

*"Still
The Second
Best Thing
About Payday"*

The NIH Record

Widespread Concern Here

Bomb Threat to Employees Explored in Seminar

By Rich McManus

A crowd of NIH'ers got a grim tutorial in handling bomb threats and suspicious letters or packages on June 6 as a bomb expert from the Maryland fire marshal's office gave two talks on campus, sponsored by the Division of Security Operations (DSO).

Employees here find themselves the unfortunate targets of two modes of social unrest at the moment, observed Jim Sweat, DSO director: antigovernment militias and the so-called Unabomber, an individual whose letter-bombing campaign has extended into the ranks of scientists.

Deputy Fire Marshal Warren Gott, assistant commander of the 15-person bomb squad and a 23-year veteran of the fire marshal's office, told his audiences—one in Masur Auditorium, the other in Natcher's conference center—how to handle a bomb threat, how to cooperate during a search and evacuation, and how to identify potential explosives.

"April 19 is a date that no one will ever forget," he began, referring to the Oklahoma City bombing of a federal office building. "There has been a great, great increase in the number of calls for service to our office, and throughout the country, since then. People are more aware, more suspicious of items now. All the kooks in the world are coming out of the woodwork with their hoax devices and threats. Life has not been enjoyable lately."

Should a bomb threat come to an employee by phone, Gott said, it's important to ask several key questions: When is the bomb going to explode? Where is it right now? What does it look like? What kind of bomb is it?

"You should ask these questions in a smooth, continuing, rolling manner," he counseled. "The less information a caller provides, the less likely it's a credible threat."

Most, but not all, bombers don't intend personal injury, he continued, and will call in a warning to avoid casualties. "They want to destroy property to make a point, or put fear into you." The Unabomber, on the other hand, has never warned an eventual victim, he said.

It's important for the recipient of a bomb threat to note not only the exact wording of the threat but also such qualities as tone of voice, background sounds, emotional state of the caller, and the kind of language used—irrational, well-spoken, taped, including some message?

(See **BOMB THREAT**, Page 4)

Protein Folding Mystery Unfolds, Say Grantees

By Alisa Zapp

Scientists are now one step closer to solving a problem that they've struggled with for 40 years—determining how proteins fold into the three-dimensional shapes crucial for their function.

Proteins control nearly every system in our bodies. Antibodies, enzymes, and many hormones are proteins. A protein's three-dimensional structure determines which molecules it binds, which reactions it catalyzes, and, to some extent, where it is located in the cell.

It is much easier to determine the order, or sequence, of amino acids in a protein than it is to determine the protein's three-dimensional structure. Although the sequence contains all the information necessary for correct folding, scientists still cannot predict a protein's final shape from its sequence.

"If we could decipher the structures of proteins from their sequences, we could better understand all sorts of biological phenomena, from carcinogenesis to AIDS," said Dr. James Cassatt, director of the Division of Cell Biology and Biophysics, NIGMS. "Then we might be able to do more about these

(See **PROTEIN FOLDING**, Page 2)

Diane Shartsis Wax Named Chief of Legislative Policy

By Carla Garnett

Diane Shartsis Wax recently was appointed NIH associate director for legislative policy and analysis, a position she had held in an acting capacity since July 1994.

In her new post, Wax provides leadership in all aspects of legislative activities for NIH,

acts as a liaison between agency officials and members of Congress and develops strategies and policies to deal with Capitol Hill's everchanging environment.

"In this office," she explained, "we work to ensure that proposed legislative changes will not have an

untoward impact on NIH activities. We work to see that NIH has the legislative authority it needs to carry out its mission."

Diane Shartsis Wax

(See **DIANE WAX**, Page 5)

Teachers Learn About AIDS, ELISAs, and More

By Ruth Levy Guyer

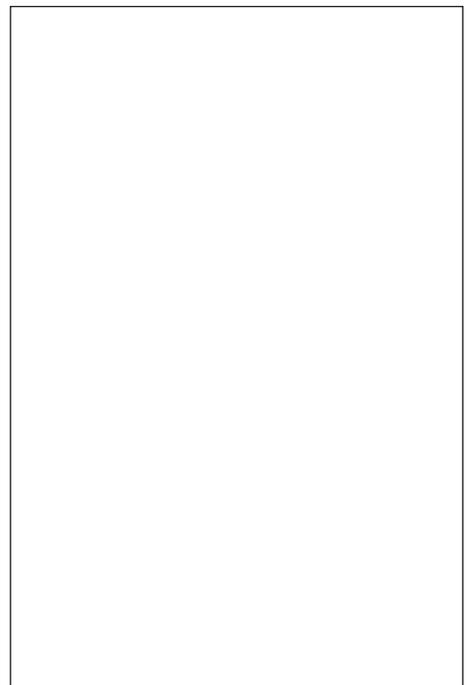
One day of science will not turn a kid into a scientist. This was one small demonstration for teachers, one lesson plan. But if the teachers go back to the classroom, do the experiment we did today, and 'wow' the kids, then a workshop like this will have served an important function."

These were some of the comments of Dr. Randall Ribaldo, a research scientist in the Laboratory of Immune Cell Biology, Biological Response Modifiers Program, NCI, who ran one of three recent workshops at NIH in a series for Montgomery County middle and high school teachers. The program is cosponsored by the Howard Hughes Medical Institute, Montgomery County Public Schools, and NIH.

Ribaldo started his session with a lecture about HIV, the AIDS virus, and the deadly disease it causes. He explained how the viruses attach to specific molecules on the surfaces of cells in the immune system, then enter the cells and eventually destroy them, leaving the immune system weakened and vulnerable to attack by other infectious agents.

Ribaldo went on to explain the theory and

(See **TEACHERS**, Page 6)



Rockville High School Teacher Edgar Walker practices lab activities that he can take back to his students.

PROTEIN FOLDING

(Continued from Page 1)
disorders."

Now, NIGMS grantee Dr. George Rose and postdoctoral fellow Rajgopal Srinivasan at Johns Hopkins University, have developed a method that promises to come closer than ever before to cracking the protein-folding code. Rose and Srinivasan describe the method, a computer program called LINUS, in a paper in *Proteins: Structure, Function, and Genetics* due out in mid-June.

"There are a lot of programs to predict secondary structure—small-scale, localized twists in the protein—from sequence information," said Cassatt. "But somehow Rose gets the overall structure. That makes his program unique."

The LINUS computer program, which is named after the late Nobel laureate Dr. Linus Pauling, is based on very simple assumptions. No two atoms are allowed to be in the same space at the same time; amino acids are encouraged to be in the conformations most commonly seen in proteins; and hydrophobic, or "water-fearing," amino acids are encouraged to cluster in the protected center of the protein.

In its calculations, LINUS doesn't even use the true structure for amino acids in the protein. Instead, it makes a gross approximation. Every amino acid has two parts: a backbone that is common to all amino acids, and a side chain unique to that type of amino acid. LINUS replaces each side chain—which can range from 1 to 18 atoms—with a single sphere that varies in size depending on the type of amino acid.

To predict a protein's structure, LINUS divides the protein sequence into overlapping, bite-sized chunks. Starting with chunks only six amino acids long, LINUS randomly twists the amino acids into any of four possible localized structures: helix, sheet, turn, or coil.

The process repeats 5,000 times, with each trial conformation ranked according to how energetically favorable it is—a measure of how likely it is to occur in nature. If a conformation is ranked as favorable in more than 70 percent of the trial structures, and it enables interaction between some amino acids, it is frozen in position for subsequent cycles.

LINUS then starts another cycle by biting off larger overlapping chunks—12 amino acids this time—and twisting them into 5,000 new conformations. As before, LINUS freezes the most favorable conformations from this cycle, creating a new starting point for the next cycle. The process continues, with LINUS taking ever-larger bites of the protein each round. The final structure is made up of the conformations that are most favored in the last cycle.

The resulting structures provide a surprisingly good estimate of the protein's three-dimensional shape. X-ray crystallography can provide more structural detail, but it requires months, even years, to complete a

crystal structure.

"Right now LINUS gives the same benefit as a poor crystal structure," Rose said. "What is that useful for? A lot of things." For example, he said, it could be used in conjunction with the Human Genome Project to classify proteins that might be involved in genetic disorders. Or it could be used to speed the progress of targeted drug design.

"The most surprising thing about this work is how these exceedingly simple ideas, crudely expressed, can do so well in giving you the gross conformation of the protein," Rose said. Of the seven structures he examined in his paper, LINUS predicted the gross overall shape for all but one. The predicted length

"The most surprising thing about this work is how these exceedingly simple ideas, crudely expressed, can do so well in giving you the gross conformation of the protein."

and location of the more localized structures—the helices and sheets—were almost identical to known structures determined by x-ray crystallography.

