his new post, he plans to test this hypothesis. □



Dr. William Paul, chief of NIAID's Laboratory of Immunology, was recently a Wellcome visiting professor at Wayne State University School of Medicine in Detroit, where he also delivered the Wellcome Lecture on "Interleukin 4: Function and Regulation of Production." Paul is internationally known for his research on the regulation of lymphocyte activation, differentiation, and proliferation and the role of lymphokines in the immune response. The Wellcome Visiting Professorships in the Basic Medical Sciences are sponsored by the Burroughs Wellcome Fund. They are awarded to medical and scientific institutions within the United States to invite eminent scientists who will "stimulate interest in the basic sciences" such as molecular biology and immunology.

NCI Offers Career Development

The NCI Administrative Career Development (ACD) Program is taking applications May 20 through June 10. Up to three candidates may be selected for the program. Positions can be filled at the GS-7 through 12 levels.

The ACD program is designed to prepare individuals who demonstrate exceptional leadership and management potential to achieve higher-level administrative management positions at NCI. It offers internship and career development opportunities for individuals pursuing careers in an administrative discipline and for those who wish to broaden their career options.

ACD interns work closely with a mentor in planning formal coursework and developmental assignments in such areas as financial management and planning, grants and contracts management, personnel management, program planning, management analysis, information management and systems analysis, legislative analysis and equal employment opportunity. The length of an ACD internship is based on the intern's interests, previous experience and education. Internships are 3 years in length. Upon successful completion of the program, interns are placed in administrative management positions within NCI.

To be considered for the ACD program, applicants must meet the following basic eligibility requirements:

- Be an HHS employee and currently hold a career or career-conditional appointment at the GS-7 level or above;
- Occupy or be willing to accept a full-time position; and
- Meet the basic eligibility requirements for the position as defined in the U.S. Office of Personnel Management X-118 Qualification Standards for the GS-341 series, which is available from the NCI Training Office, Personnel Management Branch.

Candidates must enter the program through reassignment or change to lower grade. If a candidate must request a change to lower grade to enter the program, the candidate may be entitled to salary retention for 2 years.

NCI staff will discuss the program and the application and selection processes at an information session May 23, 10 a.m.-12 noon in Lipsett Amphitheater, Bldg. 10.

Application packages may be obtained at the session and from Bldg. 31, Rm. 3A19.

For more information call 496-0643. □



The IRS man (Loren Ziller, r) confronts Grandpa Vanderhof (Robin Padorr) and Essie and Ed Carmichael (Gisele Giorgi and Jack Arthur) in the classic Kaufman and Hart comedy, You Can't Take It With You, to be presented by the NIH R&W Theater Group May 17 and 18 at 8 p.m. and May 19 at 3 p.m. in Masur Auditorium, Bldg. 10. Performances benefit the Patient Emergency Fund. Tickets are \$7 for adults, \$5 for senior citizens, and \$3 for children, and may be purchased in advance (for \$1 off per ticket) or at the door. For information call (301) 948-2507.

NIEHS Celebrates 21st Earth Day With Exhibits and Lectures

By Thomas Hawkins

Hundreds of NIEHS employees combed exhibit tables in the Bldg. 101 Mall on Apr. 22 as part of NIEHS' observance of the 21st anniversary of Earth Day. The program was sponsored by the institute's environmental awareness advisory committee (EAAC).

"Our concern with the effects of the environment on human health must extend to a concern for the environment itself, in the global sense" said Dr. John McLachlan, director of NIEHS' Division of Intramural Research, in opening remarks. "We must maintain the health of the planet we inhabit." McLachlan pointed out that NIEHS was established as a division within NIH in 1966, and was elevated to an institute in 1969, all before the establishment of the Environmental Protection Agency and the advent of the first Earth Day in 1970.

Attendees received special NIEHS household hazardous waste wheels and nine different recycling directories prepared by EAAC. Also available were water conservation kits, soil sampling boxes and forms, Sierra Club posters, free popcorn, and many other publications and materials relating to environmental awareness.

Poster sessions featured environmental issues such as endangered species, disposal of hazardous waste, recycling newspaper as packing material and animal bedding.

Rhonda Sherman of the North Carolina State Solid Waste Management group gave a nuts-and-bolts agenda for citizen action on cleaning up the environment at the household level.

One of her major points was the importance of "pre-cycling," that is, planning before purchasing items. Consider how they will fit in the waste recycling stream, she noted. Select products carefully, be picky about packaging, avoid disposables (razors, pens, etc.) by reusing things and buying in bulk, and repair things (toasters, radios, etc.) whenever possible.

Sherman also urged her listeners to buy products made with recycled materials, which helps create a market demand for recycling and causes manufacturers to look for reclaimed material to put into their raw material stream, encouraging the reclamation of materials generally.

Steven Levitas of the North Carolina Environmental Defense Fund gave a progress report on environmental efforts a year after the 20th anniversary of Earth Day. He cited areas of promise including "green marketing" and ecological journalism. He noted that the crucial effort now is to establish new and viable ways of funding environmental efforts, and



Participating in Earth Day at NIEHS were (from l) Steven Levitas of the Environmental Defense Fund; Dr. Robert Chapin, chairman of the NIEHS environmental awareness advisory committee (EAAC); Dr. John McLachlan, director of the Division of Intramural Research, NIEHS; Rhonda Sherman of the N.C. Solid Waste Management group; and William Willis, EAAC member.

this must be done primarily through legislation.

Science sometimes plays a pivotal role in environmental legislation, Levitas said.

The Earth Day presentations were followed by an NIEHS town meeting, which featured a progress report by EAAC chair Dr. Robert E. Chapin, who indicated that the first major goal of the committee is to make recycling a routine and relatively easy part of daily life at the institute.

"We don't want to redirect our mission from science to recycling," he said, "but rather to make it easy to recycle all of our aluminum, glass, paper, plastics, and so on. The first step toward emplacing a large recycling effort is to find out what we're throwing away. Therefore, we're in the midst of a waste stream analysis, the data from which will help us know prospectively what size recovery effort we should plan."

In the past year, Chapin said, the Facilities Engineering Branch has followed up a committee suggestion by replacing incandescent bulbs with double fluorescent bulbs to save \$30,000 in utilities bills a year. In addition, the committee has started a program to encourage employees to bring paper trash from home to enrich the incinerator fuel from institute dumpsters, which in turn is used in boilers to decrease the amount of fossil fuels used. □

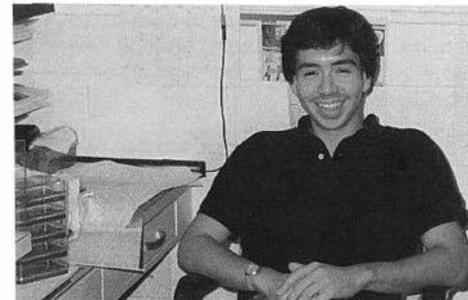
Carpoolers Needed

Two people are needed to round out a carpool group coming to Bethesda from the Hagerstown/Myersville/Frederick area. Working hours are 6:30 a.m. to 3 p.m. Contact Diane Doub (at work, 530-7008, or home, 717-597-4695) or Martha Whirley (530-7035), who work at FASEB. □

Huibregtse Wins Fellowship

Dr. Jon Huibregtse recently won a postdoctoral fellowship from the American Cancer Society to continue his research at the National Cancer Institute's Laboratory of Tumor Virus Biology.

During the 2-year research fellowship, Huibregtse will train under Dr. Peter M. Howley, who has helped illuminate the role of papillomaviruses in human cervical cancer. Huibregtse said he hopes to use the fellowship to investigate the transforming proteins



Dr. Jon Huibregtse

encoded by the human papillomaviruses, and their association with tumor suppressor gene products.