With further refinements, Rose expects the accuracy of the program to increase dramatically. For example, in the research reported in his paper, Rose told LINUS to take bites no larger than 50 amino acids. Now he is modifying the program to produce accurate structure predictions using much larger chunks. He also plans to enable LINUS to predict special protein features such as disulfide bonds, prosthetic groups, and multiple subunits. Eventually, he hopes that LINUS will be useful to researchers all over the world.

"Our goal is to boil this program down into something that is sufficiently simple and sufficiently exportable that we can give it to many other labs," Rose said. "That way, instead of trying to do all these experiments ourselves, other people who are experts in certain areas can try their own experiments."

The process that LINUS uses—identifying small, localized structures, then incorporating them into the overall protein structure—is called hierarchical condensation. Although this technique has been successful in predicting protein structure, Rose does not claim that it predicts the pathway by which proteins fold in living systems.

"We do think that hierarchical condensation is what happens in one way or another when proteins fold," Rose said. "But I don't think LINUS is giving a detailed representation of any folding pathway."

Although the field of protein folding is very popular now, that wasn't always the case, Rose said. "In 1979, when I got my first NIGMS grant to work on this, protein folding was considered a problem too hard to be solved in this century," he said. "Now we're very optimistic." □

Dr. Clair Francomano, chief, Medical Genetics Branch, NCHGR, and associate professor, medicine and pediatrics, Center for Medical Genetics, Johns Hopkins University School of Medicine, has been selected as an Executive Leadership in Academic Medicine (ELAM) fellow. ELAM, a program sponsored by the Institute for Women's Health at Medical College of Pennsylvania and Hahnemann University in Philadelphia, is the only indepth national program that focuses on preparing women faculty in academic medicine for senior leadership positions. Francomano is one of 25 women chosen from a pool of applicants from academic medical centers across the country. ELAM fellows complete 3 weeks of study and interaction, and work on independent projects throughout the academic year.

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. 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, 1995.

NIH Record Office
Bldg. 31, Room 2B-03
Phone 6-2125
Fax 2-1485

Editor
Richard McManus
rm26q@nih.gov

Assistant Editor
Carla Garnett
cg9s@nih.gov

Correspondents:

CC, Sara Byars
DCRT, Mary Hodges
DRG, Judith Grover
FIC, Irene Edwards
NCI, Patricia A. Newman
NCHGR, Leslie Fink
NCRR, Lori Mulligan
NEI, Linda Huss
NHLBI, Louise Williams
NIA, Vicky Cahan
NIAAA, Ann M. Bradley
NIAID, James Hadley
NIAMS, Janet Howard
NICHD, Carol Florance
NIDA, Mona Brown
NIDCD, Gail Blatt
NIDDK, Eileen Corrigan
NIDR, Mary Daum
NIEHS, Thomas Hawkins
NIGMS, Wanda Warddell
NIMH, Marilyn Weeks
NINDS, Shannon E. Garnett
NINR, Marianne Duffy
NLM, Roger L. Gilkeson

The NIH Record reserves the right to make corrections, changes, or deletions in submitted copy in conformity with the policies of the paper and HHS.

Gene Blocking Metastasis of Prostate Cancer Isolated

Currently, one of every four cancers diagnosed in American men is prostate cancer. Once prostatic cancer spreads or metastasizes, it is a fatal disease for which no curative therapy is available. Many diagnosed prostate cancers are not fatal and do not require treatment. However only 1 in 4 prostate cancers is lethal. A marker is needed to distinguish cancers that will metastasize from cancers that remain local and are non-life threatening. A gene recently identified by researchers at NIEHS in collaboration with scientists at Johns Hopkins University may provide such a marker.

Prostate cancer is the second leading cause of cancer deaths of men in the United States. It will strike 244,000 American men this year and will kill over 40,000. There is currently no method available that allows physicians to distinguish prostate cancers requiring immediate aggressive therapy from those requiring delayed or no treatment. Prostate cancer surgery and treatment can cause impotence, incontinence, or even death.

Prostate cancer is fatal when it spreads and forms metastases at distant sites. Researchers have shown that metastasis is normally controlled by genes that are lost or inactivated in malignant cancers. Few of these metastasis suppressor genes have been identified however. Dr. Jin-Tang Dong, Pattie Lamb and Dr. J. Carl Barrett of NIEHS report the cloning of the first prostatic cancer metastasis gene in collaboration with Drs. John Isaacs, Carrie Rinker-Schaeffer, Jasminka Vukanovic, and Tomohiko Ichikawa at Johns Hopkins University in an article in the May 12 issue of *Science*. The gene was shown to suppress the spread of prostate cancers in experimental animals. This gene appears to be lost in metastatic human prostate cancers, and currently they are investigating if it can be used to identify potentially lethal human cancers.

Prostate cancer deaths are much higher in American men than in Japanese men; however, if Japanese men migrate to the United States, their prostate cancer rates increase. This suggests an environmental or dietary cause of prostate cancer. The incidence of prostate cancer deaths is the highest in African-American men. The investigators also hope their new gene can be used to understand the environmental factors that may influence the progression of this cancer.

Dr. Kenneth Olden, NIEHS director, said, "The discovery of the prostate cancer suppressor gene is a fundamental step in addressing the increasing incidence of prostate cancer. This research gives a foundation for new approaches to diagnosis, treatment, and prevention." □

Power of Personnel at Your Fingertips: NIH deputy director for extramural research Dr. Wendy Baldwin (l) cuts the ribbon recently on "Employee Express," a computer-based administrative system that enables NIH'ers to change some of their personnel information directly, conveniently and privately, without filling out forms or visiting personnel offices. A leader in NIH's reengineering effort, Baldwin noted that 30 percent of personnel's time is spent on routine transactions that Employee Express can now handle, freeing up staff members for other duties. "One hallmark of reinvention," Baldwin said, "is to make doing business with federal agencies easier and more efficient, both outside government and inside government. Employee Express is going to help us do that." In the photo at right, Liz Dabler (far r) volunteers to be the first customer to use the Express kiosk in Bldg. 31's A wing. She touches the computer screen to enter her social security number and PIN (personal identification number that was mailed to her home) and can change such information as her federal and state tax withholdings, direct deposits and financial allotments and home address. According to Express, Dabler should see the changes she made reflected in an upcoming pay slip. A total of eight kiosks—three located on the main campus as well as five others at Parklawn, EPS, FCRDC, GRC and NIEHS—were activated recently.

NIAID Director Collects Honors at Home and Abroad

April showers brought more than flowers in May for NIAID director Dr. Anthony S. Fauci. During the month, the immunologist and leading AIDS researcher received four awards for his contributions to science and medicine.

Among his awards, he received the Ernst Jung Prize for Medicine in Hamburg, Germany, one of the most prestigious prizes for biomedical research in Germany today.

Barcelona, Spain, was the site of a double honor for Fauci; he accepted the Gold Medal of the Autonomus University of Barcelona and membership into the Royal Academy of Medicine of Barcelona. The

Royal Academy, established in the 14th century, remains one of the oldest and most prestigious academies of medicine in Europe. Fewer than 10 Americans have been granted membership in the academy throughout the years.

The Ellis Island Medal of Honor for Medical Research was presented to Fauci on Ellis Island in New York City harbor last month. The gold medal is given in recognition of lifetime achievements in various fields to individuals whose ancestors came to the United States through the Ellis Island Gateway. Fauci's grandparents came from Italy at the end of the 19th century. Other

Ellis Island awardees this year include: White House Chief of Staff Leon Panetta, Sen. Patrick Leahy of Vermont, Sen. Paul Sarbanes of Maryland, actor Eli Wallach, and Los Angeles Dodger Manager Tommy LaSorda, among others.

Fauci accepted an honorary doctorate of science from Duke University, also. Other honorees included Coretta Scott King, widow of Dr. Martin Luther King Jr., and Dr. James Billington, librarian of the Library of Congress. □

The NIH R&W Theatre Group recently presented its 1994 earnings—a check for \$4,000—to the Patient Emergency Fund. On hand for the presentation are (from l) Mary Graham, theatre group treasurer; Adriene Farrar, chief, CC social work department (which disburses PEF money); Alice Smyth, theatre group cochair; and R&W's Jodi DeOms.

BOMB THREAT

(Continued from Page 1)

"Some callers get sexual gratification from making bomb threats," Gott said. Deep breathing during the call is a tip-off.

Once a threat is made, call 115, the NIH Police emergency number.

Simply by obtaining good answers to the above questions, authorities can determine the level of threat and decide what to do next, Gott continued.

If a search is called for, the person in charge of the facility that received the threat can decide whether evacuation is appropriate. At NIH, "the senior police officer on the scene makes the decision about whether to evacuate," said Sweat. The state bomb experts do not make such a decision.