A native of Green Bay, Wis., Huibregtse earned a bachelor of science in 1983, and a Ph.D. in 1989 from the University of Michigan in biological chemistry. He has been a postdoctoral fellow at NCI's Laboratory of Tumor Virus Biology since 1989.

Other awards Huibregtse has won include a 4-year NIH Genetics Training Grant predoctoral fellowship in 1983, and the University of Michigan Cancer Research Institute Fellowship in 1987. In 1988, Huibregtse won the University of Michigan's Lee Murphy Memorial Prize for his work in yeast transcription. □

1991 U.S. Savings Bond Campaign Deputy Coordinators

Org. CC	Name	Bldg./Rm.	Phone/FAX
	Ogden Lacy	10/1C120	496-1584 402-1682
DCRT	Joanne Weaver	12A/3009	496-6146 402-0007
DRG	Nadel Griffith	WW/436	496-9797 496-9975
FIC	Sharon Nieberding	31/B2C15	496-4625 402-1135
NCI	Tim Kearns	31/4A47	496-6985 496-6005
NCHGR	Anita Brooks	38A/616	402-1094 480-2770
NCNR	Robin Schofield	31/5B03	496-8230 480-4969
NCRR	Stuart Eisenman	WW/849	496-9840 402-2116
NEI	Judith Duff Sally Gogarty	31/6A19	496-4233 496-4233 496-2297
NHLBI	Tina Roark	WW/7A11	496-7893 496-7033
NIA	Dee Cross	31/2C08	496-5345 496-2525
NIAID	Jo Morris	31/7A19	496-9592 496-5349
NIAMS	Lyn Eyre	31/4C32	496-6053 480-6069
NICHD	Anne Baur Sandra Occhipinti	31/2A49 31/2A24	496-1971 496-1511 496-4757
NIDCD	Gloria Rasband	31/B2C06	402-1129 402-1590
NIDDK	Tom Johnson	31/9A46	496-5765 496-2830
NIDR	Dorothy Costinett	31/2C27	496-7744 496-9988
NIEHS	Janis Mullaney	Mail Drop A209	8-629-4925 8-629-5002
NIGMS	Ruth Monaghan	WW/953	496-7746 402-0021
NINDS	Maureen Volz	Fed/10C10	496-0347 496-9941
NLM	Donna Baker	38/B1N17	496-6546 402-0642
OD/NIH	Loren Ziller	31/1B58	496-6385 496-8018
ORS	Joan Topalian	31/1C02	402-1661 402-0316
DES	LaShawn Goodman	13/2E47	496-2421 402-0401
DS	Bonnie Jackson	31/1C02	496-1357 402-0316
DSM	Dennis Connors	EPS/200	496-3172 402-0331
DSO	Sandra Miller	31/B3B12	496-6893 402-0394
DTS	Gene Cowgill	31/6C30	496-5702 402-1364
OD/ORS	Ronnie Rogers	Quarters/15C-1	402-0770 402-0769



The deputy coordinators for the 1991 U.S. Savings Bond campaign at NIH met recently at a briefing.



Stuart Eisenman (r), 1991 Savings Bond drive deputy coordinator for the National Center for Research Resources, presents NCRD director Dr. Robert A. Whitney, Jr., with his sign-up materials and this year's Savings Bond drive poster.

Schwetz Wins Lehman Award

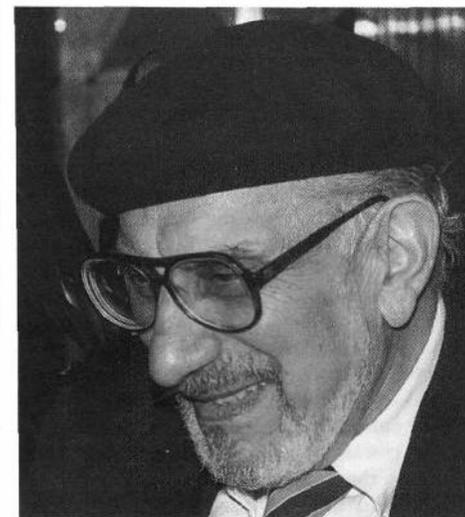
Dr. Bernard A. Schwetz, chief of the Systems Toxicity Branch, NIEHS, has received the Arnold J. Lehman Award from the Society of Toxicology at its national meeting in Dallas. The award recognizes an individual who has made major contributions to the control of chemical agents, and in recognition of scientific excellence and continuing contributions to the field of toxicology.

The SOT is an international organization with a membership of more than 2,000 research scientists and other toxicological professionals, and is headquartered in Washington, D.C. Schwetz served as a councilor, a member of the SOT governing board, from 1984 to 1986, and has served as editor of *Fundamental and Applied Toxicology*, an official SOT journal, since 1986. He has headed the Systems Toxicity Branch since 1982. The branch conducts research to help characterize the toxicological profile of chemicals, to improve the methods for toxicological evaluation, and to better understand the mechanisms of the toxicity of selected chemicals. Schwetz joined NIEHS from Dow Chemical's toxicology research laboratory in Midland, Mich., where he was director. □

NLM Mourns Daniel Carangi

The National Library of Medicine staff was saddened to learn of the death on Mar. 23 of Daniel Carangi, the library's former graphics director. He had been with the library for 23 years until his retirement in 1989 following a stroke. In recent months he had been living in a health care center in La Crosse, Wis.

Carangi joined the library in 1966 as a visual information officer with the Office of Public Information. In 1981, the graphics function was reassigned to the National Medical Audiovisual Center and later to the Lister Hill Center where, as a member of the Audiovisual Program Development Branch, he



Daniel Carangi

continued to design the library's exhibits and publications and to perform a myriad of other assignments related to visual communications.

Before his federal career, Carangi had worked in New York with King Features, specifically on the "Little King" comic strip and as art director for *Puck*, *The Comic Weekly*. He also worked for the Department of Defense from 1962 to 1966 and served in the South Pacific during World War II.

Carangi's colorful and caring approach—both to his colleagues and to his work—will be long remembered by those who knew him.

Help Needed for Barbecue

Volunteers are needed to help with the 9th annual Camp Fantastic Barbecue scheduled for Tuesday, June 18 (with a rain date of June 19). Those who sign up will help serve food and sell tickets on the day of the event, and also will sell tickets during the lunch hour in the week prior to the barbecue. If you can help, contact the R&W, 496-6061. □

Clinical Center Nurses Commissioned to Kuwait

Four Clinical Center nurses left National Airport for Kuwait last month on an American Red Cross mission marked by a farewell ceremony attended by American Red Cross President Elizabeth Dole, Surgeon General Antonia Novello, and a small contingent of Clinical Center, PHS and Red Cross employees.

Nurses John J. Tuscan Jr., Robert A. Parmentier, Patricia L. Pederstuen, and Daniel A. Sands were among the medical team of 58 PHS and American Red Cross nurses commissioned to Kuwait to provide direct medical and patient care for the Sulbikhat Children's Institution. The institution provides care for physically and mentally handicapped children and elderly.

Since the Iraqi invasion of Kuwait on Aug. 2, 1990, the staffing level at the institution fell from more than 300 to 24. During the Iraqi occupation, 170 children died due to the lack of medical care. Dole visited the institution on Mar. 21 during a 2-week trip to Kuwait and pledged to send help.

The delegation, consisting of nurses, physical therapists, a nursing supervisor, and a pediatrician, will stay in Kuwait from 6 weeks to 3 months. While the team is assigned to the institution, members may be asked to visit refugee border camps.

"There may be other duties once we are there," said Tuscan. "They keep stressing to be flexible."

Upon receipt of the mission orders, the medical team convened in Washington, D.C., for 4 days of Red Cross orientation and training, including briefings on cultural issues, environmental concerns, personal safety and international humanitarian law. According to Tuscan, there are many cultural differences to which Americans in Kuwait must be sensitive.