It's typical for a hoax caller to watch a building evacuation from a discreet distance, Gott related. "They like to witness the commotion. It gives them incentive to do it again."

Once a search is mounted, police look first in public, common areas at the perimeter of the threatened office. They then proceed to interior spaces open to public access such as rest rooms and parking areas. Once inside, "the people who work in the area are the best ones to accompany the bomb team," said Gott, to the dismay of many listeners. "A person from each office should be designated to help out with the cursory look-around because, after all, who is more familiar with where things should be and what is out of place than a person who has been around for a long time? This makes the search much more rapid and thorough."

Bomb searchers divide each room into four horizontal quadrants, scanning first from floor to waist level, waist level to top of head, top of head to ceiling, then in the ceiling, if need be.

Dogs and explosive-sniffing devices can be helpful in some searches, but are quite limited, Gott explained. "Dogs can work for 20 or 30 minutes at a time, then they need a rest of about the same duration, so they can get fresh air. They must have a better union than we people do," he joked.

A search of a big office building would totally exhaust even a team of dogs, he said. Bomb-sniffing electronics, developed largely in response to the bombing of Pan Am Flight 103 over Lockerbie, Scotland, a few years ago, are "very faulty," Gott reported. "They will pick up some, and miss others. You could set a bomb right on top of the detector and it wouldn't register a thing."

Should an unusual package arrive by mail, "don't touch it, don't shake it, don't kick it, don't cut the strings off it, and don't pick it up and bring it to a bomb expert. Leave it where it is!" he counseled. "Bombs can come in any type of package you can imagine—a cigarette pack, a lighter, even. If you can pick it up, it can be a bomb."

He described in detail the major classes of bombs typically seen by the fire marshal's

office—commercial explosives (dynamite, blasting caps, detonating cord), military explosives (grenades, ammunition, artillery rounds, C4 or plastic explosives), improvised explosives (pipe bombs, fertilizer, gasoline, homemade napalm), and distributed a handout specifying what to look for. Pipe bombs—devices that include a sturdy cylinder loaded with explosive material—are the most common type of bomb, and the most dangerous, he said.

He then detailed a series of letter or package bomb indicators (see sidebar), emphasizing that this class of bomb is specially designed not to explode in transit, only while being opened.

"Senior scientists on campus are aware of and concerned about Unabomber," commented Dr. Michael Gottesman, NIH deputy director for intramural research. "Some of the targeted scientists have been colleagues in genetics and computer sciences. Most of my colleagues are aware of the threat and treat

suspicious packages carefully."

Gottesman said the NIH Police have a bomb unit that responds quickly to remove suspicious packages. "In addition, security has been beefed up at the Clinical Center—particularly checking IDs of people parking under the building—and police are generally more alert."

He said no intramural researchers, to his knowledge, have been threatened.

On the extramural side, Dr. Wendy Baldwin, NIH deputy director for extramural research, said she wasn't aware of any particular concern among grantees, but said colleagues are aware that scientists have, in the past, been targeted.

After a brief question period, Sweat announced that DSO is preparing a videotape for employees to acquaint themselves with bomb types and their signs.

"Do not feel a bit bashful about calling the police if you are at all suspicious" about a package, he concluded.

Letter, Package Bomb Indicators

- ☒ Mail bombs have been contained in letters, books, and parcels of varying sizes, shapes and colors.
 - ☒ Letters feel rigid, appear uneven or lopsided, or are bulkier than normal.
 - ☒ Oil stains may be present on the wrapper.
 - ☒ Use of excessive amount of postage stamps.
 - ☒ Sender is unknown.
 - ☒ No return address.
 - ☒ Unusual restricted endorsements such as "Personal" or "Private."
 - ☒ The addressee normally does not receive personal mail at the office.
 - ☒ Name and title of addressee are not accurate.
 - ☒ Address is prepared to ensure anonymity of sender (i.e., homemade labels, cut and paste lettering).
 - ☒ Mailing emits a peculiar odor.
 - ☒ Mailing appears to be disassembled or re-glued.
 - ☒ Handwriting appears distorted or foreign.
 - ☒ Protruding wires, tinfoil or strings are present.
 - ☒ Pressure or resistance is noted when removing the contents.
 - ☒ Outer container is shaped irregularly, asymmetrically, or has soft spots or bulges.
 - ☒ Wrapping exhibits previous use such as traces of glue, mailing labels, return addresses or tape.
 - ☒ Several combinations of tape are used to secure parcel.
 - ☒ Unprofessionally wrapped parcel is endorsed "Fragile-Handle with Care" or "Rush-Do Not Delay."
 - ☒ Package makes a buzzing or ticking noise.
 - ☒ Contents or parcel make a sloshing sound.
- Should a package or letter arousing suspicion arrive either at home or work:
- ☒ Do NOT open the article (also, do not use metal letter openers—wood or plastic are better).
 - ☒ Isolate the item/package and secure the immediate area.
 - ☒ Do NOT put in water or a confined space such as a desk drawer or filing cabinet.
 - ☒ Dial 115 if at NIH, or 911 if at home.

(Source: Maryland State Fire Marshal's Office)

Blue Cross/Blue Shield Service Day

Blue Cross/Blue Shield of the National Capital Area will be on the NIH campus Wednesday, June 21 to assist Blue Cross/Blue Shield enrollees who have claims or enrollment problems. A BC/BS representative will be available from 10 a.m. to 1 p.m. on that day in Bldg. 31, Conf. Rm. 9 (C wing, 6th floor) armed with a laptop computer to access directly the enrollee's records at BC/BS headquarters.

No appointment is necessary. Assistance will be provided on a first-come, first-served basis. It is anticipated that BC/BS will schedule more service days in the future. □

NCI EEO Advisors Set Goals

Prior to his retirement, former NCI director Dr. Samuel Broder met for the last time with NCI's equal employment opportunity advisory group (EEOAG) to discuss annual goals and past accomplishments. Discussed were EEOAG's initiative to broaden affirmative action programs to encompass areas outside the Washington metropolitan area. Broder reaffirmed NCI's continuing commitment to EEO policy and practices in the current era of downsizing.

He also stressed the importance of outreach programs to make existing opportunities more widely available, and emphasized that participation from everyone is essential to identify more effective ways to achieve EEO goals and to solve correctable problems.

NCI-EEOAG serves as a forum for NCI employees to address EEO concerns. The group advises and makes recommendations to the NCI director on EEO issues. Monthly meetings are held on the first Thursday from 2 to 4 p.m. and are open to all NCI employees. Call the NCI EEO office for meeting location, 6-6266. Members also participate

Members of NCI-EEOAG include (seated, from l) Traci Melvin, secretary, 1995; E.C. Melvin, chairperson, 1995; Dr. Samuel Broder, ex-NCI director; Maxine Richardson, NCI EEO officer; Jeff Hughes, cochairperson, 1995. Standing are (from l) Sylvia Bennett, Don Christoferson, Sydelle Zinn, Glenn Gray, Kate Duffy Mazan, Kay Johnson, Sarah Goldenberg, Sandra Dwiggin, Suzanne Ryan, Dr. Sue Yang, Carol Smith, Johnny E. Lindsay, Linda Brown, Alex Vega, Linda Littlejohn, Gary Topper, Kevin Washington, Sheryl Luck, Laura Lee Sheehan, Charles Baron, Dr. Grace Shen, Dr. Gail Bryant, Lawrence Ray, Rosemary Dwyer, Dr. Roy Wu.

in one of the following subcommittees: adopt-a-school, affirmative action and education, career enhancement, communications, membership and employee recognition. The group plans to send the minutes of its

monthly meetings to all NCI employees via LAN in the near future.

NCI-EEOAG is currently seeking new members. Anyone interested should contact Traci Melvin, 6-1771. □

DIANE WAX IS APPOINTED NIH ASSOCIATE DIRECTOR FOR LEGISLATIVE POLICY, ANALYSIS (Continued from Page 1)

Wax's appointment became official during one of the stormiest and most critical periods in NIH's history in Congress: This year marks the first time NIH has ever faced a proposed budget reduction. As part of the Republican "Contract with America," the balanced budget amendment could have had a devastating impact on funding at NIH. The House budget committee proposed a 5 percent decrease in NIH funding; the Senate countered by calling for a 10 percent cut.

A week or so after officially assuming her associate director position on May 14, Wax was poised to lead her troops—alongside those of "Francine Little [director, NIH Office of Financial Management] and Anne Thomas [NIH associate director for communications] and many other Bldg. 1 and institute personnel," Wax said—into what proved to be the battle of NIH's budgetary life. And, the troops rallied and won. All but a small percentage of NIH funding for next year was restored by an amendment sponsored by Sen. Mark Hatfield (R-Ore.), chair of the Senate's budget committee, which recommends general spending guidelines and limits for the federal government.