"You need to learn how to say things so as not to offend or shock people," he said. For example, in Kuwait, one never says that a person will die, but that he or she is tired.

"The cultural milieu will be most interesting and challenging," added Pederstuen. "The Red Cross thoroughly briefed us and even provided us with beginning Arabic tapes from the diplomatic language service to listen to on the plane trip."

Despite short notice, the CC team members were physically and emotionally well-prepared.

"We are ready to go over there and do what we need to do," said Tuscan.—Karen Riedel □



U.S. Surgeon General Antonia Novello (second from r) bids farewell to CC nurses who left the U.S. recently to help patients in the Persian Gulf. They are (from l) Robert A. Parmentier, John J. Tuscan, Daniel A. Sands and Patricia L. Pederstuen.

Safety Classes Offered

The Occupational Safety and Health Branch of the Division of Safety is offering the following laboratory safety courses in the spring and summer. These programs are provided as a service to the NIH research community and are free of charge. Preregistration is preferred but not essential.

The courses offered are: laboratory safety for summer research associates (cosponsored with NIDDK); working safely with HIV in the research laboratory; chemical safety in the laboratory; and biosafety awareness.

For more information or to register, call 496-2346.

Date	Course	Location	Class
May 21	Summer	Bldg. 10/Lipsett	8:15-11:45 a.m.
May 28	HIV	Bldg. 1/Wilson	9:30-11:30 a.m.
June 4	Summer	Bldg. 10/Lipsett	8:15-11:45 a.m.
June 12	ChemSafety	Bldg. 21/238	8:30-11:30 a.m.
June 18	HIV	Bldg. 1/Wilson	9:30-11:30 a.m.
June 20	Summer	Bldg. 1/Wilson	8:30 a.m.-12 p.m.
June 26	BioSafety	Bldg. 21/238	8:30-11:30 a.m.
July 2	Summer	Bldg. 10/Lipsett	1:30-5 p.m.



The annual NIAID director's report and awards ceremony honored NIAID's 1990 award recipients, pictured above with Dr. Anthony S. Fauci (r), institute director. The awardees are (back row, from l) James C. Craddock, Dr. Robert Goldstein, Christine A. Kozak, Toni A. Sutherland, Dr. C. David Wise, Dr. Jonathan E. Silver, Dr. John H. Kebrl, Dr. Stephen E. Straus, Dr. Thomas J. Kindt, Dr. Steven Banks, Alan S. Graeff, Dr. Carole Heilman. In front are (from l) Brenda Velez, Dr. Marcia Carlyn, Dr. John Y. Killen, Dr. Luz A. Froeblich, Dr. John W. Diggs, Thelma Gaitber, Mary Lou Eury, Dr. Olivia T. Preble. Not shown are Dr. Daniel F. Hoth, Vincent A. Thomas Jr., Dr. Bruce W. Chesebro, Dr. Edward R. Gubish, Dr. Marshall E. Bloom, Keith E. Hanson, Farrell R. Johnson, and Dr. Michael Parnell.

Allergic to Cucarachas?

The FDA and NIAID seek volunteers who are dust/cockroach allergic to participate in a study involving allergy skin testing. Participants will be paid. Send written requests for questionnaires to Jackie Matthews, Bldg. 29, Rm. 201. □

TRAINING TIPS

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

<i>Courses and Programs</i>	<i>Starting Dates</i>
<i>Personal Computing Training 496-6211</i>	
Welcome to Macintosh	6/3, 6/20
Intro to Word Perfect (Mac)	6/10
Advanced Word Perfect (Mac)	5/23
Intro to Microsoft Word (Mac)	6/5
Filemaker	7/25
Excel Level 1	6/13, 7/8
Excel Level 2	6/21, 7/12
Excel Level 4	6/11
FoxBASE-Level 1 (Mac)	7/10
MacDraw II	6/25
Intro to DeltaGraph	7/26
Intro to Pagemaker 3.0	6/24
Intro to PowerPoint II	7/31
HyperCard Programming-Level 2	6/26
3Com PC Network-Level 1	6/4, 6/17, 7/11
3Com PC Network-Level 2	6/18, 7/22
3Com PC Network Management-Level 1	7/29
Introduction to Personal Computing for New Users	6/6, 7/1
Introduction to PC Keyboarding	7/10
Improving PC Keyboarding Skills	8/1
Introduction to DOS	6/7, 6/24
Introduction to WordPerfect 5.1	6/3, 6/26
WordPerfect 5.1 — Advanced Topics	6/10, 7/16
WordPerfect 5.0 to 5.1 Transition	6/25
Intro to Harvard Graphics, Rel. 2.3	7/8
Intermed Harvard Graphics, Rel. 2.3	6/4, 8/2
Introduction to dBASE III+	6/11, 7/8
Intermediate dBASE III+	7/29
dBASE III+ — Advanced Topics	7/23
dBASE III+ — Programming	8/19
Intro to Lotus 1-2-3, Rel. 2.2	6/17, 7/15
Lotus 1-2-3, Rel. 2.2 — Adv. Tops.	8/6

Fogarty Board Gains Four

Four new members have been appointed to the advisory board of the Fogarty International Center for Advanced Study in the Health Sciences.

Joining the board are Harry G. Barnes Jr., a former U.S. ambassador; Dr. Ada Sue Hinshaw, director of the National Center for Nursing Research; Dr. Adetokunbo O. Lucas of the Harvard University School of Public Health; and Dr. Marjorie P. Wilson, president of the Educational Commission for Foreign Medical Graduates (ECFMG).

Barnes has served as U.S. ambassador to Romania, Chile and India. He is currently executive director of the Critical Languages and Area Studies Consortium in Peacham, Vt.

Hinshaw has been director of NCNR since 1987. Prior to joining NIH, she served as director of research and professor at the college of nursing, University of Arizona.

Lucas' training is in internal medicine, public health, and tropical medicine. He has

Former NEI Scientist Kuwabara Dies

Dr. Toichiro Kuwabara, 71, a retired National Eye Institute scientist, died Apr. 2 at his home in Indianapolis of apparent heart failure.

Kuwabara, who was born and educated in Japan, came to the United States in 1952 to join Dr. David G. Cogan's research team in the Howe Laboratory of Ophthalmology at Harvard University and the Massachusetts Eye and Ear Infirmary. While there, Cogan and Kuwabara collaborated on numerous investigations, including experimental studies on fat formation in the cornea. The scientists demonstrated that lipids generally found in degenerating tissue are the product of living cells. This process, called "aberrant lipogenesis," provided a welcome and insightful explanation of the pathogenetic process in the cornea and blood vessels.

Cogan and Kuwabara also performed important studies on the eye's enzyme histochemistry. Kuwabara's modification of established histochemical techniques during these investigations helped to define the distribution of enzymes in the retina, the light-absorbing membrane at the back of the eye. These seminal investigations produced a flurry of metabolic studies of the retina in laboratories worldwide that have yielded many significant findings.

Kuwabara, who is remembered by his colleagues for his lifelong dedication to science, earned a reputation as a premier microscopist. In fact, he was one of the first investigators to apply electron microscopy in studies of the eye. "The quality of his electron micrographs is unmatched," said Dr. Jin Kinoshita, former NEI scientific director. "They are the gold standard in the field."

Kuwabara may be best recognized, however, for his landmark studies of diabetic retinopathy, a sight-threatening disease that affects in

varying degrees about half of all persons with diabetes. Teaming with Cogan, the Harvard researchers showed that the mural cell (pericyte), a specialized cell that controls capillary contraction, is degraded selectively in people with diabetes. This finding clarified greatly the disease process of both diabetic retinopathy and diabetes. For this work Kuwabara received several honors.