"It really took a team effort," she pointed out, "working together, in concert, to turn the tide. The institutes and the outside constituency groups played key roles as well. We're all partners in the effort to convince Congress that an investment in NIH is an investment in a national resource and that there is a large return on the investment."

Wax acknowledged the major victory, but

was careful to put it into perspective: The budget war still rages, she said. The next step gets more specific. NIH now prepares to enter the fray at the appropriation committee level. At that stage, funds that individual federal agencies will spend during the next fiscal year are determined, earmarked and approved following committee debate. In budget committee deliberations,

Wax explained, the size of the pie is decided; in appropriations debate, the pie is divided into slices and distributed to agencies.

"We won a big battle," she said, allowing herself a small grin of satisfaction, "but the war is far from over. And, it's going to be tougher than ever before."

The associate director position—still often referred to as "head of DLA" (Division of Legislative Analysis, as it has been known familiarly for years)—is not Wax's first professional taste of Capitol Hill. In three previous positions, her duties often found her conferring with Congress—as director of NIAID's Office of Policy Analysis and Technology Transfer (1987-1994); as assistant to the NHLBI director (1983-1987); and as NCI legislative analyst and congressional liaison (1977-1979). In between, she worked in NIH's Office of Program Planning and Evaluation; in the Office of the Assistant Secretary for Health, PHS; as well as in several roles at NCI, NINDS and NICHD.

Wax earned a B.A. degree from West Virginia University in 1968, a master's degree in public administration from Harvard University's Kennedy School of

"We won a big battle, but the war is far from over."

Government in 1977, and most recently, an M.B.A. from George Washington University last May. She said she visits Capitol Hill about once a week, on average, and consults with congressional staffers on a daily basis. Her new post will undoubtedly demand she employ every ounce of her on-the-job experience, formal education, as well as her admitted enjoyment of legislative strategies.

"When the 1994 election season was over," she observed, "there was a whole new set of players in Congress. The Contract with America took up most of the first 100 days. The Republicans are very serious about balancing the federal budget, which of course affects NIH's budget. There are a lot of new members on the subcommittees that oversee and appropriate funds to NIH. Educating these new members, and providing them with technical assistance, is extremely important, and a vital duty of this office."

"We will have to translate what we do scientifically and show them," she concluded, "NIH's impact on not only the physical health of the nation, but also the economic health of the nation." □

Sailing Association Open House

What? Free food, drink and sailboat rides. When? Saturday, July 8, from 10 a.m. to 4 p.m. Where? Selby Bay on the Chesapeake. Who? All NIH'ers, NOAA'ers, R&W members, families and friends. Why? To recruit new members, check out new helmspersons, sign up new sailors for training, and have fun. For details and directions to the Selby Bay Sailing Center, pick up a leaflet at any R&W activities desk or call Tom Murphy, 262-8574 (h), 405-1874 (w); or email: tm34@umail.umd.edu □

TEACHERS

(Continued from Page 1)

practical aspects of the experiment the teachers were about to do. They would be looking for antibodies to HIV in samples of blood taken from different individuals. The test kits did not actually contain blood of any kind, although tubes were labeled as blood samples. A reaction like a reaction between antibodies and HIV antigens was simulated. The appearance of antibodies is one of the ways that infection can be detected. It doesn't mean, said Ribaudo, that the person has AIDS, but it does mean that the virus is in the body.

The test the teachers learned to do is called an ELISA, an enzyme-linked immunosorbent assay. It involves making a four-part molecular "sandwich" in tiny wells in a plastic plate. Pieces—called antigens—of HIV would first be allowed to attach to the plastic walls of the wells. What couldn't attach would be washed away. Then a "blood" sample would be put in each well. If the sample contained antibodies to HIV, the antibodies would stick onto the HIV antigens like magnets to a refrigerator. Again, anything that didn't stick would be washed away. Next, purified antibodies from a cow would be put into the wells. If the human antibodies had stuck, so would the cow antibodies, because their special affinity is for human antibodies. Free cow antibodies would then be washed away and a final reactant put into the wells. This was something that could find and react with the cow antibodies and turn the fluid in the wells brown. Then, it was just a matter of looking at the wells. Those that contained a brown fluid had HIV antibodies in their sandwiches; wells with clear fluid contained blood samples from people not infected with the virus.

Ribaudo said he was hopeful that the teachers would be inspired by the ELISA test to push for other laboratory activities for their students. "When I was in school," he said, "we were always doing hands-on activities. It is important to bring lab work back into the lives of kids."

This type of activity, he said, helps students understand how scientists and doctors do medical research and how medicine deals with infectious diseases and their diagnosis. He was hopeful that, if the teachers and school administrators could see how excited kids got through their hands-on experiences, they might be more willing to spend their limited resources on lab equipment and other resources that help bring science alive. "Experimentation," said Ribaudo, "gets to the heart of what it is that motivates kids to go into science."

Ribaudo said he even wondered whether, through their exposure to workshops, teachers might begin to develop some of their own "kitchen science" experiments.

A kitchen science experiment was just what the teachers were shown at another workshop

Edward Schneck, a teacher from Bethesda-Chevy Chase High School, prepares a solution during a hands-on lab demonstration at a workshop for public school instructors.

in the series. That one was led by Dr. John Finnerty, director of the Cellular Immunology Program in NCI's Cancer Immunology Branch, who presented a simple but dramatic demonstration of how an infectious disease like AIDS can spread through a population.

Each teacher was given an eye dropper and a clear fluid divided into two test tubes. Teachers walked around the room "exchanging bodily fluids" with each other. Some people made many exchanges; some made few. Each person used only one tube for making exchanges and kept the other one in a pocket. After many exchanges, the teachers

returned to their seats. Finnerty put a drop of an indicator dye into each of the pocketed tubes. Most of the participants had started out "uninfected"—the fluid remained clear despite the addition of the dye. But a few had been "infected"—their tubes contained some bicarbonate that turned red in a reaction with the indicator.

After the status of each of the original "body fluids" had been determined, a drop of dye was added to the tubes that had been used for the exchanges. Most showed infection, even those that had been involved in only a small number of exchanges.

The teachers agreed that this demonstration was great for making several points about how AIDS and other infectious, sexually transmitted diseases are spread. First of all, it was impossible to tell which fluids (translate: people) were "infected." They all looked the same—clear—to start. Second, it didn't take a lot of exchanges for a sample to turn from "uninfected" to "infected." In fact, a single exchange could do it. Third, the demonstration graphically illustrated how contact with one person is like contact with all the people who that one person had ever contacted.

The experiment tied in with Finnerty's lecture about the immune system and how it responds to infectious disease agents. Cells in the immune system, he said, try to determine what in the body is self and what is foreign, or not self. It "works like transactional analysis: I'm okay, you're okay." That's what happens when the immune system detects self materials. But when it finds non-self substances—those that are "not okay"—it sends out cells to stop infectious agents and cancers from establishing themselves. Staggering immune responses can be mounted to non-self materials. "Activation of the immune system by a foreign substance," said Finnerty, "can produce a billion lymphocytes in 2-3 days." In healthy people, the immune system rarely slacks off. "When you die, your immune system is at rest," he said, "but until then it is fully active."

Finnerty emphasized a few key messages teachers should bring to teens. One is that

Cosponsored by NIH, HHMI and Montgomery County, the teachers' workshop series places several instructors, including Alix Pratt of Albert Einstein High School, in NIH laboratories for a summer.

there are no vaccines for any sexually transmitted diseases. Furthermore, many of the diseases—genital herpes, AIDS, some forms of gonorrhea—cannot even be treated effectively. These diseases are dangerous or deadly, not only for the people who have them but also for their offspring. A newborn exposed to syphilis, for example, will be at risk of neurologic abnormalities; one exposed to AIDS will likely die. For these diseases, the most meaningful approach is probably behavior modification.

Infectious diseases like malaria, schistosomiasis, and others, said Finnerty, are the big killers worldwide. And there is more to epidemics than worms, viruses, or bacteria. Politics often stirs the pot of infections, and Finnerty described factors that have led to a raging epidemic of diphtheria in the former Soviet Union. (In 1994, 80,000 cases of diphtheria were reported, but epidemiologists expect 2 million cases before it is all over.) Why should kids in Montgomery County worry about an epidemic 5,000 miles away? "Thanks to air transportation," said Finnerty, "diphtheria could show up here."

Both the high-tech ELISA lab and the kitchen science body fluid lab were popular with the teachers. "Immunology is a hot topic in schools," said Jonetta Russell from the Montgomery Blair Magnet program. "I will use this kit when we talk about the immune system." Janet Bauer, who teaches ninth graders at Richard Montgomery High School, said the ELISA would "fit nicely in the context of my family life and human development unit when we talk about sexually transmitted diseases and AIDS." A third teacher saw a use for ELISA in her unit on viruses.