In 1971, Kuwabara joined NEI as chief of the Laboratory of Ophthalmic Pathology. While at NIH, he extended his research interests and provided important contributions in several areas, most notably ocular development, senile cataract, cornea wound healing, diabetic retinopathy, and experimental autoimmune uveitis.

Kuwabara retired from NEI in 1989 to become professor of ophthalmology and pathology at the University of Indiana School of Medicine, where he worked until his death. During his career, he published more than 200 scientific articles and received several awards including the Friedenwald Award of the Association for Research in Vision and Ophthalmology, Alcon Ophthalmologic Research Award, and the Research to Prevent Blindness Trustee's Award.

"He was a perfectionist," said Cogan of his longtime friend who he rejoined at NEI in 1973. "He was hard on himself and demanded a great deal of those working in his laboratory. This dedication made him a prolific scientist—one who will be greatly missed."

Kuwabara is survived by his wife, Chishi, and four daughters. The family requests that well-wishers send donations to a special fund established in Kuwabara's name. The address is: The Kuwabara Fund, Department of Ophthalmology, Indiana University School of Medicine, 1100 W. Michigan St., Indianapolis, IN 46202.—Bob Kuska

Safety Training Offered

The NIH Disease Prevention Seminar Series will present "Protecting Workers and their Communities: Worker Health and Safety Training for Hazardous Materials, Hazardous Waste, and Emergency Response," on Friday, May 17 in Wilson Hall, Bldg. 1 at 11:30 a.m.

The panel of speakers will include Dr. John Dement, director, Office of Occupational Health and Technical Support, NIEHS; Dr. Bernard D. Goldstein, Environmental and Occupational Health Sciences Institute; and Donald Elisburg, Occupational Health Foundation. All NIH employees are invited to attend. No preregistration is necessary. For more information, call Janet Wetmore, 496-1105. □

international health experience in infectious diseases and tropical medicine in developing countries. He currently is professor of international health at the Harvard University School of Public Health.

Wilson's research expertise is in blood diseases, and she has served in various policy and executive positions including NIH planning and evaluation, medical education, and international biomedical resources. Prior to assuming the presidency of ECFMG, she was vice dean of the school of medicine, University of Maryland. □

*Waited 9 Years***DTM Holds Open House in New Facility on Hospital's West Side**

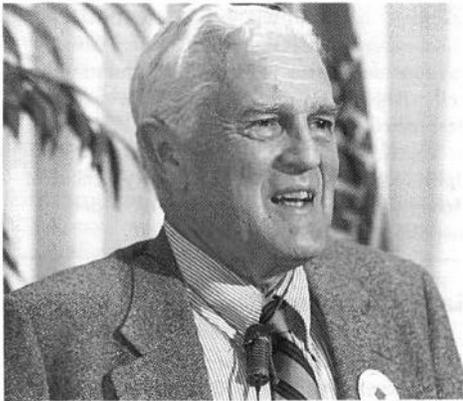
By Anne Barber

From a temporary one-room facility on one of the nursing units of the newly opened Clinical Center (the planned basement blood bank was not ready when the CC opened in 1953) with one storage refrigerator, one microscope, one lab technician, one nurse, and one physician, NIH's Blood Bank has grown into the department of transfusion medicine (DTM), with spacious new quarters located at the west end of Bldg. 10. The new addition is an extension of the west wing, which is adjacent to the round building (10A) outside the first floor north corridor of the Clinical Center.

At the dedication of the new state-of-the-art facility on Apr. 8, Dr. Harvey G. Klein, chief of DTM since 1984, noted that the first director, Dr. Hugh Chaplin, set the tone for the blood bank's intellectual development.

Chaplin had come to NIH from a 3-year research fellowship in London with one of the world's most prominent transfusion scientists, Patrick Mollison. Ironically, he had little practical experience with blood transfusion, but was appointed director of the blood bank nonetheless.

"All I knew about blood banking I learned as a fourth year medical student working as a night technician in the Columbia Presbyterian



Dr. Hugh Chaplin, first director of CC's blood bank (from 1953 to 1955), spoke at the dedication of DTM's new facility on Apr. 8.

blood bank," Chaplin admitted.

Chaplin, along with many others, returned for the dedication of the new facilities and talked about what it was like to be director when the NIH blood bank first opened in 1953.

"Our very first surgical request was from the chief of cardiac surgery, Dr. Andrew Morrow, for two units of blood for an open-heart surgery patient. To our horror, the cross matches were incompatible. I feared it might

take us a few weeks to work out the problems. Dr. Morrow granted us one extra day, and we were able to identify the antibody and provide compatible blood."

Back in 1953, Chaplin and staff traveled to Baltimore weekly to get blood donations. With arrangements made through a commercial center, in a less than respectable area of the city—it was opposite the Gaiety Burlesque



Dr. Harvey G. Klein, chief of DTM

House—they loaded a station wagon with chests filled with ice to bring the units of blood back to NIH. "My job was to check the donors for adverse reactions," Chaplin said. "We paid donors \$5 to \$10. In 1953, almost 40 years ago, the proscription against using blood from paid professional donors had not yet evolved."

Dr. Paul Schmidt, also on hand for the ceremony, became the second blood bank director in 1955. Schmidt stayed for almost 20 years and upon retiring joined the blood bank in Tampa, Fla., where he has served as president for the past 15 years.

"Schmidt," stated Klein, "formulated policies and procedures that our department still use. He is also recognized as the historian of blood transfusion in the United States."

"One of my duties," said Schmidt, "was to prove that the blood was good. I was taught to go up to the wards and evaluate the patients that we transfused."

"Although, we continued to travel to Baltimore once a week and could preserve that blood for 21 days, we had a research interest in freezing blood and developed a freezer. We had a box designed with dry ice and a blower that would keep the temperature at minus 45 degrees. Every few years, we would thaw and test some frozen units. This allowed us to report at an international meeting that blood could then be preserved for so-and-so years. The record for storing frozen blood now is over 20 years."

Dr. Joel Solomon, now chief executive officer of the American Association of Blood

Banks, has "fond memories of the middle 1950's summer program at NIH when I began working with blood and blood products at the Division of Biologic Standards. On my tour with the blood bank in the 1980's, I recall a lunchtime meeting which was spent trying to decide what the new name of the blood bank should be. We finally came up with the 'department of transfusion medicine,' the first so-designated department in this country."

The name "transfusion medicine" had appropriate beginnings from 1953 to this day largely because the people who started it and continued it at NIH were clinically involved scientists, Solomon noted. "They were interested in the relationship of the blood bank and its laboratory to the patient. That was not the case in most blood banks in this country."

Mary H. McGinnis, a research biologist, spent 30 years at the Clinical Center's blood bank. "When I walked through the new facilities and saw the latest technology, all I could think of was that in 1956, we could have been compared to the Old West in relation to the new equipment and space they have today. Back then we used glass bottles to draw blood, and today they have wonderful plastic bags that are very pliable and, above all, very quiet."

"However," she continued, "we were on the cutting edge of a number of advances including blood component therapy. I was a member of the original bone marrow transplant team for years."

Klein introduced Dr. Harvey Alter, associate director for research, DTM, and expert on post-transfusion hepatitis, as the "heart and soul of this department."

Alter credited the previous four leaders—Chaplin, Schmidt, Holland and Klein—with knowing everything that went on in the blood bank and willingness to make hard decisions. "They were all men of vision. Today, we are nationally and internationally respected." Dr. Paul Holland, blood bank director from 1974 to 1983 and now medical director of the Sacramento Blood Center, was unable to attend the ceremony.

As part of the open house, a red maple tree was planted outside the glass doors of the DTM as a living dedication to the new quarters. DTM staff presented Klein with a framed photograph of the new building in appreciation of his efforts to get them moved into the new facility. "Nine years we have waited," they said. Tours of the new facility followed, along with refreshments. □