All of the teachers had spent at least one summer—and some also a year—on the NIH campus. They and students who are also sponsored by the Howard Hughes Medical Institute participated in a third workshop, a training session on NIH Ednet. This is an electronic bulletin board that connects NIH to the public.

Students and teachers were introduced to the Forum conference, where they can read articles about advances, discoveries and people in science and medicine and pose questions about biomedicine and basic research that are answered by science writers, scientists and other specialists. They also were shown how to access the private conference set up in Ednet for them, so they can communicate with each other and administrators of their program.

Gloria Seelman, who coordinates the program from the NIH Office of Science Education, said she thinks this program gives "the teachers a whole different approach. They talk about the process of research and this is very different from teaching whatever is in the books." Alix Pratt, who started in the program in the summer of 1992 and then spent a year on campus in a lab, backed this up, saying that she does more hands-on

laboratories now as a result of the experience and believes that the experience "has changed how I teach."

Seelman says that when NIH trains a teacher, that training gets mileage. Each teacher teaches some 100 or 150 students every year, and these students pass information along to their parents and other family members. It is a way, she says, of educating the public and possibly modifying behaviors.

One of the teachers who was on campus last summer described her experience as "eye-opening." At the beginning of the summer she felt "young, inexperienced, and uneducated. Now," she said, "I have a wide grasp of how science works."

This is the sixth year of the program. Training for 10 teachers and 12 students will be conducted off campus this summer at Wootton High School, after which each participant will join an NIH laboratory for the rest of the summer. For more information about the HHMI/MCPS/NIH program, contact Seelman, 6-0608. □

NLM Exhibit on Medical Ephemera Now Showing

"Here Today, Here Tomorrow: Varieties of Medical Ephemera," an exhibit of printed medical ephemera from the collections of William H. Helfand and the National Library of Medicine, is now on display in the library's main lobby through Sept. 11.

The exhibit presents a lively and colorful collection of medical and pharmaceutical ephemera, dating from the early 19th century to the present. Organized around the themes of women, children, the medicine show, public health, AIDS, medical education, and addiction, the exhibit demonstrates the ways in which ephemeral materials—the "transitory" and commonplace documents of everyday life—educate the public and reflect the cultural values of the time.

For more information, contact Sheila O'Neill, curator of modern manuscripts, History of Medicine Division, 6-5963. □

Plomin Lecture Kicks Off New Health, Behavior Series

Dr. Robert Plomin, internationally known behavioral geneticist, will inaugurate a series of lectures organized by the NIH health and behavior coordinating committee (HBCC). The talk, "Health and Behavior: Nature and Nurture," will focus on advances in behavior genetics and the joint influence of genes and environment on the development of health and behavior. Plomin's presentation is scheduled for Tuesday, June 27, 10 a.m. to noon, in Wilson Hall, Bldg. 1.

The lecture kicks off a new program, organized by HBCC and supported by the NIH Office of Behavioral and Social Sciences Research (OBSSR), to bring exciting developments in the field to the NIH community. Dr. Norman A. Krasnegor, chief, Human Learning and Behavior Branch, NICHD, who put together the series, says behavioral and social research is making significant headway in understanding the role of behavior in several areas, including heart disease, cancer, and injuries.

"This lecture series is designed to highlight the interdisciplinary nature of research in this field, examining how behavior can improve health or is detrimental to it," he says. The series was established under the leadership of Dr. Ronald Abeles, associate director for NIA's behavioral and social research program, who is HBCC chair.

Plomin's talk will set the stage for the series by examining the basic balance of nature and nurture in human behavior

related to health. As the role of genetic influences over health and disease is increasingly accepted, he says, it will be important to recognize that genetics may be useful in helping to understand the role of environment as well.

Plomin is currently a professor at the Center for Developmental and Health Genetics at Pennsylvania State University. He also serves as research professor at the Institute of Psychiatry at Denmark Hill in London.

Recently, he was honored with a Fulbright Scholar Award and a Fogarty Senior International Fellowship. He has been named distinguished scientist lecturer by the American

Psychological Association and was president of the Behavior Genetics Association. Plomin received his Ph.D. from the University of Texas in Austin.

The lecture series will continue throughout the year with the following presentations:

✓ July 27—"Organization of the Brain for Reading and Language," Dr. Bennett Shaywitz and Dr. Sally Shaywitz, Yale University.

✓ Sept. 25—"Biological and Behavioral Bases of Tobacco Addiction," Dr. Jack Henningfield, NIDA.

✓ Oct. 23—"Socioeconomic Influences on Health: A Paradigm for Trans-NIH Collaboration," Dr. Norman Anderson, OBSSR.

For more information on the upcoming lecture or the series, call Krasnegor, 6-6591.



Dr. Robert Plomin

NCRR's Cynthia Sung Honored for Engineering

Dr. Cynthia Sung has recently been named one of Maryland's Distinguished Young Engineers for 1995. A senior staff fellow with the National Center for Research Resources, she was the only NIH winner during Maryland's Science Week. She received the award for her ability to apply engineering principles to the problems of drug delivery in the body as well as for her academic accomplishments and professional integrity.

This recognition did not surprise Dr. Robert Dedrick, chief of NCRR's chemical engineering section in the Biomedical Engineering and Instrumentation Program (BEIP). He commented that Sung "is an unusually capable and productive individual, able to combine rigorous theoretical concepts with well-designed experiments. Her published research has significantly expanded the definitive literature about the pharmacokinetics of proteins."

Sung's NIH research has focused primarily on studying large molecules such as monoclonal antibodies, immunotoxins, and radioimmunoconjugates. Consistent with BEIP's mission to meet the technological needs of intramural investigators through collaborations in engineering, mathematics, and the physical sciences, Sung teams with NIH scientists to help improve drug delivery.

She and members of the Surgical Neurology Branch at NINDS, for example, have conducted autoradiography studies of immunotoxins in tumor-bearing mice. Sung discovered that some types of immunotoxins penetrate tumors poorly. This information may explain why those proteins are not as effective as others in slowing tumor growth and is critical to designing better immunotoxins.

Also, her pharmacokinetic analyses of data from rats and monkeys in preclinical experiments and from human subjects in a phase I trial has provided the first rigorous interspecies comparisons of the toxicity of anti-transferrin receptor immunotoxins administered into the cerebrospinal fluid.

In a collaboration with scientists from NCI's Laboratory of Molecular Pharmacology, Sung has developed pharmacokinetic models that describe the "two-step" targeting of tumor antigens by the combined use of monoclonal antibodies and rapidly diffusible radiolabeled substances that bind to the antibodies. Scientists in the nuclear medicine department, part of the Clinical Center, have adapted this model to study new ways of imaging and treating lung metastases.

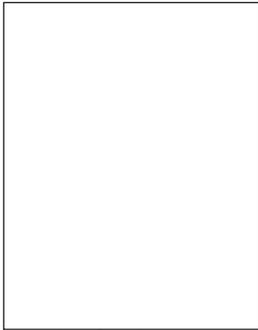
Sung came to NCRR in 1989 with a Ph.D. in medical engineering from the Harvard-MIT Health Sciences and Technology Program, where she studied polymeric materials for controlled drug release.

Highlights of her graduate work include two patents for a copolymer she developed. The biomaterial consists of hydrogel and silicone and can be used either to reduce clot

formation or control drug release into the body. She earned her M.S. degree at MIT and her B.S. from Yale University, graduating *summa cum laude*. While at MIT, she developed a filter that removes bilirubin from the blood. This filter was developed to treat children with jaundice.

This year's Distinguished Young Engineer Award will be added to an already long list of academic honors that include the MIT-Japan Science and Technology Prize, fellowships from the

Whitaker Health Sciences Fund and Surdna Foundation, and the prestigious Harold Lampert Young Investigator Award of the Biomedical Engineering Society.—Lori Mulligan □



Dr. Cynthia Sung

Duo I Musici Dell 'NIH Presents Concert, June 30 in Bldg. 10

The duo I Musici Dell 'NIH will present a concert on Friday, June 30 at noon in Bldg. 10's 14th floor assembly hall. Free and open to all, the concert by NIH'ers Daniel Spergel, cello, and Ethlyn Howard, piano, will feature two composers—Robert Schumann and Franz Schubert. The pieces to be performed are Schumann's Fantasy Pieces, Op. 73, and Schubert's Sonata in A minor, D. 821. □

Police Profiles



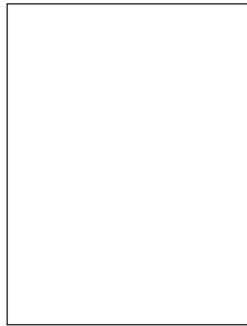
Ofc. Bradley FitzGerald was born and reared in Montgomery County. He is a 1976 graduate of Robert E. Peary High School and a 1982 graduate of Montgomery College, from which he earned an associate's degree in criminal justice.

He enlisted in the U.S. Army in June 1976, and was trained as an armor crewman. In this capacity, he advanced to the rank of sergeant. He was first stationed with the First Cavalry Division at Ft. Hood, Tex. He also was stationed in West Germany with the First Infantry Division.

FitzGerald's hobbies include weight lifting, softball, American history, as well as following

University of Maryland sports. His community policing buildings include the Clinical Center and Bldg. 49. He is a self-confessed "Officer Friendly."

He currently resides in Frederick County with his wife, Karen, son James, three cats and his dog Bubba. The FitzGerald's are expecting their second child sometime in the fall.



Ofc. Bradley FitzGerald

NIEHS Is on the Net

Information about the National Institute of Environmental Health Sciences is now available through two sources on the Internet. NIEHS has its own homepage that provides a variety of information on the institute's mission, long-range plans, research programs, the National Toxicology Program, services offered by the library, the NIEHS Clearinghouse known as ENVIROHEALTH and the NIEHS phone book. The NIEHS homepage address is <http://www.niehs.nih.gov>.

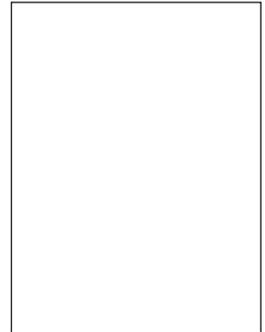
NIEHS has recently combined forces with the Federal Information Exchange and the Department of Energy and other federal research agencies to advertise the institute's minority health research and training programs on FEDIX/MOLIS. This service is free to users and contains information on programs targeted towards minority investigators including how to apply and contact names and phone numbers. Permanent and temporary job announcements are also posted with instructions on how to apply. FEDIX/MOLIS is located at <http://web.fie.com>. □

Ofc. David Turner was born and lived in Gadsden, Alabama, until he graduated from high school. He then joined the U.S.

Army, where after 20 years of service he retired at the rank of platoon sergeant. He has been a member of the NIH Police force for 7 years, and is currently assigned to the 11 p.m. to 7 a.m. shift. He is also a member of the Police Honor Guard. This special unit has participated in numerous ceremonies including a special "Changing of the Guard" at the U.S. Law Enforcement Officers' Memorial in Washington, D.C.

Turner is also a member of the "300" Club for having achieved a perfect score during firearms qualification. He has received training in criminal investigations, industry merged with police against car theft, and counterterrorism.

Turner enjoys being a volunteer educational assistant at several Montgomery County public schools. He and his wife of 14 years, Ellen, and their daughters, Lara and Megan, live in Western Montgomery County.



Ofc. David Turner

The NIH Life Sciences Education Connection



For years we have been hearing discouraging news about the state of science education in our nation's schools. Fortunately, many NIH employees have been making an extra effort to try to turn this situation around. On July 6, as part of the Office of Science Education (OSE) lecture series, the NIH leadership will hold a reception to honor these individuals.

NIH director Dr. Harold Varmus, the featured speaker, will share highlights from a University of California, San Francisco, symposium for the public on the possibilities and puzzles of DNA technology. The symposium led to the development of a science education video and teacher's guide. "Winding Your Way Through DNA: Stories from Scientists," tells about scientists who made key discoveries about DNA and how this knowledge affects the way we live today.

The lecture will be held in Natcher Auditorium from 3 to 4 p.m. with the reception in the atrium immediately following. If you have been a science education volunteer, or are interested in hearing more about science education activities, OSE encourages you to attend this special event. For more information, call 2-2469.

On June 19, a group of 10 teachers and 13 students from Montgomery County Public Schools began internships cosponsored by the Howard Hughes Medical Institute (HHMI) and NIH. For 2 weeks, the interns will participate in a biotechnology course at Wootton High School in Rockville. As part of this course, NIH researchers will give talks and laboratory demonstrations designed to prepare the interns for their lab experiences at NIH, which begin July 5. The teachers will intern just for the summer, while the students continue part-time throughout the school year. The teachers will be invited back for followup workshops throughout the year. The internship program concludes May 2, 1996, when the students present their research at the HHMI Conference Center.

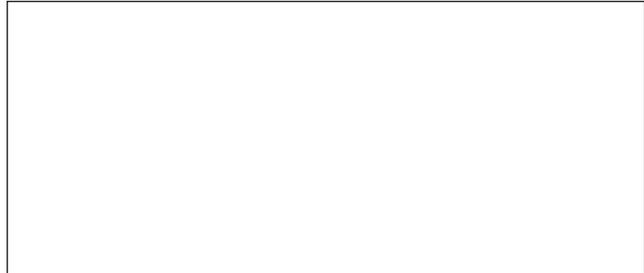
What is the value of animal research? What are the ethical concerns expressed by those who oppose it? These are some of the questions that will be explored at a lecture on July 5 by Dr. Bruce Fuchs. The lecture, "Animal Research: Thinking Through the Issues," is one of many programs and lectures designed for students working at NIH this summer. Anyone interested may attend. It will be held in Lipsett Amphitheater, Bldg. 10, beginning at 3 p.m.

Asian/Pacific Islanders in Science Gather for Symposium

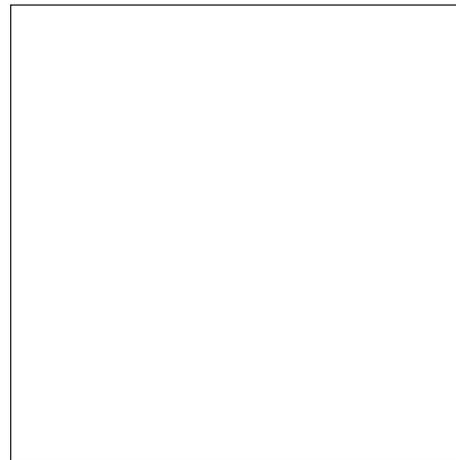
As part of NIH's observance of Asian/Pacific Islander American Heritage Month, NIH'ers heard from three Asian/Pacific Islander Americans (APIAs) who have distinguished themselves in the fields of biomedical research and affirmative action.

Topics varied from AIDS to gene therapy to affirmative action issues facing APIAs in the United States.

The audience was welcomed by Dr. Harold Varmus, NIH director, who spoke about some of the issues facing APIAs and remarked on the lack of APIAs in senior management positions in biomedical science, both at NIH and in universities and research institutions across the country. He then introduced the first speaker, Dr. David D. Ho, director of the Aaron Diamond AIDS



Participants in a scientific symposium cosponsored by AAAC and OEO include (from l) Dr. Opendra K. Sharma, AAAC chair; Dr. Bob Suzuki of California State Polytechnic University; Dr. David Ho of Aaron Diamond AIDS Research Center; Dr. Rita Liu, symposium chair; John Medina III, NIH Asian/Pacific American program manager; and Prahlad Mathur, Asian/Pacific heritage program committee chair.



Dr. Inder Verma of Salk Institute was a guest lecturer at the recent Asian/Pacific Islander scientific symposium.

Research Center in New York City, who spoke about his latest research concerning the kinetics of HIV and CD4 lymphocyte turnover.

The next speaker, introduced by Dr. Opendra Sharma, chair of the Asian/Pacific Islander American advisory committee (AAAC), was Dr. Inder Verma, senior member of the Salk Institute in San Diego. An acknowledged leader in the growing field of gene therapy, he presented an overview of the field of human gene therapy research, remarking specifically on his research in new cancer therapies.

The final speaker was Dr. Bob Suzuki, president of California State Polytechnic University in Pomona. Suzuki, who has a B.S. and M.S. in mechanical engineering from the University of California, Berkeley, and a Ph.D. in aeronautics from California

Institute of Technology, spoke about affirmative action issues facing APIAs, using a combination of nationwide statistics and personal experience to dramatize the effects of discrimination and affirmative action in this country. He expressed disappointment that the scientists, particularly the Asian scientists, who came to hear the scientific portion of the symposium, did not remain for his presentation on affirmative action.

He said that among 2,100 presidents and chancellors of universities and colleges in the U.S., only 4 are of Asian/Pacific Islander descent. Furthermore, he remarked that in many affirmative action programs, especially those in the sciences, APIAs are not eligible for consideration, despite their widespread underrepresentation, especially in upper management. As a remedy, Suzuki suggested, affirmative action programs should strive to recruit underrepresented and disadvantaged populations, particularly economically disadvantaged white males, for positions in management and administration.

At the conclusion of the program, which was organized by AAAC and the Office of Equal Opportunity, AAAC announced the publication of a bibliography of medical literature concerning the health status of APIAs. Compiled by the National Library of Medicine, the publication was produced as a result of recommendations from an AAAC-sponsored symposium in May 1994 that explored the status of health research on APIAs. □

Head-Injured Subjects Needed

NIMH needs traumatically brain-injured subjects for a study of brain function. Volunteers must be between ages 18-50 and be at least 6 months post-injury. Procedure involves cognitive testing, a magnetic resonance imaging scan, and a positron emission tomography scan. The PET scan involves exposure to a small amount of radiation that is within both NIH and FDA guidelines. Volunteers will be paid \$330. For more information, call Brenda Kirkby, 2-3682. □

NIH Mourns John Diggs, Former Deputy Director

By James Hadley

Upon hearing that Dr. John W. Diggs was slated to keynote the city of Rockville's annual Dr. Martin Luther King, Jr., commemorative program back in 1989, NIAID director Dr. Anthony S. Fauci sat down at his computer and typed out a note to him:

"This is yet another example of why my respect, admiration and friendship have grown so considerably for you over the years we have worked together. It seems that your outstanding leadership and special qualities as a person are recognized not only by the NIH community, but also by the public as a whole. By far, you are a great 'ambassador.'"

His scientific colleagues, his community, family and friends have lost their great ambassador. Diggs, former NIH deputy director for extramural research, died of cancer on May 15 at his home in Silver Spring. He was 59.

During his 20-year NIH career he also held positions in NIAID and NINCDS.

In 1993, after nearly 35 years of federal service, Diggs left NIH to become vice president for biomedical research at the Association of American Medical Colleges in Washington, D.C., where he was spokesman for research policy and administration for the nation's medical schools and teaching hospitals. His office focused on funding, training, technology transfer, university-industry relations and fraud and misconduct in research.

Before Diggs took the job at AAMC, Dr. William F. Raub, then acting NIH director, had appointed him deputy director for extramural research in July 1989. In that position, Diggs directed the development and implementation of NIH policies and procedures for awarding more than \$6 billion for biomedical research to universities and research centers throughout the nation and abroad. He also was responsible for overseeing programs dealing with the protection of human subjects, animal welfare, research training policy, institutional liaison, invention reporting and coordination of research funding for small businesses. He continued in that position during the tenure of former NIH director Dr. Bernadine Healy.

In a letter of condolence to the Diggs family, Healy said, "I am deeply indebted to John for the incredible service that he rendered to the NIH and also to me when he served as one of my deputy directors. The world was a better place every day that John was part of it. When he smiled, we all smiled. When he spoke, we all listened. Thank you for sharing him with us."

From 1982 to 1989, Diggs served as director of NIAID's Division of Extramural Activities. In that position, he developed and recommended to the NIAID director new

approaches for planning and implementing extramural activities. He also advised program staff on management of institute grants programs and acted as liaison to other NIH components for grants administration and peer review activities.

"John Diggs was an extraordinary science administrator and a wonderful human being," said Fauci. "I valued greatly his counsel and his friendship. During his years here at the NIH and subsequently at the Association of American Medical Colleges, Dr. Diggs earned and sustained the respect and admiration of his peers and of biomedical researchers throughout the country. He will be sorely missed."

Diggs received his bachelor's degree in biology in 1956 from Lane College in his native Tennessee. He earned his master's in zoology in 1969 and doctorate in physiology in 1972 from Howard University. His postdoctoral work included serving as a senior research physiologist at Walter Reed Army Institute of Research, where he worked in various positions for 15 years.

While at Walter Reed, he developed an experimental model to study drug addiction in the rat, focusing on drug tolerance and opiate receptor sites in the brain.

"He was a man who came from a small town in Tennessee, overcame significant obstacles and rose to the heights of a remarkable career," said Lily O. Engstrom, assistant director of NIH's Office of Extramural Research, who had worked with Diggs for several years. She described him as "very approachable, always interested in the individuals who sought him out for advice. He never gave the impression of being too busy. He was open and receptive to people." She added that he had served as a mentor to many at different points in his career, and strongly believed in providing access and opportunity for minorities in the sciences.

He came to NIH in 1974 as a health scientist administrator in the office of the associate director of the National Institute of Neurological and Communicative Disorders and Stroke. The following year he was named executive secretary of the neurological disorders review B committee in NINCDS. In 1978, he became chief of the Scientific Evaluation Branch of NINCDS' Extramural Activities Program and was named deputy director of the program in 1980.

The recipient of numerous awards, Diggs received the Presidential Meritorious Executive Rank Award twice, the Public



Dr. John W. Diggs

"He was a man who came from a small town in Tennessee, overcame significant obstacles and rose to the heights of a remarkable career."

Health Service Superior Service Award, the NIH Director's Award, NINCDS Special Achievement Award, the Distinguished Senior Professional of the International Personnel Management Association, and the Distinguished Alumni Awards from Lane College and Howard University.

He also was honored with outstanding service awards from the District of Columbia General Hospital, Montgomery County (Maryland) department of health, Maryland Congress of Parents and Teachers, the Montgomery County Branch of the NAACP and many other community organizations.

Diggs was a member of numerous scientific societies, including the American Association for the Advancement of Science, International AIDS Society, American Society of Microbiology, Society for Neurosciences, American Zoological Society, National Institute of Science, Beta Kappa Chi Honors Society and Sigma XI Honorary Society.

Throughout his career, Diggs worked diligently to improve educational opportunities for minorities, particularly those interested in biomedical sciences. He was in demand as a speaker for many national and international educational programs.

He served as vice chair of the NIH

extramural program management subcommittee of ACCESS, designed to increase participation of women and underrepresented minorities in mainstream NIH research efforts. He also chaired the Environmental Protection Agency's minority fellowship review committee.

Always active in his community, Diggs was a member of the Montgomery College board of trustees, serving as chair in 1988 to 1989; past president of the Montgomery County chapter of Alpha Phi Alpha, a fraternity of African-American men who promote youth educational programs; and member of the Commission on Excellence in Teaching of the Montgomery County board of education; the minority scholarship committee of State Sen. Ida G. Ruben (D-Montgomery); the educational committee of the NAACP and Blacks in Government. He also conducted workshops on cultural diversity for county school employees.

Survivors include his wife, Claudette; three sons, Gregory of Columbia, Brian of Wheaton and Derric of Silver Spring; his mother, Tommie Lou Diggs of Martin, Tenn.; and two brothers, Tommy Diggs of Detroit and Cornelius Diggs of Decatur, Ill.

In his memory, contributions may be sent to Lane College in Jackson, Tenn., Howard University, or the Dr. John W. Diggs Scholarship Fund at Montgomery College in Rockville, Md.

Diggs was buried in Martin, Tenn. □

NIA Says Goodbye to Zaven Khachaturian

Friends and colleagues of Dr. Zaven Khachaturian gathered at Wilson Hall recently to offer retirement wishes to the chief architect of NIA's Alzheimer's disease research program. Khachaturian's retirement marks the end of 18 years of government service, during which he is credited with development of the scientific infrastructure to combat Alzheimer's disease, one of the nation's increasingly important health problems.

At a reception, the achievements of Khachaturian—associate NIA director for neuroscience and neuropsychology and head of NIA's Office of Alzheimer's Disease Research—were noted by a number of speakers. NIA director Dr. Richard J. Hodes promised that the institute "will remain committed to the high standards that Zaven has set in the areas of neuropsychology and the neurosciences of aging and the effort to combat Alzheimer's disease. Our efforts in the future will be to maintain and extend the program in search of ways to prevent and to cure AD."

The tributes cited Khachaturian's prescience about the need to fight Alzheimer's disease at a time when other scientists were only beginning to appreciate the extent of AD and its devastating effects. Andrew Monjan, chief of neuropsychology of NIA's neurosciences program during Khachaturian's tenure as its director, was one of the first scientists recruited more than a decade ago by Khachaturian. In the 1980's, Monjan noted, "I think only Zaven really knew that this small group would eventually grow into the program he now leads. There is no doubt in my mind that the state of AD research would not be where it is now were it not for his efforts and vision."

Khachaturian came to NIH in 1977 while on sabbatical from the University of Pittsburgh as part of the Grants Associates Program to train health scientist administrators. In 1986-87, he returned to Pittsburgh on a 1-year sabbatical from NIA, as vice president for research and interim scientific director of the university's biotechnology center. He ultimately returned to NIA, where he developed and led some of the key programs supporting research in the neurobiology of aging and AD, including today's 28 Alzheimer's disease centers and 27 satellite diagnostic and treatment clinics; 5 drug discovery groups for Alzheimer's disease; the consortium to establish a registry for Alzheimer's disease, and the Alzheimer's disease cooperative study unit. In addition, he was instrumental in establishing diagnostic criteria and standardizing assessment instruments for AD.

Under Khachaturian's stewardship, NIA-funded research in brain aging and

Alzheimer's disease has begun to make headway against the disease. A recent important breakthrough is the discovery of the apolipoprotein E (ApoE) gene on chromosome 19. The finding that certain forms of this gene constitute a major risk for AD in late life has been critical, and related studies indicate that, depending upon which form of the ApoE gene is expressed, the age of onset of AD can vary by as much as 20 years.

Further, scientists using PET (positron emission tomography) technology suggested just this past March that people identified through ApoE typing and who also have decreased levels of brain activity may be at high risk for developing Alzheimer's disease, despite the fact that these individuals had no detectable

symptoms of the disease and were not, by virtue of their age, expected to develop symptoms for at least 20 years. Advances such as these open the way for further investigation into the mechanisms of AD and ultimately to interventions that might be started at an early stage before substantial damage to the brain occurs.

His involvement with these contributions has earned Khachaturian several awards and citations over the years. Among them are the NIH Director's Award, Scientist of the Year by Maturity News Service, and the University Medallion from the University of Sienna, representing international recognition.

Khachaturian credits the teamwork within NIH and the research community for the progress against Alzheimer's and new understanding of the aging brain. "I came here on a 1-year sabbatical to learn about the bureaucracy, to see if the bureaucracy could be turned around and if something could be built. I have concluded that we can build things, but the key is bringing together many people who share a vision," he says.

Khachaturian promises to remain active in the fight against Alzheimer's disease. He will be working with his former NIA colleague, NINR's Dr. Theresa Radebaugh, in a new consultancy called Khachaturian Radebaugh-Associates, Inc., based in Potomac, Md. Retirement from government, he says, "is not an end; it's a new beginning."—Vicky Cahan □

Le Club Francais

Si vous parlez bien francais venez pour une soiree de conversation, degustation et ambiance francaise 1er & 3eme mercredi, de 20h a 22h, NIH Federal Bldg., 7550 Wisconsin Ave., Bethesda. Pour renseignements telephonnez a Le Club Francais a (301) 438-8625. □



Dr. Zaven Khachaturian

Career Information Library Opens

The Division of Workforce Development, Office of Human Resource Management, announces the opening of the Career Information Library located in Bldg. 31, Rm. 1B47. The library offers a full array of career transition services, including career planning assistance and information on career development, free of charge to NIH'ers.

DWD has contracted with Dr. Heather M. Brown and Betty Smalls to staff the library. Together they bring more than 20 years of career counseling and employment training experience to NIH.

Employees of all grades and series, with the guidance of a professionally trained career counselor, can utilize a wide array of manuals, guides, books and brochures to assist in career planning, resume/SF-171/OF-612 preparation, and job search information for government and private sector.

In addition to the services, a series of free, 1-hour Career Transition Workshops (starting at 11 a.m.) will be offered on the following topics:

Career Decision Making - introduces participants to career development planning techniques and offers guidance through basic steps required to decide on personal career direction. (June 22, July 25)

Researching Job Leads - emphasizes where to search for job leads and how to dissect want ads and vacancy announcements. (June 27, Aug. 29)

Preparing the OF-612 - introduces the new optional application form that will eventually replace the SF-171. (July 5 and 27, Aug. 8)

Resume Writing - covers the basics of writing a convincing resume. (July 12, Aug. 1)

Introduction to FOCIS - teaches the use of the OPM database that provides information about federal job descriptions and requirements. (This is not a vacancy database.) (July 13, Aug. 2)

Cover Letter Preparation - explains when to use a cover letter and the most important information to include. (June 28, July 19)

Introduction to CareerPoint - demonstrates career exploration software available in the library to assist in assessing personal career goals, vocational strengths and career interests. (July 18, Aug. 3)

Introduction to Myers-Briggs - presents a personality assessment instrument that is also available on-line in the library. (July 20, Aug. 10)

Performing During an Interview - teaches proper conduct during an interview. (June 22, July 6, July 26)

Research has demonstrated that most successful individuals have one commonality—a clear goal. Start your career plan for success by visiting the Career Information Library and registering for one or more of the workshops. For more information call 6-3872. The library's hours of operation are Tuesdays, Wednesdays and Thursdays from 10 a.m. to 4 p.m. □

NIMH Lab Worker McLaughlin Praised for Performance

Much like some movie stars who were launched onto the silver screen after being discovered at drug store counters, junior cook-turned-lab worker Catherine McLaughlin said she was routinely performing her job behind the breakfast counter in Bldg. 35 when NIMH's Dr. Michael Brownstein noticed there was nothing routine about her performance. He approached her with an offer: Had she ever considered changing her career? Instead of scrambling eggs and planning menus in the cafeteria, would she like to mix media and prepare solutions in his Laboratory of Cell Biology?

That was in 1987. Recently, McLaughlin celebrated her eighth anniversary in Brownstein's lab by receiving an award for distinguished service from the DHHS secretary. She was recognized "for demonstrating that applying work ethic standards of the highest order to a routine job can contribute immeasurably to the success of a program," according to the citation on the award.

Although she shrugs modestly when asked about the job performance that drew her such lavish praise, McLaughlin's pride in her work is evident at her tidy workplace over which a handwritten sign politely warns: "Please do not remove ANYTHING from this area without first asking Catherine."

"Everything they use in the lab comes through these two hands first," she said, glancing around the spic-and-span quarters. "I see that they never run out of anything and that everything is prepared right."

According to the award nomination written by Brownstein, McLaughlin's duties are routine and straightforward, "but the manner in which she carries them out is absolutely critical for the quality of the scientific results obtained by the 50 or so research scientists for whom she provides service...Stacks of clean, sterile glassware are always available to meet the needs of research workers as are supplies of media and agar plates. Quality control is such that investigators have learned



Catherine McLaughlin takes a moment to enjoy the DHHS award she recently received for steadfastly and efficiently preparing a Bldg. 36 NIMH lab for its research.

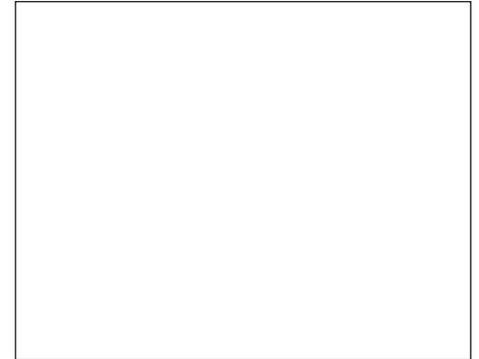
to take it for granted, confident that any aberrations in their results have a scientific basis and are not the result of contamination or error in preparation of solutions."

In addition, after her vacations, McLaughlin takes it upon herself to come in to the lab on Sunday to ensure that lab supplies are adequately prepared for the next week's research work. What's more, her cheery attitude indicates she truly enjoys her role in the lab and revels in the responsibility her second career places in her hands. Like the Hollywood hopefuls who were better served by leaving their posts behind counters to find their true callings, McLaughlin has flourished since trading in her apron for a labcoat. While she is paid more as a government lab worker, and has better benefits, she said she has something else she treasures as well.

"I like my work here," she said, "but more than that, they like my work here. They depend on me."—Carla Garnett □

Wednesday Afternoon Lecture

The final speaker in the 1994-1995 Wednesday Afternoon Lectures series will be Dr. Allen D. Roses, professor of neurobiology and neurology, Duke University Medical Center. His topic will be "Apolipoprotein E and Alzheimer's Disease: Clinical Research Points to New Basic Neuronal Pathways." Hosted by the Clinical Research Interest Group, the talk will be held at 3 p.m. on June 28 in Masur Auditorium, Bldg. 10. For more information, call Hilda Madine, 4-5595. □



Dr. Phillip Gorden (r), NIDDK director, and Dr. Constantine Londos (l), chief of the membrane regulation section in NIDDK's Laboratory of Cellular and Developmental Biology, pose with Dr. Martin Rodbell, recipient of the 1994 Nobel Prize in Medicine or Physiology, during a symposium in his honor. The day-long symposium on "Signal Transduction: Then and Now, A Day of Science and Recollections," which was sponsored by NIDDK, took place recently at the Natcher Conference Center.

NIH Family Care Fair, June 22

NIH will sponsor its third Family Care Fair on June 22 from 11 a.m. to 2 p.m. in Wilson Hall, Bldg. 1. Information will be available from child care and elder care resource and referral services, NIH onsite and offsite child care facilities, and other community resources for work/family issues. The fair is open to all NIH employees. □

Participants in bike-to-work day recently at NIEHS were (from l) Teddy Devereux, Nick Staffa, Dr. Robert Chapin, chair of the NIEHS environmental awareness advisory committee that promoted the event among NIEHS employees and contractors, Joe Cirvello, Dr. Ling-Hong Li, and Richard Sloane. Riding but not pictured were Dr. Gloria Jahnke, John Schelp, and Dr. John Bucher, who combines a bike ride with a bus ride to get to work each day.